

Youth Engaged Stewardship, YES! 2012-2018

The Cienega Watershed Partnership's YES! program combines stewardship and leadership training for teens aged 14-19. During spring and summer, 12 youth participate in sessions that include team building, leadership training, field orientation, restoration and project design. Youth, working with land managers and scientists, design and implement restoration projects on public lands, with the intent of producing sustained long term change. Students walk away from YES! program with a strong understanding of land management, a strong work ethic and outstanding communication and leadership skills.

Scientists and managers from the BLM and other nonprofit organizations are essential to the program providing ecological orientation, landscape assessment, and specific restoration skills.

Youth have worked with the following scientists and professionals:

- Gita Bodner, The Nature Conservancy
- Jason Field, UofA soil ecologist
- Dennis Caldwell, Frog Conservation Group
- Robert Fink, retired Arizona Game and Fish
- Brittany Oleson, Arizona Game and Fish
- Chris Schrage, Bureau of Land Management
- LoriAnne Barnett, National Phenology Network
- Natalie Wilson and Julian Heilman, USGS
- Matt Clark, Independent Contractor
- Trevor Hare, Watershed Management Group
- Jim Rorabaugh, retired Fish and Wildlife Service
- Ian Tomlinson, Vera Earl Ranch
- Jeff Simms, BLM
- Karen Simms, retired BLM

YES! partners are the BLM Tucson Field Office, Cienega Watershed Partnership, and Empire High School (Tucson, Arizona).

Funding for YES! has been provided by BLM and NFWF. Additional funding has been provided by donors (Freeport-McMoran, Summit Hut, and B&B Cactus) to in-kind assistance provided by volunteer scientists from the YES! Partners, The Nature Conservancy, University of Arizona, the FROG Project, Arizona Game and Fish and BLM resource managers.

YES! 2018 youth completed:

- the Hummel house and surrounding structures were measured, documented and assessed and a final report submitted to BLM for their use. Brush and debris were removed from around the existing structures to form a firebreak and upkeep the exterior of the buildings.
- purchased block for habitat improvement on 2 frog ponds with work on one pond completed by volunteers from Empire High School.
- successfully ran a volunteer day to complete their restoration work at the Bill's pond. Students and volunteers installed over-wintering habitat structures for amphibians and fish in the banks of the pond. Work was also completed on locating and excavating the water line to the pond, which will be rerouted to improve water circulation. YES! students were responsible for leading the day's events and managing all volunteers.
- report was submitted to the Bureau of Land Management on the wildlife camera captures for the time period of August 2017 to July 2018.
- population survey on one of the prairie dog restoration sites was completed and report submitted

- photo points were documented for the sacaton restoration site and monitoring protocol set for soil testing documented. Soil testing equipment was purchased for continued monitoring at the site.

YES! program accomplishments include:

2012: Students focused their efforts at improving Cottonwood pond for future leopard frog reintroduction. They propagated deer grass and planted, purchased rocks for stabilizing bank and water tank, mapped out placement of fencing, established photo-monitoring points, and designed educational signage for the site.

2013: Students focused on the Cieneguita habitat ponds. Huachuca water umbel was transplanted in one of the habitat ponds. Students ran a volunteer day at the site, transplanting native grasses and removing dirt piles.

2014: Students completed a sacaton vegetation restoration project to reduce erosion and increase moisture retention for seeds. The youth led 22 volunteers in removing invasive species in native habitat ponds and replanting native grasses. Youth designed educational signage, purchased rocks (to improve a frog habitat) and tools for future YES!

2015: Students continued work at the Gardner sacaton site, setting up 2 study plots to research different soil treatments to mitigate erosion. Youth led volunteers in planting salt tolerant sacaton, placing rock structures, and scarifying soil. Educational signage was completed for the site and data collection protocol was established.

2016: Students furthered their work efforts at the sacaton site by planting salt tolerant sacaton in clusters and transplanting crypto-biotic crust into the enclosed study plot. French drains were dug to aid with water retention and run-off in an area of heavy erosion. Educational signage was designed for pronghorn conservation.

2017: Over the course of the summer, students documented and aided in the preservation of an historic apple orchard and pipeline, surveyed and collected data on a prairie dog restoration site that contributed to ongoing population monitoring, collected data on a sacaton restoration site and removed invasive species from habitat ponds. Youth contributed to the development of a new habitat pond by transplanting aquatic plants and improving bank structure/habitat for native fish and frogs. Wildlife cameras were also purchased for installation at 2 habitat ponds. Empire High School students installed cameras at Cottonwood and Bill's ponds, and provided maintenance and collection of image captures.

And beyond:

- Huachuca water umbel that was successfully transplanted into one of the Cieneguita habitat ponds has now spread to the other 2 pond sites.
- Cottonwood is a successful leopard frog and native pupfish habitat.
- Signage has been installed for the public to gain valuable knowledge on the importance of the grasslands at LCNCA.
- Monitoring is ongoing at the sacaton flats.
- Bio crust has been transplanted successfully into the sacaton restoration site.
- Wildlife cameras capture images of robust and healthy habitat ponds at LCNCA.
- Student research and reports contribute to BLM management of LCNCA.
- Empire High School students continue to monitor and collect data, and hold volunteer days at restoration sites throughout the school year.
- Program has contributed approximately 20,000 volunteer hours to LCNCA.