Arizona has been awarded $2,260,200 grants to support 55 projects, including but not limited to, 9 research and/or education projects, 5 professional development projects and 27 producer-led projects. Arizona has also received additional SARE support through multi-state projects.

### RESEARCH AND EDUCATION GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| SW19-904   | The utility of plant traits to identify range seeding candidates that can achieve multiple management goals | $342,481     | Elise Gornish, University of Arizona  
Dr. Albert Barberan, University of Arizona  
Andrew Brischke, University of Arizona  
Dr. Bradley Butterfield, Northern Arizona University  
Dr. Jeffrey Fehmi, University of Arizona  
Carissa Koopman-Rivers, Rivers Red Angus  
Dr. Laura Lopez-Hoffman, University of Arizona  
Dan Macon, University of California Cooperative Extension  
Dr. Mitch McClaran, University of Arizona  
Mary Miller, Elkhorn Ranch  
Leslie Roche, UC Davis  
George Ruyle, University of Arizona |
| SW05-065   | Increased production of inland shrimp farms                                  | $98,024      | Feng-Jyu Tang-Nelson, University of Arizona                                    |
| SW01-026   | Development of a Sustainable Polyculture Seaweeds and Fish on Molokai       | $95,200      | Stephen Nelson, University of Arizona Environmental Research Lab               |
| SW01-056   | Conservation Tillage Benefits in a Cotton Centered Crop Rotation System     | $175,277     | William McCloskey, University of Arizona                                       |
| SW01-062   | Assessing Sustainability of Shrimp Aquaculture and Integration with a Field Crop | $68,523      | Kevin Fitzsimmons, Univ of AZ Environmental Research Lab                      |
| SW00-053   | Improving Pollination in the Southwest: Testing the on farm feasibility of establishing and managing the | $32,150      | Jim Donovan, Native Seeds SEARCH/University of Arizona                        |
Sw98-036  Indian Range Livestock Production in the West and Southwest: Entering, Enduring and Emerging from Drought Conditions  $103,000  Robert Kattnig  University of Arizona

Sw98-068  Minimum Tillage Systems for Cotton: Reduced Energy, Time, and Particulates  $182,850  Robert Roth  University of Arizona  Dr. James Walworth  University of Arizona

Sw97-025  Sustainable Culture of the Edible Red Seaweed, Gracilaria parvispora, in Traditional Hawaiian Fishponds  $95,201  Edward P. Glenn  Univ. of AZ, Dept. of Soil, Water & Env. Science

PROFESSIONAL DEVELOPMENT PROGRAM GRANTS

Project #  Project Title  SARE support  Project Leaders
EW17-006  Collaborative Training for Southwest Grassland Restoration under Environmental Uncertainty  $71,503  George Ruyle  University of Arizona

EW14-002  SOLAR ENERGY TRAINING PROGRAM FOR ARIZONA EXTENSION EDUCATORS  $65,559  Dr. Edward Franklin  University of Arizona

EW07-020  “High Tech, High Touch” Professional Development in Geospatial Applications for Invasive Species Management  $60,560  Barron Orr  University of Arizona

EW02-010  Striking a Balance: Rangeland Evaluation and Monitoring in the 4-Corners Region  $100,000  Joanna Austin-Manygoats  Navajo Nation Department of Agriculture  John Blueyes  Navajo Nation Department of Agriculture


FARMER/RANCHER GRANTS

Project #  Project Title  SARE support  Project Leaders
FW19-342  Wild crop relatives and landrace cover crops for arid-land vineyards  $19,669  Sarah Fox  Sand-Reckoner Vineyard

FNC18-1138  Mitigation of Potential Adverse Effects of Transgenic Crop Production for Long-Term Improvement of Soil Health  $7,481  Michael Osweiler  MICHAEL OSWEILER

FW17-017  Honey Bee Mating Control and Production Cost Analysis In Africanized Regions Using Instrumental Insemination  $20,000  Jaime de Zubeldia  Jaime de Zubeldia

FW17-048  Sustainable Alternative Livestock Feed System for Small-Scale Ranchers  $20,000  Chelise Largent  Chelise Largent

FW16-032  Sustainable Water Management in a Passive Irrigation System  $19,660  Aaron Anderson  Viking Agriculture LLC

FW14-007  Sustainable Method of Protecting Western Redcedar from Deer Browsing  $15,000  Dr. Andrej Romanovsky
<table>
<thead>
<tr>
<th>Project ID</th>
<th>Description</th>
<th>Cost</th>
<th>Principal Investigator/Project Lead(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FW13-142</td>
<td>Integrating Traditional Foods with Aquaponics in the Desert Southwest</td>
<td>$14,972</td>
<td>Aaron Cardona Arevalos Farm</td>
</tr>
<tr>
<td>FW12-068</td>
<td>On-Farm Pollinator Habitat</td>
<td>$25,000</td>
<td>Dr. Gary Nabhan Almuniya de los Zopilotes orchard</td>
</tr>
<tr>
<td>FW11-033</td>
<td>Navajo Crop Demonstration Project</td>
<td>$30,000</td>
<td>Ernesto Zamudio Principal Investigator</td>
</tr>
<tr>
<td>FW11-017</td>
<td>Agricultural Soil Amendment Project</td>
<td>$14,870</td>
<td>Bill Edwards North Leupp Family Farms Stacey Jensen NLFF</td>
</tr>
<tr>
<td>FW10-060</td>
<td>Eastern Navajo Cattle Herd Improvement</td>
<td>$29,992</td>
<td>Anthony Howard Eastern Navajo Cattle Growers</td>
</tr>
<tr>
<td>FW09-032</td>
<td>Intensive Cultivation Through Edible Cover Cropping Integrated with Bee Keeping</td>
<td>$14,900</td>
<td>James Golo</td>
</tr>
<tr>
<td>FW07-310</td>
<td>Hopi Rangeland Management Series</td>
<td>$14,513</td>
<td>Dennis Becenti</td>
</tr>
<tr>
<td>FW05-005</td>
<td>Partnership for Monitoring Rangeland and Riparian Health in Red Rock Canyon Watershed, Santa Cruz County, Arizona</td>
<td>$19,976</td>
<td>Richard Collins Collins C6 Ranch</td>
</tr>
<tr>
<td>FW04-113</td>
<td>Ganado Farm Board Agricultural Marketing Study</td>
<td>$15,000</td>
<td>Teresa Showa Ganado Farm Board</td>
</tr>
<tr>
<td>FW03-002</td>
<td>EC Bar Ranch Riparian Grazing Management Project</td>
<td>$7,500</td>
<td>James Crosswhite EC Bar Ranch</td>
</tr>
<tr>
<td>FW03-104</td>
<td>Wool and Weavings Fair Traded from the Source</td>
<td>$15,000</td>
<td>Carol Halberstadt Black Mesa Weavers for Life and Land</td>
</tr>
<tr>
<td>FW02-215</td>
<td>Chinle Valley Navajo Truck Farm Project</td>
<td>$13,500</td>
<td>Gwendolyn Wagner</td>
</tr>
<tr>
<td>FW01-066</td>
<td>Fruitvale Community Garden</td>
<td>$2,768</td>
<td>Patricia Vigil</td>
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<tr>
<td>FW00-258</td>
<td>Gila River Farms Fresh Produce Market</td>
<td>$3,750</td>
<td>Mary Thomas</td>
</tr>
<tr>
<td>FW00-325</td>
<td>Navajo Corn Pollen, Young Ears of Corn for Knee-Down-Bread, and Neeshjizhi Marketing</td>
<td>$7,740</td>
<td>Teresa Showa</td>
</tr>
<tr>
<td>FW00-338</td>
<td>Sustainable Shrimp Farm Tours and</td>
<td>$5,800</td>
<td>Gary Wood</td>
</tr>
</tbody>
</table>
Direct Sales Project

**FW99-061**  
**Carrying on Dine’ Cultural/Traditional Flour Corn Farming: Roots of Dine’ People**  
$5,000  
Woodie and Maggie Jodie

**FW98-031**  
**Navajo Nation Livestock Disease Survey**  
$7,000  
Glenda Davis

**FW96-010**  
**Moving Succession Forward in a Lahmann Lovegrass Monoculture**  
$3,000  
Steve Getzwiller  
Spear G Ranch

**FW96-012**  
**Goal-Driven Intensive Management of a Riparian/Sandy Bottom Site**  
$4,310  
Kali Holtschlag  
Adams Ranch

**FW96-045**  
**Managing Biological Processes for Maximum Diversity and Productivity**  
$2,500  
Mike Mercer

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**GRADUATE STUDENT GRANTS**

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| GW19-196  | Shrub Encroachment Early Detection System (SEEDS): a rangeland conservation tool | $24,994      | William Rutherford  
University of Arizona  
Steven Archer  
The University of Arizona  
Dr. Larry Fisher  
University of Arizona  
Elise Gornish  
University of Arizona  
Patricia King  
Altar Valley Conservation Alliance  
Dr. Willem van Leeuwen  
University of Arizona, Arizona Remote Sensing Center |
| GW18-131  | Empowering producers to effectively integrate chemical and biological controls through research and outreach on selective chemistries and impacts on natural enemies. | $25,000      | Isadora Bordini  
University of Arizona  
Isadora Carlos Bordini  
UofA |
| GW18-024  | Ecosystem Services on Shrub-Encroached Rangelands; Balancing Supply and Demand | $25,000      | Steven Archer  
The University of Arizona  
Scott Jones  
University of Arizona |
| GW15-006  | Biocrusts, grass establishment, and restoration of working rangelands | $24,934      | Steven Archer  
The University of Arizona  
Cheryl McIntyre  
University of Arizona |
| GW12-064  | Enhancing the Potential for Sustainability through Participatory Environmental Assessment | $25,000      | Barron Orr  
University of Arizona  
Anahi Ocampo Melgar  
University of Arizona |
| GW10-004  | Assessing Direct and Indirect Interactions between Insect and Plant Pathogens and Their Impact on Insect Herbivores | $24,996      | Dr. Patricia Stock  
Entomology-University of Arizona  
Patricia Navarro |
| GW10-015  | Agriculture, Water, and Institutions: An Investigation of Water Management | $8,795       | John Anderies  
Arizona State University |
Policy and its Effects on Water Use by Agriculture in Arizona  
Haley Paul  
Arizona State University

GW10-030 Characterization of Soil Fungal Communities Associated with Native and Invasive Grass Species in Southern Arizona  
$18,329  
Dr. Barry Pryor  
University of Arizona  
Carol Rowand  
University of Arizona Dept. of Plant Sciences

GW10-034 Influences of Society, Politics and Local Knowledge on Ranch Management  
$25,000  
George Ruyile  
University of Arizona  
Steven Woods  
University of Arizona

GW07-004 Contamination of non-Bt cotton fields by transgenic Bt cotton  
$20,000  
Yves Carriere  
University of Arizona  
Shannon Heuberger  
University of Arizona

GW07-007 An Environmentally-Friendly Alternative for Control of the Citrus Nematode in Arizona  
$19,746  
Dr. Patricia Stock  
Entomology-University of Arizona  
Joanna Gress  
University of Arizona

ON FARM RESEARCH/PARTNERSHIP GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| OW12-010  | Production, Milling and Marketing of Arid-Adapted Heritage Grains in the Desert Borderlands to Increase Food Security | $49,950 | Chris Schmidt  
Native Seeds/SEARCH

PDP STATE PROGRAM GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| WSP19-026 | 2019 Western Professional Development State Program - Arizona | $28,686 | Dr. Randy Norton  
The University of Arizona  
Rick Gibson  
The University of Arizona  
Dr. Ed Martin  
The University of Arizona  
Dan Pacheco  
Pacheco Farms  
Trent Teegerstrom  
The University of Arizona  
Dr. Jim Walworth  
The University of Arizona

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<thead>
<tr>
<th>Project #</th>
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</thead>
</table>
| WSP17-003 | 2018 University of Arizona PDP Project | $37,998.54 | Rick Gibson  
The University of Arizona

Total funding from the USDA SARE program to Arizona  
$2,260,200

For further information on projects, contact Western SARE at (435) 797-2257 or wsare@usu.edu.  
Sustainable Agriculture Research and Education (SARE) is funded by USDA's National Institute of Food and Agriculture (NIFA).