



**The Habitat Gardens at  
Sawmill Multicultural Art and Nature County Park**

**2019 Accomplishments and Plans for 2020**

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## The Friends of Willow Bend Gardens

When we were first asked to help care for the gardens, we thought it was simply a way to support the programs of the Willow Bend Environmental Education Center. We've since discovered that volunteering at Sawmill County Park means even more to us than that. We've seen how the gardens provide habitat for wildlife and a much-appreciated amenity for the human community too. We like working together and with an inspiring array of other volunteers including college and high school students, Eagle Scout candidates, members of the American Conservation Experience, and Willow Bend interns and Board members. Our time in the gardens helps us understand and appreciate the natural world around us, from the Flagstaff area's climate to its native plants and its birds, insects, reptiles, and other wild creatures. Dr. Paul Beier, an NAU Wildlife Biology Professor who lives across Sinclair Wash, tells us the gardens are likely visited by gray fox, mule deer, rock squirrels, Abert squirrels, striped skunks, raccoons, pocket gophers, two species of chipmunks, Mexican voles, deer mice, and possibly, coyotes.

The gardens connect us with the community. We've become acquainted with birders and trail runners, dog walkers, young families, sauntering seniors, and visitors from all over the world who google "park" on their smartphones. We're convinced that the common perception of a conflict between the generations is hokey and that Sawmill Multicultural Art and Nature County Park is a unique Flagstaff treasure.



### Summary

2019 was a challenging year for the gardens, as it was for all of greater Flagstaff. After a very rainy spring fostered a surge of non-native weeds and other invasive plants, the Flagstaff area entered into the worst drought in recorded history. In contributing over 1,450 hours, volunteers not only kept the gardens alive and well but also completed several projects including improvements to the irrigation and roof water collection systems, the restoration of two gardens, and a new terrace garden to host an NAU Milkweeds for Monarchs site. Leftover funds from 2018 allowed us to purchase all the supplies, materials, and tools we needed. Dr. Michael Erb, NAU post-doc Meteorologist, cleaned and updated the EE Center's weather station and laptop/monitor so the center can again collect weather data after several years without it. A visit to the Highlands Center for Natural History in Prescott prompted us to work with environmental education staff on a plan for a new Creative Play Area in a vacant spot next to the shed.

Plans for 2020: the Play Area, an orientation and rest area for visitors by the door to the Environmental Education Center, reimagining the Medicinal Plant Garden, and at least three Eagle Scout projects: a water collection system on the shed roof, a substantial compost system, and replanting one of the Wildflower Meadows. We plan to enhance our volunteer program with an orientation/training day, celebrations for waking up the gardens in spring and putting them to bed in fall, and maybe bandannas. We hope to install signs identifying each garden with QR codes linked to web pages, along with externally-produced signs for the Monarch Waystation and Pollinator Habitat. We would like to establish an iNaturalist project for the gardens with a sign explaining how to participate in it.

### Funding and Donations (mostly left over from 2018)

Peter Hilliard/Epiphany Episcopal Church Children's Collection .....	\$395.83
Jack Welch .....	\$50.00
Anonymous .....	\$500.00
Garden Portion of Heritage Fund Grant, Arizona Game and Fish .....	\$2,500.00
Total Received	\$3,445.83
Total Spent .....	<u>\$3,664.39</u>
Amount to be added to 2020 County Supervisors Funding Request .....	<u>\$218.56</u>

#### Non-cash donations

- Birdseed and suet: Jay's Bird Barn
- 8 monkeyflowers: Dr. Mike Rotter, from his NAU PhD research project
- 15 milkweeds: NAU Arizona Milkweeds for Monarchs Program
- 4 rainwater collection barrels: USFS Research Station
- Chocolate chip cookies for volunteers: Chik-Fil-A (prompted by an article in The AZ Daily Sun)

### Volunteers

Total Volunteer Hours = 1,452\*

#### Groups

American Conservation Experience (ACE)  
Boy Scouts of America, Troop 31, Federated Church  
Desert Palm UCC Church youth group, Tempe  
Making Things Right: Step Up Juvenile Justice Program  
NAU MBA Students  
NAU First Generation Program  
NAU Dorrance Scholars  
NAU Key Honor Society  
Willow Bend EE Center Board of Directors  
Willow Bend EE Center interns

*\*This total does not include hours contributed by: Eric and Jane Polingyouma to the Native Heirloom Garden; Laura Davis to the Michael Moore Medicinal Plant Garden until midsummer; Norm Lowe, who made major structural improvements to the irrigation and roof water collection systems and dug and built the milkweed terraces.*

### Special Volunteer Days

04-6: Spring Celebration  
4-26/27: Second Annual Prep and Pruning Days to Celebrate National Arbor Day  
06-1: Bird Day  
10-5: Flashmob Assembly of Pollinator Garden Kit

### Presentations

01-10: Report to Coconino Master Gardeners Association  
01-27: Tour of dormant gardens for Jack Welch walking group  
04-09: Report to Willow Bend EE Center Board  
04-23: Presentation to County Supervisors  
04-25: Presentation to Coconino Natural Resource Conservation District Board  
08-17: Tours at Willow Bend Annual Celebration  
11-02: Science Saturday - Harvest

We also interacted with many local and out-of-town visitors, welcoming them and answering questions.

## Notes

Members of the Willow Bend Environmental Education Center Board of Directors were very supportive and contributed quite a few hours of help in the gardens this year.

Volunteers tracked down the original landscape plans for the gardens, produced by The Campbell Collaborative of Phoenix in May, 2001. These precise technical plans are interesting but do not reflect some of what was in fact originally planted nor some of the infrastructure that was added later, such as the reclaimed water system.

- Friends of Willow Bend Gardens has drafted an interpretive plan outline for CCPR approval.
- Coconino County Parks and Recreation staff will build a viewing platform and install signage for an Arizona Watchable Wildlife Experience (AWWE) near the Environmental Education Center.
- Garden volunteers and CCPR staff will work together to create a Creative Play Area in the vacant area next to the garden shed.

## Updated Map



The following report describes the condition of each garden at the outset of 2019, a description of our work on them during the year, and our plans for maintenance and/or further improvements in 2020.



## 2019 Accomplishments and Plans for 2020

### 1. Monarch Waystation

**2019:** After plentiful spring moisture, this garden was overwhelmed by invasive thistles from the slope below. We contacted the City of Flagstaff Stormwater Division, which is responsible for the slope. They in turn contacted Morning Dew Landscaping. Due to a change in staff, Morning Dew had overlooked their volunteer commitment to keep the slope weed-free. They immediately sent a team to chop down and treat the weeds. Some waystation plants did not survive the summer drought. On the bright side, a pair of woodpeckers nested in the birdhouse installed by Eagle Scout Cutter Barnes at the far end of this garden.

**2020:** Volunteers will replant parts of the Waystation and plan to use the source of reclaimed water near the EE Center entrance to help sustain it in the future.



### 2. The Lizard Garden

Kathy Flaccus led volunteers in maintaining the Lizard Garden. Kathy and fellow volunteer Marjorie Sorensen improved the little trail to the top of the berm. While pruning shrubs on the berm's north end, we found cactus and other plants that we moved to better spots in the garden.

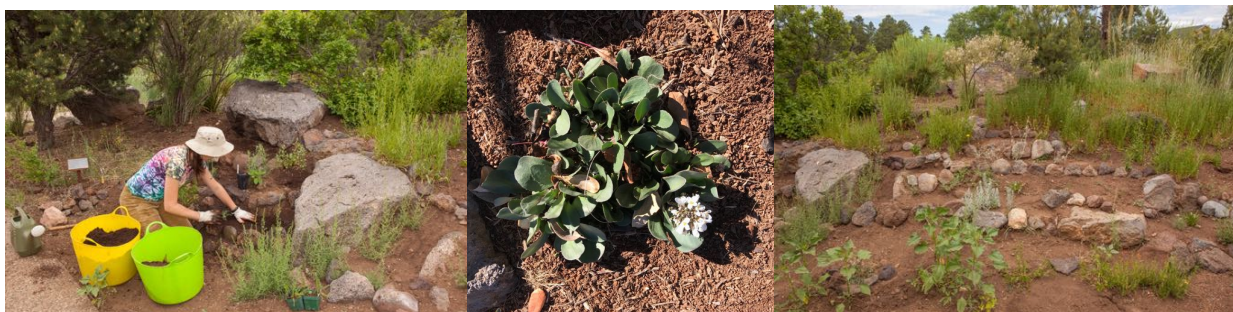
**2020:** Volunteers will continue to weed, prune, and add plants to increase diversity in this garden.



### 3. The Native Perennials Garden

Volunteers continued to maintain this 2018 Eagle Scout project. High school student Jaden Rieck was especially helpful. We rebuilt rock niches that had slipped on the very steep slope. The native perennials thrived despite the drought, along with wild annual sunflowers we encouraged because they're so cheerful. The first flower to bloom in the gardens—alpine pennycress, *Noccaea fendleri*—appeared here.

**2019:** Volunteers will continue to maintain this garden by watering and weeding it. It will be helpful to have the source of reclaimed water available just across the path.



### 4. The Entrance Garden

This area has not been improved pending construction of a kiosk for the nearby Arizona Game and Fish Watchable Wildlife Experience site (AWWE). Four large outdoor pots have served as placeholders, with plants typical of the Lizard, Forest, Wetland, and Wildflower Meadows. There is a capped reclaimed water pipe near the sidewalk and a drinking fountain next to the EE Center door.

**2020:** Coconino County Parks and Recreation staff will install a kiosk on the north/left side of this area to orient visitors and interpret the nearby AWWE. CCPR will also repair the drinking fountain and modify the reclaimed water pipe to fit the hose bib for watering the berm, Monarch Waystation, and Wildflower Meadows when necessary. Volunteers will work with CCPR to create a rest area with benches, light landscaping and possibly, gravel under and around the benches. CCPR will check codes for a sun sail.





### 5a. and 5b. The Wildflower Meadows

In past years, the two sections of meadow at Willow Bend were heavily used for environmental education activities. Those programs now take place at school sites and the meadows are no longer used that way. In 2018 and 2019, volunteers removed invasive plants and seeded the meadows with native forbs and grasses. These efforts were not successful due to heavily compacted soil contaminated with weed seeds.

**2020:** On May 9, Eagle Scout candidate Zach Palmero and his team will dig up, pot, and store the remaining native plants in the larger Wildflower Meadow. They will remove the soil, replace it with amended topsoil, replant the rescued plants, and plant native grasses and perennials propagated by The Arboretum at Flagstaff. They will also create a two-foot-wide gravel path around the sundial.



### 6. The Hummingbird Garden

This garden was rebuilt and replanted in 2018. It was very easy to maintain this year and flowered all summer despite the drought.

**2020:** We will continue to maintain this garden.



## 7. The Arch and Terraces

Guided by Master Stonemason David Wilson, community volunteers built the arch in 2017. We then put protective circles of bent willow wickets and stone around it, planted perennials, and have kept the space mulched and weeded ever since. Weeds were a persistent problem on the nearby slope. Volunteers built terraces there and filled them with clean topsoil left over from another 2019 project.

**2020:** Volunteers will plant perennials in the terraces this year and continue to maintain both areas.



## 8. Native Bee Garden (formerly the Small Pollinator Garden)

Despite repeated efforts to eradicate weeds and maintain native plantings, this little garden was again overwhelmed in 2019 with invasive plants that outcompeted the native perennials. Once the weather cooled in early September, Eagle Scout candidate Connor Perkins and team removed the rock border, dug out the soil, rebuilt the rock border, filled it with amended topsoil, planted native perennials, and mulched. Most of the perennials are bee-pollinated and so we gave the garden its new name.

**2020:** Volunteers expect this garden to be much easier to maintain from now on. We will add perennials as needed to fill in the space and increase diversity.







### 9. The Mixed Pollinator Garden (formerly the Large Pollinator Garden)

Volunteers weeded, planted, and mulched this garden in 2017 and 2018. However by the end of 2018, it was again badly overgrown and had little diversity in plants. In late 2019 we dug up, potted, and stored surviving native plants and moved aside the rock borders. CCPR's Geoffrey Gross and James removed the contaminated soil and volunteers rebuilt the rock border, filled it with amended topsoil, and planted a variety of native perennials including bunchgrasses.

**2020:** Volunteers will maintain this garden and add native perennials as needed.





## 10. The Butterfly Garden

Entomologist Dr. Michael Wagner of the NAU Milkweeds for Monarchs Program directed volunteer Norm Lowe in building milkweed terraces for raising three species of native milkweeds. Seeds produced by these plants will be distributed by the NAU Milkweeds for Monarchs Program to increase monarch caterpillar forage and habitat. Other volunteers helped Norm dig out the space and planted NAU's milkweed host plants to sustain the caterpillars as well as a few butterfly nectar plants. Dr. Wagner designed the terraces to flood during the rainy season, an idea adopted from his own successful garden. We hope it will work here!

**2020:** Volunteers will add more butterfly nectar plants and continue to maintain this garden.



## 11. The Native Heirloom Garden

Despite the drought, the garden was very successful in 2019 due to the dedication of volunteers Robert Baer, Sara Day, and Eric Polingyouma. Indigenous peoples' cultivars of sunflower, corn, beans, amaranth, squash, cotton, and tomatillos yielded produce and the garden was again the showpiece at Willow Bend, attracting lots of attention from visitors. For the November 2 Science Saturday, volunteers displayed and interpreted crops developed by indigenous farmers that enhance modern cuisine world-wide.

**2020:** Robert Baer, Sara Day, and Eric Polingyouma will repeat their successful strategies.



## 12. The Kitchen Garden

Volunteers Robert Baer and Sara Day worked with at-risk youth from the County Step Up Juvenile Justice Program to prepare the soil and plant herbs and vegetables next to the back door of the EE Center. Robert and Sara also planted and cared for culinary herbs in the space across the path from the Kitchen Garden.

**2020:** Robert and Sara will again work with Step Up youth on this garden.



## Roof Water Collection and Irrigation System

Volunteer Norm Lowe designed a system of pipes and color-coded faucets to direct seasonal overflow from the rooftop water collection tanks, switchable to either the pond or the Butterfly Garden. The system brings potable water from the tap behind the building to the EE Center's back door where it can be used in the Native Heirloom or Medicinal Plant gardens if necessary (reclaimed water is culturally prohibited). Robert Baer and youth from the Step Up program helped dig channels and install pipes.





### 13. The former Michael Moore Medicinal Plant Garden

Due to the demands of establishing and maintaining a large, new Michael Moore Medicinal Plant Garden at MNA, volunteer Laura Davis resigned as Curator of Sawmill County Park's medicinal plant garden in mid-summer.

**2020:** Volunteers will complete this garden by adding medicinal plants and shrubs.

### 14. The Forest Garden

Volunteers continued to maintain this garden, which requires very little effort now because few invasive weeds and shrubs removed in 2018 have returned. The three pots of perennials thrived but some of the perennials planted in the ground did not emerge, probably due to the drought.

**2020:** We will continue to maintain the Forest Garden and replace any plants that did not survive 2019.



### 15. The Creative Play Area

After a visit to the Highlands Nature Center, volunteers worked with Willow Bend Environmental Educators to design a play area similar to the one at Highlands plus several additional features. In

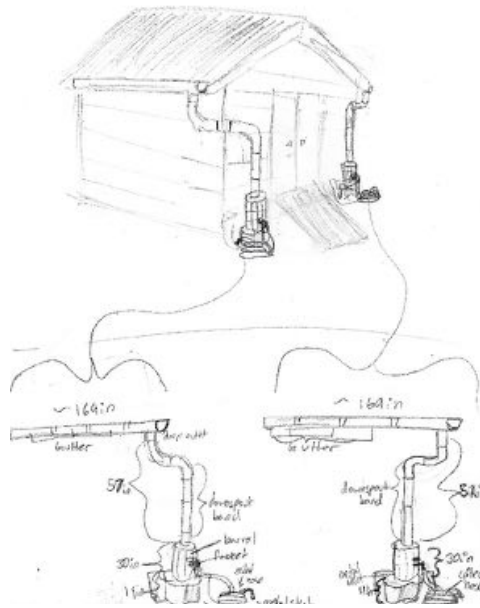
**2020:** Volunteers will work with CCPR staff to build the play area, paths, bench, and other features.



## 16. Shed

The shed has proven to be extremely useful, a vital staging area for work in the gardens. After its completion in early 2019, volunteers used grant money to keep it stocked with supplies, materials, tools, and other equipment.

**2020:** Under the supervision of volunteer Norm Lowe, Eagle Scout/Hornaday Award candidate Mason Takeuchi will install gutters and drainpipes on the shed roof to channel runoff into two water collection barrels that were donated by the USFS Rocky Mountain Research Station in 2019.



— drawing by Mason Takeuchi

## 17. The Pond Garden

Volunteers pruned the surrounding trees, weeded the perimeter, and periodically scooped duckweed out of the pond. Several donated monkeyflowers spent the summer with their pots in the pond.

**2020:** Coconino Parks and Recreation staff have submitted a request for an Arizona Game and Fish Heritage Grant to rebuild the pond. When it is finished, garden volunteers will work with CCPR to select and plant appropriate perennials in and around it. The donated monkeyflowers may end up in large pots nearby.



Monkeyflowers on their way to the pond.

### 18. The Seasonal Wetland

Volunteers continued to keep willows from encroaching on the wetland and periodically removed ragweed and other invasive plants from the area.

**2020:** Volunteers will add a few perennials from The Arboretum this year. We expect some disturbance to occur in the wetland when the pond is rebuilt. At that time we will rescue plants that are in the path of the work and replant them when it is finished.



### 19. Streetside Plantings

Volunteer and Arizona Department of Forestry retiree Pat Cirincione pruned shrubs in the area between the parking lot and the street, while other volunteers weeded it. Pat also pruned around the large ponderosa pine on the western edge of the gardens above the Monarch Waystation, daylighting a number of interesting and attractive shrubs there.

**2020:** The shrubs will require ongoing maintenance.

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