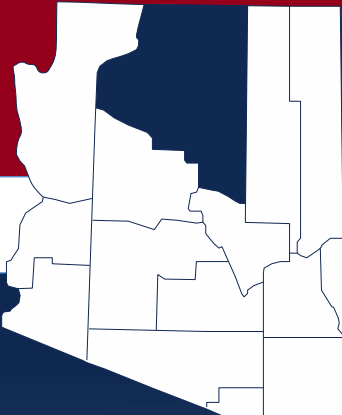


THE UNIVERSITY OF ARIZONA

# Cooperative Extension

Coconino County



## Coconino County Report 2021



THE UNIVERSITY  
OF ARIZONA



## From the Director

The faculty and staff of Coconino County Cooperative Extension are pleased to share the 2021 County Annual Report. As part of the University of Arizona's Division of Agriculture, Life and Veterinary Sciences, and Cooperative Extension, we offer programs in home gardening, 4-H youth development, livestock and range education, invasive plant education, financial literacy, parenting skills, and nutrition to our residents.



We began 2021 with extremely limited in-person activity due to the COVID-19 pandemic, yet we were able to creatively meet the needs of our clientele by embracing and growing our online virtual education programming. This shift in delivery, though definitely a challenge, had a positive effect by enabling us to reach new audiences and communities. As the pandemic continued, the Coconino County Cooperative Extension team continued to adapt to the current conditions to meet community needs. Our work would not be possible without the 180 volunteers who extend our reach through the Master Gardener Program and the 4-H Youth Development Program. Our team looks forward to continuing to provide meaningful programming to the residents of Coconino County.

Regards,

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*The Coconino County Cooperative Extension Team. We started out the year via Zoom but were able to transition back to in-person activities in the spring.*

### Coconino County Cooperative Extension by the Numbers

- **\$222,500** in competitive grant funding was obtained to support youth development, career skill-building, and positive long-term impacts for Coconino County and Arizona youth.
- The Positive Discipline Program educated **63** parents in a 4-week course that taught positive child behavior management strategies.
- **80** youth earned **\$370,000** through agricultural and entrepreneurial 4-H programs.
- **200** residents of Coconino County learned about sustainable vegetable gardening practices during the Flagstaff's Finest Vegetable Garden Tour put on by Coconino Master Gardeners.
- **156** Coconino youth (ages 5-19) enrolled in 4-H and received a high-quality positive youth development educational experience.
- **136** Master Gardeners contributed **6,728** volunteer hours providing garden education and assistance for the residents of Coconino County. This is valued at \$192,017 (2021 Independent Sector).
- 4-H collaborated with Coconino County Parks and Recreation to create a metalworking, welding, and blacksmithing day camp for **15** Coconino County youth ages 8-14.
- **44** adult volunteers were trained, managed, and supported in providing high-quality positive 4-H youth development programming.
- The Financial Literacy Program educated **18** people in a 6-week course that teaches basic money handling and budgeting skills.
- **22** children participated in a financial literacy learning library where they checked out 6 books and accompanying worksheets to learn basic money handling concepts.
- The first cross-county Archery Shoot was held in Coconino County for **30** youth from Page, Williams, Parks, Valle, Kachina Village, Flagstaff, and Baderville.
- **174** children at Leupp Elementary School received after-school programing on nutritional concepts.
- Since 2020, **161** people in northern Arizona have been able to participate in the Master Gardener Program because it was offered online by Coconino County Cooperative Extension.
- **51** students from **8** rural communities in Coconino County were able to take the online Master Gardener class.
- **1,910** local youth received water education lessons thru Arizona Project WET.
- **55,000** unique visitors found information on invasive plant identification and control from the invasive plant website developed by Coconino Master Gardeners.
- A **\$500,000** grant was received in competitive federal grants to support agriculturally focused professional development and curriculum development for K-8 teachers and classrooms.
- **136** residents signed up to Zoom-in to learn about gardening through two Vegetable Gardening Workshop series offered by Coconino Master Gardeners. The resulting videos had **900** views on the Coconino Extension YouTube website.
- **52** columns on gardening topics were published by The Arizona Daily Sun. These were written and/or edited by Coconino Master Gardeners. The ADS has a readership of 12,000.
- Over **440** students received instruction on watersheds, groundwater, the water cycle, and water conservation through the Arizona Water Festival curriculum.
- Arizona Project WET educators provided **200** Killip Elementary School students with forest and watershed lessons to help them understand the flooding that impacted their school.

*Cover photos clockwise from upper left: Frank Branham, president of the Coconino Master Gardener Association offered his garden for the CMGA Vegetable Garden Tour; Hannah Sanes shows off her prize-winning rabbit at the Coconino County Fair; Project WET partnered with the Museum of Northern Arizona to offer a riparian-themed youth camp; the Grow Flagstaff! Seed Library, located at the Extension office; a member of the Page 4-H Club at their Archery Shoot; a prize-winning swine at the Coconino County Fair.*

## 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 over 65 years. In 2016, the Coconino Board of Supervisors specifically requested that CCCE revitalize, strengthen, and grow the 4-H Program in Coconino County.

Joshua Farella was hired as the 4-H Youth Development Assistant in Extension in November 2019 and has worked to strengthen the 4-H Program in Coconino County by providing leadership for adult volunteers, increasing opportunities for 4-H youth, increasing the number of 4-H youth from families not familiar with 4-H, developing new projects, and creating an atmosphere of unity, cooperation, and respect within the Coconino 4-H program. He is now an Assistant Agent for 4-H.

The Covid-19 Pandemic put a halt to most in-person training, creating challenges as well as opportunities for the 4-H Program. In the early part of the year, AZ 4-H Ag at Home provided a webinar series on animal projects that most 4-H youth could benefit from. These webinars focused on delivering reliable, educational information for a variety of animal projects. Topics included health, nutrition, well-being, disease prevention, and more. When Covid-19 metrics improved, many 4-H youth had the knowledge to move forward with their animal projects.



### Adult Leadership

There were 44 active adult leaders in the Coconino 4-H program in 2021. 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 159 youth participating in a variety of projects including leadership, livestock and small stock, cavy (guinea pig), sewing and textiles, gardening, veterinary sciences, robotics, and shooting sports education. Currently, there are eight clubs in Coconino County. Clubs worked on several service projects such as packing boxes for Operation Christmas Child and a Firewise yard cleanup at Mormon Lake.

### 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. Seven adult volunteers are now certified instructors in shooting sports, including two from Page. Two Coconino 4-H youth represented Arizona Shooting Sport at the 4-H Nationals in Grand Island, Nebraska. Adult volunteers supported several pistol and rifle competitions. The first Coconino County Archery Shoot was held in Coconino County for 30 youth from Page, Williams, Parks, Valle, Kachina Village, Flagstaff, and Baderville. An Arizona 4-H Youth Foundation Grant awarded \$2,800 to support archery and other shooting sports competitions.



### 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 22 youth members in attendance, and 59 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 this year. This year they worked on the Bus Stop Garden at the Extension office and helped at the Colton Garden at the Museum of Northern Arizona. They also installed two self-wicking container beds for the garden at our office. These planters, made from repurposed 250-gallon totes, are a great demonstration of how to garden while conserving water.

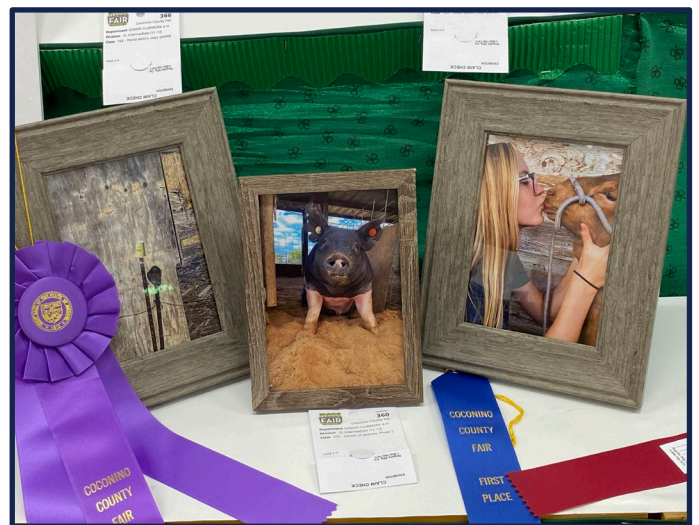


*A 4-H youth demonstrated how to build an animal shelter.*

### Coconino County Fair

The Coconino County Fair plays an important role in the growth and development of 4-H youth. There were 120 livestock projects entered into the fair with sales of over \$370,000 when 102 of 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. 572 projects were showcased at the fair, and 80 youth displayed projects in the Clubwork Building. Hattie Braun, aided by six Master Gardeners, judged the non-livestock projects entered into the fair.

Long-time 4-H leader Sandy Engelke received the Dr. Conley Westover Award to honor her extraordinary leadership and the many years of service that she has provided to the Coconino County Fair and the livestock auction.



*A display at the Coconino County Fair of a prize-winning 4-H youth project.*

### Beginning Blacksmithing

This program gives youth access and instruction to artisan and skilled trade work. Teens learn metal work 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.

In cooperation with Coconino Parks and Recreation Summer Camp, Josh Farella held a two-day 'Blacksmithing Camp' for 15 youth (ages 8-14). Youth practiced forging and learned other metal shop skills for building tools. In December, Josh Farella held a Blacksmithing Workshop for 11 4-H youth.

#### 4-H Military Teen Adventure Camp

Mr. Farella and several Arizona 4-H colleagues received \$200,000 to offer three weeklong Arizona 4-H Teen Military Adventure Camps in summer 2021. These camps were 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, mountain survival skills, hiking, and more.

#### Page 4-H Youth Development

Kristi Schoppmann was hired in 2018 to assist the 4-H for 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 39 youth and 7 adult volunteers.



*A 4-H Military Teen Camp attendee learning about blacksmithing with Josh Farella.*

Page 4-H members participated in the Page 4<sup>th</sup> of July Parade, and held two service projects: Operation Christmas Child and Page Attacks Trash. 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. They were able to hold a local shooting sports competition in August. At the fair, the Page 4-H Club won the 'Most Entries' Award thanks to the great work of Kristi Schoppmann and all the 4-H youth in northern Coconino County.

Page 4-H now has a Cloverbuds Program designed for 5-7 year-olds. This program allows members the opportunity to explore hands-on and discovery-oriented learning activities in a non-competitive space. Cloverbuds learn early on about the 4 Hs of 4-H: Head, Heart, Hands, Health.

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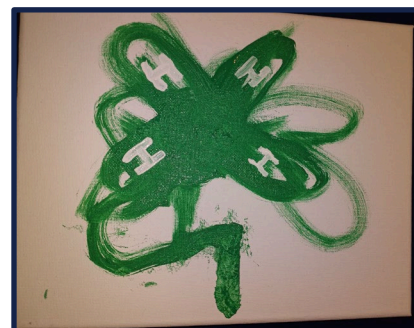
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#### 4-H Pledge

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.



*Youth from the Page 4-H Club display their swine during judging.*



*The 4-H logo and a Cloverbud's rendition of the logo while wearing a blindfold.*



## Agriculture and Natural Resources

**R**angelands 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:

- 43<sup>rd</sup> Annual AZ/UT Range Livestock Pre-Workshop Symposium: Insights on Improving Grazing on Public Land, a virtual program held on March 24 with 120 registered participants.
- 43<sup>rd</sup> Annual AZ/UT Range Livestock Workshop & Tour was held in person March 30 thru April 1 with 252 participants over 3 days and 34 registered virtual participants.
- Cowman's Reproduction Workshop was held in person on September 14 with 56 participants and 29 registered virtual attendees.
- The Invasive Weeds Workshop was held on December 15 with 68 participants and 6 registered virtual participants. Mr. Brischke presented on 'Camelthorn - Biology and Control.'



*Participants at the Cowman's Reproduction Workshop.*

### 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. Two Artificial Insemination Clinics were held: one in June with 12 participants and the second in November with 8 participants.

### 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. Tracy Ridlinghafer was hired to conduct the sampling which occurred on 69 sites on 12 allotments. Mr. Brischke participated in the Forest Research Study Group monitoring on the Diablo Trust Ranches as well as the McCauley Ranch. Allotment monitoring summary technical reports are being compiled and will be sent to respective ranch owners and managers.

**Andrew Brischke**

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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 seven times in 2021. 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.

A Summer Cattlemen's Seminar was offered in Leupp, AZ in June. Live demonstrations included cattle processing, body condition scoring, and vaccination protocols, and information on BQA, record keeping, and culling during drought was presented. A summer Livestock Seminar was held at the Tuba City Fairgrounds in September.

Grey Farrell

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*Grey Farrell, Federally Recognized Tribal Extension Program Agent.*

### COMMERCIAL HORTICULTURE/SMALL ACREAGE

Isaac Mpanga began work with the University of Arizona Cooperative Extension on December 9, 2019. Dr. Mpanga's Extension programs worked to improve and innovate small farm production practices and explore and research new opportunities for small-scale fruit and vegetable production. Isaac was housed in the University of Arizona Cooperative Extension office in Camp Verde. He had a 20% appointment in Coconino County. He recently left Arizona Cooperative Extension for another position.

In the short time that Dr. Mpanga was part of our team, he was very prolific with numerous grants, presentations, and publications. Dr. Mpanga hosted a monthly Small-scale Farmers Colloquium via Zoom. Topics included soil health, hydroponics, food safety, and Flagstaff farms and hoop house temperatures. He published 'COVID 19 Effects on Farming Activities in Arizona and How Farmers and Ranchers Responded', an Arizona Cooperative Extension publication. He received a USDA-NIFA grant for \$ 575,000 to help farmers turn on-farm waste into soil and plant health resources. He received funding from USDA-NRCS under the Conservative Initiative Grant to promote climate-smart agricultural practices among underserved small-scale farmers in Arizona using farmer participatory research. This was funded at \$1,153,886 for 4 years and will continue even with Dr. Mpanga's departure.

Hattie Braun

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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 teacher 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, Arizona Project WET and Arizona Cooperative Extension hired Lorie Cavalli to teach water conservation to students in Flagstaff area schools using the Arizona Project WET curriculum. She started in December 2019 and has worked to provide natural resource education for local schools. She has an M.Ed. in Curriculum and Instruction from Arizona State University.



Lorie Cavalli, APW Instructional Specialist

## Earth Explorers

As a part of a statewide team, Lorie Cavalli implemented a second-grade Earth Explorers curriculum integrating phenomenon-based investigations and engineering practices while meeting Arizona Science Standards and evolving instruction. To date, APW has reached over 2,000 students in Coconino County with this new curriculum. The second annual Earth Explorers Teacher Academy was attended by 13 statewide Arizona teachers and will reach over 277 students. During the academy, teachers studied erosion, water's role in forest systems, post-fire flooding, and forest habitats.

## From Camps to Comic Books

APW Coconino is developing a strong and sustainable program by building collaborative partnerships. In June, APW partnered with the Museum of Northern Arizona (MNA) for a third year to facilitate a week-long riparian-themed camp exploring water stewardship, springs, wetlands, watersheds, and water conservation. APW also developed and implemented a successful new camp called Forest Investigators, exploring forest and watershed ecology topics, and reaching 30 learners. The Discovery Camps at the MNA continued with a second camp with learning about forest and watershed health in July.

For third and fourth grades, Lorie Cavalli, working with the Arboretum at Flagstaff, co-developed a 3-part comic book series: *Plant Superheroes-Adaptations of Our High Desert Plants*, *Bark's Story-Adaptations of Forest Plants and Animals*, and *Plant Superheroes Rain Basin-Passive Rainwater Harvesting and Using Plant Guilds to Conserve Water*.



## STEM & STEAM Community Involvement

Through partnerships with the Flagstaff Festival of Science and the Arboretum of Flagstaff, APW reached over 20 classes and 600 students and 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 these hands-on, model-driven lessons through the Community STEM Festival, ¡También lo Puedo Hacer! (I Can Do it Too) that promoted STEM education to underrepresented groups in Flagstaff.

## Community Action

In the first few weeks of school, Flagstaff experienced post-wildfire flooding, and one of our local schools was adversely impacted. APW wanted to help the students understand why the flooding had occurred, so they adapted the Forest and Erosion lesson from the second-grade Earth Explorers Unit to fit the situation. In the words of Sheryl Wells, Killip Elementary STEM Coordinator, "Arizona Project WET educators provided Killip students a safe setting to share their stories of the flooding." The statewide APW team volunteered to help make it possible to reach over 200 Killip students. Interactive lessons were developed so students could understand the 'why' behind the flood.

### Building Strong Partnerships

Our partnership and education outreach with the Arboretum at Flagstaff continues to grow as we collaboratively teach and market our new Fifth Grade Forest Investigators lessons. In July, APW taught lessons to 35 campers on groundwater and watersheds during the Arboretum of Flagstaff's Water Wonder Summer Camp.

### Healthy Forests Healthy Watersheds

APW received a generous grant from The Arizona Department of Forestry and Fire Management to facilitate educational outreach on the topic of forest and watershed health. The primary goal of this project 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 for either remote or in-person instruction, one for each grade from second through fifth. APW reached 47 classes and 942 students in Coconino County.



*Campers learning about groundwater and watersheds.*

In October, APW completed the fieldwork for the Forest and Watershed Health Video series, releasing the first in the fall of 2021. Video development continued through November and December; the remaining three episodes were released in January 2022. APW's social media channels featured Forest Health Fridays for five weeks. The series was re-posted on our partners' channels. The Forest and Watershed Health Video playlist can be found on the Arizona Project WET YouTube site. To date, there has been over 300 YouTube views of these videos, and the social media campaign reached over 15,000 people.

### 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 our 15th Annual Flagstaff Water Festival on September 28<sup>th</sup>. It was a great success. The program included teacher professional development, 10 lesson plans that activate learning, and a festival event with water professionals and community volunteers engaging students in activities on groundwater, watersheds, the water cycle, and water conservation technology. We had 20 teachers from 6 schools bringing over 440 students to the festival. The City of Flagstaff sponsors The Arizona Water Festival.



*Arizona Water Festival was held in Flagstaff September 28<sup>th</sup> under cloudy skies.*

Lorie Cavalli

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## Horticulture

**H**orticulture 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

Three Master Gardener classes were offered in Flagstaff and northern Arizona in 2021 to fulfill the demand for this popular course, two online and one using a hybrid model. To meet the need 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. Thirty-two Coconino residents took the online Master Gardener class option, and 19 took the Home Hort track. Sixteen students took the hybrid class which included online learning, webinar presentations, and field trips once Covid-19 restrictions were relaxed. Twenty-two students became certified Coconino Master Gardeners in 2021.

In 2021, 136 certified and trainee Master Gardeners contributed 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. They offered 33 classes and presentations to the public reaching 1,375 residents of Coconino County. Online Master Gardener students volunteered directly in their communities. Projects included the Grand Canyon Community Garden, Grand Canyon National Park Native Plants Program, Page Farmers' Market, Page garden education, and the Page High School Greenhouse.



*The Hybrid Master Gardener class visited the Museum of Northern Arizona and the Michael Moore Medicinal Garden.*

### Coconino Extension Master Gardeners Education Programs and Projects

#### *Beginning Vegetable Gardening series*

Organized by Gayle Gratop, two free Vegetable Gardening Class series were offered via Zoom. The first was a 5-week series designed for Page, AZ residents and others gardening at lower elevations in the county. This series, 'Page Backyard Vegetable Growing Series,' included information on growing for farmers' markets and community-supported agriculture. Thirty-nine people attended this series. The series was recorded and made available on the Coconino Extension YouTube site with 198 views. For higher elevations, 'Beginning Vegetable Gardening' was offered with 99 registered for the 5-week series. The recordings had 717 views. The most watched recording featured long-time Coconino Master Gardener and favorite presenter Jim Mast.

#### *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 2021, the website had 55,829 unique page views, up 21% from 2020. The site can be found at: [www.nazinvasiveplants.org](http://www.nazinvasiveplants.org). Educational invasive plant videos were also made and posted on our YouTube site. These videos had 1,529 views.

### *Native Plant Workshop*

Gayle Graton offered a 4-week in-person native plant class to provide advanced training for Master Gardeners. The course focused on classifying, identifying, and gardening with native plants in northern Arizona, specifically in the higher elevations of Coconino County. There were 10 students in the class.

### *Other Gardening Presentations, Workshops, and Activities*

- We continued to receive requests for seeds because of the pandemic. Over 500 seed packages were provided to organizations seeking seeds in 2021.
- Two hundred thirty-six 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.
- Gayle Graton and Josh Farella were awarded a \$500,000 NIFA 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.

### **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 University of Arizona by providing researched-based information on environmentally responsible gardening and landscaping to the public. In 2021, the CMGA raised over \$3,100 to be used on community gardening and education projects.

CMGA projects included:

#### *Gardening Etcetera*

Two Coconino Master Gardeners wrote and/or edited the weekly column 'Gardening Etcetera' for the Arizona Daily Sun, a northern Arizona newspaper. Jackee Alston and Cindy Murray contributed 52 gardening columns providing northern Arizona with best gardening practices and information. The Arizona Daily Sun has over 12,200 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 300 subscribers to the library, and over 1,500 packets of seeds were checked out.

#### *Flagstaff's Finest Vegetable Garden Tour*

The first-ever vegetable garden tour was held on August 21. 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.



*Master Gardener volunteers package seeds for the Grow Flagstaff! Seed Library.*

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## Family Consumer and Health Sciences

**F**amily 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.

### 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. Due to pandemic restrictions, Ms. Seeton created many take-home kits for the students, including kits for physical activity and garden education. Once in-person instruction resumed, she provided direction education for the Leupp Elementary School FACTS after-school program, which included activities from the Cooking Matters curriculum with adaptations to make the curriculum culturally relevant. 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.



*Cooking Matters curriculum was taught at Leupp Elementary School.*

### Positive Discipline and Financial Literacy

In addition to the Snap-Ed grant, funds from the Marley Foundation, one of Arizona's most charitable grant-making foundations, were received to support two programs: Positive Discipline and Financial Literacy. These programs were offered throughout the county and state. Positive Discipline empowers parents to take a positive approach to discipline. This six-session training was held five times with 129 participants. An additional 32 parents and their families from Leupp Schools Inc. benefitted from a new parenting library in the parent resource center created by this program. Due to parent requests, a new session on saving for college was created and delivered to parents in the Leupp community. In addition, a learning library was developed that has an array of early childhood books focused on financial literacy. This Library on Wheels Financial Literacy Lending Library was piloted at Alpine Academy preschool in Flagstaff. Twenty-two preschool students and their families participated in this program.

### Food Safety and Preservation

An online Certified Food Managers Food Safety course was offered in Coconino County. One student from Coconino County completed the food safety training. Christy Stuth is now certified to provide Master Food Preserver training. A partnership with the Killip Elementary School STEM classroom was created to provide dehydrators and information cards to encourage healthy snacking. Parents could check out the dehydrators and make snacks at home by following the instructions. Two hands-on classes were taught at Killip to STEM students.

### Dental Screenings

Christy Stuth was awarded a Delta Dental Foundation grant for \$20,000 for preventative dental education and screenings at Flagstaff Unified School District Schools. This program will begin in 2022.

**Christy Stuth**

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## Coconino County Cooperative Extension

**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.
- We are recognized experts for developing and disseminating research-based information.

## University of Arizona in Coconino County

### Visiting University of Arizona Faculty—2021

Dr. Joslyn Beard, Extension Specialist, Livestock

Dr. Jeremy Elliott-Engel, State Program Leader, 4-H Youth Development

Dr. Elise Gornish, Extension Specialist, Ecological Restoration

Dr. Betsy Greene, Extension Specialist, Equine Professor of Practice, Animal and Comparative Biomedical Sciences

Ashley J.S. Menges, Assistant Agent, 4-H Youth Development and FCHS

William Milashoski, Assistant Professor of Practice, Livestock and Livestock Judging Coach

### University of Arizona Faculty and Staff that contributed content to the 2021 Online and Hybrid Master Gardener Classes

Rick Gibson, retired Agent, Agriculture and Natural Resources, Pinal County

Christopher Jones, Agent, Agriculture and Natural Resources, Gila County

Dr. Steven Poe, Professor and Academic Program Coordinator, Agricultural and Biosystems Engineering

Dr. Ursula Schuch, Professor and Specialist, Horticulture

Dr. Jeffery Silvertooth, Associate Dean and Director, Extension and Economic Development

Dr. Kathleen Walker, Assistant Specialist, Entomology

Jenny Weber, Assistant in Extension, Pesticide Education

### University of Arizona Faculty and Staff that contributed content to Project WET—2021

Amber Hughes, Instructional Specialist, Aqua STEM

Sandra Hurlbut, Instructional Specialist, Aqua STEM

Pam Justice, Program Coordinator Sr., Project WET

Kirstyn Kay, Virtual and In-Person Arizona Water Festival Coordinator

Clayton Lyon, Community Outreach Assistant, Tucson Project WET

Josh Ruddick, Program Coordinator, Project WET

Kerry Schwartz, retired Director and Associate Specialist, Project WET

Mary Ann Stoll, Program Coordinator and Curriculum Development Partner, Forest and Watershed Health

Holly Thomas-Hilburn, Director, Project WET, Arizona Water Festival