



Extension Education in Cochise County

MAKING A DIFFERENCE

2010

IMPROVING LIVES AND COMMUNITIES

The University of Arizona Cooperative Extension represents a unique three way partnership of the federal, state and county government to provide local citizens access to the Land Grant University System. Partners include the United States Department of Agriculture, the University of Arizona and Cochise County. Regardless of the program, Extension expertise meets public needs at the local level through the involvement of

volunteers, stakeholders and advisory committees. Our roots in communities help us understand local needs and put university expertise and connections where they can make a difference - both in people's lives and in their livelihoods. Increasingly, Extension serves a growing, more diverse constituency with fewer resources, utilizing methods that are timely, relevant and cost-effective. These Extension-driven programs leverage and multiply each dollar of county and state support with additional outside funding. Here are just a few highlights of Extension's impacts on this county and its people during 2010:

Cochise County Cooperative Extension

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Rangeland Management

Relevance

Range livestock production is a significant part of the economic base in southeastern Arizona. Approximately 16% of the range beef cattle in the state occur in the three county area (down from 23% in 2008) with a value in 2009 of \$120,528,000, 50% less than the previous year (2009 Arizona Agricultural Statistics Bulletin). There is a need to balance livestock grazing with natural resources. This is especially important as livestock producers have been managing herds in drought conditions for the last 13 years.



Response

Four educational workshops/trainings were conducted covering rangeland and livestock management topics. The workshop topics and presentations were developed as team efforts. They included: *Southeast Arizona Rancher Day*, *Trich Testing and Body Condition Scoring*, *Safford USFS & BLM Permittee Meeting*, *Range Livestock Nutrition School*. A total of 138 people attended one or more of these workshops.

As part of the Rangeland Monitoring & Inventory Program, 50 sites on 21 BLM allotments and 52 sites on 16 USFS allotments were monitored. Monitoring reports were prepared for each allotment and given to agencies and ranchers.

Results

All workshop ratings are on a scale of 1 being not valuable to 5 being very valuable. The four workshops averaged a rating of 4.6 (80 evaluations turned in). Eighty-eight percent of participants were able to list two key concepts taught at the workshop. Seventy-four percent of participants listed at least one specific new management practice that they intend to implement in the next two years. Thirty-three percent of ranchers were actively engaged in the monitoring of their allotment.

Noxious Weeds



Relevance

The spread of noxious weeds on public, state trust and private lands in southeastern Arizona poses risks to rangeland animals (wild and domestic), threatens biodiversity and native plant species, damages park land and natural resources, and causes economic hardship for landowners. Estimates indicate that invasive plants are spreading at about 4,600 acres per day on federal lands alone in the Western United States. Weeds have invaded approximately 17 million acres of public rangelands in the West - more than quadrupling their range from 1985-1995 (USDI-BLM, 2009). Southeastern Arizona has relatively small infestations of noxious weeds compared to other areas in the West. This gives us a unique opportunity to be proactive and control weeds before it becomes no longer economically feasible to do so.

Response

Four workshops were conducted for 99 people in their local communities focusing on noxious weed identification and rapid response measures. Presentations at other events were given to 112 people on the general problems with noxious weeds, why they should be concerned and how to identify key species.

Four-hundred acres of sweet resinbush were treated with an aerial application of Spike herbicide on Frye Mesa. Field research was continued in the Kansas Settlement area to evaluate several herbicides, rates and timing of application for the control of Russian knapweed. Worked with USDA APHIS and Cochise County to treat major onionweed infestations along roads in Cochise County. The WMA provided the county with herbicide for control.

Results

Rancho Sacatal 4-H Club pulled 220 lbs. of onionweed at two residences and the US Post Office in Portal prior to the plants going to flower and seed. They developed an educational exhibit about the project for the Cochise County and Arizona State fairs. Rapid response in Double Adobe resulted in 50 lbs. of onionweed being pulled. This was a previously unknown location.

All workshop ratings are on a scale of 1 being not valuable to 5 being very valuable. The four workshops averaged a rating of 4.7 (76 evaluations turned in). At the small acreage workshops (mentioned in another section), 80% of participants were able to correctly identify the five noxious weeds occurring in their local geographic area. Ninety percent of workshop participants indicated that they will control noxious weeds if found on their property within a year of finding the new infestation.

Watershed and Land Management

Relevance

Arizona's increasing population has an enormous impact on vast tracts of public and private land. Suburban development, traditional land uses and other activities all influence natural resources such as: surface and ground water quality and quantity, soil stability, vegetation and wildlife. This rapid urbanization permanently alters natural watershed characteristics. Informed land use decisions are the key to protecting the natural resources, community character, and long-term economic health of Arizona's communities.



Response

A series of workshops were held throughout the county to address clientele questions and concerns about managing small acreage parcels. This was achieved through partnerships with the Natural Resources Conservation Service, Coronado RC&D, local Natural Resource Conservation Districts, and the Arizona Game & Fish Department. There were a total of 254 participants at these workshops (some attended only one workshop, while some attended all in the series). The following are the workshop titles (all but the first one were held in two locations on different dates):

- *Living with Wildlife: A Workshop for Rural Landowners*
- *Know Your Soils (Part 1)*
- *Know Your Native Plants*
- *Know Your Soils (Part 2)*
- *Poisonous Plants and Noxious Weeds*
- *Your Livestock and Your Land*

Results

All workshop ratings are on a scale of 1 being not valuable to 5 being very valuable. The eleven workshops averaged a rating of 4.6 (109 evaluations turned in). Ninety-two percent of participants were able to list two key concepts taught at the workshop. Seventy-seven percent of participants listed at least one specific new management practice that they intend to implement in the next two years. In a survey conducted three months following the last small acreage workshop, 11 out of 20 respondents listed at least one management practice they had implemented as a result of attending one of the workshops.

Livestock Extension Programs in Cochise County

Relevance

Range livestock production is a significant part of the economic base of Southeastern Arizona. Thirty percent of the range beef cattle in the state occur in the region. The rangelands where these livestock are raised are some of the most productive in the state. They not only support livestock grazing, but a variety of multiple uses. The intermingled ownership of federal, state and private lands creates a need to balance livestock grazing with natural resources.

Response

Livestock extension programs support research, education and extension efforts to improve understanding of animal reproduction, nutrition, genetics and physiology for improved efficiency, performance, health, and well-being of animals and to optimize resource use while delivering environmental benefits. Integrate new science-based knowledge, technologies, decision-support systems and best management practices to optimize efficient, economical and environmentally sustainable production systems appropriate in size and scale.

- Part of team to plan and implement annual Range Livestock Nutrition Workshops, one held in Benson for Cochise County producers.
- Worked as part of team to develop range livestock mineral specifically formulated for Arizona and to field test intake.
- Conducted and presented "Basic Ruminant Nutrition" for Forest Service permittees in the Nogales and Sierra Vista Ranger District. Organized program on foraging behavior of livestock and nutrition for producers at this meeting.
- Conducted a Ranching in the Future workshop focusing on alternative energy for ranchers.
- Presented "Open Range and Livestock Health Laws" at small acreage landowners workshops in Elfrida and Palominas.



Results

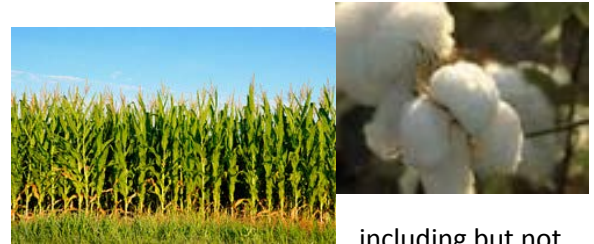
- RLN Nutrition Schools: On a Likert Scale of 1-5 with 1 being not very valuable and 5 being very valuable, respondents consistently rated the workshops high (Benson 4.6, St. Johns 4.4, Seligman 4.6 and Camp Verde 4.5). Participants were able to demonstrate increased knowledge of key concepts through interactive testing and post-test evaluations. Most indicated that they would be implementing a mineral supplementation program in the future.
- FSPermittee Meeting: All participants who turned in evaluations said they would use at least one idea from the workshop.

- Ranching in the Future Workshops: The Renewable Energy for Ranchers workshop was evaluated on a Likert scale with 1 being not very valuable to 5 being very valuable. Participants were also asked to indicate the average increase in knowledge gained on a seven step scale. The average for the Energy Workshop was 4.85 and participants reported a two-step increase in knowledge gained.

Field Crops

Relevance

Production of field crops in the Cochise County area is very diverse including but not limited to corn (silage and grain), small grains (wheat and barley), dry beans (pinto and other assorted types), cotton, and grain sorghum. Rising production costs associated with seed, fertilizer, water, and energy are making it difficult for growers to remain profitable at current commodity price levels. Recent technological advances such as transgenics, innovative pest control chemistries, improved varieties and hybrids, and site specific management technologies, to name a few, have the potential to help growers regain competitiveness in a global production marketplace. Implementation of these new technological advances can be daunting for the grower. Our responsibility in Cooperative Extension and Agricultural Experiment Station is to develop sound recommendations through research and demonstration of how best to implement these new advances in an economically and agronomically sustainable fashion.



Response

During the calendar year 2010 several research projects were conducted to continue to refine current recommendations and to evaluate several new technologies and their application to production systems in the Cochise County area. These projects included; corn hybrid evaluations with several hybrids containing novel genetics providing new options for control of corn earworm, evaluation of currently available cotton cultivars with a variety of transgenic traits and nematode resistance, and evaluation of site-specific management techniques for control of plant parasitic nematodes in corn and cotton. Results from 2010 projects along with summaries of previous years' work was presented at several grower field days and meetings during 2010 and early 2011. These meetings included a corn field day (September 2010), winter corn production meeting (November 2010), Southeast Arizona Ag Day (February 2010 and 2011) along with numerous individual farm visits to clientele across the southeast region of Arizona. These efforts resulted in well over 150 contacts with individuals involved in the production agriculture industry.

Results

Results from the research projects and demonstrations have proven the potential for significant economic benefit for growers adopting recommendations based upon these results. Selection of a corn hybrid with new corn earworm suppression technology resulted in increased yields of 8.5% over the hybrid without the new technology. At an average corn grain price of \$6/bu and increase of \$117/acre may be realized with this new technology. Results from evaluating site-specific management of nematodes have demonstrated the ability to reduce nematicide use by slightly over 50% by applying only to the areas of the field with damaging thresholds of nematodes. Not only was nematicide use reduced, yield was significantly increased (as high as 21%, average of 8%) across the treated areas. Implementing this technology will help growers become more efficient with their pest control practices by applying the nematicide only where the problem exists in the field while dramatically improving yield and yield uniformity in the treated areas. These projects will continue to be evaluated and refined in 2011. We also will begin evaluating new, innovative control measures for white mold (sclerotinia) on dry (pinto) beans in 2011. A new nematode control option utilizing a biological seed treatment will be evaluated for effectiveness in Cochise County in 2011. Evaluation of new products and technologies is critical to determine their fit in our region and also to determine their ability to be effectively implemented to improve the bottom line of our clientele in southeastern Arizona.

Commercial Horticulture

Relevance

Cochise & a portion of Graham Counties have a diverse mix of horticultural crops. Acreages grown are: apples- 1,200; wine grapes- 650; pecans- 5,800; pistachios- 2,900; stone fruit- 160; chiles- 3,000; greenhouses- 280; & mixed vegetables- 630 (2009 AZ Agricultural Statistics Bulletin, Sept. 2010). Also, there are over 100 smaller producers (gross < \$10,000/year). Many use direct farm marketing techniques to sell their products (2007 USDA Ag. Census).



Program content and delivery methods are used to educate producers about best production practices so they can make informed decisions and remain economically viable.

Response

- The Arizona Pistachio Growers Association Meetings were held the evening of April 30 & Oct. 30, with attendance of 62 and 68 respectively, including growers from New Mexico and Texas.
- The 31th SE AZ AgDay was held February 3, in Willcox, with a total of 77 growers attending the four-hour educational program. An afternoon program on wine grape production was attended by 43 people. The trade-show of 52 exhibitors helped defray the cost of the free barbecue lunch for over 300 people. I developed, organized and moderated both educational programs.
- A field demonstration of budding peach and pistachio trees was conducted on August 6, on a farm in Bowie and attended by six growers.
- Direct farm marketing meetings were held on Aug. 2, 9 and 10 in Willcox, Prescott and Tuba City respectively. These morning meetings and afternoon tours were attended by 68 growers/marketers.
- Three hour workshops for growers/marketers addressing vegetable gardening issues were presented at the Elfrida Community Garden on Aug. 26, with 27 attendees, and the St. David Farmers Market on August 28, after the market closed, with 35 attending.

Results

- Pistachio producers learned how to properly employ wind machines to avoid spring frosts, current pesticide recommendations, the market outlook and the proposed USDA marketing order. Growers, 32 in all, completed a survey evaluation tool at the first meeting and rated the overall workshop value with an average of 4.6 (1=not valuable & 5=very valuable). Evaluations showed that growers learned two new ideas and all responded in the affirmative to the question, "I will use at least two ideas from the workshop." Six stated, "I will rotate herbicides." Seven others stated "I will slow down for better coverage and calibrate sprayers." On a seven step self-assessment scale of knowledge gained a mean increase of 1.3 steps was reported.
- A total of 146 AZ Dept. of Ag. (ADA) CEUs were awarded to 44 Pesticide Applicator License (PAL) holders at SE AZ AgDay. PAL holders know how to apply pesticides correctly. Of 28 evaluations returned from the AgDay Wine Grape Production Workshop on a weighted scale of usefulness to their operations (1=low & 5=high) as 4.25. All indicated they would use at least two ideas presented. Eight growers said they would monitor irrigations more closely. Two indicated they would use fertigation techniques when watering.
- Producers surveyed responded that 86% will increase their organic production in the next five years; 83% said they increased their knowledge of organic production by attending the workshop; 76% said they would implement at least two ideas from the workshop; 63% state that after the workshop they would create a presence on one of the direct marketing websites presented. All but one respondent indicated they would use at least two new ideas from the presentations. Comments included: VERY HELPFUL! Rob answered many of my questions! Very informative! Easy to understand! Appreciate this class! Please bring more!

Urban Horticulture

Relevance

The Master Gardener Program emphasizes landscaping with appropriate plants, food production & environmental stewardship. Training of volunteers with a train-the-trainer system. To become a Certified, Master Gardener volunteers must pass an exam and contribute a minimum of 50 hours of service in support of the program. This program goal focuses on food production, landscaping with native plants and environmental stewardship.



Response

- MG Basic Training Course/Agriculture 230- 43 hour of class began Jan. 19 at Eastern AZ College. Seventeen students began the course and eight students took the final examination. Taught 11 of the 17 classes and the others were taught by specialists and Landscape Architect B. Wilson.
- MG Basic Training Course- 14-week course began March 3 at UA, South 19 students. Fifteen students took the final exam and became MG Associates
- A four week MG Advanced Training Class, "A Taste of Technology- Internet Tools" was held at UA South. G. Gruenhagen, a MG Volunteer, and the agent taught this training. Average weekly attendance was 12.
- A three week MG Advanced Training Class entitled, "Landscape Design Basics," was begun Oct. 7 & taught by certified Landscape Architect B. Wilson. Attendance was limited to 15.
- Presented four, three hour MG classes for Santa Cruz CE on Feb. 8 & 15 and Pima CE Sept. 21 a.m. & p.m., totaling 24 hours of teaching to 142 people.
- High Desert Gardening Conference, February 25-26, attended by 150 people. Participants came from AZ, NM & TX.
- The 4th tri-annual statewide MG University held Oct. 29-30 on campus and Campbell Ave. Farms, attended by 63 MG volunteers from eight counties.
- MG's staffed the Sierra Vista office for 857 hours answering 439 inquires. MG volunteers staff the "Ask the MG" table at the weekly Sierra Vista Farmers Market every other Thursday, & the Bisbee Farmers Market nearly every Saturday during the summer, answering 312 & 182 inquiries respectively. MG's also gave four community presentations.
- The "High on the Desert" Gardening Newsletter was produced by MG volunteers and agent. It was sent electronically to 958 email addresses & a printed version was mailed to 93 households.
- Graham County monthly MG meetings were held March- August with an average attendance of 15. Monthly Cochise County MG meetings had average attendance of 23. Each meeting consisted of an educational program and then a business meeting.

Results

- Master Gardener (MG) class evaluations results were using a 25 question pre/posttest averages were 11.8 & 17.7- a knowledge increase of 33.0%. Some comments on classes were: "excellent handouts," "too short- need longer classes," and "overall a very good course." The average score on the final open book test for the MG Classes was

88.3%. A self-evaluation, using a seven step scale, indicated an average increase of 2.7 levels of knowledge gained in 14 subject matter areas by taking the class.

- The High Desert Conference evaluations were completed by 69 participants. Of the 22 presentations the rating on a 1-6 Likert scale knowledge gained was rated 5.2. When asked if they would attend another conference 96% responded "yes".
- A Certified MGs answered clientele inquires, completed projects and contributed 3,356 volunteer hours. Eight of the 17 MG Associates, from the UA South class, have completed their 50 volunteer hours. Total volunteer service is equivalent to one and a half full-time positions. As a result of MG business meetings, projects were planned and completed. A donation of \$1,000.00 to the Cochise County Library System to purchase appropriate books on high desert gardening for citizens to use was made.
- The planning, installation and completion of a landscaping project at Buena High School's east entrance was done with the Class of 2010 students. This on-campus demonstration project has appropriate & named plant materials that require little maintenance.
- Currently Cochise County Herbarium at the UA, South has 1,264 species recorded online at <http://www.cochisecountyherbarium.org/> of the over 1,800 species collect. This collection aids in plant identification to manage gardens, landscapes, natural areas.
- During 2010 the Demonstration Landscape Plots, established in 2004; used the following gallons of water: cool-season turf (tall fescue)- 21,514, warm-season turf (buffalograss & blue grama grass mix)- 9,119; xeriscape with organic mulch- 36 (also, hand watered monthly with harvested rainwater); and xeriscape with inorganic mulch-0.

Water Wise Community Education

Relevance

Approximately 26 billion gallons of water are used every day in the United States alone. According to the United States Geological Survey (2005), the average American uses between 80 and 100 gallons of water daily. Of the total quantity of potable water supplied to residential homes in Arizona, the vast majority is devoted to outdoor water use such as landscape irrigation. Nationally, residential outdoor water use accounts for approximately 30% of total property use but due to high temperatures and evaporation rates it is estimated that on average, outdoor water use in Arizona accounts for over 50% of a residence's total water consumption. According to a 2011 study in the Journal AWWA, *Residential water use trends in North America*, a water company customer living in an area that experiences average temperatures between 60 -70F uses on average 14,514 more gallons than customers living in temperatures ten degrees cooler because of the higher temperatures.



One of the most significant perennial desert river reaches in the United States is the San Pedro River which lies within the Sierra Vista Subwatershed. Balancing the needs of the San Pedro River with the water needs of current and future residents is a top priority for the Cochise County Board of Supervisors, City of Sierra Vista officials, Ft. Huachuca and numerous other government entities and residents. Water education is essential to reducing the demand for water and providing a sound basis for water management decisions. "Education programs are by far the most common demand-side water use efficiency measure in the Southwest." (Western Resource Advocates, Smart Water, 2003).

Response



Recognizing that reducing landscape water demand is a key area for water conservation education, in 2010 the residential program focused on developing and launching a unique new concept called “RainScapes”. RainScapes are established landscapes that conserve non-renewable water supplies by using renewable water supplies for all water needs through rain and/or stormwater capture. With funding from a private family foundation, a public Rainscape Challenge contest was implemented awarding 5 landowners landscape conversions valued at \$5,000 to \$20,000 to RainScapes. These will serve as public demonstration sites.

In addition to the RainScape Challenge, the residential program:

- partnered with the Cochise County Juvenile Services to train 24 youth who built a water harvesting demonstration project on the Cochise County Services grounds
- partnered with Cochise County Workforce Development to sponsor a professional rainwater catchment accreditation training for 29 participants
- received in-kind sponsorship with the City of Bisbee and opened a Water Wise office in Bisbee
- launched Bisbee’s first annual rainwater harvesting tour
- increased Bisbee presentations from 3 in 2009 to 8 in 2010
- conducted 53 residential on-site visits reaching 80 residents
- held 48 workshops/events reaching 2,527 direct contacts
- is developing an on-line rainwater harvesting budget landscape and garden calculator

The commercial program assisted the Upper San Pedro Partnership’s Water Conservation Grant Program and conducted 6 Industrial, Commercial and Institutional (ICI) building audits, calculated water savings, and prepared monthly reports to the USPP Executive Committee.

Outreach: Water Wise uses a variety of outreach tools. In 2010 1 radio and 1 television interviews were given, monthly articles were written for the Sierra Vista Herald/Bisbee Daily Review and the Southern Arizona Contractors Association newspapers , periodic articles were written and published in the Bisbee Observer, monthly e-reminders were sent to a 600+ member mailing list, a dynamic RainScape web page was created , the Water Wise website was regularly updated and maintained, over 9,000 educational brochures were given out, and bus signs are on 3 Sierra Vista City Transit buses.

Results

Water Wise program continues to receive wide support from the public, the press and sponsors. The success of the Water Wise program has led to strong support by the Board of Supervisors and other partners. Water Wise personnel conducted 29 follow up calls at least 6 months after a visit for information on recommendation implementation.

Of those contacted:

- 26% had implemented some or all recommendations
- 61% were unreachable
- 2% had not made any changes yet
- 11% were not able to act on recommendations because of timing issues (seasonal visitors, planting season, other).

A written questionnaire is offered at Water Wise workshops to those who have had an On-Site Visit. From 2005 to date, 106 questionnaires have been returned. Responses are divided between those that had a water history at the site and those that did not.

<u>History</u>	<u>No History</u>	<u>Response</u>
93%	77%	Water use is less after the visit
6%	3%	Water use is about the same since the visit
1%	20%	Not sure

Of the respondents who did not have a landscape: 70% were influenced by the visit to install a low water landscape.

Out of the 253 participants that attended a Saturday Water Wise Series Workshop, 154 completed an evaluation card. Of those:

- 113 listed two water conservation practices that they learned about
- 18 of the participants listed one practice
- One hundred fourteen (74%) participants listed one or more water conservation practice they plan to implement as a result of the presentation

Overall the workshops were rate 4.7 on a 5 point scale with 5 being very valuable.

On Ft. Huachuca: "The water pumped during October is 15.2 percent less than that pumped in October 2010, 105 acre-feet, and is 50 percent less than the 28-year October tracked average, 178 acre-feet. The lower water use in October is attributed to the continued effects of the Water Wise and aggressive water leak detection programs." The Fort Huachuca Scout, 11/18/2010.

Healthy Lifestyles Programs

Relevance

The Healthy Lifestyles Programs cultivates awareness of major diseases relating to the health and well-being of the community. These conditions can be improved through a healthy diet and regular moderate physical activity. Seventeen percent of Cochise County's population report that they are in poor health. (Robert Wood Johnson Foundation 2010.) According to a report by Arizona Health Futures (2010), 63% of adults and 30.6% of youth in Arizona are overweight or obese. In Cochise County, only 17% of the youth consume the recommended amount of fruits and vegetables daily.

Response

The **Extension Food and Nutrition Education Program (EFNEP)**

is a unique federally funded program designed to reach limited resource audiences. The education is designed to assist those audiences in acquiring the knowledge, skills, attitudes, and changed behavior necessary for nutritionally sound diets and to contribute to their personal development. The Journal of Nutrition Education and Behavior 2009, reports that participants in this project experienced a significant decrease in body mass index compared to a control group. This project demonstrates the potential for the EFNEP program to have a significant impact on family dietary behaviors in populations at risk for obesity.

The **Supplemental Nutrition Assistance Program Nutrition Education (SNAP-Ed)** is a statewide program which links social marketing and community education to change dietary behaviors among participants. The SNAP-Ed program trains school districts to incorporate nutrition education into their curriculum and daily events. It also aids in reaching the community to promote preventive health concerns without duplicating the Extension Food and Nutrition Program. In Arizona, in July 2010, there were 454,358 households receiving SNAP benefits. That is the equivalent of 1,044,940 people. Total coupon issuance was \$133,588,297, an average of \$127.84 per person. SNAP participation continues to climb each month. (Arizona Nutrition Network-The Green Room August 2010).

Benefits

There are two full time staff for these programs. Teachers throughout Cochise County volunteer their time to deliver nutrition messages throughout the school day to their students for the SNAP-Ed program. Eight school districts, 11 schools, 90 teacher and 5820 students are active in our SNAP-Ed program. Six one-hour EFNEP classes were given throughout the year to low income participants. Agent developed various presentations to coincide and continue the education received in the programs. Agencies, community gardens, and grocers donate food and space for the programs. Various curricula including nutrition, financial and life planning are utilized to best serve the audience. This agent has volunteers who distribute information to the community. The programs are federally, and state, grant funded. SNAP-Ed/EFNEP outreach classes were presented for various groups teaching 21,992 community members. Attended a total of 13 community fairs and various meetings estimated reach of over 6000 community members, 7000 handouts distributed. Newsletters were sent out quarterly to over 50 community members. Extensive recruitment for the programs within schools, community meetings, health fairs and other community outlets to enroll 69 adult participants and 234 youth participants in the six hour EFNEP classes. Part time educator was encouraged to enroll 75 participants.



Results

Twenty-four hour diet recall conducted, pre and post surveys conducted to determine behavior change. SNAP-Ed teacher volunteers recorded changes in behavior, skills and knowledge from their students through the Program Teacher Survey with 23 responding.

Pre-post test showed (EFNEP)

- 58% participants improve in one or more food resources management practices (compares prices, does not run out of food or uses grocery lists),
- 68% improved their nutrition practices (meal plans, healthy food choices, low salt, reading labels, breakfast),
- 11% showed an increase on their food safety practices (thawing and storing food properly).

In the **SNAP-Ed** classes

- 37% of participants increased their knowledge on a Likert scale by more than two points on a scale of 1 to 5.

Participants reported on changing the following behaviors:

- better meal planning at home, reading food labels, and making weekly menus.

SNAP-Ed teacher survey results:

- 22 out of 23 teachers spend more time on nutrition related topics because of this program.
- Before this program teachers incorporated nutrition into school activities on average 1.5 times a week. They now incorporate nutrition into school activities on average 4.9 times a week.
- Reported improvements in physical activity examples: More physical activity in the classroom and outside; teachers are walking with students. Students have increased their consumption of fruits and vegetables after our program by an average of 30.5%.
- Teachers report that children behave better with more physical activity and nutrition.

Responses from teachers state how students and teachers improved their nutrition this year.

Examples: "Students now try fruits and vegetables at lunch;" "students and teachers have better eating habits;" "we are paying more attention to the issue (of nutrition and physical activity);" "teacher watches what she eats in front of students."

Family and Community Connection Programs

Relevance

Cochise County received 494 reports of abuse for a six month period in 2008 which accounted for nearly three percent (2.7%) of the total abuse reports in Arizona. Of those reports made in Cochise County, 312 were reports of neglect, 154 reports of physical abuse, 22 reports of sexual abuse, and 6 reports of emotional abuse. In 2006, 130 children 1-4 years of age, died in Arizona. Of those deaths, 57% were preventable (lack of parenting skills, improper supervision, minimal health and safety knowledge). The Arizona Department of Economic Security states the following, "Working with families before inappropriate parenting practices begin is essential. Studies show that nationwide, 80 percent of all severe abuse incidents occur among children under age five, and most child deaths from abuse or neglect occur at an average age of 2.6 years. The first few years of life are a critical developmental period and abuse or neglect during this time severely impacts normal development. Understanding the stages of ages, parenting skills, basic life skills, and brain development are crucial to reducing this type of abuse. From birth to age five, the brain is being "wired" into patterns for emotional, social and cognitive development which lays the wiring for the rest of their

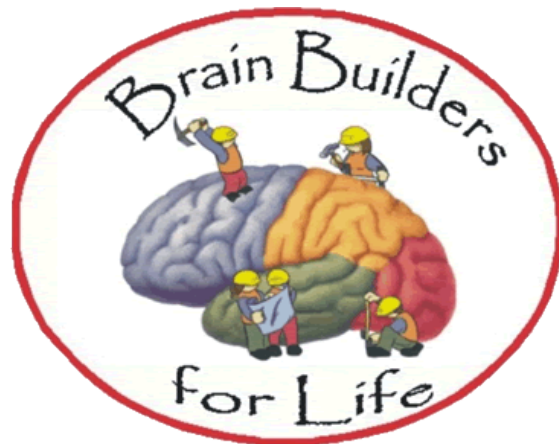


lives. Cochise County First Things First Council needs assessment identified specific issues in Cochise County relating to the birth to five population. The State and Regional First Things First approached the FCS agent to develop programs to meet the specific needs in this region.

Response

The Child Care Nurse Consultant (CCHC) is a new program implemented this year through an agreement with First Things First. This position is staffed by a Registered Nurse. The Child Care Health Consultant provides expert guidance and technical assistance on health and safety best practices and requirements.

Brain Builders Training- Prenatal to Age Three (Department of Economic Security funding) teaches about early brain development and child development to child care providers throughout the state. Brain Builders is 16-18 hour training and is formatted into six units. This agent along with another agent (Dixon) covers Graham, Greenlee, Cochise, Pima, Yuma and Santa Cruz Counties. Brain Waves which are shorter versions of Brain Builders has been started within the last two months with First Things First funding obtained by this agent through a collaboration of various social agencies in Cochise County to include: Arizona Children’s Association, Easter Seals Blake Foundation, Child and Family Resources, South Eastern Arizona Behavioral Health Services and the Cochise County Health Department. First Things First funding has been obtained by this agent to implement First Smiles oral health education and Healthy Homes Healthy Families nutrition education programs next year to address issues identified on the needs assessment and emerging issues related to the birth to 5 population in Cochise County.



Benefits

There is one Registered Nurse, one Dental Hygienist/MPH, and three trained personnel for these positions. This agent along with three Arizona agents (Dixon, Merk, Stuart), have developed and continue to update the Brain Builders (BB) curriculum. Participants received 16 hours of training with the Brain Builders Curriculum. Although budget cuts have limited state funding, this program has obtained the Department of Health and Human Services Grant to administer this vital information statewide for a third year. CCHC position funded through an agreement with the State First Things First board and two additional agreements have been made through the local First Things First Council. Agent serves as an advisory to agencies on parenting skills and brain development.

Brain Builders-Provided 5, sixteen hour institutes to 70 childcare providers from Graham, Greenlee, Cochise, Santa Cruz and Pima counties and 1 institute with 8 providers in Yuma. Extensive recruitment for the program to childcare providers by mailing each registered childcare provider information about the institute.

CCHC-Provided 51 trainings on health and safety, child development and nutrition. Provided instruction, technical assistance, and literature distribution for 21 centers, 90 providers/staff, 705 children and their families. Monthly e-newsletter to all providers promoting health and safety. Bi-lingual resource manual was compiled in collaboration with Santa Cruz County to distribute to all child care providers in the program.

Results

Five Pre-Post tests of 5-10 questions were administered to all participants at the beginning and ending of each subject taught and data was processed.

Participants entered information into a "Brain Baby" journal. Evaluations were developed and conducted to evaluate course content and relevance.

- 78 participants in Brain Builders improved their knowledge from Pre-Post tests with an average increase in knowledge of 83% in the following areas:
 - Brain Development, Prenatal Development, Physical Development, Emotional-Social Development, and Cognitive Development

Brain Baby Journal results:

- Participants recorded comparisons of teaching material to their childcare experiences in their journals.
- Participants recorded techniques learned and how they used them with the children.
- Participants recorded how they used what they learned to make changes in curriculum and daily activities and how they handled children in their centers.

Impacts-selections of participant's journals:

- "I didn't know that so many things have a part in the way a brain is developed.";
- "...and we create the environment for the children...we are with the children more than they are with their own families and we must remember that we influence their brain development.";
- "I have always worked in day care...through this class I can see what the children are getting and what they (still) need.";
- "Through this class...I have learned how to not make the same mistakes that my parents made."

On all eight evaluation questions, 95% of the participants rated the Brain Builders for Life Training as Excellent with the balance (5%) rating the training as Very Good. Evaluation comments included:

- "I went to my co-workers and showed as much as they were willing to listen..."
- Had them watch youtube video on the orphanages in Romania (shocking & realistic) and
- "This has been the best training that I have attended over the years"
- "...and you showed us how to be better human beings and to understand that there are others with special needs."

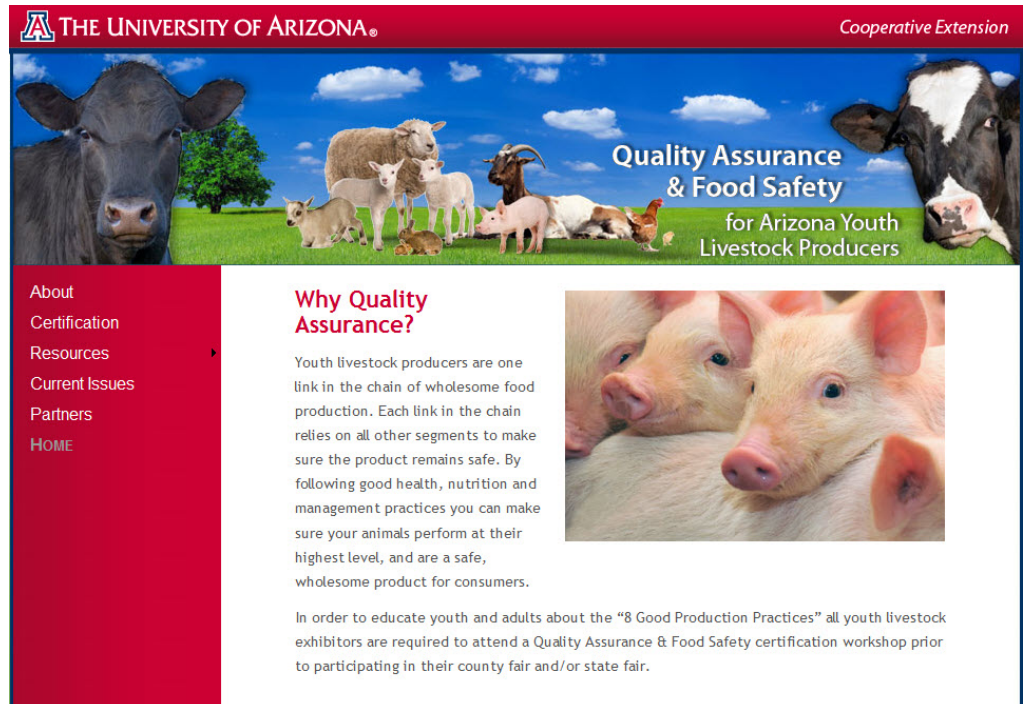
CCHC- A formal needs assessment was conducted with the provider on the first visit to all assigned centers. Information was collected from providers regarding their needs and expectations.

- Providers implemented the following after training: asthma and allergy action plans, family style dining, sunscreen and safety policies, immunization records checks, techniques to reduce the transmission of infectious illness/disease, proper food handling, and indoor outdoor play safety policies.
- Knowledge gained was indicated on a Likert scale of 0 to 5. Five being the highest and one the lowest or zero being no knowledge of the subject.
 - 35 reported their knowledge increased from two to five points
- Providers stated that they will no longer refuse to accept a child needing EpiPen care.

Youth Development through 4-H Animal Science Projects

Relevance

The definition of "youth development" is broad, and can mean different things to different people. Often the definition includes the general idea of an intentional process that helps young people meet key developmental needs. The development of subject matter and life skills through experiential learning is the foundation of 4-H programming. The general approach to 4-H Youth Development today looks at the educational content in relationship to the youth development context that focuses on the essential elements (belonging, mastery, independence, generosity) identified by the National 4H Program as necessary for youth to succeed.



THE UNIVERSITY OF ARIZONA Cooperative Extension

Quality Assurance & Food Safety for Arizona Youth Livestock Producers

Why Quality Assurance?

Youth livestock producers are one link in the chain of wholesome food production. Each link in the chain relies on all other segments to make sure the product remains safe. By following good health, nutrition and management practices you can make sure your animals perform at their highest level, and are a safe, wholesome product for consumers.

In order to educate youth and adults about the "8 Good Production Practices" all youth livestock exhibitors are required to attend a Quality Assurance & Food Safety certification workshop prior to participating in their county fair and/or state fair.

Arizona's livestock industry provides a significant impact (1.2 billion per year, *2009 Arizona Agricultural Statistics Bulletin*). Youth need to have the skills, knowledge and interest to work in agriculture, make sound policies and continue this important state industry. Skills learned in working with their projects and through the judging teams can be used in life as decision making and reasoning tools. When youth learn the process of evaluation through livestock judging, these same skills can be integrated into other real life situations. According to Boyd, Herring & Briers (1992) livestock judging has been associated with developing a variety of employer-preferred life skills such as communication, problem solving, and decision making.

Response

Livestock shows provide a unique educational experience for youth development. Caring for an animal requires responsibility and determination. Many youth begin learning positive life skills, including responsibility, at an early age. The annual county fair is an opportunity to highlight the many youth accomplishments and showcase the knowledge and skills youth have gained. Youth are provided integrated, experiential learning opportunities through their participation in project and club meetings, judging events, activity days, shows, and quality assurance and project area workshops.

Results

A year end evaluation was completed by county fair participants. Below is the percentage of 124 animal science respondents that responded "**quite a bit**" to "**a lot!**" (scale of none, minimal, some, quite a bit, a lot!) when asked the following questions.

4-H	FAIR	How much has participation in 4-H and county fair helped you to..
85.4%	81.5%	..gain new skills
81.3%	76.3%	..accept responsibility for doing a job?
74.8%	81.7%	..develop sportsmanship?
74.2%	81.7%	..develop confidence?
69.4%	70.7%	..set goals and work to achieve them?
69.4%	62.6%	..work as a team with other members?
63.7%	58.7%	..keep good records?
62.1%	58.1%	..share your knowledge and skills with others?
54.0%	54.8%	..make new friends?
52.4%	65.6%	..demonstrate skills learned in 4-H to the public?
50.0%	44.1%	..mentor or work with younger members?

Members were asked to list the two most important things they learned this past year. About 30% of the 243 items listed were life skill related such as: being responsible, leadership in my club, persistence, how all these things I have learn in 4-H can be applied to real life, helping others, sportsmanship, how to be a good officer, how to keep records, be on time to every meeting, not everything is about winning, and sportsmanship. Most of the other 70% of responses were subject matter/skill related such as: Make sure my animals are always fed and watered, learned how to show my rabbit properly, learned not to give my pig steroids, how to correct horses leads, the importance of good shelter, how to manage the weight of my swine, how to castrate a goat and general care of animals.

Water Wise Youth Conservation Education

Relevance

Youth have an important role in water conservation. Individually, as members of a family and community, and as future citizens, the youth of today have the power to act as catalysts to initiate change and guide development of future activities to ensure the availability of water resources. Balancing the needs of the San Pedro River with the water needs of current and future residents is a top priority for the Cochise County Board of Supervisors, City of Sierra Vista officials, Ft. Huachuca, and numerous other government entities and residents. Water education is essential to reducing the demand for water and providing a sound basis for water management decisions. "Education programs are by far the most common demand-side water use efficiency measure in the Southwest". (Western Resource Advocates, Smart Water, 2003).

Response

There are many ways to emphasize the culture of water conservation. This has been accomplished in Sierra Vista, Ft. Huachuca and areas throughout the county through teacher



training, classroom presentations, family science nights, after school programs and educational water festivals. Educational models such as the Groundwater Flow Aquifer, Rolling River, Water History Trunk, the EnviroScope and appearances by Wettle the Waterdrop as well as hands-on activities directly aligned to the Arizona standards are the backbone of an evolving curriculum to teach children important concepts in water education.

- Water Wise Youth Educators were requested to give presentations that reached 3,645 students during the year. Many classes have a series of four water lessons during the week that build on each other.
- An additional 1,724 youth were reached in after school and water science events.
- Partnered with UA South to conduct training for 25 students in the teaching program. Water-based lessons taught observation skills, and gathering and interpretation of data.
- A Water Wise Youth page was included in the Water Awareness Month newspaper insert - in all county papers for one issue during April.
- Two Water Wise and Energy Smart classroom lessons were aligned to the state standards.
- The 13th annual water conservation poster contest was held with 557 entries. Winning posters were displayed in Sierra Vista's Aquatic Center.
- A Sierra Vista/Ft. Huachuca 4th grade Water Festival was held in the fall for 523 students. The students participated in three educational activities at the Festival.

Results

Two-hundred-thirty-three water conservation classes were taught in 24 elementary and middle schools in the county. One teacher in the rural part of the county said "Several students could relate to the [groundwater flow] model because they have had experience with wells and recycling water (grey water)." Several Sierra Vista teachers followed up the classroom presentations by taking their classes to the Water Festival.

Nineteen teacher evaluations returned rated the lessons as follows:

	Yes	Mostly	Not Quite	No	Not Sure
Accomplished the necessary learning objectives	100%				
Actively engaged students	100%				
Positive student responses	95%	5%			
Inspired follow-up discussion and/or activities	90%	10%			
Met academic standards for the grade level	100%				

4-H Science, Engineering and Technology Education (SET)

Relevance

The National Assessment of Educational Progress reported in 2005 that Arizona's science ranking was 41st of the 44 states measured. Of the eighth grade students tested, only 20% were at a proficient level (down from 23% in 2000) and 49% were at the basic level (down from 55% in 2000). This is concerning as the 2009 Arizona Workforce Informer identifies Professional, Scientific, and Technical Services as the largest employment area in Cochise County and the second largest growth area for future employment.



The 4-H Science (formerly SET) Program forms part of the long-term solution for improving science literacy and aptitude of America's youth. 4-H has a national movement to address this critical challenge by preparing 1 million new young people to excel in science, engineering, and technology by 2013. A local focus of this effort was to collaborate with schools that currently hold 21st Century grants from the Department of Education that have science, technology, engineering and math objectives and enhance educational opportunities for youth via 4-H curriculum and materials.

Response

Center for Academic Success (CAS) Charter School Summer Program served diverse youth (4% Asian Pacific, 26% African American, 22% Hispanic, 2% Native American, 47% Caucasian)

- 14 hours of Robotics Instruction to 28 youth ages 9-14
- 14 hours of Rocketry instruction to 37 youth ages 9-14
- 21 hours of technology and video (Adobe Youth Voices) instruction to 31 youth ages 9-18
- 14 hours of Food Science and Nutrition instruction to 18 youth ages 11-14

Math and Science Exploratorium at Cochise College for 68 youth from Cochise County schools.

Fort Huachuca Middle School/Teen Program gardened under the instruction of the WaterWise/Energy Smart Educators. 24 youth, 27 hours of instruction.

Willcox Tech Club/Adobe Youth Voices Camp - 15 youth, 24 hours of instruction on topics including: Digital Photography, Photoshop and Movie Making (Windows Movie Maker and Adobe Elements). Youth filmed, edited and produced movies on topics of their choice.

Thirty-five students from across the state attended the Natural Resource Conservation Workshop for Arizona Youth. The workshop theme was forestry. Teams of students incorporated what they learned during the week into movies that they filmed and produced.

Results



CAS Charter School began a 4-H garden in spring 2009 with five youth. Through a 4-H partnership, they now have 59 youth, 31 hours of instruction in 4-H gardening, a rainwater harvest tank, expanded beds, a three-tiered grow light, and are installing the greenhouse received in a grant from Lowes (which will house the hydroponics lab). The garden club started a technology club, which gave CAS the idea to incorporate 4-H as the program of choice for their summer offerings. In fall of 2010 a culinary club and a Cloverbuds Junior Master Gardener club (for 1st-3rd grade) were offered in addition to other 4-H projects. In 2010, 294 new youth received 4-H science programming. CAS 4-H club was chartered in the summer.

CAS 4-H gardening club participants took the Arizona Life Skills Assessment tool. Fifteen participants responded to the post/pre (retrospective) IRB approved, Likert Scale survey. 100% of participants reported gains from pre to post program.

- 33% (pre) to 80% (post) reported they usually or always used their natural resources wisely
- 33% (pre) to 93% (post) said they usually or always knew the steps to germinating a plant
- 26% (pre) to 93% (post) stated they usually or always knew how to collect rainwater for garden use
- 27% (pre) to 94% (post) reported they usually or always could manage money from plant sales (at a farmers market)

CAS 4-H Technology Club participants reported gains on survey results. On an IRB approved, Likert Scale instrument with 1=low and 4=high on the pre-post questions, students reported a 42% increase overall as shown in the chart below. 100% of participants reported gains from pre to post program.

Indicator	Pre score	Post score
Decision Making	2.9	3.3
Wise use of Resources	2	3.1
Communication	2.3	3.3
Understand how to plan a media piece	1.9	3.3
Am able to analyze videos	2.1	3.3
All Indicators	2.4	3.4

Bowie School chartered the Panther's 4-H club in 2010 with gardening and photography anchoring their project offerings. One grant has been written to acquire a rainwater harvest tank and expand their greenhouse to include garden beds. There are 17 new members in this new club which offers 12 project areas.

Math and Science Exploratorium participants rated their Rocketry activity. Of the 68 youth, 32% had worked with a rocket previously, 69% had kept an observation log, 52% (pre) to 78% (post) rated themselves as knowing some or a lot about rockets. At the close of the day, 4-H established a partnership with Imagine Charter School. As of this report, 29 youth are enrolled in 4-H gardening, 20 in 4-H aerospace, and 24 in 4-H photography/videography. Five leaders have been trained and five gardening grants written. They have received a grant for a rainwater harvesting tank that is installed, have a compost bin, and 19 donated straw bales for beds. Their school is in the chartering process. In only four months, 73 new youth received 4-H science programming and will continue this opportunity as a community club structure is in place with teachers certified as 4-H leaders.

Tech Club/AYV Camp - Youth demonstrated what they had learned about movie making by making two of their own movies. Eight youth entered films in the statewide 4-H Film Festival. Five youth entered a movie in the county and state fairs. One youth wrote in their end of the year evaluation about the two most important things they learned this year "learn new software and how to teach others." Another youth wrote the following on their year-end evaluation: "The two most important things I learned this past year were how to make a movie and how to use Photoshop." Six youth entered photography exhibits in the Willcox Art League Spring Show.

NRCWAY - Students demonstrated their understanding of forestry and ecological principles and concepts through their films that were shared with parents the last day of camp.

Volunteer Development

Relevance

Volunteers are the life blood of the 4-H program. It is their service that makes or breaks the 4-H experience for the youth in a club. In 2009, Arizona 4-H transitioned to "Leading Fun & Effective Meetings" training paired with the Western Region's e-learning modules to bring new leaders into county programs. At Leading Fun & Effective 4-H Meetings, a formal needs assessment or club "checkup" was used to measure the status of how clubs were



Inspire the Next Generation...
Become a 4-H Volunteer!

implementing the four essential elements of 4-H (Mastery, Belonging, Independence, and Generosity) that are one of the six program priority areas for 4-H.

Response

- 10 Leader Certification Trainings. 3 hours.
- 52 Leaders Trained
- Seminar to 47 care providers at the Arizona Afterschool Conference, Phoenix. 75 minutes.

Results

At the close of training, volunteers were asked to complete a Likert scale four point (1=low, 4=high) (retrospective) survey. Fifty two volunteers responded and the following were measured from pre to post.

- I understand the importance of balancing business, knowledge, and fun at 4-H meetings -- 0.75 increase
- I understand what the four essential elements of 4-H are -- 1.1 increase
- I understand how to build the four essential elements of 4-H within a club program -- 1.3 increase
- I know how to plan a 4-H year (for club or project) -- 1.3 increase
- I understand the importance of goals and how to help youth set them -- 0.7 increase
- What positive effect will this training will have on your 4-H club -- 87% reported a lot or huge.

At the Arizona Afterschool Conference participants completed a four point (1=low, 4=high) Likert Scale post/pre survey. Of the 39 respondents, the following increases were measured, 1.3 to 3.5 for "I understand what the four essential elements of 4-H are," 1.3 to 3.3 for "I understand how to build the four essential elements of 4-H within a program." Thirty-five of the 39 participants stated that they felt that this training would have "a lot" or "huge" positive effect on their after school program (90%).

Leadership and Citizenship through LEAP Camp

Scientists have long studied what is needed for the positive development of youth. In 4-H the set of elements that compose that need are 1) Mastery, 2) Belonging, 3) Independence, and 4) Generosity. Independence occurs when youth begin to understand that they are able to influence their future through decisions and actions (Kress, 2006). Gambone, Klem, and Connell, (2002) provide a framework for adult outcomes which include; economic self-sufficiency, healthy family and social relationships, and community involvement. Generosity folds into that framework as young people in 4-H actively participate in community service projects which build competence, confidence, connection, character, caring and compassion which promote skills needed to become a successful adult (Lerner, et al, 2005).

Leadership, Education and Adventure for Pre-Teen (LEAP) Camp invites Cochise, Santa Cruz, Graham, and Greenlee counties to two intensive counselor trainings (one in January, one in November) that take place prior to camp. Camp counselors plan, organize, and instruct the sessions at camp with the intention of



campers duplicating those activities in their 4-H clubs after camp as a model of Van Fertman and Linden's (1996) transactional vs. transformational leadership. In order to utilize the IRB approved, Arizona Life Skills Assessment tool, youth must have a minimum of six hours of instruction on a topic which drives the need for overnight/camp venues. Qualitative and quantitative evaluations from 2009's events are reviewed by youth and adult partners during 2010's planning sessions. Those results combined with the ideas developed by the planning team, and community partner resources are woven together to create the plan for programming for youth in this area.

Response

- January LEAP Camp Counselor Training for 18 youth from multiple counties. 20 hours.
- November LEAP Camp Counselor Training for 15 youth from multiple counties. 10 hours.
- February LEAP Camp for 59 participants. 48 hours.
- June Training on the 7 Habits of Highly Effective Teens for 20 youth. 7 hours.

Results

LEAP Camp Counselor Training Life Skills Assessments showed 100% of participants made gains from pre to post program. Life skills (on a four point scale, 1=low, 4=high) reported increases in leadership from 2.7 to 3.4, wise use of resources from 3 to 3.6, communication from 2.9 to 3.4, useful/marketable skills from 3 to 3.8, self-responsibility from 3.1 to 3.5, and an overall increase from 2.9 to 3.6 (24%). Life Skills Assessment results from LEAP camp revealed 88% of participants made gains from pre to post program. The four point Likert scale found that communication skills rose from 2.9 - 3.4, decision making 2.8 - 3.2, self-responsibility 3.2 - 3.7, accepting differences 3.4 - 3.7, and leadership 2.8 - 3.5. Average overall gain from 3 to 3.5 or 17%.

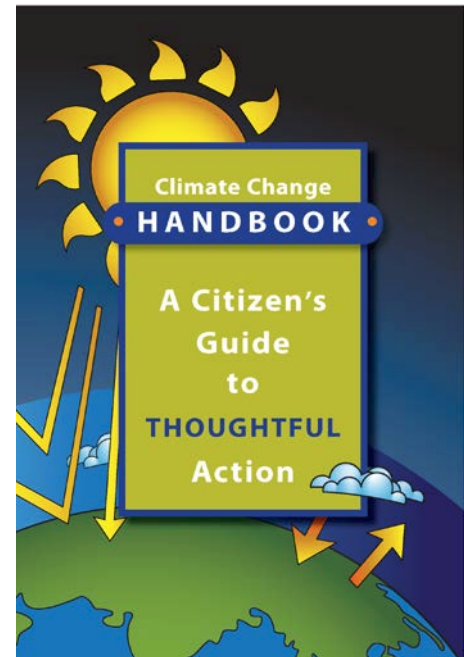
Through a partnership with the Cochise County Workforce Development Program, 20 youth from Benson, St. David, and Palominas were provided Covey's 7 Habits training. At the close of that workshop, youth took the Arizona Life Skills Assessment Tool. Youth reported a pre-post increase of wise use of resources from 2.6-3.4, communication from 2.5 to 3.4, leadership from 2.8 to 3.2, and self-responsibility from 3 to 3.5. Total increase from pre to post was 2.8 to 3.5 or 25%. Qualitative comments included the most important things gained were; taking responsibility for my actions, I need to make proactive decisions, and planning.

Land Use, Sustainable Development and Economic Development

Relevance

The Community Resource Development position was created in 2007 to help address the broader issues of rural development and impacts. The Morrison Institute for Public Policy at Arizona State University projects Arizona's population to reach over 8 million people by the year 2030. Where and how these new residents will be accommodated becomes an important issue for planners and decision makers everywhere in the Interior West. The 2009 Arizona Department of Economic Security population estimate for the state of Arizona is 6.6 million people. Census 2010 data indicates that Arizona has grown by nearly 25% in the last decade – the second fastest growing state in the nation behind Nevada in spite of high mortgage foreclosure rates and an economic downturn. Moreover, according to the 2008 Arizona Agricultural Statistics Bulletin, between 2002 and 2008, the amount of farmland in Arizona dropped by 500,000 acres.

With Arizona's increasing population and loss of agricultural lands, "business as usual" will not be sustainable in terms of land use, energy, and food production. This program incorporates outreach activities around the topic of sustainable development, defined as "meeting the needs of the present without compromising the ability of future generations to meet their own needs," especially as it relates to land use practices, zoning, the disposition of large tracts of land, and renewable energy options.



Overall, the primary purpose of these programs is to bring high quality information regarding land use planning, zoning, regulatory frameworks, land conservation options, economic development, sustainable design and sustainable development concepts to rural decision makers, small acreage land owners, developers, ranchers, concerned citizens, economic development interests, and school districts.

Response

The following are activities in this program that occurred in Cochise County during calendar year 2010.

- ✓ Continued enhancement of Arizona's Changing Rural Landscapes website (<http://ag.arizona.edu/rurallandscapes/>) - Extension's repository of land use, sustainability and economic development resources and information.
- ✓ Co-coordinated and continued construction of a youth garden centered around sustainability principles for teachers, adult volunteers and children at the Greenway Elementary School in Bisbee which resulted in the hiring of a Garden Coordinator.
- ✓ Organized with architect/rancher John Riggs, eight workshops and meetings of the Riggs Settlement Rural Plan Area (RSRPA) in Cochise County, which has resulted in a draft plan that identifies economic development options and policies while maintaining grassland resources and the ranching heritage of the area. (approx. 28 participants).



- ✓ Conducted two seminars with Tom Runyon of Fort Huachuca on water and growth issues in Sierra Vista Sub-watershed, titled "Can We Have it All?" (54 participants total)
- ✓ Presented workshop titled: Sustainability-What Does It Really Mean? From the Global to the Local View for Cochise County's Master Gardeners and Bisbee's Warren SHARES group (18 participants in all).
- ✓ With consultant Melanie Greene, organized and conducted a grant writing workshop in Sierra Vista with 35 participants.
- ✓ Collaborated with University of Arizona Planning Degree Program visiting professor Iris Patten on developing a GIS-based land use suitability analysis tool for economic development of renewable energy in rural communities, using Bowie as a pilot area.
- ✓ Organized and conducted the Bowie Economic Development Workshop with 25 participants and six speakers presenting on a range of economic development topics such as USDA Rural Development grants, Cochise Work Force Job Training opportunities, SEAGO's Pathways Out of Poverty program, UA Direct Marketing resources, and regional asset inventorying.
- ✓ Working with the National Network of Sustainable Living Educators (NNSLE), co-authored the *Climate Change Handbook – A Citizen's Guide to Thoughtful Action* that is available to the public and decision-makers in Cochise County via the internet or hard copy.

Results

- ✓ Evaluations for the "Can We Have it All" presentation indicate an average rating of 3.8 out of 4 where 4 is Highly Valuable for the overall presentation. Respondents noted a range of things they will pursue as a result of the workshop, such as rainwater harvesting and reducing water use.
- ✓ Evaluations of Sustainability workshop indicate an average rating of 3.8 out of 5, where 5 is Very Valuable for the workshop overall. 100% of respondents noted that they will pursue at least one idea from the workshop with ideas ranging from driving less, growing their own vegetables to not using plastic bags.
- ✓ Participants in the Grant Writing Workshop rated the workshop, on a scale of 1-5, with 5 a Very Valuable an average of 4.97 and 100% said they would use at least one idea from the workshop. Things they would pursue ranged from pursuing grants and resources provided, to sharing knowledge with other non-profits.
- ✓ Participants in the Bowie Economic Development Workshop, on a scale of 1-5 with 5 as Very Valuable rated the overall workshop an average of 4.35. 100% of respondents noted they would use at least one idea from the workshop. Ideas ranged from pursuing new grant funding to sharing new information with their community.

Looking Ahead

This program will continue to develop and foster training opportunities, resources and workshops that will assist small acreage land owners, ranchers, farmers, economic development interests and decision-makers in Cochise County.