

**UNIVERSITY OF NEVADA
COOPERATIVE EXTENSION (UNCE)
&
NEVADA AGRICULTURAL EXPERIMENT STATION (NAES)**

**Annual Report
of
Accomplishments & Results**

Submitted May 15, 2007

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PROGRAMS

Overview and Introduction:

Reports are only provided on select program impacts which reflect unique benefits to a diversity of clientele and stakeholders in Nevada. No attempt was made to include all programs or all program impacts since they are too extensive. All programs are based on local or statewide formal and informal needs assessments.

It should be noted that just about all Cooperative Extension programs have some type of applied “research” component. Cooperative Extension faculty are expected to research needs, program impacts, and may use applied research projects to learn new information as well as a teaching tools. All Cooperative Extension faculty must have at least these minimum research components in their programs, and research is a major consideration in annual evaluations for both field faculty and campus based faculty (many of whom also have joint Nevada Agricultural Experiment Station appointments as well). Finally, a number of Cooperative Extension faculty also participate on NAES research projects related to their program areas..

The research programs of the NAES are integral to the College of Agriculture, Biotechnology and Natural Resources and are associated with the College of Human and Community Sciences, and the School of Medicine. The mission of NAES is to build and support research capacity to advance understanding of biological, environmental, natural resource and social systems to enhance agriculture, community and economic vitality in compliance with State and Federal Legislation. Research is conducted in the laboratories of the Max C. Fleischmann College of Agriculture, Knudsen Resource Center, Howard Medical Sciences, Bureau of Mines building, and the Sarah Fleischmann College of Human and Community Sciences. Six field laboratory sites are also utilized for research, including: Main Station Field Laboratory, which houses the large animal surgical facility and laboratory and the meats laboratory; Valley Road Field Laboratory, which houses the College of Agriculture Equestrian Center; Newlands Research and Extension Center; Gund Ranch Rangeland Research Center; Rafter 7 Ranch Sheep Research Station; and the Jay Dow Sr. Wetlands Research Laboratory.

GOAL 1: AN AGRICULTURAL SYSTEM THAT IS HIGHLY COMPETITIVE IN THE GLOBAL ECONOMY

Overview: Our Plan of Work (POW) goals are to increase the overall quality and health of Nevada livestock through research and outreach, to understand the quality of plants through basic research and to evaluate and promote improved marketing of Nevada products.

University of Nevada Cooperative Extension (UNCE) education programs have focused on diversified/alternative crops, risk management and animal production efficiency. UNCE campus and field faculty are also part of many NAES research projects in these subjects, and have made extensive use of research findings. As noted in some of the key themes, the dissemination of research information via UNCE educational programs has had an impact on producer’s practices and profits.

NAES research programs have focused on developing alternative crops for Nevada, determining genetic and nutrition factors to enhance the quality of beef products, improving beef cattle reproduction rates to increase profitability, rangeland rehabilitation, improving the economic return in sheep production by emphasizing both wool and meat production and finding niche markets for specialty meat products.

Federal and State Funding by Plan of Work Goals

	Goal	Federal \$	State \$	County	Total \$	FTE
Nevada Agricultural Experiment Station	I	512,195	3,360,710		3,872,905	59.9
University of Nevada Cooperative Extension	I	447,485	3,196,618	3,814,937	7,459,040	20.96

Theme: Invasive Species (Weeds)

Issue:

Weeds are one of the most serious threats to Nevada rangelands and lawns. Noxious weeds have already invaded thousands of acres of Nevada's lands and waterways and threaten water quality, wildlife habitat, recreational activities and the economic stability of ranchers, farmers and other land managers.

What Has Been Done:

Hundreds of Weed Warriors, Woad Warriors, and other volunteers have been trained by University of Nevada Cooperative Extension (UNCE) personnel in how to spot, control and eradicate noxious weeds. There are numerous activities every spring in which weed volunteers pull and/or spray hundreds of acres of noxious weeds. These volunteers:

- Educate their neighbors and other local residents about the threat of noxious weeds by making presentations, staffing booths, writing media articles and giving tours.
- Identify weeds and map infestations. They develop databases and monitor the infested areas.
- Control and eradicate weeds by conducting weed pulls and applying herbicides to large infestations.

There are more than 30 Nevada coordinated weed associations and other groups, according to the Nevada Department of Agriculture's Weed Coordinator. UNCE plays an active role in many of these groups, serving as catalysts, educators and grant consultants. The goal is to achieve long-term sustainability of the weed control efforts.

Various weed control methods are also being tested by Cooperative Extension working with local individuals and groups. For example, weed control by ruminants.

Impacts:

The Tahoe Weed Coordinating Group - consists of landowners and managers, regulatory agencies and residents working together to share information and resources to achieve effective weed control in the Lake Tahoe Basin. Cooperative Extension is key to their efforts. As a result of efforts of this group, we measured a 57% decrease in total weed infestations from 2004 to 2006 in El Dorado and Placer Counties, and a 28% decrease on USFS properties in the basin. We also measured a 41% decrease in sites infested with five priority weeds in Incline Village.

The Truckee Meadows Weed Group provides a variety of educational programs to elementary schools on weeds. Teachers at 19 elementary schools (29.7% of all Truckee Meadows elementary schools) requested one or more presentations. In a post-class test, 63% of students in grades 3-5 could name 2 or more ways that weed seeds spread, and 69% could correctly identify three or more of the five priority weeds. Their outreach campaign this past year was successful in increasing weed reporting via the hotline and Web site. After the Aug. 7 full-page ad, hits on the website jumped from about 90 per day to about 180 per day, and remained elevated. The website was accessed 7,344 times in 2006. Also in 2006, \$30,000 from the Carson- Truckee Water Conservancy was used to treat headwaters drainages along the Truckee River. Washoe County Roads treated 1745.3 acres of various weeds along roads, and City of Reno road and ditch maintenance personnel treated 101.4 acres of weeds. Sparks treated 1,234 acres of parks, medians, roadsides, ditches, alleys, schools, etc. with chemical controls in 2006. NDOT spent 290 man-hours controlling weeds with herbicides on approximately 160 acres in wetland mitigation basins and along Interstates 80 and 395. USFS treated 100 acres. Weeds on 2702 total acres were controlled. Finally, volunteers met at several locations to mechanically remove a variety of weed species from local parks and trails. For example: Oxbow Park: April 29 (5 bags of thistles removed by a few volunteers), Mayberry Park: May 6 (27 bags of thistles removed by 10 volunteers); Dorostkar Park: May 6 (90 bags of thistles, hoary cress, perennial pepperweed removed by 2 community service crews led by a Extension trained Weed Warrior).

Weed Control By Ruminants - As a result of this program, 4,000 goats and 2,000 sheep were purchased by five individuals and are now grazing weeds on a contract basis in Eastern Nevada. These five new successful businesses are in their first year of operation thanks in large part to information learned from this program and

Extension's assistance. Over fifty interested parties participated in a two-day educational workshop. Participation ranged from interested grazers, agency personnel and the publisher of Western Farmer Stockman Magazine. Participants were from five western states. On a scale of 1 to 5 with one being poor and five being excellent the 50 participants rated the overall educational program at 4.8. A 4.9 was given to the instructors' ability to teach and their knowledge of the subject. Comments from several participants included that they will put the information to work immediately. Gallagher Fencing representative stated that fence sales at local stores rose by over \$30,000 following this program and the electric fence demonstration. The Western Farmer Stockman editor in attendance used information learned in his feature story which went out to thousands of readers. Two participants hired two of the five new businesses to control weeds on their Elko County properties.

Source of Funding;

Smith-Lever
State Matching Funds

Scope of Impact:

State Specific
Integrated Research & Extension

Theme: Diversified/Alternative Agriculture

Issue:

Alfalfa or grass hay is produced on more than 90 percent of Nevada's irrigated agricultural lands. The lack of alternative crops limits producer options when hay prices fall or input costs such as electricity rise. This situation is compounded by threats to irrigation water from urban communities and natural drought. An increase in higher value crops or crops that use less water will enhance agriculture's contribution to rural communities and the state's economy, as well as creating opportunities for agriculture careers. University of Nevada Cooperative Extension (UNCE) is collaborating with private cooperators and agencies in developing applied research field trials that determine the survival and production potential of alternate crops.

What Has Been Done:

The purpose of this program is to test and demonstrate crops that use less water and/or offer increased income potential to Nevada agricultural producers. With Extension's assistance and research from tests, producers planted and/or harvested commercial acreages of tef, wine grapes, and turf grass for the first time in Churchill County during 2006. Additionally, tef was planted in Pershing and Humboldt Counties.

Impact:

The number of acres, producers and County locations producing tef expanded greatly in 2006 due to Extension's educational efforts. A mail survey of the 7 tef producers taught was completed in 2006. The results indicate that the acreage of tef grown in 2006 tripled from that grown in 2005 to over 300 acres. The harvest in 2006 included approximately 200 acres of forage which yielded an average of 4.6 tons/acre and about 100 acres of seed with yields ranging from <600 to 1800 pounds/acre. The forage was marketed as high quality horse hay for an average price of \$140.00/ton (\$644/acre) while the seed sold for \$.35/pound plus 3 tons/acre straw valued at \$65/ton (\$720.00/acre). Both enterprises equal or exceed the average income from alfalfa hay in Churchill, Eureka and Humboldt Counties. Most importantly, tef production reduced water use by approximately 1/3 as compared to alfalfa and input costs are significantly less than those associated with alfalfa. Tef is rapidly becoming established as a viable alternative to alfalfa in western Nevada.

Multi-year efforts in establishing a premium wine grape enterprise have resulted in the planting of approximately 13 acres of premium wine grapes, the establishment of Nevada's only estate vineyard and winery and the first large scale marketing of wines produced totally from Nevada grown grapes. The 2006 production figures averaged approximately 3.5 tons/acre which yields around 2600 750 ml bottles of wine per acre. In 2006 the producer began selling the first vintage at the retail level. The vineyard is currently selling 5 wine. They are for sale at the vineyard, in upscale restaurants, and wine shops in Reno at \$12.00, \$14.00, \$16.00, \$18.00 and \$20.00

per bottle respectively. With current production values (tons/acre), the retail value of the wine ranges from \$31,200 to \$52,000 per acre. The current production required less than 1/3 as much water as alfalfa production on a per acre basis. Other potential producers are now seeking information on the potential.

Source of Funding:

Smith-Lever Act funds
State matching funds
Producer Support

Scope of Impact:

State Specific
Integrated Research and Extension

Themes: Home Lawn & Gardening and Urban Gardening

Issue:

Nevada is one of the fastest growing states in the nation and many new residents do not know how to garden in these arid land conditions. Experienced and novice gardeners from around the country have trouble growing plants and vegetables in Nevada. There is a great need to assist these new neighbors, and there is also a big demand for plant science knowledge from long-time citizens.

What Has Been Done:

Master Gardeners, educated by University of Nevada Cooperative Extension (UNCE) professionals, provide research-based horticulture information to the increasing population of Nevadans. They are local volunteers who learn advanced plant science skills through at least 50 hours of classroom instruction. Then, the student gardeners volunteer a minimum of at least 50 hours a year by giving their newly acquired knowledge to other citizens. Master Gardeners educate through the media, give talks and workshops, answer phone calls, send out informational materials, develop community gardens and teach in the schools, at garden clubs, senior centers, hospitals, childcare centers, nurseries and farmers markets. The Master Gardener program is also available to some prison inmates to help them with career development.

Impact:

There are nearly 600 active Master Gardeners statewide. In 2006, they handled nearly 20,973 phone calls requesting horticulture information, and replied to emails and mailed out requested publications. Master Gardeners volunteered more than 31,000 hours around the state educating people in plant-science, the equivalent of 17 full-time employees.

To this date, more than 100 inmates have completed the 70-hour program with all but two students passing the comprehensive final exam. Only one prisoner is known to have re-entered any southern Nevada prison. This is in accord with the results of other research that found decreased levels of recidivism among inmates who engaged in horticulture study. Self reports (n=30) of the increase in horticultural knowledge before and after taking the course showed that students who completed the course in 2004 and 2005 perceived an average increase in knowledge of 2.7, out of a maximum of 4. Qualitative statements included "I can take all the self-esteem classes they can offer, but this gives me something real." Another inmate said, "This is the best thing I've ever done". A former inmate attending a pruning seminar made it a point to tell how grateful she is for the horticultural classes she took in prison and that she and her roommate now work for NDOT because of the skills she gained from the program.

Source of Funding:

Smith-Lever Act funds
State matching funds

Scope of Impact:

Themes: Risk Management

Issue:

The goal of the **Risk Management Education for Sustainable Agriculture in Nevada** project is to develop and deliver a comprehensive risk management education program to livestock and forage producers in the State of Nevada. This program helps producers understand the risks they face in agricultural production and teaches strategies to mitigate those risks in order to increase the probability of economic survival for the farm and the personal security of the farm family.

What has been done:

The educational programming will consist of five separate one or two-day programs in the areas of financial, production, and market risk. The program topics are based upon programming needs as indicated in producer program evaluations and surveys conducted in the 2005-2006 academic year. As a result of these programs, participating producers will be able to more effectively manage their enterprise and have an understanding of the various risk management options available to them. Informed decisions regarding markets, pricing, and production based on strong financial analysis will lead to sustainable agricultural practices and enhanced quality of life for farmers and their surrounding communities.

Programs in 2006 included or focused on: Estate & Farm Transition Planning; Managing Human Resources; Nevada Cattleman's Update; Nevada Range Management School; the Nevada Grown Connections conference; the Cattlemen's College at the Nevada Cattlemen's Association Annual meeting; and the Western Alfalfa and Forage Symposium - Farm Financial Decision Making.

Impacts:

Program impacts measured through pre- and post-seminar testing, post-seminar evaluations, and six-month seminar evaluations concluded the following: producer knowledge gain from attending the seminars ranged from 188-455%; the majority (46-98%) of the program participants considered the seminar valuable to them and worth their time; between 86 and 97% of the participants felt they could apply their new knowledge and information in their job/operation; and between 92 and 100% of the participants would attend future risk management programming. Six months after the participants attended the seminars, 50 to 76% had incorporated ideas, knowledge, and information from the seminar into their job/operation, and 63 to 78% were directly applying production, legal, marketing, and personnel management techniques learned at the seminars. Additionally, many program participants noted increased profits and financial benefits of 1 to 60%, while others gave non-financial benefits, including more efficient management, awareness of alternatives, and better communication and planning with family business partners.

Western Alfalfa and Forage Symposium - Farm Financial Decision Making: Attendees rated the seminar as very helpful (6 out of a possible 7) and the majority said they would use the information and knowledge gained in their job/operation (5.6 out of a possible 7). All UNCE instructors and material were rated at least a 4.5 out of a possible 5.

Cattlemen's College at the Nevada Cattlemen's Association Annual meeting: The participants said they would incorporate a large portion of the material and knowledge gained (7.1 out of a possible 10) into their job/operation. All six presentations were rated a 4 or higher (out of a possible 5).

Source of Funding:

USDA-Risk Management Agency
State matching funds

Scope of Impact:

State Specific

Themes: Diversified/Alternative Agriculture

Issue

Nevada's arid climate makes it hard for farmers to grow non-native crops. Many farmers in the state rely on alfalfa as their main crop. While alfalfa grows well in Nevada, it uses about 3.5 acre-feet of water per acre each season. That is, more than 1.1 million gallons of water for 1 acre of alfalfa. Nevada's farmers need a crop that grows as reliably as alfalfa, but uses less of the state's limited water supply. Researchers know that wine grapes use little water, but overcoming the challenges of Nevada's harsh climate needed some serious help.

What has been done?

Over the past eleven years, the University of Nevada, Reno (UNR) has established experimental vineyards in Reno, Minden/Gardnerville, Fernley, Fallon, and Yerington, Nevada to test regional micro-climates effects on grapes. UNR is using several different approaches to developing more stress tolerant wine grape (*Vitis vinifera*) plants including: adapting cultural practices; selecting for more tolerant plant cells; making hybrids of *V. vinifera* with more tolerant native North American species; and using genetic engineering technology to develop more hardy genotypes. To keep the public informed, the University of Nevada's Official Viticultural Newsletter has been released! This quarterly e-publication is intended to keep Nevada residents up to date on all information released by the University regarding its wine grape research program. Jason Evans UNR's vineyard field manager is now aiding local growers just getting started.

Impact

The success of the UNR vineyard has generated considerable interest in nearby areas, with two commercial and numerous private vineyards. Miguel Henry a local economist recently determined that grapes are much more profitable than alfalfa in Nevada. That is, grown over a 10 year period both Chardonnay and Merlot can be highly profitable and based on Risk Analysis have a near 100% chance of positive return. Dr. Grant Cramer the lead scientist on the projects likes to point out that "The net profit on an acre of alfalfa is about \$300, the net profit on a one-acre vineyard in Grand Junction, Colo., is \$5,000."

Source of Funding:

USDA – Hatch Grant
State matching funds

Scope of Impact:

Outreach
Research

Themes: Risk Management

Issue

Hay, Nevada's primary crop, accounted for 24.4% of total farm production cash receipts in Nevada in 2002. Hence, this crop is an important component of Nevada agriculture and rural Nevada economic development. Alfalfa hay producers often use other hay products as rotation crops. Cool season hays, including Timothy hay, are often chosen by producers. Recent fluctuations in cool season hay pricing due to competition, pest issues, and climactic conditions have caused concern for producers and residents in their communities. Lack of appropriate production contracts and the subjectivity of current pricing controlled by buyers have created a need for expanded markets and new pricing mechanisms. This project evaluated existing markets and potential markets.

What has been done?

Investigators constructed optimal production contracts for cool season hays based on the current market information. They then implemented marketing and contract information into enterprise budgets. Once risk management educational programs were developed, workshops were conducted covering a variety of topics important to alfalfa growers.

Impact

“This is one of the best ways the University of Nevada can assist Nevada’s hay farmers,” said Cooperative Extension Educator Willie Riggs. Program participants at the hay growers update in Eureka, NV in a post seminar evaluation said that as a result of attending the program they felt their business would be more profitable (77%). Fifty-nine percent felt that they could use a large portion of the material in their job/operation. And finally, on average all participants indicated that they had learned something new.

Source of Funding:

State matching funds

Scope of Impact:

Outreach

Research

Themes: Agricultural Profitability

Issue

The establishment of a grower cooperative for local growers and buyers is a proven tool in helping the economy and its agricultural producers as well as the buyers in their market. The objective of this project was to increase the use of Nevada Grown food products in Nevada high-end (gourmet) restaurants and specialty food stores, resulting in growth in the small farm industry and economic development in rural communities.

What has been done?

Agricultural producers in Nevada were surveyed. Based on focus group feedback we constructed a survey for each group (producers and chefs) and sent out by mail. We sent out and analyzed all survey responses. A conference for chefs and producers was held in Reno March 7, 2006 to present the study results, provide educational programming, and also to allow for discussion regarding purchasing arrangements. Workshops were held on such topics as agri-tourism, adding value to agricultural products, agricultural marketing techniques, farm finance, alternative crops production, cooperatives and marketing alliances, and coordination and contracting benefits for producers. Chefs gave presentations on quality requirements, packaging and labeling issues, casino contract and delivery considerations and product types of interest. The chefs also prepared various meal courses to demonstrate ingredient use and preparation and to illustrate the expectations of the restaurant consumer as far as quality, taste, and presentation.

Impact

The goal of this program was to increase the use of Nevada Grown food products in Nevada high-end (gourmet) restaurants and specialty food stores. Six months after the Nevada Grown Connections conference, participants were mailed a follow-up survey. Fifty-seven percent of the respondents said that they have incorporated a great deal of the information they received in the workshop in their current operation/job, with the rest (43%) stating that they have incorporated some of the information. Additionally, 71% of people surveyed now use the market and/or price techniques learned at the conference in their operation.

Respondents listed financial benefits of 1-5% (increase in profits). As a result of the Caesars Las Vegas tour, 64% of the producers said they would incorporate the fine-dinning market into their marketing plan. The participants agreed that the Risk Management Seminar provided information for enhanced planning. The seminar helped them be “more efficient and worry less about the future” and to “better understand risk management” factors. Two participants mentioned that their operations increased net revenues/profits from 6 to 8 percent since attending the seminar. A farm service credit agent mentioned that all of her customers should attend this seminar. Two Reno based chefs and one chef from Truckee, CA are currently making purchases for their restaurants at Reno farmers markets and from the basket program.

Source of Funding:

State matching funds

Scope of Impact:

Outreach
Research

Themes: Diversified/Alternative Agriculture

Issue

Native seed production is a viable alternative crop for many Nevada agriculture producers with dwindling irrigation water resources. This project will provide the initial steps for developing a product that can serve as an alternative crop for a fledgling Nevada native seed industry. This is a long-term project with Bureau of Land Management to develop native seed from Northern Nevada for Nevada that can be used in fire rehabilitation efforts once quantities are commercially available.

What has been done?

Four wild grasses (two varieties of basin wild rye, creeping wild rye, & needle-and-thread grass) were collected from field populations. The seed production of each type of grass was tested against commercial varieties for performance. A promising variety of basin wild rye (Gund) was expanded to a 25 acre. Seed were then provided to the Aberdeen Plant Materials Center and to the Lab in Logan, UT for performance comparisons with commercial available Indian ricegrass.

Impact

The Aberdeen Plant Materials Center field trials on this promising Gund variety of basin wild rye unfortunately showed a lower potential for growth and production when compared to commercial cultivars like Indian ricegrass. However, the Gund variety does appear to perform better under drought and saline conditions typical of Northern Nevada – a fact not lost on many of Nevada’s government agencies. Bureau of Land Management and Natural Resource Conservation Service have been briefed on the potential of the Gund variety. Though not as vigorous a grower as Indian ricegrass over 1,000 lbs of seed was produced from research plots in 2006 and is now being made available for growers in 2007.

Source of Funding:

Nevada Arid Rangeland Initiative
State matching funds

Scope of Impact:

Outreach
Research

Themes: Invasive Species

Issue

Kentucky bluegrass is a significant weed problem throughout Nevada wherever alfalfa is grown under pivot irrigation. The frequent light irrigation that is delivered in the area nearer to the pivot irrigation tower provides an ideal environment for the dense sod-forming Kentucky bluegrass to dominate over alfalfa and other tap-root or bunchgrass plant growth forms. Kentucky bluegrass not only negatively affects crop yields, decreases the relative feed value of the forage, but also influences the price downward to buyers of high quality feeds for dairy cattle because of the appearance. The purpose of this project is to determine a cost-effective herbicide management program to control Kentucky bluegrass in alfalfa under pivot irrigation in Nevada.

What has been done?

A fall application of Kerb[®] herbicide was applied in a randomized complete block design and was irrigated into the soil. The precision application equipment was donated by the Tri-County Weed Program in Ely, Nevada. In the

early spring the following year, a spring-tooth harrow was used across the trial area. After emergence of the Kentucky bluegrass various rates of the grass herbicides (Poast and/or Select) were applied.

Impact

Investigator have completed the Kentucky bluegrass trials and were happy to find that Kerb[®] herbicide at 2 pounds / acre give is over 90% control and we keep suppression of Kentucky bluegrass down to 1 pound / acre. As a result of this investigation, Dow AgriSciences are now planning on introducing new Kerb[®] herbicide product especially designed to control Kentucky bluegrass in alfalfa. Specifically targeting irrigated alfalfa fields throughout the western United States. Local alfalfa producers were given the information at a field day in Eureka during the summer and again at an indoor workshop in October of 2006.

Source of Funding:

State matching funds

Scope of Impact:

Outreach

Research

Themes: Diversified/Alternative Agriculture

Issue (Who cares and why?)

The United States, the largest importer of natural rubber in the world, imports more than 1.2 million metric tons each year. But, currently, more than 90 percent of natural rubber is produced in Southern and Southeastern Asia, making the United States dependent on international governments for its supply of rubber. For this reason natural rubber has been and still is classified as a strategic commodity by the U.S. Government, and mandated that a domestic source of rubber be developed.

What has been done?

Investigators have been scouring Nevada's high deserts for different varieties of Rabbit Brush and screening them for rubber content. Investigators have expanded their study to look at seasonal changes in rabbit brush rubber content. Previous studies report that rabbit brush accumulates rubber in response to high temperature and low soil moisture content.

From the molecular standpoint, investigators have generated ~10,000 expressed sequence tags (ESTs) from each of four different rubber producing plant species including; Rabbit Brush, Russian Dandelion, Guayule and ornamental rubber plant. They have sequenced and identified over 400 different proteins associated with rubber particles isolated from these plants. They have developed a method to specifically chemically tag proteins associated with the rubber enzymes. Additionally, investigators have generated transgenic dandelion plants that over and under express the major protein associates with dandelion rubber particles and are in the process of determining how these transgenic changes effect rubber yields.

Impact

The development of rabbit brush into a commercial rubber crop would provide Nevada agriculture with a high value crop that would require low agronomic inputs (i.e. irrigation water and fertilizer). Furthermore since rabbit brush thrives on marginal soils, rabbit brush will not compete for land resources with current crop species and would increase farm acreage to land previously thought to be unsuitable to agriculture. Initial analyses revealed that rabbit brush collected from the Eagle Valley Sand Dunes and Sand Mountain had the highest amount of rubber with yields as high as 14 mg or rubber per gram dry weight. The wild accessions collect through these studies are providing the initial genetic resources required for the selection of high yielding rubber lines. These lines will prove essential for the development of elite rabbit brush lines for possible commercial consideration.

Source of Funding:

USDA Western Region Research Center

State matching funds
Oregon State University

Scope of Impact:
Research

GOAL 2: SAFE AND SECURE FOOD AND FIBER SYSTEM

Overview: Our POW goal is to conduct research and outreach programming to prevent food borne illness in Nevada.

There are no significant programs or impacts to report for this goal from 2006, although there have been in previous reports. For example, data from past Nevada research has been incorporated into the Nevada Beef Quality Assurance Program as well as the Hazard Analysis and Critical Point (HACCP) management program to improve consumer confidence in Nevada's beef industry. Also, food safety is a part of all nutrition and food preparation training conducted by UNCE under Goal 3.

Federal and State Funding by Plan of Work Goals

	Goal	Federal \$	State \$	County	Total \$	FTE
Nevada Agricultural Experiment Station	II	-0-	-0-	-0-	-0-	0
University of Nevada Cooperative Extension	II	-0-	-0-	-0-	-0-	0

GOAL 3: HEALTHY, WELL NOURISHED POPULATION

Overview: Our POW goal is to conduct research to better understand healthy life style habits, and educational programs that focuses on learning and adopting healthy life style habits.

Many studies have documented the impact of nutrition on learning and health problems such as obesity among youth, diabetes, heart disease, hypertension and stroke among minorities as well as other adults. Therefore, major UNCE programs have been directed at improving the nutritional knowledge and eating behaviors of youth, especially those from minorities or limited resource families. Special efforts have also been made to reach minority audiences in these programs and examples are given below.

NAES research has focused on nutritional intervention strategies with dietary fat to assist in the treatment of human cancers and research on humanizing organs in sheep tissue through stem cell implantation.

Federal and State Funding by Plan of Work Goals

	Goal	Federal \$	State \$	County	Total \$	FTE
Nevada Agricultural Experiment Station	III	309,393	960,049		1,269,442	12.8
University of Nevada Cooperative Extension	III	35,676	254,855	304,152	594,683	8.79

Themes: Human Health & Nutrition

Issue:

The prevalence of diabetes in the U.S. has increased from 1.5 million in 1958 to 20.8 million in 2005. Individuals of Hispanic origin are 1.7 times as likely and African Americans 1.8 times as likely to develop diabetes as non-Hispanic whites of similar age. The growing numbers of diverse populations make reaching out to these groups imperative. The direct cost of hospitalization for diabetes in Nevada in 2002 was \$82 million, not including outpatient medical care and loss of productivity. Individuals with diabetes spend \$7,400 more annually on health care than those who do not have the disease. Preventing diabetes translates into huge medical savings to patients and the community.

What Has Been Done:

University of Nevada Cooperative Extension (UNCE) developed An Ounce of Prevention, a diabetes prevention program targeting Hispanics, African Americans and Native Americans who are at an increased risk for developing the disease. Lessons in both English and Spanish help clients learn how to reduce their risk by: making lifestyle modifications to prevent or delay the onset of diabetes and its complications; increasing physical activity; and adopting healthy eating habits.

Four separate, culturally sensitive curricula were developed and published: *An Ounce of Prevention African American; Native American; English Version for Hispanics;* and *Mas Vale Prevenir: Version en Espanol*. More than 1,000 Las Vegas residents have completed the program. An Ounce of Prevention is being expanded through a train-the-trainer component; Native American health representatives and African American church volunteers have been taught how to educate others about diabetes. Additionally, it is being incorporated into other health related Extension programming like the “Healthy Hearts” Program (reported separately).

Impact:

In 2006, one hundred seventy-three students completed a 49-item survey instrument post-pre test measures knowledge of diabetes, risk factors for diabetes, food choices, and physical activity. Analyses of evaluation data showed a significant improvement in knowledge of diabetes, as well as knowledge of the risk factors for diabetes. Lifestyle behaviors also changed significantly. Physical activity increased, TV watching decreased and four of six food choice items demonstrated statistically significant improvement.

Source of Funding:

Smith-Lever Act funds
State matching funds
Grant funds

Scope of Impact:

State Specific
Integrated Research and Extension

Themes: Human Health & Nutrition

Issue:

The overall goal of "**The Healthy Hearts Project**" is to reduce the incidence of cardiovascular disease in the African American population residing in Clark County, especially targeting zip codes 89030 and 89106, as well as congregations of the faith membership of the coalition Community Partners for Better Health (CPBH). Schedules of The Health Hearts Project classes are distributed through churches (60) as well as libraries, community and recreational centers, newsletters, beauty and barber shops, radio and some TV programs. The Healthy Hearts Project Delivery is primarily through predominately African American churches, some physical activity programs are held at recreational centers. Educational workshops focus on preventing and controlling risks factors for cardiovascular disease such as hypertension, diabetes, physical inactivity, and unhealthy food choices and preparation. Other activities create an awareness of healthy behaviors to decrease cardiovascular disease.

What Has Been Done:

The "Healthy Hearts Project" involves a wide variety of outreach educational programs and activities designed to cover a wide range of health/nutrition issues related to cardiovascular disease especially focused on the African American population in Las Vegas. This includes such programs/activities as:

"Under Construction: The Rebuilding of the Body" - A 12 week physical activity lifestyle modification course. Participants learn a wide variety of physical activities that they can do at home or in the workplace. Activities include "pathways walking", (learning to walk in available space), simple social dances, such as line dancing, as well as other well known social dances (twist, swim, etc.), African folk dances, Tai Chi, stretching exercises, and strengthening exercises using chairs and exercise bands. Ten workshops have been conducted this year in ten sites; churches and community centers in the target area. Two hundred and eight participants gained from this workshop.

"Tour de Church" - Walking Clubs: Walking Club participants travel through a virtual tour of the Faith Community in the five week time period of the initiation of the club. Incentives are earned as church "checkpoints" are reached on the tour. During the five weeks, a leader from the group is recruited to carry on the club after the community based instructor completes the initiation period. Participants receive a trophy and a pedometer at the completion of the twenty mile tour. Walking habits are encouraged to be continued with the use of the pedometer and walking logs.

Ten walking clubs were conducted at ten church or community center sites in 2006. One hundred and eleven community members participated in these walking clubs. Extension staff return to the walking club two to three weeks after the initiation of the new leader to lend support. The CBI brings motivational hands outs, and checks if the new leader needs any additional incentives for new members. They encourages existing members to continue with the newly established physical activity behaviors.

Aquatic Exercise Program - "Have A Blast with A Splash, and Get A Healthy Heart, too" is an aquatic exercise program tailored to community. The program includes social interactive activities, and incorporates variety in class content to encourage program adherence. Each class is team taught by an exercise professional and a community based instructor. One instructor leads the class, while the other instructor assists individuals in varying unique needs. Many of the participants of the program are non-swimmers, and are often apprehensive of the aquatic environment, and sometimes need assistance with many of the moves. This team teaching method works well to accommodate individual needs. One hundred and forty have participated in the program at two sites. Throughout the year, two classes are taught weekly (September-May), but during the summer months, five classes are taught weekly (June-August). Class content includes aquatic kickboxing, aquatic pilates, aquatic tai chi,

aquatic yoga, and aquatic ball workouts.

Community Center Gym Program – Extension has conducted the personal exercise program "Your Personal GitFit Plan" in two Faith Community center gyms. Members of the Faith Community are recruited to come to the local community center gym, and have an exercise program designed for them on equipment in the formal exercise environment. Exercise preferences, scheduling considerations, special conditions, and level of fitness are utilized by the Instructor to develop the personalized exercise program. Participants make monthly reappointments to progress their personalized program. Two programs are conducted weekly throughout the year, and to date, there have been 661 participants in this project, 192 of them participated this year.

Tone, Stretch, and Relax (T.S.R. Program) - One exercise professional (Program Officer II) conducts the T.S.R. (Tone/Stretch/Relax) program at two community centers once weekly. This program is comprised of a combination of Yoga and Pilates mat exercises, developed by the Physical Activity Instructor and the Exercise Program Officer II. One hundred and twelve community members participated in this program in 2006. Evaluation/Outcome: (See focus group comments below.)

Hypertension: Stop It! Control IT!: Information and education to enable participants to make the choices and changes necessary to promote a healthy lifestyle and to decrease their risk factors for hypertension. The workshop includes information on understanding hypertension, blood pressure readings, sodium restriction, application of the Dietary Approaches to Stopping Hypertension (DASH) diet, portion sizes and increasing physical activity. A booklet of recipes supporting the DASH diet is given out to the participants at the end of the workshop. The workshop encourages the use of shared ideas, introduction to new foods and preparation techniques. Information on lactose intolerance is included to counteract problems with lactose intolerance that may be experienced using low fat dairy products recommended by DASH. This workshop has been offered at many churches throughout Clark County over the past five years, with numerous people participating. Since their previous participation, many people have requested new workshops. In response, The Healthy Hearts Project has added two new workshops and fewer churches are requesting the original workshops, "Hypertension" and "Ounce of Prevention".

"Heart Care": - This packaged four lesson program is designed for prevention and control of high blood cholesterol, a risk factor for heart disease. Extension began teaching this program January 2006. Workshops were conducted on a weekly basis at eight churches and one apartment complex. There were 180 participants in this workshop this year.

Impact:

The 12 Week Physical Activity Lifestyle Modification Course uses The Social Learning Theory for evaluation. Workshop participants complete pre and post testing, and post-post testing after six months. Variables measured are related to cardiovascular disease risk factors, which include resting heart rate, resting systolic and diastolic blood pressure, body mass index, percentage of body fat, fat mass, lean mass, waist/hip ratio, waist circumferences, a wellness profile rendering information on exercise and nutrition behaviors, tobacco usage, stress management, and safety behaviors. Of the 17 variables measured, 9 were found to be statistically significant in changes from pre test to posttest at 12 weeks. At six months, 9 variables were found to be significant in changes. The variables where changes were very significant from pretest to posttest (<0.0001), include waist circumference, abdominal circumference, total wellness scores, exercise behavior scores, and nutrition behavior scores. The variables where changes were significant from pretest to posttest include diastolic blood pressure, and hip circumference. In pretest to post-posttest, the variables of waist circumference, hip circumference, abdominal circumference, and total wellness were found to be very significant in changes (<0.0001). The variable found to be significant at post-post test was exercise.

Walking Clubs: Eight variables were measured during the five weeks; general health, vitality levels, bodily pain, role emotional, mental health, physical functioning, role physical, and social functioning. Very statistically significant changes were found for five variables: general health, bodily pain, vitality levels, role emotional and mental health. Moderate significant changes were found in role physical.

Focus Group Feedback on Physical Activity Programs: Seven focus groups were held with a total of 54 participants. Questions for the focus groups and responses were used to provide suggestions for future program delivery methods, additional programming needs, marketing, scheduling, etc.

The "Hypertension: Stop It!, Control IT!" evaluation tool was changed as the 2004 year began. A decision was made to use the "Eating Styles Questionnaire" due to its tested reliability with African Americans. Between summer 2004 and fall 2006, participants completed a survey (the "Eating Styles Questionnaire") at the first meeting and after the last meeting four weeks later. Responses are reported for 238 participants for whom both pretest and posttest surveys were available. The "Eating Styles Questionnaire" (ESQ) was analyzed by summing the responses across items and forming two sub-scales measuring fat and fiber intake (15 items) and sodium intake (6 items). Fat and Fiber Scale - A paired-sample t-test showed significant changes in the fat and fiber scale from pretest to posttest. This shows that participants improved their eating habits related to fat and fiber intake after completing the hypertension workshop. Sodium Intake Scale - Participants' sodium intake habits also improved after completing the workshops.

Source of Funding:

Smith-Lever Act funds
State matching funds
Grant funds

Scope of Impact:

State Specific
Integrated Research and Extension

Themes: Human Health & Nutrition

Issue:

A needs assessment identified target audiences and educational priorities for eligible food stamp recipients in Nevada. The assessment determined there was a need to increase the consumption of low-fat, calcium-rich foods among children (particularly females), ages 11-14 years. Youth in this age group have lower intakes of calcium, among other nutrients. If calcium needs are not met during this critical development stage, the risk of osteoporosis increases in later life.

What Has Been Done:

To reach the target audience of 11-14 year olds with the "Calcium, It's Not Just Milk" message, we used two primary communication strategies: 1) an awareness component, which featured special food tasting events; and 2) a school-based education component, which included classroom teaching. In 2005, three special food tasting events were held at Bridger and Cashman Middle Schools, which reached 2,413 students at each event. At Cashman, a food tasting event was offered at science night at the school that involved parents and students. The five day Calcium, It's Not Just Milk curriculum was taught to 216 students at Bridger and Cashman and to 469 students at Traner.

In 2006, five day classroom-based nutrition education modules were taught at Traner Middle School, Reno, Washoe County School District in northern Nevada, and Jim Bridger Middle School, North Las Vegas, and Cashman Middle School, Las Vegas, both in the Clark County School District. The key message through the "Calcium, It's Not Just Milk" program was to encourage students to increase their consumption of calcium-rich foods. The primary nutrition education methods included educational classes and food sampling events.

Impact:

In 2006, results show that a greater percentage of students from all the schools were able to answer the knowledge questions correctly from pre- to post-test. However, because of the additional teaching they received in 2005, students from Bridger and Cashman performed significantly better than Traner students on most all questions.

With regard to Q7 "How many milligrams of calcium are in this product?", students at Bridger and Cashman showed improved ability to answer the question correctly from pre- to post with 55.4% of Bridger students and 48.8% of Cashman students answering correctly on the post-test, a 30.3% and 21.2% change, respectively. The Traner students showed little improvement to answer the question correctly from pre- to post-test with 34.8%

answering correctly on the pre-test and 39.6% answering correctly on the post-test, only a 4.8% improvement. On Q8, most students could read the serving size on the food label since there was little change from pre- to post.

With regard to question 9 "Which combination of four foods below would give you enough calcium to meet your daily requirement?", when asked to identify a combination of four foods from a group of 15 foods that would give them enough calcium to meet their daily requirement, less than 10% of the students at any of the schools were able to identify the right foods. On the post-test, there were great improvements in the response to this question among the Bridger and Cashman students, with 39.8% and 40.7%, respectively. Traner students showed little improvement on this question from pre- to post-test.

Source of Funding:

- Smith-Lever Act funds
- State matching funds
- Grant funds

Scope of Impact:

- State Specific
- Integrated Research and Extension

Themes: Human Health & Nutrition

Issue:

The "Chefs for Kids" program recognizes that Childhood and adolescence are the critical periods for development of good health practices; many health behaviors established in childhood persist into adulthood. Because many chronic diseases are attributable to poor diet, it is essential to start good dietary eating and related health practices as early as possible. This is especially important for the almost 26 percent under the age of 18 and 16.4 percent living below the poverty level in Clark County.

What Has Been Done:

University of Nevada Cooperative Extension (UNCE) collaborated with the American Culinary Federation of Las Vegas and developed a nutrition education curriculum that promotes practices engendering lifelong, healthy lifestyles in children. "Chefs for Kids" teaches nutrition to children ages 6-8 in 12 Clark County "high needs" elementary schools (high % of households below poverty level or other similar indicators). Topical newsletters and monthly wellness calendars written in both English and Spanish are sent home to families to expand instruction into the home.

The program consists of two parts, an intensive, second grade curriculum and a video curriculum. "Choose Well, Be Well," the curriculum used for the second grade, promotes practices that will engender lifelong, healthy lifestyles in children that may ultimately lower risk for heart disease and other chronic diseases. It is based on the Theory of Reasoned Action and the Theory of Planned Behavior. Every week, educators teach second grade students about the origin, use and need for food. Students also learn about healthy food and choosing foods that provide the greatest benefit to their bodies. The video curriculum, "Adventures with Chefs for Kids," has expanded the program to potentially reach all first graders in high needs elementary schools in the district.

Additionally, the chefs donate 300 hours yearly preparing much-needed breakfasts for the students at each participating school, with food donated by local properties and purveyors. The program is partially supported by a social function that raises more than \$90,000 yearly in private funds. In 2005, the Chefs for Kids nutrition education program was implemented at twenty-one schools and reached approximately 1700 second-grade and 2726 first-grade children. The Chefs for Kids program has reached more than 25,000 students since its inception.

Impacts:

Evaluation findings in 2006 for the second grade, intensive program are as follows:

Hand washing, was evaluated after two food safety lessons were taught. The goal was to have students be able to demonstrate the proper method for washing hands. We found that 83% of the students were able to respond correctly with no steps omitted, while 17% could not. Those who did not respond correctly did so for several

reasons: they used soap before wetting hands, they dried hands on their shirts, they did not count to 20 as they rubbed their hands, they failed to scrub fronts, backs and wrists, etc.

Describing activities that are part of an active lifestyle, was measured following lessons on energy and activity. Children were asked to list two activities that would be part of an active lifestyle. Eighty-nine percent of students were able to list two activities and another 9% of students could list one activity. Answers were varied but included things like swimming, jumping rope, dancing, playing with a hula hoop, boxing, playing tetherball, playing tag, etc.

Children listed their favorite foods according to food group. Eighty-three percent of children were able to list two foods from each food group with absolutely no errors. Another 9% of students listed foods with only one error. Only 4% of students scored lower than 70% on this evaluation.

Students were asked to choose three snacks out of ten possible choices at both the beginning of the school year (before the intervention) and the end of the school year (following the intervention). The pre and post-tests were matched and the choices were tracked and rated according to both sugar and fat content. The "more healthful choices" (apple, orange, animal crackers, cheese, and pretzels) were given a score of ten points each. The "less healthful choices" (brownie, potato chips, cookies, donut, and candy bar) were given a score of five points each. Scores ranged from 15 possible points (three, "less healthful choices") to 30 possible points (three, "more healthful choices"). An average score on the pretest was computed by using the data from all the pretests. An average score from the post-test was likewise computed. Scores for both pre and post-tests were then compared. Children increased their snack choice score from pre to post-test by 5.2 points or one healthful choice.

The findings in 2006 for the first grade evaluation are as follows:

The food categorization objective was moderately successful. Eighty-four percent of students were able to categorize foods from each food group with 80% or better accuracy (missing only four foods out of fifteen correct choices). In fact, 38% of students were able to categorize foods with absolutely no errors, and 23% made only one error.

Source of Funding:

- Smith-Lever Act funds
- State matching funds
- Grant funds

Scope of Impact:

- State Specific

Themes: Human Health & Nutrition

Issue:

National data show a disparity between the health of low-income households and that of higher income households. According to Healthy People 2010, income is associated with differences in the occurrences of illness, including heart disease, diabetes, obesity, elevated blood lead level and low birth weight. The mission of EFNEP (Expanded Food and Nutrition Education Program) is to assist families with limited financial resources by educational support and experiential learning to apply acquired knowledge, skills, attitudes and changed behavior to improve nutritional and health status in order to prevent chronic disease and enhance family wellbeing. Practical application allows learners to see the relevance of information to their daily lives.

What Has Been Done:

University of Nevada Cooperative Extension (UNCE) engages adults and youth to improve nutrition through building basic skills. The key elements of education are food safety, wise use of food resources, buying, planning and preparing nutritious meals, encouraging physical activity, modifying behavior related to food practices and money management lessons. Program materials are available in English and Spanish.

EFNEP programming is conducted by paraprofessionals in small group classes at 19 agencies throughout Las Vegas. The small group classes are one hour in length and conducted each week for eight weeks. In 2005, more than 500 program families were enrolled, for a total of more than 2,400 family members reached through EFNEP

programming. The EFNEP program was expanded to new venues including elementary schools and low income areas throughout the valley.

In 2006, EFNEP paraprofessionals worked with 601 families with the race/ethnic breakdown of 49% Hispanic, 35% White, 13% Black, 1% American Indian, and 3% Asian or Pacific Islander. Sixty-four percent (n=601) of these families have incomes at or below the poverty level.

Impacts:

In 2005, EFNEP paraprofessionals worked with 544 families with the race/ethnic breakdown of 53 percent Hispanic, 32 percent white, 11 percent black, 1 percent American Indian, and 3 percent Asian or Pacific Islander. Of these families, 66 percent have incomes at or below the poverty level. Results of the pre/post evaluation showed 98 percent made a positive change in consumption of servings of grains, fruits, vegetables, meat/alternatives, and dairy. Food resource management and nutrition practices improved for the majority, and food safety practices of NFE participants improved, with 44percent more often following recommended practices of not allowing meat and dairy foods to sit out for more than two hours and 63 percent more often followed the recommended practice of not thawing foods at room temperature.

In 2006 EFNEP paraprofessionals worked with 601 families with the race/ethnic breakdown of 49% Hispanic, 35% White, 13% Black, 1% American Indian, and 3% Asian or Pacific Islander. Sixty-four percent (n=601) of these families have incomes at or below the poverty level.

Results of the 24 hour recall analysis showed 88% positive change in consumption of servings of grains, fruits, vegetables, meat/alternatives, and dairy.

Results of the pre/post evaluation showed (n=375) food resource management practices of EFNEP participants improved as indicated by the following:

- 60% more often planned meals in advance.
- 50% more often compared prices when shopping.
- 43% less often ran out of food before the end of the month.
- 54% more often used a list for grocery shopping.

Nutrition practices of EFNEP participants improved as indicated by the following:

- 60% more often planned meals in advance.
- 55% more often thought about health food choices when deciding what to feed their family.
- 57% more often prepared foods without salt.
- 72% more often used the "Nutrition Facts" on food labels to make food choices.
- 34% reported that their children ate breakfast more often.

Food safety practices of EFNEP participants improved with: 1) 41% more often followed the recommended practices of not allowing meat and dairy foods to sit out for more than two hours, and 2) 63% more often followed the recommended practice of not thawing foods at room temperature.

Source of funding:

Smith-Lever
State matching funds
USDA Food Stamp Nutrition Education Program

Scope of Impact:

State Specific

Themes: Human Health & Nutrition

Issue:

The prevalence of childhood obesity has dramatically increased nationwide. The underlying causes are many, ranging from genetic propensity to socioeconomic, cultural and environmental influences resulting in unhealthy

eating and physical activity practices. A person's relationship with food and physical activity begins in infancy and is molded during childhood. It goes beyond food selection, preferences and quantity. It goes to the very core of adult-child interactions based on either trust (potentially supportive) or control (potentially damaging).

What Has Been Done:

Given the multi-dimensional causes of childhood obesity, educational programs are composed of a group of efforts under the Childhood Obesity Prevention in Nevada umbrella. No one program can achieve the overarching goal to reduce the incidence of childhood obesity; thus, the issue is addressed with a multi-pronged approach. University of Nevada Cooperative Extension (UNCE) efforts focus on adults who directly feed children (i.e., parents or childcare providers) or those who work with these adults (health professionals).

Little Lives Feeding and Moving Inserts: Clark County distributed a total of 2381 (2213 English and 168 Spanish) inside appropriately aged newsletters for parents with babies from birth - 12 months for 2006.

Tummy Talks: 1096 copies of this children's book about recognizing hunger and fullness were distributed during workshops in 2006.

TV Moves Me: 1096 copies of this children's book about increasing physical activity while watching television were distributed during workshops in 2006.

Coloring books: Food Stamp offices requested both Tummy Talks and TV Moves Me be produced as coloring books. 5300 copies of Tummy Talks and 3700 copies of TV Moves Me coloring books were distributed to the 15 Food Stamp offices statewide in 2006.

Enough is Enough facilitated dialogue classes for childcare providers and parents related to Tummy Talks and TV Moves Me were conducted. A total of 230 providers received training in 2006.

Nurturing Partners concepts are taught in schools and homes. UNCE staff facilitate changes in knowledge, attitude and practices of teens regarding nutrition, health and parenting issues. The lessons include making healthful food and nutrition choices, maternal health care, infant care skills, child development, personal development, and financial and home management. Teens (ages 10 to 19) were selected because of the high birth rate in this population in Nevada and Las Vegas. The staff works in alternative high schools to bring core program elements to parents or prospective parents. In 2006 397 individuals were taught in high schools, and contact hours in Community Agency Classes totaled 2759 (475 students). Home visitations: 5 teen mothers were visited (2 African American and 3 Hispanic).

Mom's Special Gift creates a breastfeeding-friendly environment in southern Nevada among low-income mothers. Twenty-four University of Nevada School of Medicine pediatric residents were trained in 2004 to 2005 to learn more about the advantages of breastfeeding. They worked with more than 200 women who were breastfeeding. In 2006, eighty-five health care professionals were trained in addition to 54 Mothers. Community partners are Clark County high schools, local Women, Infants and Children (WIC) offices, University Medical Center, School of Medicine, Sunrise Hospital, Family Resource Center, Probation Judicial Studies and Child Haven.

Impact:

Enough is Enough: In evaluations from providers/parents trained in "Enough is Enough" in 2006, the most provocative responses were those that reflected differences between why adults and children eat. Each provider had the opportunity to select three of nine possible responses to why adults eat and three reasons why children eat. The three predominant reasons (in order) for adults are hunger, socialization and emotional needs (e.g. boredom, sadness and anger). For children, the rankings (in order) were time, hunger and availability. It is not surprising that time and availability for children ranked high, since childcare centers regulate the schedules of meals and snacks. What is surprising is that hunger ranked high for children in this activity, yet on the questionnaire, less than half of the providers thought children could tell when they were hungry. Few providers felt that toddlers and preschoolers ate for emotional or social reasons.

When asked about allowing children over the age of 2 years to serve themselves food, the majority of providers expressed concerns. Most correctly were concerned that this practice was "messy". This led to discussions of teaching children this important self-help skill. Some providers stated that preschoolers cannot judge

how much to serve, an erroneously belief.

Ten questions assessed knowledge and attitudes associated with feeding children and providing

Nurturing Partners results in the Las Vegas area found significant improvements in nutrition knowledge were noted of the 283 students answering the pre and post nutrition knowledge questionnaires in 2006. Also, teens ate more vegetables and fruit; decreased consumption of fast foods, sodas, junk foods and foods high in fat; and ate out in fast food restaurants less often.

Mom's Special Gift: Among the more than 130 WIC staff who received breastfeeding training in 2006, 91% said they would make changes in educating women about breastfeeding; 82% of agencies would like to receive on-site assistance to facilitate this change process; and all participants expressed interest in writing grants to receive additional funds and in improving facilities to create a learning-centered environment. Medical residents trained about breastfeeding attributed much of their preparation to this knowledge.

Source of Funding:

- Smith-Lever Act funds
- State matching funds
- Grants

Scope of Impact:

- State Specific
- Integrated Research and Extension

Themes: Human Health & Nutrition
Issue

Thousands of Nevadans cannot always afford to buy enough food to support an active, healthy life. While not many Nevadans starve to death, many residents sometimes go to work, to school, or to bed hungry, and many others barely manage to avoid hunger.

In 2002-2004, an average of 8.5% of households in Nevada were food insecure. No information is available about the prevalence of food insecurity among Food Stamp Program households with children in Nevada, and no information is available about their needs relative to nutrition education. Findings from this research study will provide information that is not currently available about Nevada's low income population to other agencies; while guiding the development and refinement of Food Stamp Nutrition Education programs in Nevada

What has been done?

During the first six months of the study researchers developed the survey, had it reviewed by content experts, and pre-tested it among members of the target audience. The survey was translated to Spanish. 938 Food Stamp households with children in Washoe County Nevada, were surveyed in Spring 2006. The survey data was entered and checked for errors. Statistical analysis is on-going, however, preliminary findings show that 79% of the households were food insecure with 42% experiencing hunger. These figures are significantly higher than the national estimates for Food Stamp households.

Impact

Hardly a month goes by when hunger is not mentioned in Nevada's two leading newspapers. The considerable media coverage on hunger reveals the value of state data on food insecurity, especially low-income food stamp recipients. This study provided new information regarding Food Stamp households with children in Washoe County, including information on estimates of food insecurity and food insecurity with hunger, and preferences regarding nutrition education. We are hoping that this information may be useful in the planning and execution of nutrition education and nutrition assistance programs. Ultimately, leading to better nutritional well-being for low-income families in Nevada.

Source of Funding:

- Smith-Lever Act funds

State matching funds
Grants

Scope of Impact:

Outreach
Research

Themes: Human Health

Issue

Approximately one in 5,000 males born in the United States has hemophilia. Hemophilia A is the most common type of hemophilia. It is also known as factor VIII deficiency or classic hemophilia. It is largely an inherited disorder in which one of the proteins needed to form blood clots is missing or reduced. Some clotting factor products are made from human blood products such as donated plasma. Others, called "recombinant factor," are made in a laboratory and do not use human blood products. Regardless of the method of treatment, regular treatments are required through the life of the patient. The objective of this research is to develop a treatment for hemophilia while in the mother's uterus that would correct the disease prior to onset, allowing for the birth of a healthy baby.

What has been done?

Researchers at the University of Nevada were able to re-establish a strain of sheep that exhibited spontaneous factor VIII deficiency with symptoms closely mimicking that of human hemophilia A. This re-established strain of ewes upon breeding with normal rams will produce offspring in which 0.25 of the males will be hemophiliac and 0.25 of the females will be carriers. To further assist researcher in quickly singling out carries a new genetic probe was developed. The latest findings utilizing this unique sheep model is the controlling mechanisms that can increase production of liver cells in-utero.

Impact

Scientists have shown that normal functional liver cells can correct hemophilia in dogs and humans in which liver transplant were preformed. Unfortunately, liver transplants are a complicated procedure that carries with it a substantial rate of morbidity and mortality. Performing stem cell transplantation to correct the hemophilia would have several advantages over factor replacement therapy and a procedure like liver transplantation.

Source of Funding:

Smith-Lever Act funds
State matching funds
Grants

Scope of Impact:

Research

GOAL 4: GREATER HARMONY BETWEEN AGRICULTURE AND THE ENVIRONMENT

Overview: Through the deliberate incorporation of diverse and often conflicting interests, the POW goals of the community-based decision-making for natural resources include:

- To catalyze decision-making processes that build communities and produce sustainable agreements
- To facilitate the development of innovative collaborations for the conservation and enhancement of natural resources
- To analyze and strategically confront barriers to implementation of community-based decision-making and collaborative utilization models for public lands

Given the nature of Nevada, water and wildfire related educational programs continue to be a primary focus of the University of Nevada Cooperative Extension Service (UNCE). In both of these areas, UNCE faculty have made a significant impact and received local and national recognition for their efforts.

In the “living with fire” related educational programs, UNCE faculty continue to have a significant impact on people’s awareness and preparedness for wildfires. The program has grown and expanded each year, and many request are received for materials and assistance from other states as well as from the Federal level. This is an integrated research-extension effort, and has led to statewide cooperation and involvement of Federal, state and local organizations concerned with wildfire prevention and preparedness. Additionally, other states (especially California) are participating or adapting many of these programs for their states.

Water quality is a concern for both urban and rural communities in Nevada. Major UNCE efforts have been devoted to working with local groups and organizations to reduce non-point source pollution, and to clean up various waterways – especially Lake Tahoe. Additionally, having education programs for rural public community water supply operators has been important.

NAES research has focused on predicting hazardous spills in local water supplies, evaluating livestock grazing for vegetation management, compatibility of wildlife and livestock on irrigated pastures, arsenic and mercury contamination from mining in Nevada watersheds, using NAES field labs to conserve municipal water supplies, and evaluating various range management systems for post wildland fire grazing.

Federal and State Funding by Plan of Work Goals

	Goal	Federal \$	State \$	County	Total \$	FTE
Nevada Agricultural Experiment Station	IV	288,620	1,129,659		1,418,279	18.3
University of Nevada Cooperative Extension	IV	262,289	1,873,663	2,236,083	4,372,035	87.63

Theme: Water Quality/Soil Erosion/Natural Resources Management

Issue:

Lake Tahoe has been losing its world-renowned clarity at the rate of over a foot a year for more than 30 years. The loss of water quality and clarity can be attributed almost entirely to human impacts. There is an urgent and continuing need to educate residents and visitors about the relationship between their daily activities and the loss of valued resources. Most polls say that people want to protect their environment, but don’t know how. Educators, agency staff and community leaders recommended increased and continued outreach education to motivate homeowners to support restoration projects and implement Best Management Practices (BMPs) on their property.

What Has Been Done:

University of Nevada Cooperative Extension (UNCE) joined University of California Cooperative Extension to form The Lake Tahoe Environmental Education Coalition (LTEEC), a collaboration of 30 agencies, educational organizations and non-profits interested in improving the effectiveness of environmental education throughout the Tahoe basin. Environmental and water education efforts have continued through Contractor Workshops, TV reports, developing training materials, newsletters, etc.

In 2005, UNCE assisted the Sierra Watershed Education Partnerships (SWEP) in making DVDs of the new “Teach Tahoe” program. This resulted in producing DVDs and videos that combine 20 of the past TV reports into four lessons. Each is complemented by readings and activities. This program was piloted and evaluated in classrooms during 2005. Working with Sierra Watershed Education Partnerships materials on “Teach Tahoe” were distributed with lessons and 30 teachers were trained to use them.

UNCE is an active partner in a coalition of Lake Tahoe agencies called the Best Management Practices Retrofit Partners (BMP Retrofit Partners). BMPs are land management practices that reduce nonpoint source water pollution. Partner agencies are the Tahoe Regional Planning Agency (TRPA), the USDA Natural Resources Conservation Service, the Tahoe Resource Conservation District and the Nevada Tahoe Conservation District. New bi-state Natural Resources Needs Assessment at Lake Tahoe. Workshops are held at the UNCE Demonstration Garden, which the contractors themselves have made into a functioning teaching and learning facility. All five categories of best management practices are demonstrated there, along with many other gardening features and methods.

During the fall of 2006, UNCE joined University of California Cooperative Extension to conduct a needs assessment for the Tahoe Basin. The assessment focused on natural resources issues and needs for research and outreach education about those issues. Interviews were held with 35 key informants from agencies in both states. The unstructured interviews were conducted individually or in groups of two or three. Results will be published in 2007.

Impact:

On a scale of 1 to 5, teachers trained to use Teach Tahoe rated the need for this program at 4.8, and they rated their interest in using the curriculum at 4.6. Half of the teachers trained said they would use the Teach Tahoe video to launch their place-based learning unit (n=30). In a later survey, all teachers who reported using the video in class stated that it stimulated the students’ interest in learning more (n=5).

As an outcome of training the Cub Scout Pack in Tahoe City, the leader and scouts labeled 46 storm drains in Tahoe City, Carnelian Bay and Tahoe Vista with the message, “No Dumping—Drains to Lake.” They volunteered a total of 21 hours on this program.

Our 2005 longitudinal phone survey shows gains in public knowledge regarding water quality protection. In 1997, 42% of respondents knew that runoff from yards and streets go directly into streams and Lake Tahoe. In 2005, 48% of respondents knew this crucial fact. In 1997, 31% of respondents could identify the meaning of the term Best Management Practices (BMP). In 2005, 39% of respondents know this definition, a 25% improvement in public knowledge.

The 2005 survey also shows behavior change. There was a 171 percent increase in use of native and adapted plants over the 1997 survey, a 183% increase in the use of slope stabilization and a 168% increase in directing runoff to infiltration systems.

Through the joint efforts of BMP Retrofit partners in 2006, 1400 BMP Site Evaluations were performed on private properties, and 1378 BMP Certificates of Completion were awarded by TRPA. Since our BMP Retrofit partnership formed in 1999, TRPA has issued 7070 Certificates. This is a desired mid-term outcome, showing behavior change, because every property that earns a Certificate of Completion must have BMPs implemented correctly.

A total of 197 participants attended our 2006 Contractors Workshop. The average score on the pre-tests was 71.3% (n=113), and that on the post-test was 89.9% (n=129). Cooperative Extension also administered an “Experience Survey” for the contractors, to determine if their completion of our course was leading to a greater number of actual installations of BMPs: 43 participants responded. The 20 respondents who had NOT taken the Workshop before completed a total of 15 BMP jobs in 2005. The 23 people who had taken the workshop before completed a total of 95 BMP jobs that year. In other words, respondents who attended the workshop completed

about six times more BMP jobs per capita than those who had not attended before. Finally, the *Home Landscaping Guide* is used as a required text in the horticulture classes on “BMP Design” and “Landscape Construction” at Lake Tahoe Community College, and it is posted on the TRPA website.

Source of Funding:

Smith-Lever Act funds
State matching funds
Grants

Scope of Impact:

Multistate Integrated Research and Extension – NV & CA

Theme: Wildfire Science & Management/ Natural Resource Management/Land Use

Issue:

Living with Fire (LWF) is a comprehensive, multi-agency project aimed at teaching homeowners how to live more safely in high wildfire-hazard environments. The collaboration is enhanced by the Sierra Front Wildfire Cooperators, a group of 12 Nevada and California firefighting agencies, who came together to help communities prepare for dangerous wildfires. The importance of wildfire education was identified in a 1997 needs assessment involving local fire officials. Between 1999 and 2001, fire consumed 3.2 million acres in Nevada. More acres burned in Nevada during the 1990s than in the previous 40 years combined. In 2006 1.3 million acres burned. The Nevada Fire Safe Council is a key entity in reducing Nevada’s wildfire threat to communities. There are now over 2000 paid members.

What Has Been Done:

The collaborators focus on pre-fire activities that reduce the wildfire threat around homes, thus improving the survivability of those homes and occupants. In 2004, responding to a request from fire departments, educational materials were made available in VHS and DVD formats. The popular *Living With Fire: A Guide for the Homeowner* tabloid continues to be distributed locally and throughout the West and nation. The spin-off, non-profit Nevada Fire Safe Council continues to assist the state’s high fire-hazard communities in reducing their wildfire threat.

“Living With Fire: A Guide For the Homeowner”: This popular, nationally known publication was completely overhauled in 2005 to reflect current research findings and to improve its attractiveness. In 2006, specific versions of the publication were developed for the Lake Tahoe Basin, Mt. Charleston area, and the Great Basin.

In 2005, work stated on a half-hour Living With Fire television special. KOLO News Channel 8 was contracted to do the filming and northern Nevada television personality, Brent Boynton, was hired to narrate the program. Production was completed in 2006 and the special was aired.

Survey of Residents Living in Extreme Fire Hazard Communities: Working with a researcher in the Agriculture Research Station, a mail survey of homeowners living in Nevada's 16 extreme fire hazard communities was conducted. The purpose of the survey was to determine homeowner attitudes concerning wildfire threat, their knowledge of wildfire threat reduction practices, and where they sought information about wildfire threat reduction.

Living With Fire Website: The Living With Fire website was launched in March of 2005. The intent is to make it the most comprehensive source of wildfire threat reduction information available to the homeowner in the country. Activities related to the website in 2006 included: 1) adding new content to the website and 2) implementing activities with to promote the website. Specific website promotional activities included: 1) 7000 website business cards were distributed; 2) U.S. Senator Reid’s office mailed a flyer concerning wildfire threat to 83,000 Nevada households which directed readers to the website; 3) 64 promotional banners were posted throughout Nevada; 4) 4 billboards were posted in northern Nevada; and 6) BLM produced 5000 website refrigerator magnets.

Wildfire Threat Reduction Workshop: In 2005, a two-day workshop to teach wildfire threat reduction practices to landscape industry and fire prevention professionals was conducted. In 2006, a 9 month follow-up evaluation survey was distributed electronically to the fire prevention professionals who attended.

Miscellaneous Living With Fire Activities: Other Living With Fire activities and outcomes included: 1) 8 interviews with local media about Living With Fire; 2) the USDA Forest Service is using Living With Fire materials in their 20 year plan for the Lake Tahoe Basin document; 3) Living With Fire evacuation instructions were printed in the Reno/Sparks, Carson City, Elko, and Tahoe phone books at no charge; 4) a PSA developed by UNCE faculty was aired on northern Nevada television stations; 5) 11 Scalar's Food and Drug stores throughout northern Nevada are distributing Living With Fire DVDs and VHS tapes through their video departments; 6) the Reno-Sparks Indian Colony distributed Living With Fire materials to residents of their Hungry Valley parcel; and 7) UNCE faculty taught eight, one-hour Living With Fire classes to a combined total of 80 homeowners.

Impacts:

Living With Fire: A Guide For the Homeowner: A total of 45,000 copies of the three versions were distributed. Permission was granted to 39 out-of-state requests to create localized versions of the publication for their own use. The North Lake Tahoe Fire Protection District printed 12,000 copies of the Lake Tahoe Basin version and had it inserted into local newspapers.

“Living With Fire-Before, During, and After” TV Special impacts: Nevada Governor Guinn introduced the television special. The program aired twice, commercial free, in May on KOLO during high viewer timeslots. The program has aired 367 times on public access channels throughout Nevada and 450 copies of the program DVDs and VHS tapes were distributed throughout Nevada to fire safe council chapters, fire departments, libraries, and other entities, and 70 out-of-state requests for the program.

Survey of Residents Living in Extreme Fire Hazard Communities: A total of 362 individuals responded to the survey. Of those surveyed: 1) 20% of the respondents (i.e., residents of Nevada's extreme fire hazard communities) were somewhat to very familiar with Living With Fire program; and 2) Local fire officials and the Nevada Division of Forestry were the most trusted sources of information on wildfire threat reduction.

Living With Fire Website: There were 15,829 unique visits to the website in 2006 compared to 5705 visits for an 8 month period in 2005.

Wildfire Threat Reduction Training Evaluation: In 2005, wildfire threat reduction practices were taught to landscape industry and fire prevention professionals. In 2006, a 9 month follow-up evaluation survey was distributed electronically to the fire prevention professionals who attended. Twenty-one of the 29 fire prevention professionals responded. Of the fire prevention professionals; 1) 92% of the respondents were able to use the information learned at the workshop; 2) 73% of the respondents used the information to educate approximately 700 homeowners; and 3) all of the respondents indicated that they would recommend others to attend future trainings.

Seventy-one professionals who were involved in wildfire threat reduction education in Nevada were also surveyed in 2006. An on-line survey was conducted to determine their awareness and use of “Living With Fire” materials. Of the 42 (59%) of these individuals who responded: 1) 92% of the respondents had used Living With Fire materials; 2) Living With Fire materials were used more often than any other source; and 3) the various Living With Fire products were rated "very good" to "excellent" in terms of quality.

Source of funding:

- Smith-Lever
- State matching funds
- Bureau of Land Management
- Grants

Scope of Impact:

- State Specific
- Multistate Extension – NV & CA (besides other states adopting program and using materials)

Theme: Wildlife Management/ Natural Resource Management/Land Use

Issue

For many counties in the state of Nevada, federal agencies administer or own most of the land area. For the Nevada counties of Esmeralda, Lander, Lincoln, Nye and White Pine over 90 percent of the county's acreage is under federal control. For these counties and others in the state of Nevada, changes in public lands management policies will impact local communities. Often changes in public land management policies are not researched or analyzed concerning consequences to the local economy.

What has been done?

Development of a regional (Elko, Eureka and White Pine Counties) dynamic Computable General Equilibrium (CGE) model was developed providing information to the Nevada populace regarding future impacts of alternative public lands policies. Researchers extend regional level dynamic CGE modeling to address resource issues and their impacts on the local regional economy. Development of the model occurred in close cooperation with federal, state and local decision makers and is currently acting as an important extension education tool for providing information on the linkages of public lands and the local economy. As opposed to many so-called "black-box models", the regional dynamic CGE model is open so that data, linkages, and modeling can be made available to federal, state and local decision makers. An extension education programs was developed for understanding the model through the University Center for Economic Development.

Impact

In terms of direct economic impact, Dr. Harris states that the grazing on public range has links to Elko County's local economy, from seeing more bankruptcies when cows are taken off the range, to the availability and price of hay when forage land is taken away, such as in the case of recent fires. Based on a typical Elko ranch, having 700 head of cattle, and extrapolating to total county AUMs, production would be valued at more than \$32.5 million, with an impact of more than \$57.2 million and labor earnings of more than \$11.4 million, employing more than 550.

The study also looked at impacts of potential reductions in federal grazing land, reaching the conclusion that if all federal AUMs were eliminated, there would be a 96% chance of ranch failures, based on debt load.

Model results are now being used by Elko County Commissioners and US Forest Service in the upcoming Environmental Impact Statement analysis of public land grazing in Elko County.

Source of funding:

Multi-state W-192
State matching funds

Scope of Impact:

Outreach
Research

Theme: Natural Resource Management/Land Use

Issue

Cheatgrass is a non-native invasive plant that is having profound impacts on Nevada's rangelands. Unfortunately, the rate at which acreage becomes infested with cheatgrass is increasing rapidly, mainly fueled by wildfires. Furthermore, the spread of a number of other weeds is coincident with cheatgrass infestation, which further complicates our ability to control cheatgrass and restore rangelands. Our overall goal is to identify concepts and management strategies to control the spreading dominance of cheatgrass and other weeds on Great Basin rangelands and to restore native species and increase biodiversity.

What has been done?

Researchers at the University of Nevada primary focus was on cheatgrass because it is the most widespread and damaging, but our scientists also examine the extent that secondary weeds complicate cheatgrass control and

native species restoration efforts. A series of replicated experiments across the Great Basin tested management techniques for controlling cheatgrass and restoring native plant communities. This included testing herbicides, nitrogen depletion in soils, and plant competition between native species and weeds.

Researchers also addressed the economic costs of undertaking restoration and social attitudes of various stakeholders (users) who could possibly have an affect on the support for and/or conduct of restoration activities. They found that ranches in Idaho, Nevada Oregon and Utah maintained an economically viable operation when following one of the or grazing scenarios OR not adopting any cheatgrass treatments, but faced the possibility of bankruptcy under the herbicide, fire, and integrated scenarios. Above doing nothing, grazing remains the most cost-effective restoration strategy.

Impact

These experiments were designed to provide an ecological understanding of why restoration techniques succeed or fail as well as developing an economic basis for choosing appropriate management techniques.

Recommendations are being made to regional land managers on how best to handle the invasive weed. The research demonstrated that several varieties of wheatgrass proved good native seed alternative for restoring cheatgrass-infested areas. Techniques such as herbicide application or burning prior to planting increases success of restoration efforts, while reducing nutrient availability reduced cheatgrass, but unless sustained is not a permanent solution.

Since public rangelands are a public good, it may not be economically prudent for ranchers to support federal and state agencies in undertaking restoration. In general, while there are some private benefits from restoration, it is likely that most of the benefits accrue to society. It may be appropriate to explore the use of (or develop) cost-share mechanisms or innovative policy tools to ensure that cheatgrass control efforts are ecologically feasible, socially acceptable, and economically fair.

Source of funding:

Nevada Arid Rangeland Initiative
State matching funds

Scope of Impact:

Outreach
Research

Theme: Water Quality/Soil Erosion **Issue**

Lake Tahoe is world renowned for its striking blue color and amazing clarity. In fact, the EPA has granted Tahoe the status of Outstanding National Resource Water. This designation affords the highest level of protection, strictly forbidding degradation of water quality. However, since 1968, there has been a decline of Lake Tahoe's clarity at an alarming rate of nearly one foot per year. Total Maximum Daily Loads (TMDLs) are water quality restoration plans required by the federal Clean Water Act to ensure that water quality standards in impaired water bodies are achieved and beneficial uses are restored and protected. The Lake Tahoe Water Clarity Model is being developed to support the TMDL process.

The production of algae in the lake has become limited by the supply of phosphorus, meaning that inputs of phosphorus from the watershed are likely to be causing much of the current loss in clarity of the water. However, not all phosphorus entering the lake can be utilized by algae. Currently, we do not have a reliable estimate for biological available phosphorus loading to Lake Tahoe. The model assumes all chemical forms of phosphorus are contributing to the lakes decline in clarity. This project looks at updating the model by determining the amount of biologically available phosphorus in Lake Tahoe.

What has been done?

Over a two year time period, across all seasons, investigators collected samples from Lake Tahoe's steams, groundwater, and shorelines. They then concentrated suspended samples onto glass fiber filters, incubated them

with phosphorus-starved algal cultures for 21 days and measured the total phosphorus released from the filters to determine what portion of the phosphorus was taken up by algae.

Impact

Phosphorus was identified as a nutrient limiting factor to algal growth in Lake Tahoe. Biologically available phosphorus from the tributary stream suspended sediments were, on average 21% of the total extractable phosphorus, 36% for urban runoff, and 5% for potentially erodible stream bank soils. This information proved pivotal in updating the Water Quality sub-model in the Lake Tahoe Water Clarity Model, which in turn decides how best to implement Total Maximum Daily Loads.

Source of funding:

State matching funds

Scope of Impact:

Research

Theme: Natural Resource Management/Wetlands Restoration and Protection

Issue

The science and management of aquatic ecosystems is inherently interdisciplinary, with issues associated with hydrology, atmospheric science, water quality, geochemistry, sociology, economics, environmental science, and ecology. Addressing water resources issues in any one discipline invariably involves effects that concern other disciplines, and attempts to address one issue often have consequences that exacerbate existing issues or concerns, or create new ones due to the strongly interactive nature of key processes. Thus, research and management of aquatic ecosystems must be interdisciplinary to be most effective, but such truly interdisciplinary work is often difficult to implement.

What has been done?

The Interdisciplinary Modeling for Aquatic Ecosystems Curriculum Development workshop was held July, 2005. The objective being to develop a graduate-level course that specifically addresses the impediments to implementing a successful interdisciplinary course. Senior investigators from different institutions participated in giving lectures on modeling topics, while graduate students provided valuable feedback on educational approaches that were most effective for fostering learning about interdisciplinary approaches and issues.

Impact

The workshop resulted in the development of a graduate level course with an overall objective of engaging interdisciplinary discourse in modeling aquatic ecosystems. Students taking the new course will be better-prepared for professional or academic careers in which they interact with peers from other disciplines to address real-work aquatic ecosystem issues. Investigators are currently finalizing materials that can be distributed as a collection via an internet website so that instructors who wish to teach this course at any institution of higher learning will have background materials and a recommended curriculum.

Source of funding:

State matching funds

Scope of Impact:

Education

Theme: Natural Resource Management

Issue

In 1980-1984, Nevada rangeland managers recognized the importance of monitoring for managing livestock grazing and came together to create the "Nevada Rangeland Monitoring Handbook". While the first Handbook

proved useful, it is more than 20 years old. As monitoring is a tool for learning from ongoing management to adjust and improve management, it is fitting that we learn from our past experiences in monitoring to create a new synthesis of current ideas.

Monitoring in the 1980s focused almost exclusively on livestock grazing management. Today, we recognize that, as important as this is, herbivory is only one aspect of land management, and that some monitoring of vegetation change is needed to track and manage problems such as fire regimes, invasive weeds and riparians.

What has been done?

The updated version focuses on adaptive management and objective setting as the means to determine monitoring needs, methods, and ongoing management. The updated Monitoring Handbook also includes a Rancher's Guide to Monitoring and a detailed process for establishing a cooperative monitoring program. University of Nevada provided technical writers, editor in chief and review committee members.

Impact

The second edition of the handbook is now being used by a multitude of state and federal agencies including Bureau of Land Management (BLM), Agricultural Research Services (ARS), Natural Resources Conservation Service (NRCS), Nevada Farm Bureau and Nevada Cattlemen's Association. Don Henderson, Director of Nevada Department of Agriculture, stated that there have been a number of community leaders who have worked in public land grazing issues for a long time knowing that the handbook needed to be revised and commended the efforts of all involved.

Source of funding:

State matching funds

Scope of Impact:

Outreach

Theme: Biodiversity/Wildlife Management

Issue

Northern Nevada's urban lakes are focal points for neighborhood recreation. This includes fishing. The Nevada Division of Wildlife is responsible for maintaining fish populations in many of the urban lakes in Reno, NV and stocks them annually with varying success. In recent years fish kills and decreased catch have led to concerns about suitability of habitat for potentially sensitive species, such as trout. It is unclear if periodic declines in water quality or losses to predatory birds are leading to decreased catches. This project evaluated the relative effects of water quality and predation on fish survival, with the ultimate goal of developing guidelines to increase stocking success in Nevada's urban lakes.

What has been done?

Researcher at the University of Nevada first needed to establish baseline fish population estimates in Virginia Lake, Reno Nevada. They next conducted bathymetric characterization of Virginia Lake. Monthly water quality samples and continuous temperature data were collected. In 2006 approximately 2,500 rainbow trout were fitted with unique tags for use in mark-recapture trails. Finally researchers monitored fish eating bird communities at the lake at a regular interval to determine number of fish eaten.

Impact

The results of this study suggested that the single most factor determining fish survival was bird predation. An island at southern end of the lake hosts a migratory breeding colony of fish-eating Double-crested cormorants. In the summer months, there are as many as 125 breeding adults present. When tags were located the vast majority were found on the island.

The Nevada Division of Wildlife is using this project as a guide for stocking policies for this and other urban lakes in the vicinity of Reno, NV. The Division of Wildlife is citing the results of this study in continuing

conversations with the City of Reno, with respect to establishing and maintaining a recreational fishery in Virginia Lake.

Source of funding:

State matching funds

Scope of Impact:

Research

Theme: Biological Controls/Invasive Species

Issue

Saltcedar has taken over stream banks and lake margins across the west, according to Tom Dudley, associate research professor in the Department of Marine Science Institute, University of California – Santa Barbara.

With roots that can seek groundwater as deep as 100 feet underground and the ability to drink water too salty for other plants, saltcedar (a.k.a. tamarisk) leaves other southwestern plants unable to compete. It spreads rapidly and can survive almost anything, from being submerged in water for more than a year to being consumed by wildfire.

Originally brought to the U.S. as an ornamental plant and to stabilize soil, saltcedar is at least partially to blame for lack of adequate water flowing into a number of lakes in Arizona, Nevada, New Mexico, Texas, and Utah. Dudley says saltcedar has caused major economic damage to agricultural producers in semi-arid to arid regions. Mechanically and chemically removing the plant is costly. “Farmers can’t economically justify the cost to control saltcedar, and they want to put the land back into production.”

What has been done?

The newest enemy of the invasive saltcedar is a tiny leaf beetle called *Diorhabda elongata*. Researchers at the University of Nevada are finding that the beetle is successfully killing off the tree. The quarter-inch long beetle is a good biocontrol of saltcedar because both larvae and adults feed exclusively on the plant, and the adults produce two or more generations of offspring per year. They not only eat the green vegetation, but in doing so create holes in the leaves through which water escapes, causing branches to wither and die.

The beetle was first introduced to Nevada inside multiple enclosed areas across several ecosystems so that researchers could study the effects beetles had on saltcedar. The beetles were then introduced to the wild in Pershing County, Nevada 2002. Research is now focusing on varieties of beetles (China, Greek, Uzbekistan, & Tunisia) best suited for local climates. Two quarantine laboratories (Grand Junction, CO - Colorado Dept. of Agric. Insectary; New Mexico State University, Las Cruces) have been developed for larger scale rearing

Impact

According to Dr. Dudley, using the beetles has obvious advantages over bulldozing the saltcedar. It is less disruptive and can easily treat a large area. Except for the cost of the research, it is basically free, whereas mechanical clearing costs \$1,000 to \$5,000 per acre.

Dr. Dale Devitt, a University of Nevada professor of soil and water based in Las Vegas noted that if, through removal or defoliation of saltcedar, the trees' water consumption could be reduced by half, an extra 50,000 acre-feet of water per year could make its way to Lake Mead. That's enough water to supply 125,000 people.

Allen Brinkerhoff a local grower in Pershing County, NV, said he is thrilled by the results the beetles have had on the saltcedar on his land. "They have done a good job. The effect is amazing." Two years ago the beetles defoliated 25-30 acres of Brinkerhoff's land and they now have defoliated over 1,000 acres of land.

The beetle is the first approved by the USDA as biological control agent for saltcedar in the United States.

Source of funding:

USDA Agricultural Research Service
Nevada Arid Rangeland Initiative
State matching funds

Scope of Impact:
Research

GOAL 5: ECONOMIC DEVELOPMENT AND QUALITY OF LIFE FOR PEOPLE AND COMMUNITIES

Overview: Our POW goals in rural economic development include conducting research and subsequent education for decision-makers on changing economic dynamics for their communities, developing leadership opportunities for community decision-makers, establishing and evaluating innovative decision-making models and extending research results in educational programs to stakeholders. In the area of youth and family development our POW goals include educating parents regarding quality childcare, conducting research and outreach on youth at risk, and conducting research and outreach learning on literacy.

UNCE's Project MAGIC (Making a Group and Individual Commitment) educational program was designed to teach at risk teens the skills necessary to become productive members of society. A decline in per capita incarceration was observed in those counties where MAGIC was implemented, and among youth participating. Project MAGIC continues its expansion to new areas and from rural to urban counties, and to Reservations. Results of this program continue to show a dramatic reduction in the % of youth returning to the juvenile justice system. Because of its success, the program has expanded into additional communities in Nevada and is being adopted or emulated by many other states.

Literacy programs have been important for the development of good parenting skills, as well as for helping youth. This has been especially important for families where English is a second language. Literacy programs have been developed in English and Spanish, and a version for use on Reservations. After school and other programs where students can receive help with studies have also been important.

Nevada scientists have evaluated the financial impact of rangeland fires on Nevada cattle operations and skyrocketing utility bills. In addition, recreational valuations in Nevada have been determined to provide an economic impact of recreation on rural communities due to river volume changes resulting from mining gold. In addition we have had the benefit of increased security at our Valley Road Field Lab by providing boarding and staging areas to the Reno Police Department horses at our equestrian center.

Federal and State Funding by Plan of Work Goals

	<u>Goal</u>	<u>Federal \$</u>	<u>State \$</u>	<u>County</u>	<u>Total \$</u>	<u>FTE</u>
Nevada Agricultural Experiment Station	V	154,234	1,595,258		1,749,492	36.9
University of Nevada Cooperative Extension	V	387,352	2,767,058	3,302,288	6,456,698	67.75

Themes: Aging/Consumer Management

Issue:

The *Seniors CAN* Program addresses the needs of the rapidly growing elderly population by providing Extension programming to promote health and improve their quality of life. The graying of America is increasing as the first wave of Baby Boomers began reaching age 60 in 2006. Southern Nevada's Clark County is one of the country's fastest growing communities and has evolved into one of the nation's top retirement destinations. One of every four new residents and more than 26% of the total Clark County population of two million is 55 or older and many lack traditional support structures.

What Has Been Done:

Seniors CAN was developed in 1999 by the University of Nevada, Cooperative Extension. *Seniors CAN* is offered at community sites such as senior centers, older-adult housing and hospital outreach centers. The 15-lesson program utilizes information from sociology, nutrition, behavioral medicine, health promotion, finance and criminal justice. Program instruction is enhanced by 25 lesson-related fact sheets published in English and Spanish. Elderly participants become stakeholders and shape the program through ongoing process evaluation that relies

heavily upon their feedback in classes and focus groups. New topics and information are constantly being added as a result of their input.

The target audience for the *Seniors CAN* Program is all independent-living elderly over age 55 whose quality of life could be improved with wellness information. Participants reflect diverse ethnic groups and all economic levels. The program has expanded into Hispanic senior centers, taught by bilingual volunteer instructors. All program materials are available in both English and Spanish. Cultural variance in nutrition is addressed by using ethnic appropriate tools such as the African-American Soul-Food Pyramid.

To solve the challenge of program expansion without hiring additional staff, the train-the-trainer approach was adapted to recruit and train volunteer instructors. A *Seniors CAN* “Volunteer Training Manual” was published, and more than 5,300 of the program’s 28,000 teaching contact hours in urban and rural southern Nevada have been taught by community volunteer instructors that we train and supervise. This includes two bi-lingual volunteers who have taught five, 16-week sessions of *Seniors CAN* in Spanish. The volunteers are recruited through a Southern Nevada community-wide collaboration that includes senior centers, public housing, the cities of Las Vegas, Henderson, North Las Vegas, Boulder City, Mesquite and Overton, AARP, and the state Division of Aging Services.

Impact:

A survey was conducted for a sample of participants from 69 program sites (N=748) and included participants from low-income housing and senior centers in urban and rural Clark County, Nevada (1999-2006). Statistically significant improvements were seen from pre- to post intervention with increased mastery and knowledge and decreased loneliness and stress. Analysis also revealed that minority (32%) and the lowest-income participants (35%) demonstrated the greatest levels of improvement. While the quantitative results of *Seniors CAN* demonstrate statistical improvements in health-related characteristics, even more striking is the amazing change in self-confidence, socializing with their peers, and enthusiastic approach towards life reflected by program participants. They make changes in their eating behaviors, their interaction with health professionals and reflect a renewed sense of self-assurance. They report using health-related behavioral techniques that include emphasis on hand-washing, reading food labels, increased water consumption for hydration, and greater care in food handling and storage.

Source of Funding:

Smith-Lever Act funds
State matching funds

Scope of Impact:

State Specific

Themes: Youth Development/4-H-Children, Youth & Families At Risk

Issue:

Washoe County, Nevada, has a high transient population and some schools have a particularly high concentration of low-income and transient families. Children 6- to 12-years-old need supervision after school while parents are at work. Parents with low or poverty level wages often cannot afford childcare for their school-age children. All children face risks as they grow and develop, but children who live in low-income housing or are homeless may be at higher risk for participating in risky behaviors. These children can benefit from positive, nurturing interactions with caring adults. Children who have strong interpersonal skills and support are less likely to participate in risky behaviors, such as drug use, early sexual involvement and dropping out of school.

What Has Been Done:

University of Nevada Cooperative Extension (UNCE) developed the 4-H After School Club (ASC) to teach children basic life skills including math, reading, science, positive communication, goal setting, self-responsibility, decision-making and good nutrition. Youth who have these life skills are less likely to participate in risky

behaviors. Additionally, the program helps youth complete their homework by providing quiet space, materials, support and encouragement. The program is based on research, child development theories and a respect for each youth's ability to make choices that are healthy and respectful of others.

The 4-H ASC is an educationally focused program for low-income and homeless youth. Grant funding was obtained to conduct the programs at 10 sites at high-risk elementary schools in Washoe County and Reno Housing Authority community rooms. The children receive a snack and help with their homework, and participate in other activities including reading and educational programs. Literacy skills are emphasized. Also offered are family centered activities such as family nights and a family newsletter, written in both English and Spanish. The youth participate in community activities, such as building flower and vegetable garden beds in the Master Gardener program, clean-up projects and canned food donations. Staffing opportunities have been expanded through university student work-study and internships, offering students real-life experiences before entering the workforce.

4-H ASC is provided using a variety of different methods. At some locations UNCE, 4-H ASC staff are the lead agency, providing daily supervision and educational activities for participating youth. At other locations UNCE 4-H ASC staff provide enrichment activities, while other agencies take the lead for day-to-day operations. Youth at various locations participated in 4-H ASC programming.

In 2005, 687 youth participated in the 4-H after school program. Seven newsletters were written, translated and disseminated to participating families. Nine Family Nights were offered for participating youth and their families.

In 2005, the Nevada 4-H ASC was one of seven nationally to pilot new alternatives and renewable energy projects. In 2006, the pilot 4-H renewable energy program continued to the second phase on heat and heating, and students in White Pine County joined the pilot test of the science curriculum.

Impact:

In 2006, 203 youth participated in Washoe County 4-H AfterSchool Club (4-H ASC)programming at 6 sites, 8 trained volunteer teen leaders provided 192 hours of program support and educational activities at 4-H ASC sites, 30 UNR students and 2 adult volunteers were trained and provided approximately 900 hours of program support and educational activities in 4-H ASC programs.

Evaluation of the 4-H ASC has shown a significant increase in some children's reading grades and improvement of social skills for participants of all ages. Specific curricula focusing on energy and life skills have shown self-reported increases in participants' knowledge and skills. A program review was conducted during 2006 and ratings of the UNCE 4-H ASC run sites were very positive, both from staff and outside raters.

In the alternative and renewable energy project youth participating had a 38% increase in knowledge in a pre-and-post-survey.

Source of funding:

- Smith-Lever
- State matching funds
- U.S. Department of Energy grant
- Other Community Partners

Scope of Impact:

State Specific

Theme: Leadership Training & Development

Issue:

University of Nevada Cooperative Extension (UNCE) has worked with the Washoe County Department of Community Development's Citizen Improvement Process for several years. The need for this program arose based on evaluation results of programs. In particular, there was a need for advanced training and skill building for the

county's Community Action Board (CAB) members to help them to participate effectively in local government issues that impact their communities.

What Has Been Done:

UNCE developed and implemented an Engaged Leadership program to assist chairpersons and CAB members in their efforts to create and sustain effective boards. This program is a custom-designed, six-session training and support to provide members with relevant information, hands-on practice, homework assignments and personal coaching. This program, certified as part of a university professional development course, also included mentoring and coaching.

The program continues to expand. In 2004, Washoe County agreed to offer the training to all Washoe County Advisory Boards, Committees and Commissions, so that now the program is offered to 17 boards in Washoe County. The revised program began in February 2005. The program also expanded in 2005 to include Carson City Advisory Boards, Committees and Commissions. Starting in 2006, UNCE is partnering with the Nevada Rural Development Council to expand the Engaged Leadership Program to rural communities across the state.

Impact:

In 2004, 2005 and 2006 pre- and post-tests, respondents continued to experience the following gains from participating in the "Engaged Leadership Program":

- more confidence in chairing or planning a meeting
- facilitating
- giving speeches or presentations
- making decisions in a group
- engaging in dialogue or discussions
- working through group conflict
- being a leader and
- feeling their participation is effective.

Qualitative data from the program in 2006 this year included such comments as: 1) This program has taught me to be more of a facilitator as opposed to being mostly a participant. It also taught me how to be more objective. 2) It has given me concrete ideas for running a meeting, ideas for working on conflicts within a group, how to get a group to collaborate. 3) This training was excellent for giving me the tools to: run an effective meeting, making a meeting fun, setting goals that are real and achievable, and most important, how to maintain an open mind and stay as impartial as possible.

Source of funding:

Smith-Lever
State matching funds.

Scope of Impact:

State Specific
Integrated Research and Extension

Theme: Children, Youth & Families At Risk

Issue:

Nevada has one of the highest per capita juvenile incarceration rates in the nation. State and county costs for incarceration of Nevada juveniles is on the increase. Currently, the average cost to incarcerate a juvenile is \$84 a day with a seven-month average stay. In comparison, Project MAGIC is expected to cost just \$400 per family per year.

Several Nevada studies indicate that taxpayers support community-based, prevention programming. In a survey of Nevada's rural counties, 71% of the local population indicated support to increase spending for programs that might prevent juvenile crime. A statewide survey of all adjudicated youth in state-run juvenile detention facilities found that few alternatives to detention exist.

What Has Been Done:

University of Nevada Cooperative Extension (UNCE) developed Project MAGIC, a collaborative prevention program to help juvenile offenders leave the criminal justice system and become productive members of society. The program, originally designed for rural, entry-level juvenile offenders and their families referred through probation, has expanded to urban and Indian Reservation populations. The after-school program is conducted three times a week over an eight-week period. The youth learn communication, self-concept, team building, problem solving, decision making, self-responsibility, conflict resolution, aspiration building, goal setting and community leadership. The parent sessions include the same life skills.

The Las Vegas program targets entry-level juvenile offenders ages 12 to 18; they are court-ordered to participate. The targeted juveniles are either in the detention facility or on probation. Clark County processes more than 2,500 juveniles each month. (This program in Las Vegas was ended in April of 2006 because of loss of grant funds.)

There are currently nine Nevada sites that conduct Project MAGIC programs – Elko, Battle Mountain, Winnemucca, Las Vegas (ended April 2006), Carson City, Owyhee (including parts of Idaho), Hawthorne, Lovelock and Tonopah. Partners include school administrators, juvenile court judges, probation department personnel and others concerned about the welfare of young people.

In 2005, 193 youth and 122 participants from 9 communities participated. Of those who responded to a survey, ethnicity included 37 percent Caucasian, 24 percent Native American, 11 percent Hispanic and 28 percent unknown, with 68 percent male and 32 percent female. Mean age was 14.8 years. Project MAGIC materials were also translated into Spanish in 2005.

During 2006, 9 different MAGIC sites graduated 189 youth and their parents from the program: 50% White, 20% Hispanic, 19% Black, 3% Native American and 1% Asian (7% did not report ethnicity). 124 were male and 60 female (5 did not report gender). Each youth participated in 20 hours of formal instruction and each parent participated in 10 hours of instruction. 14 instructors taught the program at the following sites: Battle Mountain, Carson City, Duck Valley Indian Reservation, Elko, Las Vegas, Lovelock, Tonopah, Winnemucca, and Yerington.

Impact:

The national award-winning Project MAGIC has graduated more than 3,000 juvenile offenders who have not reentered the justice system, saving taxpayers an estimated \$5.4 million in incarceration costs. Probation staff estimate only 10 percent of MAGIC graduates are further involved in the juvenile justice system compared to 30 percent in Nevada.

At the conclusion of the 2005 program, youth reported seeing significant improvement in their grades, missing less school, thinking less about dropping out of school, increasing participation in positive school and community activities and seeing a decrease in serious family arguments. On average youth reported a 25 percent improvement in skills in decision-making, conflict resolution, goal setting and communication. Parents reported seeing what their child was learning in school as important for later life, thinking it would be wrong to drink alcohol and reducing the yelling and insults at home. They were also more aware of where their children were when not at home.

Both quantitative and qualitative data for 2006 were analyzed and revealed the following. The average increase comparing pre-tasks to post-tasks of student work related to the life skills taught in the program was 91%, a substantial percent increase. Students rated their attitudes in comparison to before the program started at a 36% increase. Instructors average scores for student participation in community service projects was 9.5 out of a possible 10-point perfect score. Both youth and their parents completed a pre-post survey designed to measure risk/protective factors. Following are a representation of the statistically significant improvements.

- After completing the program, youth are significantly more likely to call their parents if they are going to be late ($p < .05$, $n=120$).
- After completing the program, parents reported youth missed significantly less school ($p < .05$, $n=60$).
- After completing the program, parents reported their family was significantly less likely to argue over and over ($p < .05$, $n=65$).

Source of funding:

Smith-Lever
 State matching funds.
 CSREES Grant
 Bureau of Alcohol and Drug Abuse
 Other state and local agencies

Scope of Impact:

State Specific
 Multi-state Integrated Research and Extension – NV & ID (besides other states adopting and using materials)

Theme: Children, Youth & Families At Risk/Leadership Training & Development (Military Youth)

Issue:

With many military personnel being deployed overseas and Guard/Reserve units being called to active duty, youth from active duty military families and Guard/Reserve families are particular vulnerable. Positive youth development is highly related to a decreased likelihood of involvement with all types of risk behaviors. As youth develop, they need positive settings that offer the opportunity to build these important internal resources. It is particularly essential that youth from military families be aware of the potential impact of their decisions and learn effective decision-making skills.

What Has Been Done:

Project Thunder: University of Nevada Cooperative Extension (UNCE) developed Project Thunder on the Nellis Air Force Base in southern Nevada to increase the decision-making and leadership skills of teens; demonstrate positive decision-making and leadership skills through completion of community service projects and leadership roles; and increase youths' ability to see a positive vision of their future goals and dreams. Partners are the Nellis Air Force Base Youth Center, The Ruby Foundation, Monoco Middle School, Junior Achievement of Southern Nevada and church youth groups.

This program brings together middle and high school youth representing diverse backgrounds, and provides training in personal leadership, decision-making and civic responsibility. Adventure-based activities are used to help youth see beyond traditional barriers of race, religion, culture and class, and see themselves as part of a wider community. Youth attend residential leadership conferences, participate in adventure-based activities, such as repelling and trust exercises, take part in seminars and commit to working together on community projects. Activities in Project Thunder included the following:

- Bi-monthly seminars and planning sessions on decision-making and leadership for 30-60 teens (12 teaching hours or 360-720 contact hours).
- Three outdoor adventure camps for a total of 11 days for 55 youth (88 teaching hours or 4840 contact hours).
- Leadership/teamwork training and overnight outdoor adventure camp for a 20 member faith based Teen leadership council (24 teaching hours or 480 contact hours).
- Training for 29 students in Chaparral High School's Life Time Sports Class (6 teaching hours or 174 contact hours).

- Get in the Act! – A workforce readiness program resulting in 60 students participating at three sites.

Operation Military Kids focuses on those young people whose parents are in the National Guard or Reserve units who are being called up in increasing numbers for extended assignments in support of the Global War on Terrorism. While these youth do not necessarily relocate, their lives are changed dramatically when a parent suddenly leaves the family through being mobilized or deployed for potentially dangerous assignments. UNCE developed a statewide team of formally committed partners from 4-H, Boys & Girls Club, State of Nevada Education Department, American Legion, and Nevada National Guard Family Programs Office willing to provide support for children of military families with a deployed parent. A variety of activities and programs have been developed under the broad umbrella of Operation Military Kids. For example:

- 55 Clark County School District counselors were trained on OMK and understanding youth issues during the deployment cycle (3 teaching hours or 165 contact hours).
- Nevada's Operation Purple Deployment Camp was held a total of 6 days for 51 teens and 6 adult counselors (48 teaching hours or 2736 contact hours).
- UNCE organized and enrolled 120 military youth in 4-H clubs at Nellis AFB youth center.
- Presented OMK awareness training to staff officers of Nevada National Guard.
- Direct contact with family members of deployed National Guard soldiers and airmen was made through their Family Readiness Groups.
- Developed Military Day and included youth from military families at the 3 Nevada 4-H camp sessions.

Impacts:

Project Thunder: After completing the 2006 program, participants on average were significantly more likely to: think of all the results, good and bad, before making a decision; come up with lots of possible choices before making an important decision; think about what they could do differently next time when they are unhappy with the outcomes of an important decision; think about if they are happy how an important decision turned out; think about how their decision might have helped or hurt another person; think about how past decisions turned out when faced with making an important decision; think about how decisions made today, good or bad, will affect their life in the future, and; make the same decision again when things turn out well. Further, after completing the program, participants were significantly more likely to report most of their decisions turned out well, they achieve goals they set, they stretch themselves by setting challenging goals, they found it easier to talk in front of a group, and they were less likely to wait and see if a problem will just go away.

Teens stated, "I learned to try new things even if they are scary," "Teamwork and friendship help to solve problems," "To trust people," "I like the way the activities taught us to rely on each other," and "Courage over my fear of heights." Additionally, over 50 teens have participated in community service projects totaling over 600 hours of service. Ten teens demonstrate their leadership skills by participating on adult lead community committees, student government and teen councils. Six teens operate (from start-up to finished products) the snack shack for athletic events 3 evenings a week for approximately 12 hours per week. One teen was invited to Washington, DC to compete for youth of the year in the Air Force Congressional award program.

Operation Military Kids - Upon completion of the Operation Purple Deployment Camp and Speak Out for Military Kids program, participants [N=60] on average were significantly more likely to (a) try to get all the facts before attempting to solve a problem, (b) stretch themselves to set challenging goals, (c) find it easier to get their point across, and (d) report doing more volunteer work in an average month. Further, participants were significantly less likely to wait and see if a problem will just go away.

Teens stated, "I have gained a lot of respect for many people," "More confidence in myself," "How to get along with people I don't know and don't be afraid to speak your mind," "People care about other people," "Helping people makes you feel good," "New friends are great."

School counselors reported that OMK overview training was very informative and helpful in their counseling role and have requested follow-up or additional training to be provided.

Source of funding:

Smith-Lever
State matching funds.
USDA Military Grant

Scope of Impact:

State Specific

Theme: Community Development

Issue:

The Laughlin, NV and Bullhead City, AZ area (including Fort Mohave, Mohave Valley and Golden Valley) is considered one of the fastest growing rural regions in the nation, with an 85 percent population increase between 1990 and 2004. By 2010, it is estimated the region's population will exceed 100,000 people. Managing population growth and diversifying the economic base are the primary goals for the region. To achieve these goals, community leaders from both cities and surrounding communities requested that University of Nevada Cooperative Extension (UNCE) provide leadership and technical assistance programming to: create and maintain a community-based advisory committee; locate and analyze economic, fiscal and social data; build community awareness of economic, fiscal and social indicators; measure economic leakage and develop strategies to improve local spending; improve local business retention and identify expansion opportunities; and conduct needs assessments to improve quality of life.

The University of Arizona Cooperative Extension (UACE) is a partner in this effort.

What Has Been Done:

UNCE developed and implemented a five-year program, including the establishment of a 15-member regional advisory committee. In 2003, UNCE conducted workshops that identified and targeted priority issues. As a result, new community members joined the committee. A multi-regional technical economic model was developed and updated using primary data collection and newly released census data. UNCE also collected, analyzed, published and presented socioeconomic trend data, including more than 25 demographic and economic indicators.

UNCE & UACE Community Economic Development program played an integral part in 2005 by providing leadership and technical assistance education and training in the following areas:

1. How to locate, analyze and disseminate community and regional social, economic, and fiscal, social data.
2. How to measure economic leakage and strategies to improve local spending.
3. How to improve local business retention and identify business expansion opportunities.
4. How to create a community based advisory committees consisting of representation from regional communities.
5. How to conduct community and regional needs assessment to improve quality of life

During 2006, two overlapping programs were conducted in the Colorado River Region. First, a program started in 2005 was completed and published that included developing a comprehensive analysis that studied the regions social, economic and fiscal interactions between communities in the Colorado River Region. Second, a pilot Community Business Matching (CBM) model program was implemented in response to the closure of Mohave Generating Station (major employer with over \$20 million payroll). This program was to further assist with developing a regional overall economic develop strategy to mitigate regional job loses taking into account

community "desires" and business "wants". In 2006 this program received a grant from Economic Development Administration for \$25,000.

Impact:

In 2005 using a 5-point Likert Scale, advisory committee members rated the following areas: program goals and objectives clearly states (4.87); program materials were relevant (4.83); instructor understood program material (4.95); monthly workshops met expectations (4.81). In addition, advisory committee members have used various social, economic and fiscal indicators to update community and regional plans and marketing information. Selected materials on demographics, consumer expenditures and trade leakage that were presented in workshops have been used to recruit new industry and businesses to the area. In addition, the community college in Bullhead City is reviewing published materials to find educational and training solutions to address the lack of skilled trade labor (i.e. construction).

To date, five businesses have used materials generated from this program to help with their final decision to locate to the region, including Home-Depot (opened 2004), Sam's Club (opened in 2005), Super Wal-Mart (opened 2004), Lowe's (to open in 2006), In & Out Burger (opened 2004).

In 2006, community leaders are starting to use CBM analysis to formulate economic adjustment programs to counter the closing of the Mohave Power plant closure and its economic impact.

Source of funding:

- Smith-Lever
- State matching funds.
- Other state and local agencies or organizations

Scope of Impact:

Multi-state Extension – NV & AZ

Theme: Literacy/Children, Youth & Families At Risk

Issue:

The foundation for literacy is built during the preschool years through reading time. It fosters children's interest in reading and builds confidence, while helping to eliminate some of the severe consequences of poor literacy skills, including lack of grade retention, school failure, school dropout, delinquency, unemployment and underemployment.

The Nevada Literacy Coalition estimates that nearly 25% of youth and adults in the state have inadequate literacy skills, placing Nevada's children at extremely high risk for developing illiteracy related problems in the future. Studies show 51 percent of 3rd grade and 47 percent of 4th-grade students are below basic reading level. The percentage of Spanish speaking immigrants is expected to increase in Nevada over the next 25 years, and so it is likely that ever-larger numbers of children who are English-language learners and at risk for low achievement will be entering schools. Parents with limited language skills cannot always teach their preschoolers. Breaking the cycle is important to ensure that preschoolers have reading skills in order to succeed.

What Has Been Done:

Family Storyteller is a literacy program aimed at encouraging and training parents to play a vital role in the literacy development of their children. The program, developed by University of Nevada Cooperative Extension (UNCE), KNPB-TV, Washoe County Libraries and Washoe County School District, creates an opportunity for parents and young children to interact around literacy and language activities. Designed especially for families that may have limited language skills and few children's books at home, Family Storyteller is a six-week series of workshops targeting families at risk for low literacy and related problems. Each workshop includes a 10-minute video viewing, book-reading techniques, practice time for reading to children and other literacy activities. The program has also expanded to Las Vegas, where it is taught in both English and Spanish – in homes as well as group settings such as libraries, childcare centers, Classroom on Wheels and elementary schools. Cuentos en

Familia is the Spanish version of the program. There is also a Native American Storyteller Project and data was collected from the pilot in 2006 to use in revising the program in 2007.

In 2005, Cuentos en Familia expanded the traditional Family Storyteller program by enhancing the original workshop sessions to specifically help ELL parents learn to read the children's books in English. Follow-up training was provided to 3 ELL teachers in Carson City. Children's Cabinet staff were trained and delivered 113 workshops reaching 493 families at 16 pre- or elementary schools.

The UNCE collaborative team partnered with the Nevada Literacy Coalition to present train-the-trainer sessions in Henderson, Winnemucca, and Reno. These one-day, six hour training sessions reached 31 people, including teachers, school administrators, librarians, child care providers, and other human service personnel. Additionally, follow-up training was provided to 3 ELL teachers in Carson City. Children's Cabinet staff were also trained and delivered 113 workshops reaching 493 families at 16 pre- or elementary schools. UNCE staff conducted workshops reaching 8 families (8 ELL parents and their 17 children).

In 2005 the Family Storyteller was chosen by the National Early Childhood Extension Network as one of three programs to promote nation-wide with evaluation data aggregated from across the country. Outside Nevada, 235 curricula have been purchased for use in 29 other states.

In 2005 UNCE faculty conducted an invited train-the-trainer session for the Galt Unified School District (California) sponsored by the local Rotary International club. The one-day, six hour training session reached approximately 30 school district personnel. UNCE faculty facilitated communication with school staff and the Rotary representative, helped develop the training agenda, and provided several hours of instruction at the training. In Nevada, UNCE faculty collaborated with the Washoe County School District to reach all school district Pre-Kindergarten sites. These sites serve families with children who are at-risk for educational difficulties. Trained school district staff delivered the curriculum and reached 174 at-risk families at 21 school sites.

Also, by request in 2006, UNCE faculty presented two national Extension CYFERNet web-based training sessions reaching 71 Extension professionals nationwide.

Impact:

Through 2006 UNCE has directly reached 11,536 families, over 80% of which were Hispanic. In addition, UNCE trained facilitators have reached approximately 3,250 additional families. The Family Storyteller uses several techniques to measure changes in frequency of parent-child reading, quality of parent skills in reading to children, and child engagement in the reading process. Due to the potentially low reading abilities of parents and children, new innovative techniques that required few reading and writing skills to complete. In addition, pre-post interviews and standardized assessments with parents and children in their homes. Results of this comprehensive evaluation show that:

a) Parent's use more joint book reading skills. A primary goal of the program is to teach parents specific skills that research has shown to be related to children's literacy development by helping children get the most out of shared book reading. Analysis revealed that parents **significantly increased** their use of 12 key shared reading skills, such as vocabulary building (having children name pictures), pointing out new words, prediction (having children guess what happens next), comprehension (asking children to retell the story), and connecting the story to real life. Parents whose children had the lowest language skills at the beginning of the program were even more likely to increase their use of these skills than parents whose children started out with the highest language skills.

b) Parents and children read together more often. A second goal of the *Family Storyteller* program is to increase the amount of time parents and children spend together in literacy and language activities. Assessments conducted prior to the workshops and then again following the six-week series revealed **statistically significant increases** in:

- Number of days parents and children read books together
- Number of hours parents and children read books together
- Number of days children asked to be read to
- Number of days children looked at books alone
- Children's enjoyment of being read to
- Parents' enjoyment of reading with their children

c) Children's literacy skills improve. As a result of participating in the programs, children made **significant gains** (paired t-tests) in their understanding of basic book reading concepts, such as understanding that books are read from left to right, following along with the reading, and simple letter and punctuation knowledge. Those children having lower literacy scores at the beginning of the program increased their literacy scores more than children with higher initial literacy scores.

d) English Language Learners also show gains. An NAES grant was obtained to specifically evaluate the effectiveness of the curriculum version for Spanish-speaking families wanting to learn English. Impacts using standardized literacy and ESL assessments conducted prior to the workshops and then again following the six-week series (using paired t-tests) revealed that:

- parents made **significant increases** in their English vocabulary, print knowledge, and ESL scores
- children **significantly increased** their English vocabulary and print knowledge
- parents reported **significant gains** in their use of 12 skills for sharing books with children
- parents' and children's enjoyment of reading books together increased over the course of the program
- parents reported behavior change by using 3 out of every 4 (19 out of 24 total) extender activities sent home
- researchers observed improvements in parents' shared book reading skills over the course of the programs
- there was a **significant increase** in the number of books for children in the home.
- parents reported being excited about the opportunity to at least try to learn to read the English books and felt more comfortable trying to read the books by the end of the sessions; appreciated time spent on pronunciation, grammar, and spelling; learned positive guidance and shared reading techniques; and some had noticed that their children learned new words in English

e) Parents are very satisfied. Overall, parents have been very enthusiastic about the program, with almost all rating the major components of the workshops as either a 4 or 5 on a 5-point scale (with 5 high).

f) Continued impact. Additional three and six month follow-up phone evaluations with families in Las Vegas showed parents made **significant gains** in their use of the 12 skills for sharing books with children. Also, there was:

- a gain in the average number of books for children in the home from 87% with 1 book or less at the start of the program to an average of 35 books per home six months after the program
- 43% reported not reading to child at all at start of program to 96% reading to their child daily at 6 months
- 2% of the parents had taken child to library before start of program to 60% at 6 months
- minutes reading per day increased by 25 minutes a day

In 2005, UNCE faculty conducted a mailed survey to see how the program was being used by other state Extension systems that had purchased it from Nevada. Sixty-three surveys were sent out and 21 were returned (33% response rate). Respondents estimated that they had conducted a total of 233 workshop series ($M = 12.3$) reaching 1,188 families ($M = 218$), and 76% had partnered with other agencies to deliver the programs. On a scale of 1 (very negative) to 5 (very positive), respondents rated the reaction of parents to the program as 4.55. Some respondents reported results of program evaluations that they conducted. One agent reported an average 57% gain in parents' use of 12 book sharing skills, while another agent reported a 44% gain. Another Extension system used the program statewide and reported that "As a result of the Family Storyteller Program, 267 parents read books to their children and demonstrated that skill to their Literacy volunteer." Other reported success stories using the curriculum included: 1) "There is one family in particular that I worried about because the parents didn't seem too excited about my helping them. However, they did read to their 3-year-old and this little girl has memorized 'Brown Bear.' This helped them to stay motivated to read daily to their daughter. This family rarely read to the small children but that's changed now."; 2) "Hispanic audience really enjoyed receiving the books, after last program they wanted to celebrate by having a Mexican potluck, great group."; 3) "Parents want to do it again with new books – not offered, but that's how well they like it."; and 4) "We have experienced a variety of success stories. Examples include the following statements: 'It helped me know how to do things with reading I wouldn't have done before,' 'I ask questions and point to things now,' 'After I did the activities with my children I felt good about myself, because I actually did it!'"

Source of funding:

Hatch

Smith-Lever
State matching funds

Scope of Impact:

State Specific

Multistate Integrated Research and Extension – NV & CA (plus 29 other state that have purchased curriculum)

Themes: Agricultural Financial Management

Issue

Management and marketing are key components of success and profitability of any beef cow/calf operation. The choices needed to make accurate decisions are complex, difficult and often impractical as most producers know. What producers were asking for was a tool that provided flexibility (based upon management practices selected) in real-time that accurately predicted the economic investment necessary to take an animal from recently weaned calves to market/breeder standards. Producers needed something that would allow them to play “what if...” and tell them the subsequent effects on their wallets.

What has been done?

What faculty at the University of Nevada developed were three software packages that would enable producers to evaluate various management practices and their potential impacts on profitability. “Feedlot” was design to help producers estimate the economics of retained ownership of yearlings through the a feedlot. The second package “Grassfat” was designed to track your yearling cattle through the pasturing stage of production. And, “Calf back” was designed to track calves after weaning through the production process and allows producers to vertically integrate and diversity their operation while spreading marketing risk throughout the year.

Impact

This software, available for free at <http://www.ag.unr.edu/cabnr/resources.htm>, lets producers check rapidly many different scenarios and possible prices, costs, etc., and how they will affect profits. Over the last year and a half, visitors from 47 states and 15 countries have downloaded over 1348 copies of the software. Ron Torrell of Elko, NV claims that by using this software “budgeting your production alternatives can save you money by avoiding costly mistakes.”

Source of Funding:

State matching funds

Scope of Impact:

Outreach

Theme: Children, Youth & Families At Risk

Issue

Over the past decade, suicide and violence among youth have increasingly been viewed as major public-health issues. Although most often seen as separate topics, a growing acknowledgement of the overlapping nature of various forms of violence has made it imperative to better understand the linkage between these serious youth problems. The purpose of this study is to explore the link between peer-related violence and suicide risk among youth.

What has been done?

The initial survey results were treated as a needs assessment that established baseline data for each school site. Investigators have met with teachers and administrators, providing reports from the survey data that school personnel can use for program development and planning purposes. Project data was used to help monitor the safety, violence, and suicide indicators at the project community sites. In addition, project data was used in

cooperation with the CDC Suicide Prevention Center to develop programs and applied research on youth suicide in Nevada.

This project has helped fill this gap, and the data is critical to intervention and prevention efforts because the period of adolescence has the highest ratio of suicide attempts to completions across the lifespan. Moreover, a better understanding of how risk and protective processes interact developmentally to increase youth vulnerability to suicide is critically needed, given the emotional liability typical of adolescence, and exposure to the various forms of violence, victimization, and risky behaviors increasingly common today.

Impact

This project helped in the understanding of the connection between youth suicide and violence, with several University of Nevada Cooperative Extension faculty using project data to develop community-based intervention and educational programming on these issues. Nevada is currently third in the country in suicide rates, so this issue is of critical importance. Project data also has helped in the understanding of which resiliency models are best supported on these topics. Thus, this project has generated new knowledge in terms of information that plays a critical role in our understanding of suicide and violence among youth, as well as applying this knowledge to the development of interventions and programming for youth, their families, and communities.

Source of funding:

USDA Hatch Grant
State Matching Funds

Scope of Impact:

Research

Themes: Child Care/Dependent Care

Issue

Researchers have documented that caregivers of elder parents face a myriad of stresses and strains. Chronic fatigue, anger, depression, anxiety, relationship and financial strain, and isolation are among the problems associated with the caregiving activity. Little attention has been paid to the experiences of ethnicities and family types, which may partially reflect their lesser involvement with formal services. The purpose of this project is to learn about the issues, expectations, and needs of caregivers of elder parents from diverse ethnicities (Latino, Native American, Anglo-European) and family types (traditional vs. non-traditional).

What has been done?

The focus of this study was to examine successful aging among caregivers of 1 or more elder parents. The sample consisted of 65 middle aged and older adult caregivers of one or more elder parents. Results indicated significant correlates of successful aging to be greater importance of spirituality, perceived social support, and number of caregiving difficulties. Young adults reported positive emotions, independence, and good health as important to successful aging. Middle aged adults reported independence to be most important, whereas positive emotions and staying active were most important with older adults. The strongest predictors of successful aging were difficult aspects of caregiving, importance of spirituality, and perceived social support. Latino caregivers reported similar needs to the Anglo-European caregivers.

Impact

Families have become educated about some of the strains and positives of the caregiving role through their participation in our study interviews. They also were given coping strategies and ways to deal with caregiver strain. UNR students have learned about research with familial caregivers.

Source of Funding:

USDA Hatch Grant
State matching funds

Scope of Impact:
State Specific

STAKEHOLDER INPUT PROCESS

In 2000, UNCE established a statewide Advisory Committee that represents a diverse cross section of stakeholders from both rural and urban communities, including minorities. This Advisory Committee has met at least twice a year since 2001 and continues to review UNCE programs and provide suggestions on additional program opportunities. It provides broad guidance on UNCE programming and policies, serves as a sounding board for setting program priorities, and has helped obtain support for UNCE from key state and county elected officials. CARET representatives also serve as members of this UNCE Advisory Committee.

In 2000, UNCE administration began a series of statewide “community stakeholder meetings.” Within their first year of being hired, UNCE funded campus based faculty are expected to conduct a formal needs assessment in order to identify critical issues in their subject matter area. For County Extension Educators, a very broad, community-based assessment is expected. For Area Specialists, a broad, issue-based assessment is expected. State Extension Specialists are charged with compiling local needs assessments and adding statewide data and impacts. Indeed, one of the criteria for annual performance evaluation is effective assessment of need. Following the initial needs assessment, faculty are required to continually assess needs through contact with stakeholders and periodically conduct a needs assessment in a similar manner as expected of newly hired faculty. Information on the “community stakeholder meetings” and other statewide needs assessments can be found at: <http://www.unce.unr.edu/Gateway/gateway.htm>

As a result of the above processes for stakeholder input, all of UNCE’s major educational programs are based on one or more needs assessments. UNCE has also used this information in ongoing strategic planning for the future.

The data collected by UNCE is also used as the basis for broad Nevada Agricultural Experiment Station research priorities and shared with other university faculty. In addition, NAES has conducted “rural tours” into the state and met with county and municipal decision makers, agriculture producers, state and Federal agency personnel and local high schools to obtain input into our research program. A newly formed citizens advisory committee meets quarterly and provides insight into NAES and College of Agriculture, Biotechnology and Natural Resource programming. Finally, the NAES has created a web page at <http://www.ag.unr.edu/naes/index3.htm> to connect stakeholders with campus faculty and Nevada Dividends, an impact database that is useful for establishing accountability.

PEER AND PROGRAM REVIEW PROCESS

There have been no significant changes in the peer and program review processes used by UNCE or NAES since the FY05 & FY06 Plan of Work Update submitted last year. These same procedures will continue to be used.

EVALUATION OF THE SUCCESS OF MULTI AND JOINT ACTIVITIES

As outlined in the previous POW, and continued for FY05 and FY06, University of Nevada Cooperative Extension (UNCE) and the Nevada Agricultural Experiment Station (NAES) will work together to build multistate, multi-institutional and multidisciplinary activities, and joint research and extension activities which address critical issues of strategic importance as well as those identified by stakeholders. All activities/programs of UNCE and NAES match needs/issues identified in the stakeholder input processes. Additionally, these activities/programs also address needs common to under-served/under-represented populations of the state, as well as activities/programs specific to the needs of these audiences.

For almost a decade, Nevada Agricultural Experiment Station (NAES) and University of Cooperative Extension (UNCE) have complied with the intent of Congress to *integrate agricultural research, extension and*

education functions to better link research to technology transfer and information dissemination activities. These efforts of both UNCE and NAES are continuing. NAES has used the program priorities established by and needs assessments conducted by UNCE faculty as an initial guide in allocating their research funds. Collaboration with community-based faculty and developing research components to Extension programs has been openly endorsed.

UNCE likewise has made specific efforts. Scholarship has long been recognized as an expectation of community-based faculty. All major programs are grounded in research theory and deliberate attempts are made to include campus-based faculty who hold joint UNCE and NAES appointments in their overall design. Programs are rigorously evaluated so as to contribute to the knowledge base of theory in practice. Not only are campus-based faculty expected to be involved in the evaluation design, but UNCE faculty are expected to take a scholarly approach to their work.

Integrated and multistate programs have generally realized the outcomes/impacts expected. The multi-state research program and Western Coordinating Committee projects are reviewed by RCIC (which is represented by both Extension and Research) for progress during the course of the project/program and at project termination. The reviews are documented and housed at the executive director's office in the western region. This process will continue to be used. Additionally, UNCE faculty and campus faculty on UNCE appointments are expected to demonstrate program results/impacts as part of their annual evaluations. Therefore, peers and administration both have an opportunity to review impacts/results of all UNCE programs.

Both UNCE and NAES have a long history of integrated and multistate programs/activities. In fact, many of the State Specialists with UNCE appointments also have NAES appointments so that their research is closely related to their educational programming. Additionally, many UNCE faculty are participants with NAES faculty on research projects. Integrated and multistate programming is increasingly the result of more proactive processes, and has helped to identify ways for cooperation even outside of specific programs. For example, UNCE has continued an arrangement with Utah State University Extension for their Dairy Specialists to provide dairy programming in Nevada.

MULTISTATE EXTENSION ACTIVITIES

See Appendix "A" for Multistate Activities for 2006. This reported is generated from a database and formatted consistent with Revised CSREES-REPT, Supplement to the Annual Report of Accomplishments and Results. The amount of Federal dollars related to Multistate Extension Activities has risen for a number of reasons: 1) more faculty on Federal dollars are involved in multistate activities; 2) faculty are spending a higher percent of time on multistate activities; 3) faculty are more accurately reporting their multistate activities; and 4) Federal dollars are being targeted to those faculty with multistate activities.

INTEGRATED RESEARCH AND EXTENSION ACTIVITIES

See Appendix "A" for Integrated Extension Activities for 2006. This reported is generated from a database and formatted consistent with Revised CSREES-REPT, Supplement to the Annual Report of Accomplishments and Results. The amount of Federal dollars related to Integrated Extension Activities has risen significantly for a number of reasons: 1) more faculty on Federal dollars are involved in integrated activities, 2) faculty are spending a higher percent of time on integrated activities, 2) faculty are more accurately reporting their integrated activities; and 3) Federal dollars are being targeted to those faculty with integrated activities.

See Appendix "B" for Integrated Activities of the Nevada Agricultural Experiment Station (Revised CSREES-REPT), Supplement to the Annual Report of Accomplishments and Results.

Appendix A

**U.S. Department of Agriculture
Cooperative State Research, Education, and Extension Service
Supplement to the Annual Report of Accomplishments and Results
Actual Expenditures of Federal Funding for Multistate Extension and Integrated Activities
(Attach Brief Summaries)
Fiscal Year: 2006**

Select One:	<input type="checkbox"/> Interim <input checked="" type="checkbox"/> Final						
Institution:	University of Nevada, Reno						
State:	Nevada			Multistate			
		Integrated		Extension		Integrated	
		Activities		Activities		Activities	
		(Hatch)		(Smith- Lever)		(Smith-Lever)	
<i>Established Target %</i>			%	25%	%	25%	%
<i>This FY Allocation (from 1088)</i>				1,132,801		1,132,801	
<i>This FY Target Amount</i>				283,200		283,200	
Title of Planned Program Activity							
2006 Lake Tahoe Science Education Docent Program				3,985		3,985	
4-H After School NFL/JCP workforce readiness AS project				6,676			
Aging Needs Assessment: Capacity Building for UNCE						8,032	
Agriculture Production				1,413		769	
Anger Management for Parents						303	
Bee Population Management						27,473	
Beef Production Information						33,194	
Better Kid Care America				5,855			
BMP Retrofit Partnership Group				13,948		13,948	
Bootstraps						12,944	
Capacity Building for Cooperative Weed Management Areas						3,512	
Carson City Weed Coalition						1,123	
Carson River Corridor				5,087			
Carson River Watershed Education Program, 06				11,955		11,955	
Cattlemen's College Wildfire Prevention						11,406	
Cattlemen's Update						22,813	
Child Passenger Safety Program				3,666		2,749	
Childhood Obesity Prevention in Nevada (COPIN)				6,380		6,912	
Collaborative Resource Stewardship - Northeastern Nevada Stewardship Group						6,325	
Collaborative Resource Stewardship - Shoesole Resource Management Group						6,325	
Commercial Water Conservation Training program (Desert Green)				1,316		1,316	
Community Business Matching Model				23,256		3,502	
Community Readiness Network				2,988		1,494	
Cooperative Monitoring by Livestock Permittees				4,135		3,162	
Desert Bioscape				15,795		15,795	
Desert Landscape Design				11,065			

Economic and Community Development					3,502
Educating Early Childhood Caregivers					15,516
Even Start Explorers- Exploring 4H					605
eXtension Entrepreneurship Project			7,005		3,502
Family Resource Management			3,666		2,749
Family Storyteller			5,737		68,877
Food for Health and Soul					877
Healthy Rural Communities					1,494
Home Horticulture			18,329		13,746
Improving Water Quality Through Wetlands and Irrigation Drainage Management					3,512
Just In Time Parenting (JITP)			18,477		12,622
Keeping Kids Safe: Recognizing, Reporting and Responding to Child Maltreatment					3,879
Lake Tahoe Environmental Education Coalition (LTEEC)			1,993		1,993
Laughlin, Nevada Community Economic Development Educational Program			20,006		18,129
Living on the Land: Stewardship for Small Acreages			8,897		7,024
Living With Fire			21,781		23,736
MAGIC			17,794		27,434
NEMO Nevada - Nonpoint Education for Municipal Officials					10,536
Nevada Range Management School			2,875		
Nevada Range Monitoring Handbook, Guide, and Schools			26,914		24,895
North Lake Tahoe Demonstration Garden			1,196		1,196
Noxious Weeds			13,043		3,594
Nurturing Partners			911		
Nutrition in the garden: grow yourself healthy					3,132
Operation Military Kids			13,351		13,351
Other Economic Development Programming & Research Activities					14,626
Parenting and Literacy for Success (P.L.S)					1,513
Pest Management			7,331		5,499
Processing and Marketing of Local Meat Products: A Feasibility Analysis					2,084
Range Management School			16,541		12,649
Rangeland Ecology and Management			12,471		6,602
Rangeland Vegetation Management for Resilience					11,004
Regional Water Quality Coordination			1,010		2,021
Riparian and Watershed Assessment and Management			20,785		11,004
Riparian Proper Functioning Condition Assessment			8,271		6,325
Risk Management Education for Sustainable Agriculture in Nevada					3,923
RURAL HEALTH WORKS					3,502
Sage Grouse Conservation Planning			4,157		2,201
Science, Engineering and Technology: Community Readiness Network (CRN)			3,606		3,606
Sustainable Agricultural Practices (Alternative crop production)					52,173
Sustainable Agriculture Practices (Cool season forage grass/IR-4/IPM program)			22,336		
Sustainable Biodiversity/Multiple Use of Rangelands			8,271		6,325
Tahoe Basin Weed Coordinating Group			8,897		7,024
Technical Assistance for Public Water Supply Operators in Nevada			2,021		
The Healthy Hearts Project					3,508
Tri-County Weed Demonstration Program					1,538
Truckee Meadows Weed Coordinating Group					7,024
UNCE Aging Needs Assessment					5,210
Understanding Native American Populations			4,995		

Value-Added Toolbox for Small Agricultural Producers			2,132		137
Vegetation Management					6,325
W1005 - An Integrated Approach to Prevention of Obesity in High Risk Families			4,557		4,937
Water Wise					10,536
Waterfall Fire Education Project					1,572
Weed Warriors Invasive Weed Training					3,512
Western Beef Resource Committee (Cow/Calf Handbook)			8,971		8,298
Western Cattlemen's Library Committee			11,517		11,537
Western Extension Farm Management Committee			277		326
Western Nevada Flood Education Program			1,993		1,993
Total			449,634		683,472
Carryover					

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

Director

Date

Attachment to Appendix A:

Brief Summaries of 2006 Smith-Lever Multistate and Integrated Programs

TITLE	DESCRIPTION
2006 Lake Tahoe Science Education Docent Program	A program in cooperation with the Tahoe Environmental Research Center to develop the content for the new interactive educational exhibits and a training program for volunteer Docents.
4-H After School NFL/JCP workforce readiness AS project	Designing 4-H After School teens reaching youth workforce readiness programs in 10 states.
Aging Needs Assessment: Capacity Building for UNCE	Beginning effort in aging programming within UNCE, identify needs of target population and develop collaboration and communication other UNR faculty, state agencies and organizations.
Agriculture Production	Agronomic practices that can significantly impact profitability if producers find that those practices can be incorporated into their operations.
Anger Management for Parents	Teaching parents how to manage their anger in more constructive ways is the focal point of this program.
Bee Population Management	Establish the relationship between bee population density and rate of pollination and/or yield.
Beef Production Information	Providing information on best management practices for beef cattle production to producers.
Better Kid Care America	Better Kid Care America is a developing eXtension CoP.
BMP Retrofit Partnership Group	A five-agency coalition actively cooperating to reach out to Lake Tahoe homeowners to teach them how to implement best management practices (BMPs).
Bootstraps	A work preparedness program for high-risk young adults.
Capacity Building for Cooperative Weed Management Areas	This program supports workshops and other events designed to educate the members of 30 CWMA's across the state and address their issues and concerns.
Carson City Weed Coalition	Cooperative effort focusing on noxious and other invasive weed management in the Carson City area.
Carson River Corridor	A program involving a group of agency and private interests committed to enhancing cooperation, communication, and collaboration to positively impact watershed health. Educational programming is to heighten citizen awareness and decision-maker knowledge of the need to restrict development and encourage agricultural use on the lands immediately adjacent to the Carson River. Preservation of this floodplain zone aids in the dissipation and storage of floodwaters, improves water quality through filtration, provides wildlife habitat, affords recreational opportunities, and makes good economic sense.
Carson River Watershed Education Program	Cooperative programming to research and educate the public (especially small land owners) about protecting open space in the hazardous flood zone close to the Carson River channel.
Cattlemen's College Wildfire Prevention	Educational program for land management agencies focusing on moving from fire suppression to fire prevention.
Cattlemen's Update	Educational program for beef cattle producers. Program topics speak to current beef cattle production management issues in the Great Basin region affecting profitability and product quality. Subject matter selection is based on a needs assessment of Nevada beef cattle producers and on concerns and trends expressed by the leaders of the beef cattle industry in the United States.
Child Passenger Safety Program	This project is designed to provide both education and training on proper use of equipment to assist parents in protecting their children while they are passengers in a motor vehicle. Inspections are done at community check points and by individual appointment.
Childhood Obesity Prevention in Nevada (COPIN)	This "program" is actually composed of a group of efforts linked together under the COPIN umbrella. No one program can achieve the overarching goal to reduce the incidence of childhood obesity; hence, a multi-pronged approach. Educational efforts focus on adults who either directly feed children (e.g. parents and childcare providers) or those who work with these adults (e.g. health professionals and childcare providers).
Collaborative Resource Stewardship - Northeastern Nevada	Cooperative programming with the Northeastern Nevada Stewardship Group focused on collaborative approaches for addressing rangeland issues

Stewardship Group	and developing appropriate adaptive management strategies.
Collaborative Resource Stewardship - Shoesole Resource Management Group	Cooperative programming with the Shoesole Resource Management Group focused on collaborative approaches for addressing rangeland issues and developing appropriate adaptive management strategies.
Commercial Water Conservation Training program (Desert Green)	This Commercial Water Conservation Educational Program is designed to educate commercial clientele in the Green Industry as well as others who have an interest in water conservation issues. It is implemented by a committee representing the industry and is chaired by one industry representative and one university representative. The program is presented once a year, with 36 classes taught in a two-day period. A committee of industry representatives reviews evaluations from the previous year to decide future educational direction and topics.
Community Business Matching Model	The CBM research and extension program started in 2004 and continued in 2006. The primary goal of this program is to develop a community economic development assessment tool that matches community desires (assets and vision) with business/industry needs. This application enhances current economic development programming with national implications. This program was officially launched in late 2006 with several western states communities participating as pilot test communities, including Laughlin, Nevada.
Community Readiness Network	According to the Department of Homeland Security (DHS) and the Federal Emergency Management Agency (FEMA), communities need rapid access to information during an emergency." (CSREES Information Technology Education website). This is increasing more evident due to recent disasters such as hurricanes Katrina and Rita. In an effort to enhance EDEN's resources, Western States, including Nevada, are creating 4-H Technology Teams to help in the development and training of local responders. Community Readiness Networks (CRN's) are being developed across the United States that create collaborative efforts between youth and community officials, agencies and organizations. Through the use of GPS and GIS mapping, youth will work with responders in educating communities on how to access dynamic websites and other information technology to become better prepared in a myriad of disaster situations.
Cooperative Monitoring by Livestock Permittees	Programming involving the development and implementation of a new program that teaches public land ranchers and land management agency range specialists about the importance and methods of cooperative rangeland monitoring.
Desert Bioscape	Desert Bioscape is a program that takes a holistic approach to the conservation of natural resources in the urban setting. The goal of this program is to teach homeowners and commercial clientele to conserve water and energy, reduce pesticide and chemical fertilizer use, and promote wildlife habitat in a sustainable manner. This program contains several components, including wildlife and conservation landscaping, constructed home wetlands for water recycling, a research project to find and determine water-efficient plants for the southern Nevada area, and a research project to determine the use and benefit of natural organic mulches in the Mojave Desert.
Desert Landscape Design	This program teaches homeowners how to design their own landscape, through principles developed from research, that conserves water and energy and results in a low water-use landscape tailored to the needs of the homeowner. Taught through an eight-week class Students then apply these principles during class and at home (assignments) to create a landscape design surrounding their own home and based upon their own needs and wants. Water conservation is estimated after the designs are completed using a Southern Nevada Water Authority model for estimating landscape water use.
Economic and Community Development	Programming to assist Nevada counties and communities in analyzing socio-economic data and developing strategic economic development plans.
Educating Early Childhood	Thousands of young children are in the care of someone other than their

Caregivers	parents or other family member everyday in Nevada. The quality of child care impacts children, their families and communities. Caregivers need training and education to provide quality child care. UNCE has offered training to improve the quality of child care in Nevada for 19 years. We do this by developing, implementing and evaluating research based curricula for child care givers.
Even Start Explorers- Exploring 4H	The overall goal of the Even Start Explorer's program is a fun and educational program that encompasses elements from the areas of health and nutrition, ecology, animal science, wildlife, and physical development
eXtension Entrepreneurship Project	National extension program to develop electronic programs to assist rural America in addressing issues in development of an entrepreneurial community and local entrepreneurship.
Family Resource Management	Too many individuals and families are experiencing financial crisis because of inadequate savings, too much debt, and poor planning for potential major life events. Extension has converted family resource management educational programs to web and print media delivery methods. The primary focus has been on promotion of the programs and web sites and encourage parents and others to use these and other web resources to meet some of their educational needs.
Family Storyteller	Family Storyteller is a family literacy program for parents and their preschool-aged children and beginning readers. Includes English, Spanish, English Language Learner, and Native American versions.
Food for Health and Soul	The goal of this six session curriculum, "Food for Health and Soul" is to decrease risk for chronic disease. The curriculum encourages and teaches families to modify their favorite recipes by decreasing sugar, fat, salt and sodium and increasing fiber-rich foods during preparation.
Healthy Rural Communities	Providing health and wellness information to residents, including nutrition, health care cost information, social emotional issues, etc.
Home Horticulture	Most new residents in rapidly growing Southern Nevada are not accustomed to desert growing conditions. Landscape and garden plants and products are expensive. This program uses a variety of delivery methods to reach as wide an audience as possible with information on desert plants and growing conditions.
Improving Water Quality Through Wetlands and Irrigation Drainage Management	This project incorporates research into the use of constructed wetlands for pollutant removal on Steamboat Creek and development of a curriculum for middle school students learning about water pollution and wastewater treatment.
Just in Time Parenting (JITP)	eXtension Community of Practice. This program provides on-line parenting information to parents that is geared to their baby's development. The information is delivered monthly, just as parents need it.
Keeping Kids Safe: Recognizing, Reporting and Responding to Child Maltreatment	Child caregivers, youth workers, volunteers working with youth are all mandated reporters of suspected child maltreatment and caregivers have regular contact with the young children in their care. UNCE faculty have developed a variety of educational materials to educate adults about the recognition and reporting of suspicions of child maltreatment and how to respond to a disclosure of maltreatment.
Lake Tahoe Environmental Education Coalition (LTEEC)	The Lake Tahoe Environmental Education Coalition (LTEEC) assists 30 agencies, educational organizations, and non-profits in working together to improve the effectiveness of environmental education throughout the bi-state Tahoe Basin (California and Nevada).
Laughlin, Nevada Community Economic Development Educational Program	Community economic development educational program in the Colorado River (Laughlin, Nevada and the communities in Arizona including Bullhead City, Fort Mohave, Mohave Valley, and Golden Valley). The University of Nevada Cooperative Extension (UNCE) and University of Arizona Cooperative Extension (UACE) partnered and developed a comprehensive community economic development program for the Colorado River region. This program follows basic community economic development principles that include planning processes and technical assistance. This program was to further assist with developing a regional overall economic develop strategy to mitigate regional job loses taking into

	account community "desires" and business "wants"
Living on the Land: Stewardship for Small Acreages	This project developed a curriculum and training for NRCS, Conservation District, and Extension personnel in eight western states who work with small acreage owners. The curriculum was based on key natural resource issues (goal setting, soil, water, plants and animals). In 2006, funding was obtained to allow revision and expansion of the curriculum and 2 trainings.
Living With Fire	Living With Fire is a comprehensive, multi-agency project aimed at teaching people how to live more safely in high fire hazard environments.
MAGIC	Project MAGIC (Making a Group and Individual Commitment) was developed to target entry level and less serious offenders and provides opportunities to address the large recidivism rate of rural youth. This program has expanded across rural Nevada and now into urban Las Vegas. The MAGIC program targets juvenile offenders ages 12-18 and offers life skills programming in an effort to reduce recidivism. The targeted juveniles are on probation.
NEMO Nevada - Nonpoint Education for Municipal Officials	The program will help land use decision-makers understand the nature of the non-point source pollution problem and its impact on their lives, towns and natural resource base, thereby enabling them to plan for growth and development while addressing water quality issues through educated land use decisions.
Nevada Range Management School	This program integrates sound science, collaboration, and common sense to put public agency land managers, livestock permittees, and other land users on the same page in terms of the range resource.
Nevada Range Monitoring Handbook, Guide, and Schools	The main purpose is to update the Nevada Range Monitoring handbook and then plan educational programs around the new book. This includes developing a "Producer Monitoring Handbook", a subset of the main book, in layman terms so that it is useful in the field.
North Lake Tahoe Demonstration Garden	This garden, originally built at the Mountain Campus of Sierra Nevada College by Master Gardeners with assistance from Extension faculty is the only demonstration garden at the lake other than the one in South Lake Tahoe. It is used as a teaching and demonstration program in the Lake Tahoe basin.
Noxious Weeds	Noxious and invasive weeds are widespread throughout Nevada, and threaten agricultural and rangeland productivity. Rural counties are susceptible to significant adverse economic damage. A wide variety of education programs and methods are used to help individuals, agencies and weed control organization reduce the abundance of noxious weeds. Additionally, applied research and demonstrations are undertaken as a part of these educational efforts.
Nurturing Partners	Working primarily in high schools, UNCE staff members are able to facilitate changes in knowledge, attitude, and practice of teens regarding general nutrition and health, specific issues of pregnancy and breastfeeding, and parenting guidance. The flexible curriculum enables staff to personalize needs for each class.
Nutrition in the Garden: Grow Yourself Healthy	This program was developed to provide nutrition education via a tailored curriculum, and increase communication and team-building skills and promote increased physical activity through participation in the creation and maintenance of a school garden. Project goals are to foster healthful eating habits and increased physical activity, through the provision of nutrition education and the creation of a school garden.
Operation Military Kids	OMK focuses on those young people whose parents are in the National Guard and Army Reserve who are being called up in increasing numbers for extended assignments in support of the Global War on Terrorism. While these youth do not relocate, their lives are changed dramatically when a parent suddenly leaves the family due to being mobilized or deployed for potentially dangerous assignments. OMK has the following goals: 1) Create community support networks for military youth "in our own backyard" when soldier parents are deployed. 2) Provide programs for military youth living in civilian communities 3) Support Military youths coping with the stress of knowing their deployed parents may be in

	harm's way. 4) Collaborate with schools to ensure that staff is attuned to the unique needs of military students whose parents are deployed. 5) Educate the public on the impact of the deployment cycle on soldiers, families, youth and the community as a whole.
Other Economic Development Programming & Research Activities	This program mainly responds to requests by communities and organizations to conduct analyses directed at specific policy issues.
Parenting and Literacy for Success (P.L.S)	This family literacy program helps parents teach their preschoolers pre-kindergarten concepts in math, science, reading and other areas that can prepare them for kindergarten success. The P.L.S program combines the reading of four specially selected children's books with hands-on activities that reinforce the Pre-Kindergarten concepts introduced in the book. These workshop activities prepare the parents to extend the learning from workshop to home. Each book is used for two sessions and focuses on different Pre-Kindergarten concepts. For example, the first session uses the book, <i>The Best Bug Parade</i> and focuses on Pre-K concepts for math, visual arts and reading. In the second session, the concepts from the first session are reviewed and the book is re-read and the new activities focus on Pre-K science concepts. This program also demonstrates to the parents the value of a single book and encourages overall family literacy.
Pest Management	The rapid growth in Moapa and Virgin Valleys means more land disturbance and more problems with noxious weeds and other pests like ants, scorpions, termites and gophers. Extension programming to address some of these issues includes providing identification of pests, distributing printed materials, mapping some of the high priority noxious weeds and encouraging their control. Included is a Tri State Pesticide Workshop (Utah, Arizona and Nevada) providing 6 hours of Continuing Education Units (CEU) in December to help meet the certification requirements of licensed pesticide applicators as well as facilitating credit by videos and sales of pesticide study manuals.
Processing and Marketing of Local Meat Products: A Feasibility Analysis	The first objective of this program is to complete an in-depth feasibility study of a producer-owned slaughter, processing, and packing facility (USDA inspected and certified) to be located in the Carson, Smith, or Mason Valley region. A complete feasibility analysis and report will be provided at the end of the study. The second objective is to provide educational programming to the Local Livestock Marketing Group in Gardnerville regarding business planning, business organization, marketing, packaging, and health inspections.
Range Management School	A new educational program that integrates sound science, collaboration, and common sense to put public agency land managers, livestock permittees, and other land users on the same page in terms of the range resource management.
Rangeland Ecology and Management	Involves a group of rangeland managers, users and educators in collaborative programming focused on Nevada rangelands and their management.
Rangeland Vegetation Management for Resilience	This program addresses the need for proactive vegetation management to prevent rangeland and plant communities from crossing an irreversible threshold by transitioning to another state.
Regional Water Quality Coordination	This program coordinates educational efforts and materials of water quality specialists in Nevada, California, Hawaii and the Pacific Islands and Trust Territories.
Riparian and Watershed Assessment and Management	As the most biologically diverse and the most frequently overused component of Nevada Rangelands, riparian areas have attracted a great deal of management attention. There is considerable need for focusing people on proper management of uses within the potential and capability of individual settings. By focusing on the physical functioning of riparian areas we strive to avoid the conflict of differing values. Generally if riparian areas function properly, all land users will benefit and this provides a great vehicle for riparian restoration, including enhancement of water quality, habitat for listed or important species, forage for livestock, water

	for agriculture, etc. Extension leads an interagency and interdisciplinary Cadre that puts on Riparian Proper Function Condition Assessment trainings and works with agencies and watershed groups to develop collaboration about riparian management.
Riparian Proper Functioning Condition Assessment	Under the leadership of the National Riparian Service Team of the BLM, FS, and NRCS, The Nevada Riparian Cadre for teaching Riparian Proper Functioning Condition (PFC) Assessment, and for Creeks and Communities, teaches classes and provides expert assistance with riparian assessment and collaborative management. Riparian Proper Function Condition Assessment is used as the minimum riparian assessment by the BLM and is recommended for watershed-wide assessments. It is an excellent format for increasing landowner and land manager interaction and cooperation under the themes of Cooperative Riparian Restoration and the national Program "Creeks and Communities."
Risk Management Education for Sustainable Agriculture in Nevada	The goal of this project is to develop and deliver risk management education programs to agricultural producers in the State of Nevada. The educational program will consist of five separate one or two day seminars in the areas of financial, production, legal and market risk. As a result of these programs, participating producers will be able to more effectively manage their enterprise and have an understanding of the various risk management options available to them. Informed decisions regarding markets, pricing, and production based on strong financial analysis will lead to sustainable agricultural practices and enhanced quality of life for farmers and their surrounding communities. Programs in 2006: Estate & Farm Transition Planning, Managing Human Resources, Nevada Cattleman's Update, Nevada Range Management School, and the Nevada Grown Connections conference.
RURAL HEALTH WORKS	Rural Health Works is a national Cooperative Extension program to assist county health sectors in estimating the economic impacts of their local rural health sector has on a rural economy. Also selected budget analysis can be completed to estimate the potential feasibility or subsidy required for a selected medical service. Lastly, Rural Health Works can assist counties/communities in developing a strategic health care sector plan.
Sage Grouse Conservation Planning	This collaborative effort has developed a strategy for conserving sage grouse and their habitats. The strategy is being implemented in local conservation planning through eight local planning groups. Continuing efforts are focused on implementation and tracking progress.
Science, Engineering and Technology: Community Readiness Network (CRN)	In an effort to enhance community preparedness, safety and available resources, Nevada is creating multi-state partnerships to address disaster situations. Through the use of GPS and GIS mapping, 4-H youth and adult leaders will work with community emergency managers to address evacuation and shelter mapping concerns. In addition 4-H teams develop leadership skills, conduct needs assessments, participate in CERT training, education citizens about 96 hour backpacks and other safety procedures.
Sustainable Agricultural Practices (Alternative crop production)	The purpose of this program is to test and demonstrate crops that use less water and/or offer increased income potential to Nevada agricultural producers. Currently six crops are under evaluation. In 2006 producers planted and/or harvested commercial acreages of tef, winegrapes, and turfgrass for the first time in Churchill County.
Sustainable Agriculture Practices (Cool season forage grass/IR-4/IPM program)	This project has three primary purposes. The first is to increase the number of pest control materials labeled in Nevada. The second is to increase the knowledge and implementation rate of IPM practices in Nevada. This involved on farm field trials targeting Banks Grass Mites and Western Brown Wheat Mite in cool season forage grass.
Sustainable Biodiversity/Multiple Use of Rangelands	The sustainable biodiversity/multiple use of rangelands program emphasizes a balance between wildlife habitat/diversity and livestock forage production.
Tahoe Basin Weed Coordinating Group	The Tahoe Basin Weed Coordinating Group consists of landowners and managers, regulatory agencies and residents working together conduct educational programs, and share information and resources to achieve

	effective weed control in the Lake Tahoe Basin.
Technical Assistance for Public Water Supply Operators in Nevada	This program assists public water supply operators throughout the state. It is designed to provide information in a way that maximizes the opportunity for rural water supply operators to participate. The project involves organizing and broadcasting courses to videoconferencing sites throughout the state.
The Healthy Hearts Project	The goal of "The Healthy Hearts Project" is to reduce the incidence of cardiovascular disease in the African American population residing in Clark County, especially targeting zip codes 89030 and 89106, as well as congregations of the faith membership of the coalition Community Partners for Better Health (CPBH). Delivery is primarily through predominately African American churches, some physical activity programs are held at recreational centers. Educational workshops focus on preventing and controlling risks factors for cardiovascular disease such as hypertension, diabetes, physical inactivity, and unhealthy food choices and preparation. Other activities create an awareness of healthy behaviors to decrease cardiovascular disease.
Tri-County Weed Demonstration Program	Bringing invasive species under control is a struggle for every landowner/land manager in Nevada. The Tri-County Weed Demonstration Program is designed to show that an effective invasive weed program can be developed in Nevada which emphasizes landowner support, collaborative processes, and does not require substantial inputs of new county tax dollars.
Truckee Meadows Weed Coordinating Group	Weed management in the urban Truckee Meadows has been fragmented and largely unsuccessful due to a failure to organize and share information and resources. This program represents an exciting breakthrough in coordination of weed management efforts in an urban area.
UNCE Aging Needs Assessment	The initial goal of the UNCE Aging Needs Assessment is to address gaps and challenges in existing community education and services to elders by complimenting existing service and/or filling identified gaps. It is the start of a more coordinated and focused effort by Extension to address the needs of the expanding aging population.
Understanding Native American Populations	This program involves developing a self-paced curriculum to train agriculture professionals on the social, political and economic environments on Indian reservations. The intent is to help agriculture agency professionals to conduct more programs on reservations in Nevada and to be more effective in doing so.
Value-Added Toolbox for Small Agricultural Producers	Many agricultural producers in the West want to find new ways to increase their profits and decrease the marketing risk they face. Developing and marketing a value-added agricultural product is one possible method for these producers to add profitability to their operations, but it requires marketing and analytical skills to evaluate the viability of the product and develop a marketing plan, skills that many producers lack. Due to traveling distances and the reduction in producer seminar attendance, an electronic educational system (web-based) needs to be erected. This program is targeted to small farmers in the Western States. The program objective is to provide small farmers a central location where they can find information and/also be led through a process that teaches them about risk management concepts related to marketing that will enable them to change their behavior through the development of evaluations of their own ideas. The website will have materials in a variety of formats including fact sheets, PowerPoint presentations with audio using Breeze, and video clips. It will also have a list of experts to contact for additional help. As the website is revised, it will be advertised and used in presentations in the western states.
Vegetation Management	Over the last several decades, Nevada's rangelands have experienced adverse changes in vegetation. This vegetation management program focuses on teaching land managers/owners about applications of appropriate rangeland vegetation management to avoid crossing ecological thresholds that will result in irreversible changes in rangeland vegetation.
W1005 - An Integrated Approach	The primary objective of W-1005 is to identify factors that help low-

to Prevention of Obesity in High Risk Families	income families with children ages 4 to 10 maintain healthy weights rather than looking for antecedents causing overweight. The partnership between research faculty and Extension personnel resulted in the development of scientifically valid and theoretically sound materials and methods that also conformed to the needs of community-based educators and target audience. This involves the work of the 18 states.
Water Wise	This project addresses the need for broad public education about non-point source pollution in western Nevada through collaboration with a local broadcast meteorologist and creation of an interactive website. It provides a distribution and communications mechanism to get environmental science information to the public effectively and efficiently. This project enhances citizen awareness about local individual efforts needed to reduce NPS pollution, and broad-scale societal, community, institutional, and political actions needed to achieve long term improvements in water quality protection. This project promotes making a difference by effecting changes in stakeholder knowledge and attitudes about their environment, and publicly acknowledging individual and community pollution control efforts. The broadcast meteorologist and interactive website provide water quality data in a format that the general public can easily understand and identify with. This project complements local watershed protection, stormwater protection, and land-use decision maker education projects (NEMO).
Waterfall Fire Education Project	In July, 2004 the Waterfall Fire occurred creating a multi-year need for community education on wildfire recovery, rehabilitation, and prevention.
Weed Warriors Invasive Weed Training	This 8-hour program provides basic training in weed law, identification, biology, and integrated pest management, and teaches students to recognize 12 noxious weeds. Students are then provided with opportunities to participate in volunteer weed management or applied research projects.
Western Beef Resource Committee (Cow/Calf Handbook)	The cow/calf handbook is the definitive beef cattle production handbook in the west. This multistate committee works collaborative to update the book and add new information to it on at least an annual basis.
Western Cattlemen's Library Committee	A committee representing 12 states whose purpose is to coordinate educational programs and publications. This includes the Cattlemen's library notebook, annual update meetings and publication of fact sheets.
Western Extension Farm Management Committee	Western Extension Farm Management Committee is a multistate effort in the west to share programming and educational materials, develop joint programming and collaboratively create educational materials.
Western Nevada Flood Education Program	This is a community education program about flash flooding and river flooding. The program is linked with our Carson River Watershed Education Program.

Appendix B
U.S. Department of Agriculture
Cooperative State Research, Education, and Extension Service
Supplement to the Annual Report of Accomplishments and Results
Actual Expenditures of Federal Funding for Multistate Extension and Integrated Activities
(Attach Brief Summaries)
Fiscal Year: 2006

Select One: **Interim** **Final**
Institution: University of Nevada Reno
Nevada Agricultural Experiment
Station Only
State: Nevada

	Integrated Activities (Hatch)	%	Multistate Extension Activities (Smith-Lever)	%	Integrated Activities (Smith-Lever)	%
<i>Established Target %</i>	25	%		%		%
<i>This FY Allocation (from 1088)</i>	1,134,798					
<i>This FY Target Amount</i>	283,100.00					
Title of Planned Program Activity						
Implementation of a School Wellness Policy	\$4,810					
Population Change in Communities	\$13,508					
Reproduction Performance in Domestic Ruminants: Pre- and Post-Partum Effects on Maternal Undernutrition	\$5,525					
Working with Teens: A Study of Youth Worker Characteristics and Promotion of Youth Development	\$28,246					
Freeze Damage Effects of Drought on Wine Quality of Various Vitis Vinifera Grapes Varieties in Nevada	\$44,949					
Marketing and Price Risk Management for Cool Season Hay Products in Nevada	\$45,593					
Rural communities & public lands in the West: Impacts & alternatives	\$43,342					
Benefits and Costs of Natural Resources Policies Affecting Public and Private Lands: Quantifying the Impact of Grazing on the Recreational Value of Riparian Eco-Systems	\$40,396					
Nevada beef cattle.	\$70,014					
The Influence of Home and Child Care Environments on Toddler's Language and Literacy Skills	\$43,931					

Incidence and Prevalence of P(M), Hemolytica in
Nevada Sheep Populations

Total

Carryover

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

\$3,661

343,975

Brief Summaries for Appendix B

Implementation of a School Wellness Policy

To address the epidemic of overweight children and to promote overall health, the Washoe County School District approved a Student Wellness Policy. This policy addresses requirements for physical activity, nutrition and portion size standards for food and beverages sold outside of the federal school meal programs; marketing of unhealthful food; and the length and timing of school lunch. In order to determine if this policy is effective in achieving its intended effect, it is necessary to know the degree to which it is executed. Therefore, the purpose of this study is to evaluate the implementation of the Washoe County School District Wellness Policy.

Population Change in Communities A. Young adults in the West are less educated than their seniors. B. Until now, schools have been able to count on increasingly educated parents and employers have been able to count on an increasingly educated workforce. To find out what mix of educational trends and migration patterns accounts for the educational reversal and to examine its ramifications, with special reference to rural areas.

Reproduction Performance in Domestic Ruminants: Pre- and Post-Partum Effects on Maternal Undernutrition

Nevada and Wyoming are home to a basic high desert sheep-lamb industry that markets product with little owner retention through a feed lot. Although differences in breed, parity, body condition score, pre-pregnancy nutritional inputs and management all impact reproductive and growth performance, maternal undernutrition early in pregnancy, in particular, has been reported to alter fetal and placental growth and development. A unique aspect of this proposal is that it proposes to use available DNA based technology to significantly improve overall sheep-lamb production in the short term. We will achieve this if we can learn how to alter the multigenerational selection of ewes under markedly different production systems to more efficiently respond to undernutrition through management. We expect the results from our study to improve the cost effectiveness of feeding for the producer to the point that educational programs can be developed to improve flock performance over the short term. Long term, a producer's knowledge base would be significantly increased with regard to increasing product uniformity in the face of extreme environmental changes. This research is focused on producing healthier lambs. The proposed study will incorporate molecular genetic tools into an analysis of the impact of a constant reduction in feed intake to 50% National Research Council (NRC) recommendations, from day 28 to day 78, on conceptus growth and development in ewes of similar breeding, parity, and body condition score, but selected under markedly different management systems.

Working With Teens: A Study Of Youth Worker Characteristics And Promotion Of Youth Development

Although an extensive literature has developed surrounding the elements needed to affect positive change in youth, little is known about the characteristics of people who work directly with youth to enhance positive youth development. This project will examine youth workers to better understand what characteristics, education/training, and experience contribute to job satisfaction, retention, and job competencies.

Freeze Damage -Effects Of Drought On Wine Quality Of Various Vitis Vinifera Grape Varieties In Nevada

Regulated deficit irrigation can improve grape quality, affect wine aroma and taste by altering metabolite composition, and improve winter hardiness. The major goal of this project is to enhance the viability and quality of vinifera grape and wine production in Nevada. More specifically, we wish to identify and characterize the best varieties and clones for Nevada regions, to identify and characterize specific practices that enhance the cold tolerance of vinifera grapes, and to identify the level of drip irrigation that produces the best quality grapes and wine.

Marketing And Price Risk Management For Cool Season Hay Products In Nevada

Alfalfa hay producers often use cool season grasses as rotation crops. Recent fluctuations in cool season hay pricing have caused concern for producers. Lack of appropriate production contracts and the subjectivity of current pricing controlled by buyers have created a need for expanded markets and new pricing mechanisms. Evaluate existing markets and potential markets. Construct optimal production contracts for cool season hays based on the obtained market information. Implement marketing and contract information into enterprise budgets. Develop risk management educational programs.

Rural Communities & Public Lands In The West: Impacts & Alternatives

For many of Nevada's rural counties, the management of public lands greatly impact these economies. The Computer Generated Equilibrium Models provide a platform to analyze the economic and welfare impacts of alternative public land management scenarios.

Benefits And Costs Of Natural Resources Policies Affecting Public And Private Lands

The social impact of grazing on public lands is changing through time and the rate of change has not been examined in previous research. To be able to understand the impact of grazing on recreational uses well enough to forecast these changes far enough into the future to be of use in public lands planning.

Nevada Beef Cattle

The goal of the project is to provide proof of the concept that a set of DNA-based markers can economically and reproducibly identify those sires that are "underperforming". Simply put, we will use the same technology that identifies an individual, family or families as different from all others in a human population and apply it to beef cattle. Byproducts of this work are economically affordable parentage testing and a means to identify replacement heifers from a mixed sire.

The Influence Of Home And Child Care Environments On Toddler's Language And Literacy Skills

The environments in which toddlers are raised affect their brain development and language and literacy skills. Early language and literacy development predicts later academic success and affects adult capacities. Little is known about how aspects of the home and child care environments contribute to the literacy development of one to three year olds - particularly those from lower socioeconomic groups. The purpose of this project is to learn more about the relative influences of home and child care programs on toddler's development, focusing on language and literacy skills.

Incidence and Prevalence of P(M), Hemolytica in Nevada Sheep Populations

A Management issues related to endemic disease in wild sheep populations are complicated by multiple-use of public lands. B Accurate identification of P . haemolytica strains using conventional methodology is difficult. This project seeks to answer the questions; what are the incidence and serotype prevalence of P (M). hemolytica in Nevada desert bighorn (*Ovis canadensis* spp) and domestic sheep populations. This data will provide a baseline for future studies that explore the question: To what extent are "spill over" or "spill back" of infectious pathogens, including parasites, occurring between wild and domestic sheep populations in Nevada and the Great Basin. It is essential that these questions be answered before we pursue a testable hypothesis e.g. "spill over" or "spill back" of pathogens between domestic and wildlife species results in high mortality and death loss. Samples from this study will also be extremely useful in future work that incorporates DNA based technology to identify the degree of population inbreeding, determine the extent of bighorn population movement assess the degree of genetic diversity between California bighorn and Nevada desert bighorn sheep. They will also be available for standard laboratory approaches to determine the extent of potential mineral deficiency, parasite incidence and prevalence in wild sheep populations, etc.