2008 Annual Report to:

Gila County Board of Supervisors
Gila County Extension Advisory Board
And
The San Carlos Apache Tribal Council
Gila County staff meet at the Boyce Thompson Southwest Arboretum at Superior for a staff meeting. Left to right, front row: Kate Hawker (Intern, BYU-ID), Celestina Fast Horse, Sabrina Tuttle, Susan Bolt; back row: Pam Leonard, Jim Sprinkle, Mark Bierner (Office of Arid Land Studies, assisting with Chris Jones duties while he was on sabbatical), and Mike Leonard. Chris Jones not in picture due to sabbatical.

Cover photo: Scott Stratton (NRCS, Payson) digs a soil pit to profile soils on the Hardt Creek Allotment (3V Ranch) of Tonto Basin while Hugh Dorathy of the US Forest Service looks on. (Photo by Dan Robinett).
The following pages describe the work of the Gila County Faculty. Faculty implement programs that are planned and conducted in response to needs assessments accomplished through surveys, interviews and discussions with Advisory Boards, County Supervisors, county residents, San Carlos Apache Tribal organizations and Tribal members. In addition to the planned programming efforts of Extension Faculty, a large amount of time is devoted to assisting county residents with specific questions. Volunteers are an integral part of Gila County Extension programming.

Gila County Cooperative Extension has offices in three locations. If you have questions or would like additional information, please contact us:

**Gila County Cooperative Extension Offices:**
- Payson - (928) 474-4160
- Globe - (928) 425-7179
- San Carlos - (928) 475-2350

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**GILA COUNTY COOPERATIVE EXTENSION FACULTY AND STAFF**

### FACULTY

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
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<tbody>
<tr>
<td>Jim Sprinkle</td>
<td>County Extension Director &amp; Area Extension Agent, Animal Science</td>
<td>Payson Office</td>
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<tr>
<td>Mark Bierner</td>
<td>Professor, Office of Arid Land Studies, Globe Office</td>
<td>Globe Office</td>
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<tr>
<td>Lani Hall</td>
<td>Extension Agent, 4-H Youth Development, Payson Office</td>
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<tr>
<td>Christopher Jones</td>
<td>Extension Agent, AG/Natural Resources, Globe Office</td>
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<tr>
<td>Sabrina Tuttle</td>
<td>Assistant Agent, AG/Natural Resources &amp; 4-H Youth Development, San Carlos Office</td>
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### STAFF

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<thead>
<tr>
<th>Name</th>
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<tr>
<td>Susan Bolt</td>
<td>Administrative Associate, Payson Office</td>
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<td>Celestina Fast Horse</td>
<td>Secretary, San Carlos Office</td>
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<tr>
<td>Pam Leonard</td>
<td>Administrative Secretary, Globe Office</td>
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<tr>
<td>Michael Leonard</td>
<td>Office Specialist, Globe Office</td>
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GILA COUNTY
BOARD OF SUPERVISORS
2008

District II—Mr. Jose M. Sanchez, Chairman
District I—Ms. Tommie C. Martin, Vice-Chairperson
District III—Ms. Shirley Dawson, Member

GILA COUNTY COOPERATIVE
EXTENSION ADVISORY BOARD
2008

Clark Richins, Chair
Judy Baker
Letha Cline
David Cook
Kenny Evans
Therese Hicks
Justin Marks

SAN CARLOS APACHE TRIBAL COUNCIL 2008

Wendsler Nosie, Chairman
David Reede, Vice Chairman

7 Mile District: Karen Key and Bernadette Goode
Gilson Wash District: Charles Stevens and Tao Eptison
Peridot District: Harding Burdette and Walliman Clark
Bylas District: Jonathan Kitcheyan, Martha Interpreter-Baylish, and Terry Rambler
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Sights and Scenes of Cooperative Extension at Work .......................................... 36
Cooperative Extension provides educational leadership impacting critical social, economic, agricultural, and environmental issues. Research based educational programs focus on strengthening youth, families and communities, environmental stewardship, and economic vitality. Cooperative Extension benefits from the extensive involvement of volunteers in the design and implementation of its education outreach. It’s programs target the diverse populations of the state.
Passage of the Smith-Lever Act by Congress in 1914 officially established the Cooperative Extension Service. The Act provided states with federal funds to carry out Extension work as agreed upon by the respective land-grant colleges and the federal government.

When the Arizona Legislature accepted the provisions of the Smith-Lever Act of 1914, it empowered county governments to appropriate funds to provide additional support to each local county Extension program. It was this cooperative funding from federal, state and county governments that led to the current name, "Cooperative Extension."

In 1921 the State Legislature endorsed the organization of County Farm Bureaus to be the official, county-level sponsors for Extension programs. The enactment of Arizona Senate Bill #179 in 1964 repealed the 1921 legislation. This 1964 legislation established County Extension Boards, appointed by the Board of Supervisors, to be the official sponsors of Extension programs offered in each county.

House Bill #2125, passed in 1974, amended the 1964 legislation to provide greater latitude in the criteria for appointment of County Extension Board members. This legislation also allows counties greater flexibility in the amount of their financial support of County Extension budgets. A further revision in 1986, Senate Bill #1306, addressed the responsibility of each County Board of Supervisors to provide reasonable office space for Cooperative Extension.

In 1991, Congress established the Extension Indian Reservation Program (EIRP) under section 1677 of P.L. 101-624, the Food, Agriculture and Trade Act ("Farm Bill"), which reinstated federal support for extension programs on Indian Reservations. Currently, there are 28 projects on 27 reservations, one of which is on the San Carlos Apache Reservation. Federally Recognized Tribal Extension Program (FRTEP) Extension Agents are employees of the 1862 land grant Cooperative Extension Program, although funding is through the federal Extension branch, CSREES.
$750,859 salaries, programs and equipment and
11,971 face-to-face contacts with county residents with
2,199 hours of donated time from 315 volunteers

COOPERATIVE EXTENSION
- Is in more than 100 colleges and universities that comprise the nation’s Land-Grant University System
- Is in all 50 states and U.S. Trust Territories
- Has an office in or near most of the nation’s approximately 3,000 counties
- Has support from more than 600,000 volunteers nationwide, impacting 6.5 million young people in 4-H

ADDRESSING CRITICAL ISSUES IN GILA COUNTY
- 4-H Youth Development
- Animal Science
- Range Livestock Production
- Youth Leadership
- Home Horticulture & Pests
- American Indian Programs
  - Livestock & Range Management
  - 4-H Youth Development
- Natural Resources
  - Forest Health/Firewise
  - Range Management/Monitoring
  - Noxious Weeds
  - Climate Education
- Water/Watershed Education

In 1862, Abraham Lincoln signed into law the Morrill Act, which started land grant universities.
Personal Impacts to Gila County Residents

Speaking of the Climate Change Workshop, “Congratulations on an excellent workshop. It was well organized, and I sure learned a ton.” Wayne D. Spencer, Ph.D., Conservation Biology Institute.


From a participant in the Range Livestock Nutrition Workshop, “This has been the most informative class I’ve been to yet.”

From Dr. George Ruyle, University of Arizona, “Jim: Thanks much for your help with Range 101. You do a great job and we are lucky to have your help.”

From Dr. Soyeon Shim and Dr. Lynne Borden, University of Arizona, “In our visit with Jim Sprinkle we learned a great deal about the challenges facing Gila County. It was clear that Jim provides tremendous leadership in the county.” Speaking of Lani Hall, they further stated, “It is clear that she is actively involved in making a difference in the lives of young people.”
One youth from Northern Gila County was selected to attend the National 4-H Congress in Atlanta, GA. She gave a report to her community club and encouraged other youth to apply as it “was a once in a lifetime experience!”

Livestock Judging events were held in three areas of the county. Seventeen youth from Gila County went on to enter the Arizona National Livestock Show Junior Livestock Judging contest. One junior individual placed as did one of the junior teams.

4-H Horse project members continued to be involved in horse shows at both the county and state levels. In 2008, 14 youth attended the state horse show and horse judging contest. Several youth placed in various classes and said that they are learning a lot through their 4-H experiences.

Chris Jones was the lead author of the peer-reviewed Living with Wildfire: Homeowners' Firewise Guide (AZ1416) in 2005. At that time, $74,000 of federal funds were used to print and distribute 278,000 copies. Due to its popularity and demand, $8,000 were used to print 24,000 copies of a slightly revised version in 2008.

“Chris, thanks again for stopping to help us with the problems we're having with the dying mesquites. Hopefully something will turn up that we haven't thought of yet! Keep us posted. Thanks and Good Luck.” Roger King.

One teacher at San Carlos elementary school stated the following about the JMG Gardening/Nutrition Program: “My students were motivated and enjoyed learning about gardening. High school students were great role models.”

Three Youth Interns had the following to say about the program: “Teaching the little kids was so much fun. Knowing that we were all teaching them about nutrition and seeing them smile every time they saw us walk in the classroom was great. I love them!” “Teaching the kids was a blast, seeing the excitement they get from learning about nutrition.” “The kids inspired me to teach and for that they showed me what I want to do in my life—become a teacher.”
University of Arizona Resources in Gila County 2008

The following have provided programs, consultations, mediations, or other forms of support on one or more occasions.

Dr. Ron Allen, Head, Department of Animal Sciences
Robert Armstrong, Support Systems Analyst, Sr., Arizona Cooperative Extension
Dr. Kirk Astroth, Youth Development Director, State 4-H
Dr. Lynn Borden, Family and Consumer Sciences Specialist, Norton School of Family Sciences
Bill Brandau, Associate Agent, Agriculture and Natural Resources, Graham County
Dr. Paul Brown, Biometerology Specialist, Department of Soil, Water, & Environmental Science
Dr. Jim Christenson, Director, Arizona Cooperative Extension
Dr. Mike Crimmins, Climate Specialist, Department of Soil, Water, & Environmental Science
Rachel Cummings, Instructional Specialist, Sr., Pinal County
Dr. Peder Cuneo, Extension Veterinary Specialist, AZ Veterinary Diagnostic Lab
Dr. Jack Elliot, Head, Department of Agricultural Education
Dean Fish, Area Agent, Agriculture and Natural Resources, Santa Cruz, Cochise, and Pima Counties
Glen Gigsted, Video Production Coordinator, Arizona Cooperative Extension
Kimberly Gressley, 4-H Agent, Pinal County
Mike Hauser, 4-H Agent, Apache County
John Hays, Jr., Senior Research Specialist, School of Natural Resources
Dr. Joe Hiller, Chair, Watershed Resources Program & School of Natural Resources; Native American Programs
Dr. Larry Howery, Range Management Specialist, School of Natural Resources
Phil Jenkins, Curatorial Specialist, Sr., University of Arizona Herbarium
Dr. Colin Kaltenbach, Vice Dean, College of Agriculture & Life Sciences; Director, AZ Experiment Station
Dr. Bob Kattnig, Associate Livestock Extension Specialist, Department of Animal Sciences
John Kava, Research Specialist, V Bar V Ranch
Dr. Bill McCloskey, Associate Weed Specialist, Department of Plant Sciences
Dr. John Marcello, Professor, Department of Animal Science
Andy Medina, Support Systems Analyst, Sr., Arizona Cooperative Extension
Dr. Walt Meyer, Research Specialist, School of Natural Resources
Gerald Moore, Extension Agent, Agriculture and Natural Resources, Navajo Nation
Dr. Randy Norton, Resident Director, Safford Agricultural Center
Amy Parrott, 4-H Agent, Yuma County
Cindy Pearson, Administrative Assistant, Graham County
Channah Rock, Water Quality Extension Specialist, Soil Water & Environmental Sciences
Lauren Romig, 4-H Youth Development Agent, Graham County
Candice Rupprecht, Statewide Program Coordinator, Water Resources Research Center
Dr. George Ruyle, Range Management Specialist, School of Natural Resources
Dr. Dave Schafer, Resident Director, V Bar V Ranch
Jeff Schalau, Agriculture & Natural Resources Agent, Yavapai County
Kim Stone, Horticultural Specialist, Boyce Thompson Arboretum
Trent Teegerstrom, Research Director, Department of Agricultural & Resource Economics
Darcy Tessman, 4-H Agent, Cochise County
Dr. Doug Tolleson, Rangeland Management Specialist, V Bar V Ranch
Dr. Russ Tronstad, Agriculture and Resource Economics Extension Specialist, Department of Agricultural & Resource Economics
Kristine Uhlman, ANR/Hydrology Extension Agent, Water Resources Research Center
The 4-H Youth Development program in Gila County continued to grow and make a positive impact on youth in 2008. Youth within Gila County are gaining life skills that will help them to succeed throughout their lives. The essential elements of the 4-H program are mastery, independence, belonging and generosity. As the volunteers, youth and families involved in Gila County 4-H participate in the program, the essential elements can be seen in the various activities. Goal setting and completion, trying new projects, and community service are some of the objectives that can be observed within the program.

In 2008, Gila County was represented at several state-wide events with 4-H youth excelling but, most importantly, learning and having fun! The Arizona National Livestock Show was well attended with entrants in the Junior Livestock Judging Contest and the 4-H Horse Show. The agent serves on the committee for the Large Livestock Expo, which was held for the first time in Tucson. The expo included events such as the quiz bowl, skillathon, and public speaking competitions. With the completion of a recently developed handbook for the Expo, plans are being made for another event that will include additional opportunities for youth involved in livestock projects.

The 20th Annual JOLT (Journey of Opportunities for Leaders of Tomorrow) summer leadership camp was held in Heber. For the first time, both Northern and Southern Gila County were represented as well as youth from Pleasant Valley. All of the youth as well as the chaperone are anxiously awaiting enrollment for the next JOLT event. Also, for the very first time, a stellar 4-H member from Gila County was selected by his peers and the JOLT advisors to serve on the 2009 JOLT staff. The National 4-H Congress was held in Atlanta, GA, in 2008. Proudly, Gila County was represented at a National 4-H event with the selection of one of our members as part of the Arizona delegation.

Recruitment efforts continue to be a high priority as we strive to involve more youth and families in 4-H. Awareness of the variety of programs offered in 4-H has been a focus in activities that have included school presentations, media coverage of events, fundraisers and community service. Enrollment continues to increase as volunteers and youth work to bring 4-H into the lives of others. Many new members are realizing that 4-H is a positive program that truly has something for everyone!
The 2nd Annual “Kids Day at the Fair” was held with more than 650 children in grades Pre-K through 3 attending from Northern Gila County. As future 4-H members learn about our program it gives current members an opportunity to showcase their projects and continue to develop their life skills. The event has been very well received and has resulted in an increased awareness of the 4-H program in general, what it can bring to the lives of the children, and how it can serve as a school enrichment program. Agriculture Literacy is a program that has become a traditional celebration in November throughout Arizona. This year more than 750 elementary students received lessons based on agriculture literacy. The lessons are closely aligned with state standards, and the overall program has been successful in Gila County. Teachers are now aware of the programs and the role that the 4-H agent can play in bringing “agriculture to the classroom.”

For the first time, Financial Education and Service Learning was brought to Gila County through a grant from the State Farm Youth Advisory Board. This program was taught during the spring and fall semesters of 2008 to 7th and 8th graders at High Desert Middle School. More than 450 students received weekly lessons focusing on financial education and service learning. The entire program was evaluated and the results were positive that children want to learn more about life skills, they did learn from this program and most importantly decision making skills showed a dramatic increase in the evaluation. Administrators and teachers recognize the need for this type of education, but have lacked the necessary resources. Through this program community service projects were developed and 14 volunteers from the community served as guest speakers. Students chose service learning projects that would help educate the community on financial concepts. Seven newspaper ads were developed along with informational posters and a DVD about key concepts presented through this program. Students, teachers and families are excited about their projects and hope that they can make a difference in their communities.

This year the agent was able to serve as a guest speaker at both the 4-H state leadership camp and the District FFA leadership retreat. This was an opportunity to further education youth on the positive impact of the 4-H Youth Development Program. Youth within Gila County are realizing the many possibilities of the 4-H program at the local, county, state and national level. As 4-H members are receiving scholarships for their continued dedication to their projects and the program it is evident that 4-H is developing youth that have the skills to succeed in their chosen paths of life. The new members of 4-H are excited to try new things and although fun is a high priority they are learning skills that will be vital throughout their lives.

![Gila County 4-H Enrollment Chart]
Program Highlights 2008

Sabbatical Leave with a Fulbright Fellowship
Sololá, Guatemala—June through December, 2008
Chris Jones

Chris Jones on his first day at the university in Guatemala with some of his students and fellow faculty.

Tollman Volcano overlooks Lake Atitlan, renowned for its splendid views and Mayan heritage.

Project Summary: Under the project title: Agroforestry and Watershed Program Development at the Technical Institute of Universidad del Valle Guatemala (UVG), UA Gila County Extension Agent Christopher Jones worked with UVG faculty to adapt and deliver the Master Watershed Steward (MWS) program to the students and community of the Sololá Department in Guatemala.

Lake Atitlan in Sololá, Guatemala

Lake Atitlan is a closed system caldera lake in the highlands of Guatemala, in the governmental department of Sololá. Because of the spectacular beauty of the lake and its volcanic watershed, it is of great value for local and international tourism. At the same time, the Mayan communities that surround the lake maintain a strong traditional culture, including time-honored religious, agriculture and fishing practices.

Master Watershed Stewards – ¡En Español!

I offered two semester-long courses “Introducción al Manejo Integrado de Cuencas Hidrográficas” based on the Master Watershed Steward curriculum. One was for the university’s Agroforestry students, and the other was for the Sololá community. The 35 college students, ages 18 through 20, were mostly of Mayan descent; six were women. Most were well motivated and interested. Participants in the Sololá community course were professional and technical members

Chris leads the soils lab class.
of the Sololá departmental agencies, national agencies, international non-profit organizations and the university who work together to address watershed issues in the Sololá department. There were 16 adult participants in this course.

To teach the course, I translated Master Watershed Stewardship materials into Spanish. I have compiled the materials and presentations on a cd-rom and plan to submit it as curriculum for peer-review.

**Project WET en Español**

I was invited to participate in providing teacher training classes at the Universidad para Todos program. Armed with the Project WET (Water Education for Teachers) curriculum in Spanish that Kerry Schwartz gave me before leaving, I provided hands-on water education activities to local teachers on two occasions. Each class was attended by more than 45 participants, most of whom were women of Mayan descent.
Range monitoring workshops have been offered for several years by the University of Arizona, yet range monitoring as a standard operating procedure on Arizona ranches has been sporadically adopted. In 2000, a USDA grant, Reading the Range, was obtained and demonstration ranches for range monitoring were established with technical assistance provided. It was hoped that establishment of demonstration ranches for range monitoring would encourage neighboring ranches to consider implementing similar practices on their ranches.

In 2003, The University of Arizona Cooperative Extension Rangeland Monitoring Program Evaluation Report was developed by Maria Fernandez-Gimenez (available in January 2005 Rangeland Ecology and Management). The purpose of this extensive evaluation was to determine the impact of Extension’s current rangeland monitoring program, and identify ways to improve it. A major finding was that “there was a strong association between rangeland monitoring and implementation of beneficial land grazing management practices by permittees.” The 2003 survey reported that Cooperative Extension has a clear track record for producing credible and high-quality rangeland monitoring reports. One major finding for the Fernandez-Gimenez survey was that “the demand for Extension’s rangeland monitoring services far exceeds supply with the main improvement suggested to increase program staffing.”

Impact. From the original 6 participants enrolled in Reading the Range in 2001 on 100,000 acres, the program has expanded to now include 34 ranches encompassing 941,490 acres. On the Tonto National Forest, approximately 30% of grazing allotments are enrolled in Reading the Range. Data are being collected from 178 key areas and the results are being incorporated into National Environmental Policy Act (NEPA) documents (at least 5 ranches in 2008).

In a 2003 University of AZ survey on Cooperative Extension Rangeland Monitoring http://www.srmjournals.org/pdfserv/i1551-5028-58-1-89.pdf from 142 ranchers in five counties with United States Forest Service (USFS) grazing allotments, 13% reported that their relationship with the USFS had greatly improved as a result of monitoring and 26% reported that their relationship with USFS had somewhat improved. For agency employees (n = 100), they reported that as a result of permittee or landowner participation in monitoring, relationships with permittees had greatly improved in 37% of the cases and had somewhat improved in 46% of the cases.

“Extension enjoyed a high degree of credibility among both agencies and permittees, and Extension’s objectivity and professionalism were great assets to the rangeland monitoring program.”
**Needs.** Partial funding for *Reading the Range* has been obtained from the Natural Resources Conservation Service (NRCS) Environmental Quality Incentives Program (EQIP) through the Tonto Natural Resource Conservation District to assist with key area selection, range monitoring data collection, materials, and data entry. These funds have enabled us to hire staff for data entry and summary, and to contract with certified range consultants to assist with data collection and key area selection. Due to the extensive expansion of *Reading the Range* and the increased data compilation and summary necessitated by an expanding program, it has become apparent that another alternative is in order to keep up with demand. In 2008, some grant money was made available to purchase three military grade touchpad computers for field data entry in Gila County. *Vegetation Data System* software developed by Dr. Del Despain (Utah Cooperative Extension, St. George, Utah) interfaces with the touchpad computer allowing real time data collection in the field and saving hundreds of hours of data entry from handwritten field forms. This software seems to be intuitive and has been successfully used in the field by clientele from 11 to 69 years of age. The software needs further development to make it interface with large government databases. At a recent national meeting of range professionals in Albuquerque, the touchpad computers and VGS software were very well received by both the US Forest Service and NRCS. They are seeking to integrate this technology into day to day operations. We are seeking additional funding to increase the number of touchpad computers we have to accommodate data collection on more than one ranch at a time.
Agriculture, Livestock, and Range

This year, we provided three workshops and three small group meetings in the livestock area, all geared toward cattle associations and tribal agency personnel. One was a Range Livestock Nutrition Workshop focusing on “Why Don’t Cows Get Pregnant?” attended by 23 participants. Another was a statewide Rez to Rail Workshop focusing on beef meat quality, marketing and San Carlos cattle operations; two members of Point of Pines Cattle Association spoke about the history and current activities of their group, with 51 attending from San Carlos, Navajo, and Hopi reservations. A National Animal Identification Update Workshop was hosted by the Tribal Planning Department, and the agent presented on Animal Identification and Beef Marketing for 21 participants.

There were two small group meetings, where the agent met with Point of Pines and Ash Creek Associations to discuss the data entry needed for the cattle sales and membership record keeping system. Another meeting included a Budget Tutorial for the NRCS President and Range Conservationist; this tutorial went in detail over a spreadsheet for fencing for range conservation project.

Outcomes and Impacts of the Agriculture, Livestock and Range Program

In 2008, the San Carlos Cattle Associations were showing signs of organizational problems, and this most likely has affected adoption of new and even more efficient technologies, so outcomes and impacts were minor. Participants increased skills and gained knowledge about the following topics as stated on their evaluations: improving range cow breeding and pregnancy rates, beef marketing, meat processing, and history of the San Carlos Cattle Associations. Two cattle association members from San Carlos were able to teach about their local cattle operation to a statewide group. R100 tribal ranch has mainly relied on the aid of extension specialists, such as Dr. Dave Schafer and Dr. Peder Cuneo, in the areas of Hereford registration, breeding technologies, and pregnancy testing. We try to use the R100 ranch to help in teaching other ranchers.

4-H Youth Development

The agent chaired the SC High School Agriculture committee, made up of three school faculty, one administrator and two agency professionals from SC Forestry and Soil and Moisture departments. The committee held three planning meetings. UA Faculty cooperator Arturo Baez from the Controlled Environment Agriculture Department continued to help the school repair the greenhouse.
The agent implemented short courses for youth in high school agriculture classes, with the aid of the teacher, including vet science and horse science short courses. The agent chaired these meetings with input from Lauren Romig and Cindy Pearson from Graham County Extension, a Graham County Supervisor, a community nurse from Bylas Indian Health Service, a nutritionist from SC Diabetes Prevention, and an educator from SC Health Education. Two Community Club planning activities were held in Bylas. The first meeting had three attendees, the second had five. These meetings formulated project ideas and began to plan the first community club meeting scheduled for February 2008. Bylas Community Club had two evenings of activities with 35 attending the first and 20 attending the second.

The agent and our instructional specialist, Celestina Fast Horse, along with a Diabetes Prevention nutritionist, Sara Kotler, designed and instructed a Junior Master Gardener nutrition curriculum training course for high school students at San Carlos High. These students taught five classes at the local elementary schools. The instructional specialist and agent conducted five three-hour training sessions employing a Junior Master Gardener nutrition curriculum, including nutrition principles, gardening, an instruction practicum, and construction and planting of a raised bed garden. The interns taught three three-hour sessions to Mr. Sander’s special needs class of five to seven people and four teacher aides, with modifications for a 1st-3rd grade level of students with special needs. We also met twice for planning with the three principals of the schools to plan for the interns to teach 11 classes at the elementary schools. The gardening and nutrition course taught five sessions to 200 participants in 10 elementary classes.

Outcomes and Impacts of the 4-H Youth Development Program
We began outreach to SC Elementary and SC Intermediate Schools in the JMG nutrition and gardening program, collaborating with school administrators to implement the Spring 2008 semester teaching course and planned the 2008-2009 classes. The high school agriculture teacher learned horse science and vet science in the spring semester; the special needs teacher and four aides learned about gardening and nutrition; the SC Diabetes nutritionist learned how to implement a JMG nutrition/gardening curriculum. The new high school agriculture teacher learned about greenhouse repair and was able to do repairs on his own after collaboration with the UA consultant.

On an evaluation with student interns and teachers, the effectiveness of the nutrition/gardening courses was positively ranked. One student said that she realized her plans for a career as a teacher were correct after teaching youth in this course. Interns, teachers and youth stated that they enjoyed the format of the course using high school youth to teach elementary classes. Youth learned life skills of responsibility and planning while teaching. We have continued collaboration with San Carlos High school for three years, and we are expanding our contacts with the school faculty. Assistance includes helping with the selection of programming, coordinating planning and organization, and giving technical advice. This positive activity may help to decrease delinquency and negative behaviors on the reservation.
2008 Program Focus Areas

- 4-H Leadership
- 4-H Youth Development
- 4-H Record Keeping Skills
- 4-H State Leadership Involvement
- 4-H Volunteer Leader Certification
- A Changing Beef Industry: Options for Arizona Beef Producers
- Alternative Cattle Marketing
- An Introduction to Collaborative Conflict Management
- AZ National Livestock Show Junior Judging Contest
- Beef Cattle Trace Mineral Research
- Browse Monitoring Workshop
- Career Preparation
- Climate Variability and Ecosystem Impacts
- Critical Thinking High School FFA
- Forage Manipulation through Cattle Supplementation Research
- Forest Health & Firewise Education
- Fulbright Fellowship/Sabbatical Leave
- Highway 60/70 Project
- Home Horticulture and Master Gardener Program
- Horse Science Workshop
- Managing Rangelands that Interface with Grand Canyon Park
- Master Watershed Steward Program
- National Environment Policy Act (NEPA) Curriculum Development
- Natural Resource Dispute Management
- Noxious Weed Education
- Ranch Management
- Range 101: Range Management & Analysis
- Range Breeding Cow Efficiency
- Reading the Range
- Rez to Rail — Meat Quality
- Service Learning
- Show Goat Nutrition
- Show Lamb Nutrition
- Steer Nutrition
- Strengthening 4-H/Youth Programs: Managing Conflict
- Swine Nutrition
- Why Don’t Cows Get Pregnant?
- Youth Financial Education
- Youth Gardening
- Youth Horsemanship
- Youth Horse Nutrition
- Youth Livestock Quality Assurance
- Youth Livestock Judging
- Youth Nutrition
- Youth Veterinary Science
**Funding for Gila County 2008**

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These values do not represent office space and utilities provided by Gila County and the San Carlos Apache Tribe.

1 State funds from state appropriations to University of Arizona College of Agriculture.
Federal funds from US Department of Agriculture for Cooperative Extension programs.
2 Grants are listed on the following page.
3 USDA funds provided specifically to support Extension Agent for the San Carlos Apache Reservation.
# Grants Awarded or Continuing for Gila County 2008

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<td>Agribusiness Companies</td>
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<td>Range Livestock Nutrition Program</td>
</tr>
<tr>
<td>AZ Cooperative Extension</td>
<td>2,000</td>
<td>Range Livestock Nutrition Working Group</td>
</tr>
<tr>
<td>AZ Cooperative Extension</td>
<td>2,000</td>
<td>Indian Country Extension Working Group</td>
</tr>
<tr>
<td>AZ Cooperative Extension</td>
<td>1,500</td>
<td>Professional Development Working Group</td>
</tr>
<tr>
<td>Arizona State Land Dept.</td>
<td>10,000</td>
<td>Hwy 60/70 Tree Inventory project in partnership with the Southern Gila Co. Economic Development Corp.</td>
</tr>
<tr>
<td>DC Cattle Company</td>
<td>1,000</td>
<td>Reading the Range (Original award 2006)</td>
</tr>
<tr>
<td>Food Stamp</td>
<td>8,802</td>
<td>Supplemental Nutrition Education Grant to support the Jr. Master Gardener San Carlos school nutrition and gardening project</td>
</tr>
<tr>
<td>Gila County</td>
<td>11,279</td>
<td>Wildfire Risk Reduction Program Gila County Instructional Specialist (Original award 2004 - $42,581)</td>
</tr>
<tr>
<td>Gila County Board of Supervisors</td>
<td>6,641</td>
<td>Reading the Range (Original award 2006 - $15,000)</td>
</tr>
<tr>
<td>Gila County Pioneers</td>
<td>3,100</td>
<td>4-H Educational Programs / Opportunities for Gila County Youth Members</td>
</tr>
<tr>
<td>San Carlos High, Primary, and Intermediate Schools</td>
<td>200</td>
<td>Supplies for Nutrition Intern Training and Jr. Master Gardening Class (supports Food Stamp program)</td>
</tr>
<tr>
<td>State Farm Youth Advisory Board</td>
<td>31,834</td>
<td>Service Learning and Financial Education in Southern Gila County Schools</td>
</tr>
<tr>
<td>Tonto Natural Resource Conservation District</td>
<td>5,325</td>
<td>Reading the Range Data Collection</td>
</tr>
<tr>
<td>Tonto Natural Resource Conservation District/Natural Resources Conservation Service</td>
<td>62,273</td>
<td>Reading the Range (2008)</td>
</tr>
<tr>
<td>Tonto Natural Resource Conservation District/Natural Resources Conservation Service</td>
<td>21,040</td>
<td>Three military grade touchpad computers for range monitoring data collection</td>
</tr>
<tr>
<td>Funder</td>
<td>Amount</td>
<td>Purpose</td>
</tr>
<tr>
<td>-------------------------------------------------</td>
<td>--------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>UA College of Agriculture</td>
<td>$ 1,000</td>
<td>Climate and Natural Resources Working Group</td>
</tr>
<tr>
<td>UA College of Agriculture</td>
<td>500</td>
<td>Arizona Firewise Working Group</td>
</tr>
<tr>
<td>UA College of Agriculture</td>
<td>1,000</td>
<td>Master Watershed Steward</td>
</tr>
<tr>
<td>UA College of Agriculture</td>
<td>1,400</td>
<td>Understanding Youth Development State Initiative</td>
</tr>
<tr>
<td>UA Department of Agricultural Education</td>
<td>1,471</td>
<td>Travel support for Indian Country Extension Research Project</td>
</tr>
<tr>
<td>UA Drachman Institute; School of Landscape Architecture</td>
<td>8,000</td>
<td>Planning &amp; Design for Hwy 60/70 in partnership with Southern Gila Co. Economic Development Corp.</td>
</tr>
<tr>
<td>USDA-CSREES</td>
<td>5,000</td>
<td>Preventing Ticks on Pets in and Around Residences to Reduce Incidence of Rocky Mountain Spotted Fever on the San Carlos and White Mountain Apache Reservations</td>
</tr>
<tr>
<td>USDI-Bureau of Land Management</td>
<td>8,000</td>
<td>Homeowner’s Firewise Guide Booklet (Reprint 24,000 copies)</td>
</tr>
<tr>
<td>USDI-Bureau of Land Management</td>
<td>30,000</td>
<td>Living with Wildfire: Arizona Fire Ecology Guide Phase III (DVD &amp; 1,000 copies)</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$225,415</strong></td>
<td></td>
</tr>
</tbody>
</table>

Some of the grants listed above were team efforts that benefited additional localities in Arizona beyond Gila County.

Dr. Loretta Singletary (standing), University of Nevada-Reno, gauges progress of one working group in the Natural Resource Dispute Management Workshop in Globe.
Faculty Rank: Area Associate Agent, Animal Science

A primary responsibility of this position is to provide leadership in developing and conducting educational programs in animal science, primarily livestock production, with emphasis in Gila and Yavapai Counties. The area agent will also participate in planning or implementing natural resource educational programs that complement range livestock production.

The agent is expected to participate in or lead team efforts across county lines and statewide in educational programming or appropriate applied research, particularly with the Arizona Range Resource Education Committee. The agent shall contribute in establishing multi-county and statewide partnerships with other extension, research, and multi-agency personnel to implement these programs.

The agent shall conduct problem-solving research on site with land managers, livestock producers, other extension faculty, and interested parties. Results of research shall be included in extension programming efforts and applied and scholarly publications.

The agent shall work with 4-H clubs, providing animal science expertise through consultations, workshops, and publications. Additionally, the agent shall work with target audiences identified through local needs assessment in solving problems and utilizing new technology and information in production, resource management, marketing and other areas. The area agent shall participate in appropriate multi-disciplinary teams, livestock production industry and commodity groups, agencies and organizations, and communicate research interests and educational needs to extension and campus faculty.

The agent is expected to keep current in his area of specialization and transfer appropriate research-based information and technology to clientele via publications, educational programming, or the media. The agent is also expected to comply with all Civil Rights mandates and actively solicit participation from under represented groups in Extension programming.

As Gila County Extension Director, this position carries a 20% administrative appointment to supervise Extension work in three offices at Payson, Globe, and the San Carlos Indian Reservation.
Grants Awarded in 2008

In 2008, Jim assisted in bringing in $87,363 in new grant money for Livestock and Resource Management.

Abstracts

Publications

Continued on next page ...
Proceedings


Extension Reports

Poster
2009 Plan of Work: Focus Areas
Jim Sprinkle

Research
- Submit the X4 Ranch trace mineral research data and V-V range plant trace mineral research for publication in the Journal of Range Management. Continue with trace mineral research on the V-V Ranch, the final year of data collection. With industry support and by partnering with the V-V Range Extension Specialist, Dr. Doug Tolleson, continue the second year of a three year research project on the effects of protein supplementation on weeping lovegrass forage utilization and species composition.

Extension
- Continue to facilitate data collection and summary in the Reading the Range program for ranchers who are interested in starting a monitoring program and for past participants. Seek to maintain funding or expand funding for field technicians to assist in data collection. Migrate previous years data collection into the new software for the touchpad computers we are now using for collecting the majority of the data. Maintain qualified consultants to help complete field work. Recruit an intern to assist with data collection the fall of 2009, providing funds suffice in the next fiscal year.
- Assist in providing animal science and range monitoring programming for other areas of the state upon request of 4-H and Ag/Natural Resource Extension Agents.
- Help conduct a Browse Monitoring Workshop in Yavapai County to present new (and established) monitoring techniques. With the assistance of other coauthors, commence work on a peer reviewed publication Relevé Shrub Monitoring Protocol for inclusion into Rangelands.
- With the Range Livestock Nutrition Working Group, put on three to five Arizona Range Livestock Nutrition Workshops in 2009.
- In conjunction with Arizona Section, Society for Range Management, offer a premier symposium on Geological, Anthropological, Historical, and Climatic Influences on Arizona Rangelands.
- Continue work on the development of a curriculum Negotiating the NEPA Process: Coordinated Planning for Grazing Allotments through 2009 and into 2010 to be accompanied by a series of workshops.
- Effectively participate with the University of Arizona Animal Sciences Department as an Regional Livestock Specialist.
- Get animal nutrition PowerPoint presentations for lambs, steers, and swine successfully approved as peer reviewed publications so they can be used by other 4-H agents throughout Arizona and beyond.

Service
- Serve as chairman and help put on the Arizona National Livestock Show Junior Livestock Judging Contest.
- Serve as a President in the Arizona Section, Society for Range Management and assist in running the organization with the board of directors.
- Play an active role in the Western Regional Education/Extension Research Committee # 110. With this group, assist in planning an international conference, 4th Grazing Livestock Nutrition Conference to be held in Colorado in 2010.

Administration
- Serve as Gila County Extension Director and seek to maintain adequate funding in the face of expected state budget cuts. Help ensure that effective mentoring occurs for agents preparing to traverse the Continuing Appointment and Promotion process.
Faculty Rank: Assistant Agent, 4-H Youth Development

This agent is responsible for developing the 4-H Youth Development program throughout Gila County. 100% of the agent's time is focused on developing positive Youth Development programs in all areas of expressed interest and/or needs. As 4-H Youth Development in Gila County continues to grow, areas of focus will change but positive Youth Development will always be top priority.

The agent is responsible for leader recruitment, training and certification. The agent serves as a resource for leaders as they conduct their regular project club meetings and activities. It is the responsibility of the agent to verify that civil rights and affirmative action are included in all 4-H Youth Development programs.

The agent is responsible for the development of educational programs that meet the needs and desires of Gila County 4-H families. This includes programs in all areas of positive youth development including but not limited to: animal science, youth leadership training, livestock quality assurance, crafts, geology, consumer and family sciences, record keeping.

The 4-H agent develops a network of certified volunteer leaders, 4-H youth and community volunteers to form a positive collaboration. The end result is a strong program that not only benefits Gila County Youth 4-H members but our communities. The agent is a member of three leaders councils; Southern Gila County, Northern Gila County and Pleasant Valley. The agent will serve as a resource for leaders and youth as well as a facilitator of educational program that meet the overall needs of youth in Gila County.

The primary purpose for the Extension Agent, 4-H Youth Development is to deliver research-based, non-formal, objective education to Gila County youth and families. This education will assist in developing leadership and promoting healthy lifestyles and communities.

Lani Hall received the Achievement in Service Award at the 2008 GALAXY of Extension Professionals National Convention in Indianapolis, IA.
In 2008 Lani was awarded $36,960 in new grant money for conducting programs and workshops.

**Grants Awarded in 2008**

In 2008 Lani was awarded $36,960 in new grant money for conducting programs and workshops.

**Publications**

**Abstracts**

Publications

Pamphlet/Newsletter
Hall, L. 2008. Today’s 4-Her, Gila County, monthly.

Popular Press
Hall, L., K. Gressley, and R. Cummings. 2008. State Farm Service Learning Grant Tips for the Community. Pinal County, Seven ¼ pg articles.

Posters


Curriculum

Fact Sheet


Invited Speaker

Hall, L. 2008. What FFA and 4-H Involvement Can Do For You. FFA District Leadership Retreat. Young, AZ.

Software

Other Work
2009 Plan of Work: Focus Areas

Lani Hall

Extension

- Further develop the Large Livestock Exposition into a statewide event with strong participation from Gila County.
- Continue the “chartering” process for all Gila County 4-H clubs within Arizona 4-H requirements.
- Strive to develop programs on the Tonto Apache Reservation.
- Develop and present the new “Understanding Youth Development” curriculum in a course for youth development professionals.
- Join with Apache County to provide a youth leadership camp for youth ages 9-13.
- Submit approximately nine fact sheets on Understanding Youth Development.
- Submit a journal article on research results from the Financial Education/Service Learning program held in Gila and Pinal Counties.
- Present workshops on the Financial Education/Service Learning program at two national conferences.
- Work with the Gila County Health Department to offer programs for youth as a joint effort (e.g., safe-sitter program, tobacco free program).
- Continue and increase School Kids Day at the Fair for both Northern and Southern Gila County.
- Continue involvement with the Extension Scholars program.

Service

- Continue involvement as co-chair on the Professional Development working group.
- Continue serving on the Arizona National Livestock Show Junior Livestock Judging contest committee.
- Serve on the Peer Review committee.
- Serve as co-chair on the 2010 Arizona Association of Extension 4-H Agents Conference subcommittee: Area extracurricular trips of interest.
- Continue involvement with the Understanding Youth Development state initiative group.
- Continue as treasurer and member contact for the Arizona Association of 4-H Agents.
- Continue involvement on the Northern Gila County Steering committee.
- Continue involvement with the Payson Agriculture Education Advisory committee.

The Clover Kids Program is for children ages 5-8 and is a very successful activity to prepare them for future 4-H membership.
Faculty Rank: Associate Agent, Agriculture & Natural Resources

A primary responsibility of this position is to provide leadership in developing, implementing and evaluating educational programs aimed at improving the sustainability of natural resources, increasing understanding and involvement in land use and natural resources policy, and increasing the effectiveness of program-related producers, groups and individuals to solve their own problems and improve their quality of life.

The agent is expected to participate in or lead team efforts in Gila County and statewide in educational programming and materials, particularly as it applies to the needs of the high desert and mountain environments, such as forest/ecosystem health and wildfire risk reduction issues. The agent shall contribute in establishing multi-county and statewide partnerships with other extension, research and multi-agency personnel to implement these programs. The agent shall participate in appropriate multi-disciplinary teams, agencies and organizations, and communicate research interests and educational needs to extension and campus faculty.

The agent shall work with Master Gardeners and other groups including youth, providing leadership and expertise through training and coordination of volunteer activities. The agent shall work with target audiences identified through local needs and planning assessments in solving problems, utilizing new technology and information in land use planning, resource management, climate, water issues, noxious weed education, riparian areas and other areas. In addition, the agent shall coordinate efforts with the animal science area agent to improve range and livestock production.

The agent is expected to keep current in his area of responsibility and transfer appropriate research based information and technology to clientele via publications, educational programming, or the media. The agent is also expected to comply with all Civil Rights mandates and actively solicit participation from under represented groups in Extension programming.
In 2008 Chris was awarded $39,500 in new grant money for conducting programs and developing publications.
Abstract


Posters


Review/Revisions


2009 Plan of Work: Focus Areas

Chris Jones

Forest Health & Firewise
- Work with Gila County fire departments and other partners to continue to offer fire mitigation education throughout the county, including Firewise Assessor/Advisor program.
- Co-lead organization of Home Hazard Assessment Training for San Carlos Indian Reservation.
- Seek to initiate up to three Firewise Communities/USA projects in southern Gila County, with partners at San Carlos, Canyon and Tri-City Fire Departments.
- Assist southern Gila County with Community Wildfire Protection Plan development.
- Continue to secretary Arizona Firewise Working Group to guide fire education efforts throughout the state and develop publications and other education materials, such as through the Arizona Firewise website.

Home Horticulture/Master Gardeners
- Offer MG class through the community college, Spring Young; and Fall Globe/Payson. Seek a UCF Challenge Grant to conduct a shade tree demonstration project at the Young cemetery.
- Pursue a Master Gardener Association for Gila County.
- Complete Arizona Pines publication with Jack Kelly (presently submitted and in review).

Hwy 60/70 Project
- Continue to assist community effort to implement visual concept plan for the Miami-Globe-Casino Corridor.
- Co-write ADOT Transportation Enhancement Grant for Miami portion of corridor.
- Co-write UCF Challenge Grant for a Tree-of-Heaven population management project.

Climate Change & Vegetation Impact
- Provide leadership for the Climate and Natural Resources Working Group.
- Conduct Climate and Natural Resources working group strategic planning retreat in April.
- Discuss conducting a Climate and Wildlife Habitat Workshop with working group as suggested by Clark Richens.

Noxious Weed Education
- Offer noxious weed education to Master Gardeners through classes and respond to noxious weed education activities in county as appropriate.
- Encourage Young Master Gardeners to participate with the Tonto Weed Management Area for volunteer service hours.

Master Watershed Steward (MWS) Program
- Teach MWS classes in Payson Fall 2009; partner with Payson Water Dept. and Xeriscape Council for volunteer projects.
- Prepare Spanish translation of Master Watershed Steward materials for peer-reviewed publication.

Riparian Areas & Grazing Systems Program
- Continue to coordinate with area animal science agent as needed for program development and delivery.

Administration
- Initiate process to seek and hire a VISTA or AmeriCorps volunteer to assist volunteer coordination efforts.
Faculty Rank: Assistant Agent, Agriculture & Natural Resources

This position provides educational programs and practical information to the residents of the San Carlos Apache Reservation. The program areas are agricultural production, natural resource management and 4-H youth development. Approximately 55% of the agent’s time will be spent in agriculture and natural resource programming and 45% in the 4-H youth development programming. Duties and Responsibilities: Carry out needed problem solving research, determine and conduct needed educational programs, and provide practical and useful information to the people on the San Carlos Apache Reservation. Develop and facilitate Extension Agricultural and 4-H programs for the San Carlos Apache Reservation in the program areas of agricultural production, marketing, natural resource management, and 4-H youth development, using all available means of communications. Develop an extension advisory committee, which will give direction on critical issues for program development. Organize and direct groups as needed to carry out Cooperative Extension programs, which includes civil rights and affirmation action. Acquire and dispense knowledge for the San Carlos Apache Reservation situation relative to livestock production, grazing and range management, livestock and farming financial management, natural resources, cultural appreciation, and the overall needs of youth. Involve Tribal Leadership, the Extension Advisory Committee, commodity groups, governmental agencies, County Extension staff, and clientele in program planning and methods to evaluate program effectiveness. Identify and develop a core of volunteers and cooperators. Maintain technical competence in agricultural and natural resources subject matter relative to San Carlos Apache Reservation’s needs.
In 2008 Sabrina was awarded $14,002 in new grant money for conducting programs and workshops.

Grants Awarded in 2008

In 2008 Sabrina was awarded $14,002 in new grant money for conducting programs and workshops.

Publications

Proceedings


Continued on next page ...
Research Report

Fact Sheets


Continued on next page ...
Research
- Continue analyzing data for the research project *Indian Country Extension: A Comparison of Community Proponents and Programs in the University of Arizona Cooperative Extension System*, as well as seeking venues for further publication.

Instruction
- Guest Lecture for the Agricultural Education Department, as requested.

Agriculture, Livestock and Range Management
- Work with the Educational Campaign Planning Committee to implement three workshops on cattle and/or horse production, visiting at least three of the five ranch headquarters with hands on activities including education about beef quality assurance, vaccination techniques, simple veterinary treatments, and horse training. Continue to encourage finishing data entry for San Carlos Cattle Associations computerized record-keeping system.

4-H Youth Development
- Continue to refine curriculum to improve delivery in the JMG nutrition/gardening program with youth interns teaching elementary age students at at least one school and with at least one community organization. Look for more efficient methods of delivery for this curriculum for school age youth. Continue to work in coordination with the San Carlos High School Agriculture program, with one workshop and one tour in animal and horse husbandry, and coordinate the committee’s other educational activities with community members and tribal agency personnel.
- Explore opportunities for collaborating with at least three Bylas agencies to provide youth programs in Bylas community.

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**Publications**


**Posters**


**Invited Speaker**


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**2009 Plan of Work: Focus Areas**

*Sabrina Tuttle*
Victoria Wesley teaches about rodeo horse selection at the Horse Science Short Course at Peridot Rodeo Arena.

Navajo Nation extension agent Gerald Moore demonstrates how to control gophers and prairie dogs at Bylas Community Club.

San Carlos High School students watch as area agent Jim Sprinkle trains a young horse at the Horse Science Short Course at Peridot Rodeo Arena.

Monitoring browse on the Coolidge Parker Allotment near Globe. Dan Robinett (left, Robinett Rangeland Resources, LLC, Tucson) and Larry Widner (Mesa, SW Resource Consultants, LLC of Las Cruces) assisting.

Monitoring on the J-B Ranch near Roosevelt with touchpad computers. Jim Maynard (left, Southwest Resource Consultants, LLC, Las Cruces) and John Fowler (ranch owner).

Collaborative monitoring team from Gila County Cooperative Extension, Little Green Valley Ranch, US Forest Service, and Southwest Resource Consultants, LLC gather at the Pocket line cabin prior to range monitoring data collection.
In 2008, the Master Watershed Stewardship program was taught through the Gila County Community College using the ITV Virtual Classroom to offer the course simultaneously in Globe and Payson. Seven students, three in Globe and four in Payson, completed the training. Fieldtrips were a highlight of class (clockwise from top left to bottom left): Pinto Creek with Dr. Janet Grove to discuss stream restoration of impaired waters; East Verde Park to discuss stream dynamics and concerns with the local HOA; the pump room at Cutter Field where water is delivered to Globe’s storage tanks; and drill pipe at Cutter Field Well #4.

Participants at the Range Livestock Nutrition Workshop in Camp Verde hold aloft their clickers used to answer quiz questions following presentations.

Research cows at the V-V Experimental Ranch being brought to the corrals for data collection.
Superstition Mountains, Millsite Allotment, near Superior.