The faculty and staff of Coconino County Cooperative Extension are pleased to share the 2022 County Annual Report. As part of the University of Arizona’s Division of Agriculture, Life and Veterinary Sciences, and Cooperative Extension, we address our mission through Agriculture and Natural Resources, 4-H Youth Development, and Family, Consumer, and Health Sciences. We offer programs in home gardening, 4-H youth development, livestock and range education, invasive plant education, and oral health education to our residents.

Arizona Cooperative Extension recently completed an economic impact report of extension efforts in each county. For Coconino County, $3.05 was returned to our community for every dollar of state support.

In 2022, we continued many of the great programs that we offered in 2021 including the Online Master Gardener Course, the Master Gardener Plant Sale, Beginning Blacksmithing, Project WET, Range Monitoring, Beef Quality Assurance, and Oral Health Screenings and Education. We also added two new innovative programs: Ag Literacy Professional Development for Educators and Horticultural Therapy. These topics were selected based on the needs of our community and our expertise in these areas.

Our work would not be possible without the 121 volunteers who extend our reach through the Master Gardener Program and 4-H Youth Development. Our team looks forward to continuing to provide meaningful programming to the residents of Coconino County. We would like to thank the Coconino County Board of Supervisors for their continued support of Coconino Cooperative Extension.

Regards,

Hattie Braun

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Cover photos clockwise from upper left: The Route 66 STEM Club planted and maintained the Bus Stop Garden at the Extension Office; Assistant in Extension Gayle Gratop introduces native plants to shoppers at the Master Gardener Plant Sale; 4-H Youth show their poultry entries at the Coconino County Fair; members of the Page 4-H Club practice their archery skills.
4-H Youth Development

Coconino County Cooperative Extension (CCCE) 4-H Youth Development program provides educational and personal growth and development opportunities for children. Our 4-H members develop life skills and gain knowledge through participation in clubs, projects, educational and social events, after-school programs, service projects, and career exploration. Teens are taught how to avoid risky behaviors and make good decisions. 4-H has been a fundamental part of CCCE for almost 100 years, first as Boys’ and Girls’ Clubs and then as 4-H. CCCE has been working to revitalize, strengthen, and grow the 4-H Program in Coconino County.

Adult Leadership
There were 25 active adult leaders in the Coconino 4-H program in 2022. The partnership of youth and adults is the heart of the 4-H mission. These youth-adult partnerships are known to be one of the most effective ways to engage both youth and adults in meaningful activities which contribute to positive youth development. Youth involved in positive, meaningful, respectful relationships with adults have been shown to improve skills and competencies while decreasing participation in risky behaviors. When partnering with youth, adults also build skills and simultaneously strengthen the organizations to which they belong.

Coconino County 4-H Clubs
Coconino County 4-H community and project clubs reached 195 youth participating in a variety of projects including leadership, livestock and small stock, cavy (guinea pig), sewing and textiles, gardening, robotics, and shooting sports education. Currently, there are eight clubs in Coconino County. Clubs also work on a variety of service and fundraising projects.

Shooting Sports
The purpose of the Arizona 4-H Shooting Sports Education Program is to promote positive youth development through the safe and responsible use of archery equipment and firearms. Josh Farella and several adult volunteers worked to expand the Arizona Shooting Sports Program so more opportunities could be offered to Coconino County youth. The Arizona State 4-H Archery Fun Shoot was held in Parks, AZ with over 150 youth in attendance from across the state. Eight Coconino youth representing Arizona attended the 4-H Shooting Sports National Championship that was held in Nebraska. The Shooting Sports Project goes beyond 4-H through collegiate level and scholarships.

County Demonstration Days
Presenting or speaking before a group or audience is an important life skill to develop. 4-H Public Speaking contests begin at the county level. 4-H members select a topic, research facts, and present timed speeches, graduated in length as required by their age division. Demonstration Days are held for youth to increase their ability to present to an audience and speak in public. Demonstration Days were held in Page with 36 youth members in attendance, and 52 members in Flagstaff.

4-H and STEM
4-H STEM was developed for youth to increase their skills in science, technology, engineering, and math. 4-H STEM programs combine the strength of experiential learning and inquiry-based science learning within a positive youth development framework. A 4-H club based on STEM – the Route 66 STEM Club – was started in 2017. The club focused on gardening in 2022. This club planned, planted, and maintained the Bus Stop Garden at the Extension
Office. These youth also showcased the garden during the Master Gardener Vegetable Garden Tour.

**Coconino County Fair**
The Coconino County Fair plays a significant role in the growth and development of 4-H youth. There were over 100 livestock projects entered into the fair with sales of over $360,000 when these animals were sold. 4-H members use their profits from the sale to help fund their education and future livestock purchases. The opportunity to exhibit a completed project at a show, fair, or other public exhibition is often the highlight of the year for 4-H members. Members develop self-esteem as they show off their accomplishments to the public. In addition to livestock projects, 125 youth displayed projects in the Clubworks Building.

**Beginning Blacksmithing**
This program gives youth access and instruction to artisan and skilled trade work. Teens learn metalwork techniques and produce a set of hand tools from which they can make many other hand tools. This will allow them to complete projects using materials like steel or wood with the skills they have learned. This is a novel program, developed and designed by Josh Farella. This program is now in Flagstaff, Page, and the Hopi and San Carlos Apache Reservations.

**4-H Military Teen Adventure Camp**
Mr. Farella and several Arizona 4-H colleagues received $148,000 to offer a weeklong Arizona 4-H Teen Military Adventure Camp. Thirty youth attended this camp that was held in July 2022 at the James 4-H Camp in Prescott and was open to Arizona youth 14-18 years old of Active Duty, Guard, Reserve, and Retired or Veteran personnel. Activities at camp included blacksmithing, shooting sports, teambuilding, and a low ropes course.

**Page 4-H Youth Development**
Kristi Schoppmann was hired in 2018 to assist the 4-H program in the northern portion of Coconino County. Page has a long history of 4-H programming, and Mrs. Schoppmann grew up as a member of 4-H in Page. County funds have allowed her to be the boots-on-the-ground employee in Page to help strengthen the program. The Page 4-H Club now has 56 youth and 8 adult volunteers.

Over 30 Page 4-H youth participated in archery in the shooting sports program. Three archers from Page placed at the state competition (1st, 3rd, and 5th) and went on to represent Arizona at the 4-H Shooting Sports National Championship.

The 4-H program in Page saw an increase in available projects. They went from having just livestock projects to offering archery, sewing, photography, and arts and crafts this year. At the fair, for the second year in a row, the Page 4-H Club won the ‘Most Club Entries’ award thanks to the great work of Kristi Schoppmann, the 4-H youth in northern Coconino County, and the adult volunteers.

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**4-H Pledge**
I pledge my head to clearer thinking,
My heart to greater loyalty,
My hands to larger service,
and my health to better living, for my club, my community, my country, and my world.
Agriculture and Natural Resources

Rangelands are extremely important to society for the goods and services they produce and for the ecological services they provide. With almost 12 million acres, more than 85% of the land in Coconino County is owned by Tribal Trust Land, Arizona State Land, or Federal Agencies; most of which is rangeland. Coconino County is the second largest producer of beef cows in the state of Arizona (Census of Agriculture, 2017). There is a need to balance natural resources with livestock grazing, particularly on public lands administered by government agencies. Coconino County Cooperative Extension (CCCE) educates land managers and livestock producers on working landscapes to optimize rangeland resource sustainability while maximizing livestock production profits. Andrew Brischke is the Area Associate Agent for Agriculture and Natural Resources. He has a 20% appointment in Coconino County and an 80% appointment in Mohave County.

Range and Livestock Programs
Workshops are held that teach a variety of subjects relating to rangeland management, monitoring, livestock production, and other identified needs requested by clientele. Coconino County Cooperative Extension collaborated with Utah State University Extension to offer the following workshops:
- 44th Annual AZ/UT Range Livestock Workshop and Tour was held March 29-31. A virtual pre-conference symposium on livestock processing was offered on March 23.
- Range Monitoring 101 Training was offered in Flagstaff in May and was followed by AZ Game and Fish Monitoring Field Training.
- The 15th Annual AZ/UT Cowman's Reproduction Workshop was held in person in September.

Artificial Insemination Clinics
Mr. Brischke developed a 2.5-day Artificial Insemination (AI) Clinic hosted at The University of Arizona’s Experimental Ranch, the V Bar V in Camp Verde. The AI Clinic allows practitioners to learn the AI process with classroom-style lectures as well as hands-on practice utilizing a variety of tools, including live cows. One Artificial Insemination Clinic was held in 2022 at the V Bar V Ranch.

Three Forests Cooperative Monitoring Program
The Three Forests Cooperative Monitoring Program is designed to bring people together in cooperation to help manage natural resources to help make better-informed management decisions. The project allows for more accurate information from range and watershed areas to be collected through monitoring on National Forest lands. This data is used for more informed management decisions. Agencies, ranchers, ranch managers, youth, and other interested stakeholders are educated through outreach programs about the application of science that inform these decisions. The US Forest Service Three-Forests Cooperative Monitoring Agreement was signed in 2020, and work began in June 2021. Aaron Judkins was hired in 2022 to conduct the sampling. Allotment monitoring technical reports were sent to respective ranch owners and managers.

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NAVAJO TRIBAL EXTENSION PROGRAM
The Navajo Nation consists of 27,000 square miles in Arizona and 18,661 of those square miles are in Coconino County. Grey Farrell, the Federally Recognized Tribal Extension Program (FRTEP) Agent, works in this vast region. His priority areas include livestock management, youth development and leadership, healthy living, farming, and home gardening. Mr. Farrell plays a vital role in providing Navajo producers with information to expand their knowledge so that they can re-engage in traditional practices of farming. He is able to provide Extension program delivery in the Navajo language which is invaluable to older clientele. Extension work with Native American communities is highly personalized and depends on personal and professional relationships with clientele.

Navajo Beef Program
Mr. Farrell recruits, educates, and certifies producers for this program which has been ongoing since 2013.
Over 70 producers are certified annually as a result of training and education on beef quality assurance guidelines, record keeping, marketing, and range management. Educational tours, workshops, and field days are held for producers, grazing officials, and government officials to expand their knowledge and improve their product.

Arizona Beef Quality Assurance (BQA) Virtual Training was offered several times in 2022. BQA is a program that raises consumer confidence through offering proper management techniques and a commitment to quality within the beef industry. The target audience for BQA training was Native producers.

Equine Programming
Mr. Farrell provided many opportunities for equine education in 2022.

- A horseshoeing clinic was held in late May and covered the correct way of shoeing, as well as the importance of proper diet and horse foot care.
- Song of the Horse Camp was a 2-day event held in Tuba City in June. Youth learned about horsemanship fundamentals, riding, equine care, and traditional horsemanship. This camp, though youth-oriented, isn’t just for youth. Dr. Betsy Greene provided equine education to the families that joined this event.
- Speaking the Horse’s Language was another educational event held in Tuba City to help improve horsemanship skills.

Other Programming
- Beginning Rancher Training was offered at the Tuba City Fairgrounds to provide hands-on experience for pregnancy testing vaccinations, and selection of replacement heifers as well as information on nutrition.
- A Drought Tools and Resources for Livestock Workshop was held in September.

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AG LITERACY
Gayle Gratop and Josh Farella were awarded a $500,000 National Institute of Food and Agriculture grant to develop and deliver a professional development series in Agricultural Literacy that will be free to formal K-8 educators in Coconino County. The class will be delivered ten times over the next four years beginning in 2022. Eleven teachers and educators participated in the program in 2022. They visited the Yavapai College (YC) Agribusiness campus in Chino Valley and learned about indoor tomato production, hydroponic systems, and aquaponics. In addition to the field trip to YC, participants toured Mortimer Family Farms in Dewey, AZ. Here, teachers gained knowledge in the agritourism industry and learned how farmers expand their revenue through value-added products. They also developed curriculum to take back to their classrooms.

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ARIZONA PROJECT WET
Arizona Project WET (APW) is a University of Arizona Cooperative Extension program that fosters water stewardship and STEM literacy by providing teachers with professional development, direct student outreach, and community engagement. APW advocates for change and works with learning institutions to build relevant content that relates to
water conservation, water stewardship, watershed management, and forest and community ecosystems. Thanks to funding from the City of Flagstaff and The Arizona Community Foundation of Flagstaff, Arizona Project WET Coconino teaches water conservation to students in Flagstaff area schools and our broader community using the Arizona Project WET curriculum. APW reached over 3,300 students, teachers, and community members directly with our education programs.

Plant the Rain
Plant the Rain was a water conservation project funded by the City of Flagstaff Sustainability and Water Conservation divisions and completed by APW in partnership with the Arboretum of Flagstaff and FUSD. The project consisted of students building small rain basins in their schoolyard that collected water. Students were introduced to native, drought-tolerant plants through APW’s Plant Superheroes curriculum, with the goal of conserving water and creating water stewards in our community. Two student-designed demonstration rain basins were completed. Seed balls with native, drought-tolerant seeds were distributed to families who participated in educational events and festivals.

STEM & STEAM Community Involvement
Through partnerships with the City of Flagstaff’s Earth Day event, the Flagstaff Festival of Science, Sierra Club Colorado River Days, Willow Bend Environmental Education Center, STEM City Full STEAM Ahead, Coconino Master Gardeners, Museum of Northern Arizona Colton Gardens, and the Arboretum of Flagstaff, APW reached over 1,000 community members with lessons on forest and watershed health, groundwater, native plant adaptations, and water conservation. APW supported our community in the fall by presenting hands-on, model-driven lessons through the Festival of Science, STEM City Festival, and MNA Colton Youth Garden Potluck.

Healthy Forests Healthy Watersheds
The primary goal of this program is to build learners’ and teachers’ foundational understanding of forest ecosystems connected to watersheds and the benefit of forest management practices. APW’s approach to instructional design includes these important parts: instruction must be standards-aligned, it must engage the 3-dimensionality of the standards to be authentic, deep learning, and it must be student-centered. APW integrated these strategies into four fundamental lessons, and it is one of our most popular programs. APW reached 23 classes and 700 students in Coconino County with these lessons.

Arizona Water Festival
Arizona Water Festivals (AWF) instill a deeper understanding of water in the earth system and Arizona’s water resources through a fourth-grade curriculum unit driven by exploration and inquiry. Arizona Project WET celebrated its 16th Annual Flagstaff Water Festival on September 27th. 32 teachers from 11 schools brought 693 students to the festival. This was a spectacular collaborative day between Arizona Project Wet, Flagstaff Unified School District, the City of Flagstaff, and Northern Arizona University. APW trained over 115 other volunteers to deliver lessons and assist with the festival for our Flagstaff 4th graders.

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Horticulture programs at Coconino County Cooperative Extension (CCCE) are some of the most popular programs we offer. These programs use research-based information along with experts from the University of Arizona, other agencies, and our trained volunteers to help people live more sustainable lives in Arizona’s high-elevation forest communities. CCCE has a vibrant and active Master Gardener program with an equally enthusiastic volunteer force. This program helps to educate participants on a wide variety of horticultural topics including plant selection, pest identification, high-elevation gardening, and general urban horticultural concerns. These volunteers are vital to providing accurate information to community gardens, school gardens, non-profit gardens, and the residents in Coconino County. Hattie Braun has managed the in-person Master Gardener Program since 2003, and Gayle Gratop was hired in 2019 to develop and deliver the online program.

Coconino County Master Gardener Program
Two Master Gardener classes were offered in Flagstaff and Northern Arizona in 2022 to fulfill the demand for this popular course; both classes were online. To meet the needs for horticulture education, the asynchronous online program added a Home Horticulture Certificate option. This option doesn’t have the volunteer requirement that the Master Gardener Track does. Fifty-two Coconino residents took the online Master Gardener class option, and 14 took the Home Hort track. We had sixteen new certified Coconino Master Gardeners in 2022.

In 2022, 96 certified and trainee Master Gardeners contributed 6,710 volunteer hours in our community. Master Gardeners volunteered with the Coconino Master Gardener Association and at the Coconino County Fair. They volunteered at many non-profit organizations, including the Arboretum at Flagstaff, the Museum of Northern Arizona, Riordan Mansion State Historic Park, and the Olivia White Hospice Home Garden. We offered 37 classes and presentations to the public reaching 2,811 residents of Coconino County. Online Master Gardener students volunteered directly in their communities.

Coconino Extension Master Gardeners Education Programs and Projects
Beginning Vegetable Gardening series
Master Gardeners offered a free Spring Vegetable Gardener Series in partnership with Coconino Community College, in-person and via Zoom. We had 154 people participate from communities all over Coconino County.

Root Camp
Coconino Master Gardeners partnered with Warner’s Nursery, a local landscaping and nursery company, to offer Root Camp, a series of free gardening classes. Eleven sessions were offered on a variety of gardening topics and most sessions were filled to capacity.

Invasive Plant Information for Homeowners
Coconino Master Gardeners are the driving force for the website ‘A Northern Arizona Homeowner’s Guide to Identifying and Managing Invasive Plants.’ After developing the site in 2016, Master Gardeners updated the information so that Coconino County residents can find timely information to help them with their invasive and weedy plant problems. In 2022 the website had 54,778 unique page views. The site can be found at: [www.nazinvasiveplants.org](http://www.nazinvasiveplants.org). We presented information on weedy plants for three neighborhood meetings.

East Valley Baptist Church Garden Open House
Two hundred twenty-two residents attended the East Valley Baptist Church Garden Open House where Master Gardeners answered questions. Pastor Daryl Bennet became a Master Gardener in 2017 and believes that one way to help people is to teach them about gardening. Two thousand plants were given away at this event to encourage people to garden. Pastor Bennet, along with several Master Gardeners, have developed teaching and community gardens at this church, and gardening workshops were taught at the demonstration gardens.
Coconino Master Gardener Association
The Coconino Master Gardener Association (CMGA) is the non-profit arm of the Coconino Master Gardener Program. The mission of the CMGA is to support the mission of Arizona Cooperative Extension by providing research-based information on environmentally responsible gardening and landscaping to the public. In 2022, the CMGA raised over $5,000 that was used for community gardening and education projects.

CMGA projects included:

**Gardening Etcetera**
Coconino Master Gardeners wrote and/or edited the weekly column ‘Gardening Etcetera’ for the Arizona Daily Sun, a northern Arizona newspaper. 52 gardening columns providing northern Arizona with best gardening practices and information. The Arizona Daily Sun has over 7,000 subscribers.

**Grow Flagstaff Seed Library**
The Grow Flagstaff! Seed Library located at the Coconino County Cooperative Extension Office continues to grow with both seeds and members. At the library, residents can “check out” seeds suitable to our short-season growing conditions and learn about seed starting, sowing, growing, and collecting. The library provides local gardeners access to the most appropriate cultivars for our region of Arizona. We have over 405 subscribers to the library, and over 1,000 packets of seeds were “checked out.”

**The Plant Sale and Garden Festival**
In May, Master Gardener volunteers organized the ‘Plant Sale and Garden Festival’ in partnership with the Museum of Northern Arizona. This event brought together 18 small growers to sell plant starts and native plants as well as garden related products. Vendors sold more than $20,000 worth of plants. This event also had talks, garden tours at the Colton Garden, a tool sharpener, a used tool sale, children’s activities, and an indigenous gardening workshop.

**Flagstaff’s Finest Vegetable Garden Tour**
The first-ever vegetable garden tour was held on August 13. There were over 200 attendees, and $2,500 was raised to support the CMGA education grants program. The attendees had the opportunity to visit eight gardens in Flagstaff to learn more about best vegetable gardening practices.

**Therapeutic Horticulture**
Gayle Gratop, after receiving training in horticultural therapy, began providing programming to at-risk youth in partnership with Coconino Transition School and the local non-profit Terra BIRDS. These youth worked and learned at the NAU Greenhouse to grow native plants and vegetable starts for the Green Schoolyard at Killip. She helped these youth grow plant starts and assisted them with selling $700 worth of plants at The Plant Sale. Ms. Gratop was awarded a $6,000 grant from a local non-profit to begin a new horticultural therapy program at Killip Elementary School. The City of Flagstaff also provided a $5,000 neighborhood sustainability grant to support this work.

**Green Schoolyards**
Thanks to the work of Gayle Gratop, Coconino Cooperative Extension partnered with the City of Flagstaff Sustainability Office and Terra BIRDS to provide ‘green expertise’ at Killip Elementary School. Green Schoolyards’ mission is to ‘create green spaces at schools that improve children’s well-being, learning and play while contributing to their communities’ ecological health.’ Ms. Gratop provided Jr. Wildlife Gardener as an afterschool program at Killip. Jr. Wildlife Gardener is part of the national Junior Master Gardener curriculum. Students assisted with the native plant pollinator garden that was planted at Killip. For this program, the students studied and helped to build a pollinator garden. The City of Flagstaff Sustainability Office provided additional funds to support this work.

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Gayle Gratop received the Heart of Extension Award from Dr. Edward Martin, Arizona Cooperative Extension Director.
Family Consumer and Health Sciences

Family Consumer and Health Sciences (FCHS) Cooperative Extension works to strengthen families, promote healthy lifestyles, and wise financial decisions, and develop community leaders by taking our programs to community centers, schools, churches, and other venues to reach different audiences. Programs are conducted by the University of Arizona county-based extension agents and campus-based extension specialists from the Norton School of Family Consumer Sciences and the Department of Nutritional Sciences. In Coconino County, FCHS programs include positive parenting, financial literacy, local food systems, food safety, dental screenings, and early childhood education. Christy Stuth was hired in May 2019 as the Family Consumer and Health Sciences Area Agent for Coconino and Mohave Counties. She is no longer working for Cooperative Extension.

SNAP-ED

Christy Stuth has worked to strengthen ties to the Coconino County Health Department and partnered with them for an Arizona Health Zone SNAP-Ed Award for the Leupp area. Program Coordinator Valerie Seeton came on board in February 2021 to provide Zoom and in-person education to Leupp Schools Inc., Star School, and Leupp Elementary School. The SNAP-Ed team also worked with the cafeteria manager at Leupp Elementary School to encourage healthier eating in the cafeteria. Technical assistance and support for their state-required local wellness policies were provided to Leupp Elementary and Star Elementary School. Ms. Seeton taught lessons from Healthy Schools, Healthy Classrooms as an after-school program. She also offered virtual cooking classes with food kits sent out to participants to cook with their families.

Positive Disciple and Financial Literacy

In addition to the Snap-Ed grant, funds from the Marley Foundation, one of Arizona most charitable grant-making foundations, were received to support two programs: Positive Disciple, a program that empowers parents to take a positive approach to discipline, and Financial Literacy. Ms. Seeton offered parenting education classes from Positive Discipline at Leupp Elementary School, as well as virtual financial literacy classes. Ms. Seeton resigned in March 2022.

Dental Screenings

Christy Stuth was awarded a Delta Dental Foundation grant for $20,000 to fill gaps for preventative dental education and screenings in Flagstaff Unified School District Schools and local preschools. Registered Dental Hygienist Jenny Zamora-Garcia AKA “the Tooth Fairy” was hired for this program. In 2022, she provided education to 1,215 students and 464 screenings for low-income children in Flagstaff.

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Coconino County Cooperative

Our Mission: As the outreach arm for the University of Arizona, Cooperative Extension enhances the lives of people and communities in Coconino County through Education, Research, Engagement, and Creativity.

Our Vision: We envision strongly connected communities invested in the betterment of every individual. As the University of Arizona in Coconino County:

- We empower people to expand their capabilities to improve their lives.
- We are a well-known, effective, and accessible educational resource for all communities.
- We are a trusted partner in the community for leadership education.
- We develop strong, capable leaders in all communities.