



Willow Bend
environmental education center

founded by the
Coconino Natural Resource Conservation District

ANNUAL REPORT

Fiscal Year 2014

July 1, 2013 - June 30, 2014



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Local Resources

Not only do we teach about local natural resources, but we are a local resource. Many of Willow Bend's K-12 programs are designed to be multi-disciplinary. We touch on as many academic standards as possible, while keeping the program engaging and fun for kids. Our downtown geology program introduces children to Flagstaff's early pioneer days through a geologic scavenger hunt of Flagstaff's historic rock buildings. The McMillan building adds to the intrigue because it is constructed of a variety of local rocks as its builders made use of any sturdy rock available. This intersection of geologic and human history provides a springboard for a discussion about how our local natural resources shaped our town and early pre-historic settlements. Through support from the National Park Foundation we continue to partner with the Flagstaff National Monuments and three FUSD



6th graders from FUSD's Alpine Preparatory Academy explore the rocks used to build the McMillan building (above). Students from Kinsey Elementary are among the first to see the new watershed and terrain model (below.)



classes to take an in-depth look at sustainable practices of ancient cultures.

The theme continues through our adult education programs as well. This past year we welcomed keynote speaker Brad Lancaster to Flagstaff for our fundraiser, held at Ponderosa High School. Brad's message was a perfect fit. He spoke about enabling the environment to do more by allowing free local resources to work for you, thereby increasing the capacity of your land and reducing your demands upon it.

To help students see these connections and learn about physiographic maps, we designed and built a new watershed and terrain model for northern Arizona (see page 6). Meanwhile, tending to our own backyard, we began a restoration project on the slope between Willow Bend and the Rio de Flag, and thanks to the help of several dedicated volunteers we have been doing a lot of maintenance work improving our building and grounds.

-Russell Tweed, Director

America's Best Idea

SUSTAINABLE LIVING – THEN AND NOW

For several years Willow Bend has partnered with the Flagstaff Area National Monuments to provide local K-12 students with classroom programs about the human and geologic history of Walnut Canyon, Sunset Crater Volcano, and Wupatki National Monuments. This year – thanks to funding from the National Park Foundation – we deepened that partnership through a project working with three 4th-grade classes across Flagstaff.

Based on Willow Bend's successful 5-points project from 2012-13, this project incorporated

classroom programs, field trips, service-learning, a teacher professional development workshop, and a family science program.

Classroom programs were co-taught by “Ms. Cassandra” (from Willow Bend) and “Ranger Sara” (National Park Service Interpretive Ranger) and focused on the human history of the local monuments. Students learned how the Ancestral Puebloans found food and water, why their shelters/homes were so sustainable, and about what the National Park Service does today.



4th graders and chaperones from Marshall Elementary explore sustainable living from the perspective of ancient civilizations.

Each class went on two field trips – the first to Sunset Crater Volcano and Wupatki and the second to Walnut Canyon. The first field trip included a hike up Lennox Crater, activities about the changing vegetation life-zones, and a ranger-led tour of Wupatki Pueblo. At Walnut Canyon students explored the cliff dwellings, made their own pueblo models, and became “Junior Rangers.”

The final stage of the project was service-based. Students discussed the concepts of sustainability and stewardship and considered their role in caring for special places and the environment. They then designed and created posters reminding Monument visitors to “Recycle paper and cans,” “Use reusable drinking bottles,” and to “Save paper and trees

by using hand dryers.” These posters are on rotating display in each of the three Monument visitor centers.

As a final celebration of the project, students graduated as “Climate Friendly Kids” – the first in the nation to do so!

- Cassandra Roberts, Program Manager



The students created posters with conservation messages for Monument visitors. The posters are on rotating display in each of the three Monument visitor centers.



Restoration Work Begins

TAKING CARE OF OUR OWN BACKYARD

As part of our Earth Day celebration this past April, we adopted a technique from Brad Lancaster's book, *Rainwater Harvesting for Drylands and Beyond*, Vol. 2. The focus of our project was to redirect rainwater into an area where it is challenging for vegetation to become established – the hillslope below Willow Bend and Sawmill Park. The slope faces south, is fairly steep, and has many areas of disturbed and bare soil, and some invasive weed problems. With a grant from the Arizona Forestry Division's Community Challenge Grant Program with funds from the USDA Forest Service, we started this work and expect to continue in small, manageable sections.

We chose an area near the southwest corner of our building where we already have some small rainwater collection barrels. These barrels frequently overflow in heavy precipitation events and it is the overflow that we aim to capture and redirect. We are grateful for the hard work of the volunteer crew from the American Conservation Experience that completed the digging and leveling, while volunteer Norm Lowe did the trenching and installed the pipe.



The first step in our restoration work on the slope between Willow Bend and the Rio de Flag was to create a terrace to catch overflow from our rainwater collection barrels. The piping installed by Norm Lowe extends from the southwest corner of the building to the terrace below.



Toward the end of our rainy season we will select trees and shrubs to plant in the new terrace. We will create some shade, healthy soil and improve the habitat before moving on to another section.

Please drop by to take a look and gather ideas for how something similar could be used to capture rainwater at your home or neighborhood to rejuvenate areas with a drink of free water.

A volunteer team from American Conservation Experience led by Matt Roberts built the terrace and covered it with wood chips from an unrelated tree thinning project.

Watershed and Terrain Model Arrives

3-D RELIEF MAP OF FLAGSTAFF REGION

Our new Watershed and Terrain Model arrived in May. Many months of planning and plotting what features to include and/or label has resulted in a beautiful, realistic 3-dimensional representation of Flagstaff and surrounding regions. Some features included are:

- Watershed boundaries
- Riparian areas and springs
- Water wells
- Major utility lines
- Arizona Watchable Wildlife sites

K-12 schools

Topographic features, and much more...

Currently we are working on a system to facilitate bringing the model to schools and community events. Please contact us for scheduling and associated fees.

Thanks very much to The Wildland Trekking Company for supporting this project, and a special thanks to volunteers Norm Lowe and Collis Lovely for their many hours compiling information and discussing ideas

Willow Bend expanded its open hours to include Saturdays during the summer for drop-in guests from Flagstaff's Southside neighborhood as well as visitors to the retail shops north of Willow Bend, both of which use Coconino County's Sawmill Park, in which Willow Bend is located. The new 3-D model has been a focus of many of these visits.



Volunteer Spotlight:

KATHLEEN SATTERFIELD

Kathleen Satterfield has a vision for the native gardens that surround Willow Bend in Sawmill Park. She imagines sitting under the new ramada watching the native flowering plants generate a flurry of activity with butterflies, bees and hummingbirds zipping around from flower to flower. She and fellow volunteer Charmain Lovely are dedicated to turning the vision into reality. They regularly visit to remove weeds, monitor, and watch what is blooming, when and where. Kathleen's volunteer work started in the humming bird garden that had been taken over by snowberry, and now also includes invasive weed removal on the slope below Willow Bend.

The snowberry has been a challenge; it is not a dangerous invasive "but it did crowd out the perennials in the humming bird garden. We tried sheet mulching with cardboard weighted down by rocks, but the snowberry was too aggressive" she explained. "We have seen better success with weed cloth and now we are spraying horticultural vinegar around the edges." She researched non-toxic weed-control alternatives and has found the higher acidic content of this vinegar to be effective. It kills the leaves but not the roots so repeated applications are necessary. "For people looking at ideas for safe home use on weeds, the 1-gallon sprayer was only \$10 and a gallon of the special vinegar was \$15."

Before volunteering at Willow Bend, Kathleen worked for 5 years on scotch thistle removal at Logan's Crossing along the Rio de Flag, east of Flagstaff. This spring she and Charmain began a similar effort on this invasive species on the slope between Willow Bend and the Rio de Flag.

After Kathleen retired from a career in corporate accounting she found a new passion in environmental education while volunteering at Torrey Pines State Natural Reserve north of San Diego. She later served as President of the San Diego Audubon Society while owning and operating a Wild Birds Unlimited store. More recently she was a founding member of the Friends of the Rio de Flag and continues to be involved that organization.



Kathleen Satterfield and Charmain Lovely have regularly volunteered at Willow Bend on a long-term project to remove invasive species while planting and encouraging native flowering species for wildlife.

Now that the summer rains have returned, she and Charmain have turned their attention to the ragweed that has moved into some of the gardens. In the meantime, she is excited to start thinking about what to plant in the soon-to-be revitalized humming bird garden for next season. Willow Bend is very lucky to have such wonderful volunteers and we thank them for their hard work and dedication.

Thank You to the Organizations that Enable our Success

BUSINESS SUPPORT

Sustaining (\$1000 and above):



Steward (\$500-\$999): APS

Collaborator (\$250-\$499): SCA Tissue; Flagstaff Native Plant and Seed; Natural Channel Design

We would also like to thank: Wilson's Auto Repair, Heath's Paint Center, Center for Spiritual Living-Flagstaff, Foliage Unlimited.

MAJOR GRANT, CONTRACT, OTHER SUPPORT

- City of Flagstaff Art and Science Fund/BBB Revenues, and the Flagstaff Arts Council
- *Public School Educational Programs:* Coconino



Natural Resource Conservation District, Coconino County Superintendent of Schools, Flagstaff Unified School District, AZ State Land Department, Williams Unified School District

- National Park Foundation (in partnership with Flagstaff Area National Monuments.)
- Urban and Community Forestry Financial Assistance Program administered in cooperation with the Arizona State Forestry Division - Urban and Community Forestry and the USDA Forest Service
- Arizona Game and Fish Department Heritage Fund
- Flagstaff Community Foundation
- The City of Flagstaff Sustainability Program
- Coconino County Community Initiative Grant



Thanks to our partnership with Arizona Game and Fish Department and Liberty Wildlife Center, and support from Mountain Sports Flagstaff, we are able to offer free Family Science programs on Arizona wildlife.

Program Summary

K-12 Programs

Informal learning centers, such as Willow Bend, play an important role in K-12 education: we provide out-of-the-ordinary experiences such as guest visits to classrooms, demonstrations, and field trips that trigger effective learning opportunities. Proven strategies we use in our programs that enhance learning are experiential education and place-based education. We work at over 25 public schools from three school districts as well as six schools on the Navajo and Hopi Nations. We also work with regional charter schools, such as Montessori Schools of Flagstaff, Leupp Schools Incorporated, and have classes that visit for field trips from as far away as Tuba City and Kykotsmovi.

- Number of School Programs presented: **306**
- Number of Students reached through those programs: **7,281**
- Top programs for 2013-2014: Groundwater, Starry Skies, Rock Talk, Fire Ecology, Alien Plant Invaders, Mystery Animal: Condors, Grand Canyon Geology, Plant Power, Erupting Earth, Adapt to Survive, Downtown Flagstaff Geology, Images on Stone, Living Within Your Climate



Kindergartners look at ants with their hand lenses during their field trip to Willow Bend focused on exploring habitats.

Education Programs

The number of people reached for all programs by Willow Bend was **17,019**. *Adult education* programs connect our visitors with experts from a variety of fields such as forestry, botany and sustainability through presentations and workshops. *Family Science* programs typically include games, hands-on activities and presentations from experts. Subjects included: Midnight Hunters, Eagles, Arizona Animals, and Family Gift-making.

Projects, Programs and Progress



Top left: Volunteer Norm Lowe sealed the cracks and then painted the exterior of Willow Bend's building in the fall of 2013. It was the first time the building had been painted. Top right: a volunteer group from Coconino Community College completed several service projects on the grounds during their volunteer day. Bottom: Mick Henry did a workshop on tree care and maintenance using the wide variety of trees and shrubs at the County's Sawmill Park as the demonstration area. He later returned to complete much of the maintenance work. This program was supported through USDA Forest Service funds through the Arizona State Forestry grant process.



About Us

Willow Bend Environmental Education Center was founded by the Board of Supervisors of the Coconino Natural Resource Conservation District in 1978. This past year the Willow Bend Advisory

Board transitioned to a Board of Directors. All board members that served during Fiscal Year 2014 are listed below. Italicized names are those serving as of June 30, 2014.

CNRCD Board of Supervisors

- *Mike Macauley*
- *Paul Babbitt*
- *Steve Gatewood*
- *Jim Parks*
- Pat Browning
- Kit Metzger
- Norm Lowe

Willow Bend Board of Directors

- *Bret Carpenter*
- *Holly Taylor*
- *Andy Gould*
- *Steve Gatewood*
- *Jim Corning*
- *Shelly Shepherd*
- *Tom Hanecak*
- Rollie Kohl
- Norm Lowe
- Matt Roberts
- Veronica Hipolito
- Tim Clark

Volunteers from Coconino Community College learned about invasive weeds through an interactive game and then performed a related service project on the grounds.



Staff and Volunteers

Russell Tweed, Director

Cassandra Roberts, Program Manager

Val Grimmert, Educator

Joe Zofrea, AmeriCorps Educator

Thank you to the following key volunteers not mentioned elsewhere in this report, for their substantial donation of time and skills:

Joyce Chriscoe, Kathy Hayes, Linda Kranz



Top right: AmeriCorps volunteer Joe Zofrea holds a Prairie Dog in preparation for a Family Science Program. Below: Project WET (Water Education for Teachers) held a training seminar at Willow Bend this spring. Many local teachers attended to learn about water issues and curriculum that can be used in the classroom.

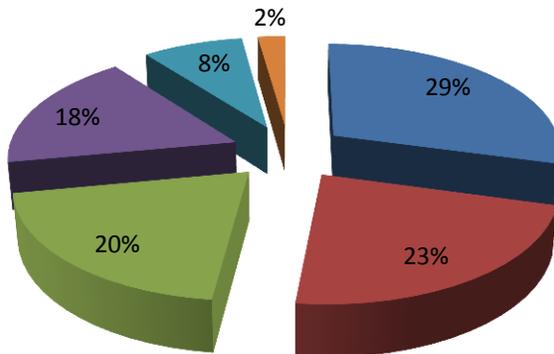


Financial Position

Our financial information is entered and tracked in Quickbooks with advice from a professional CPA. The information presented below is on an accrual basis and is unaudited.

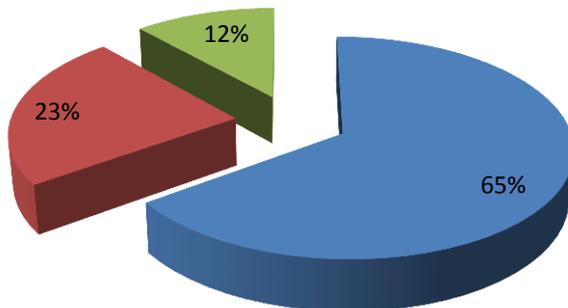
July 1, 2013 – June 30, 2014

Income



Grant	\$	36,125
In-kind	\$	27,907
Contract	\$	24,895
Contributions	\$	21,648
Program	\$	10,142
Misc.	\$	2,766
Total	\$	123,483

Expense



Program	\$	102,255
Management	\$	36,616
Fundraising	\$	18,296
Total	\$	157,167

(Note: Grant awards received in June, 2014 for projects occurring during FY 2015 were reclassified as deferred revenue for FY 2015, resulting in loss in FY 2014.)

Balance Sheet

June 30, 2014

ASSETS

Current Assets

Checking/Savings	72,446
Accounts Receivable	15,349
Other Current Assets	23

Total Current Assets 87,818

Fixed Assets 13,932

TOTAL ASSETS 101,750

LIABILITIES & EQUITY

Liabilities

Current Liabilities

Other Current Liabilities 23,054

Total Current Liabilities 23,054

Total Liabilities 23,054

Equity 78,696

TOTAL LIABILITIES & EQUITY 101,750

Willow Bend Environmental Education Center

703 East Sawmill Road, Flagstaff, AZ
86001.

(928) 779-1745

www.willowbendcenter.org

*Willow Bend is a 501(c)(3) nonprofit
organization.*

(Note: Willow Bend has an endowment fund not included in the above figures at the Arizona Community Foundation valued at \$35,995 as of 6/30/2014.)

Below: Children from the
Boys and Girls Club of
Flagstaff made their own
mini-watershed models.

