

# AZ Water 91<sup>th</sup> Annual Conference

Thursday Afternoon - May 3, 2018

## Welcome

### **Please:**

- Download the Phone App!
- Use the Phone App to Complete the Fresh Ideas Scoring
- Use the Phone App to take the Conference Survey and rate the sessions
- Wait until end of each session to scan out
- Silence cell phones and electronic devices

### **This Afternoon's Highlights:**

- Industry Job Fair in Ballroom
- Meter Mania Finale, Top Ops Competition, Hydrant Hysteria
- Student Poster Contest
- Awards Reception at Hyatt Regency Phoenix

# **Local plant knowledge protects water supply and native ecosystem: A nonprofit and governmental collaboration**

Tamara Lawless, PhD  
Water Conservation Manager, City of Flagstaff

**Tamara has been with the City of Flagstaff since 2013, working on Water Conservation and Sustainability. She currently manages the Water Conservation Program including staff, policies, rebate programs, public outreach events and strategic planning. She holds a B.S. in Conservation Biology, an M.S. in Environmental Education, and a PhD in Sustainability.**

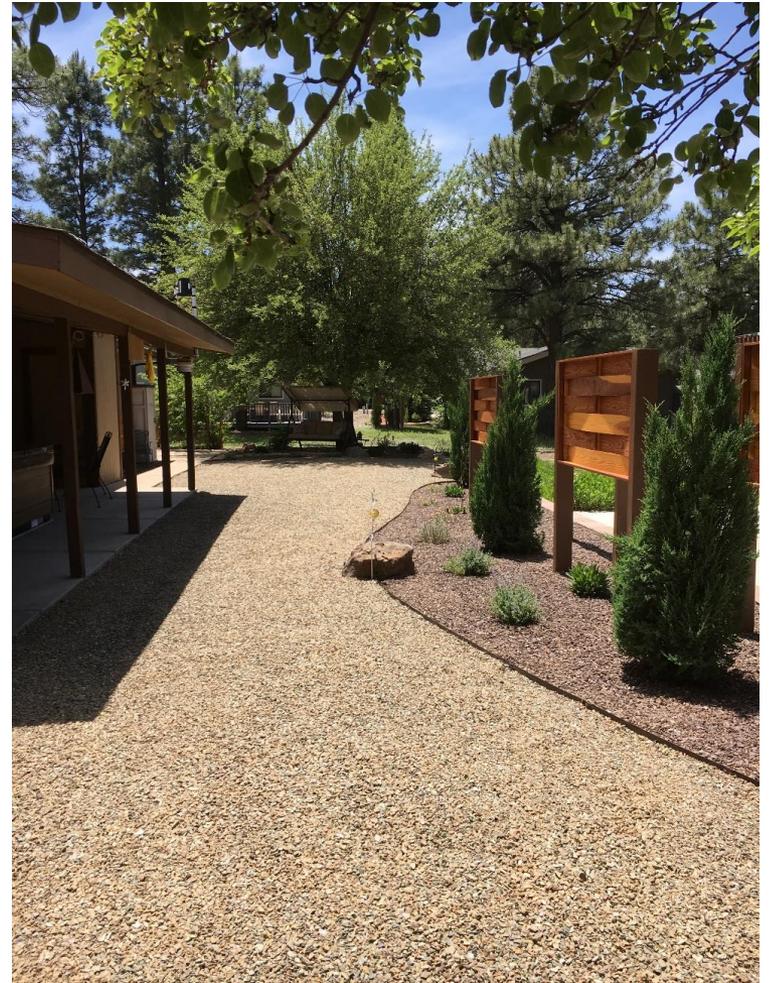
# About Flagstaff

- Flagstaff – 7,000 feet
- Annual precipitation – 23”
  - (AZ average is 8”)
- Water Conservation Program since 1988
- Water Conservation Ordinance
- Rebates – Toilets, Turf, Rainwater Harvesting



# Backstory: Turf Rebate Program

- “Turf” rebate since 2005
- Previous participants had mixed results
  - In a previous analysis, 26% of participants ended up using more water over time
  - Program outcomes were not necessarily ideal



# The Challenge

- Water Conservation ≠ Botany
- Behavior change science: Make it easy!

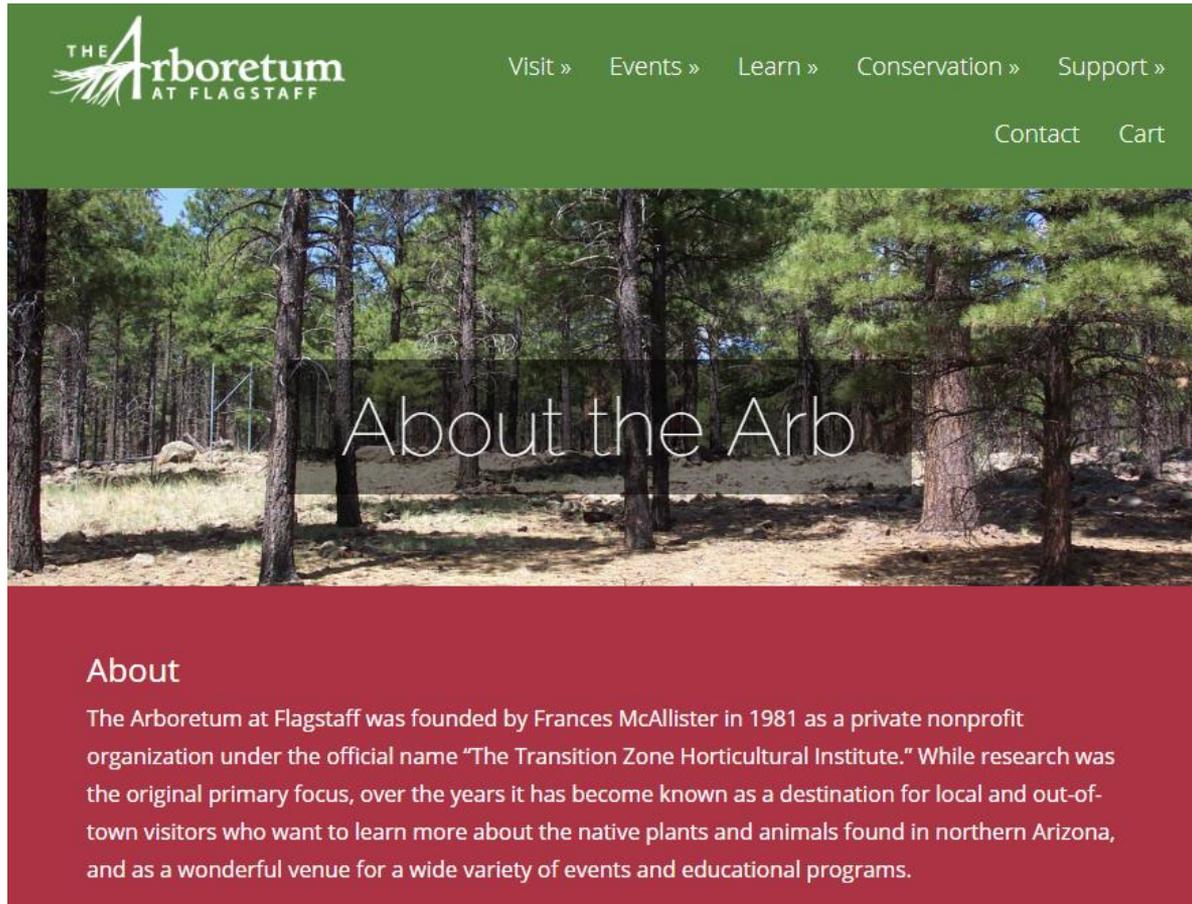


# Local Plants = Gorgeous!



# The Solution (We Hope!)

- The Arboretum at Flagstaff – local plant experts



The screenshot shows the website for The Arboretum at Flagstaff. The top navigation bar is green and contains the following links: Visit », Events », Learn », Conservation », Support », Contact, and Cart. Below the navigation bar is a large image of a pine forest. Overlaid on the image is the text "About the Arb". Below the image is a red section with the heading "About" and a paragraph of text.

**THE Arboretum**  
AT FLAGSTAFF

Visit » Events » Learn » Conservation » Support »  
Contact Cart

## About the Arb

### About

The Arboretum at Flagstaff was founded by Frances McAllister in 1981 as a private nonprofit organization under the official name "The Transition Zone Horticultural Institute." While research was the original primary focus, over the years it has become known as a destination for local and out-of-town visitors who want to learn more about the native plants and animals found in northern Arizona, and as a wonderful venue for a wide variety of events and educational programs.

# New Name for Program

- “Turf” was confusing



- New name: **Low Water Landscape Rebate**



# Plant Lists

## S. ELDEN/BANANA BELT NATIVE PLANT LIST



TYPE	FLOWER & BLOOM TIME	WATERING (after establishment)	LIGHT NEEDS	SOIL AND HABITAT CONDITIONS
Tree or Large Shrub Height: 6 to 30 ft	N/A	Low (Monthly watering except in times of extreme heat or drought)	Part shade or full sun	Sandy soils, clay soils, rich soils

**GAMBEL OAK**  
*Quercus gambelii*

*Photo: Wasowski Collection*



TYPE	FLOWER & BLOOM TIME	WATERING (after establishment)	LIGHT NEEDS	SOIL AND HABITAT CONDITIONS
Tree Height: 30 to 40 ft	Blue to purple berries attract wildlife	Low (Monthly watering except in times of extreme heat or drought)	Part shade or full sun	Sandy soils, clay soils, loam

**ROCKY MOUNTAIN JUNIPER**  
*Juniperus scopulorum*



TYPE	FLOWER & BLOOM TIME	WATERING (after establishment)	LIGHT NEEDS	SOIL AND HABITAT CONDITIONS
Shrub or Small Tree Height: 8 to 20 ft Note: year-round evergreen leaves	Cream or white flowers in spring	Low (Monthly watering except in times of extreme heat or drought)	Full sun	Well-drained soils

**MOUNTAIN MAHOGANY**  
*Cercocarpus montanus*

# Soil Guidance



## WHAT IS SOIL, ANYWAY?

Soil is the upper layer of earth in which plants grow, and is a dark or light brown material typically consisting of a mixture of organic materials, clay, and rock particles. The type of soil, or name of the soil, depends on the percentage of sand, clay, gravel, or rock that is mixed in with the organic materials. Soil in northern Arizona generally contains large proportions of gravel, sand, rock, and clay—and native plants here thrive in what most gardeners consider “poor” soil.

**Sandy soil:** Sand is a naturally occurring granular material composed of finely divided rock and mineral particles. A soil containing more than 85% sand-sized particles by mass is called sandy.

**Silty soil:** Silt is a naturally occurring loose sedimentary material with very tiny rock particles. Soil containing 80% silt is called silty.

**Clay soil:** Clay is composed of very fine particles that become heavy and sticky when wet—and hard and concrete-like when dry. Soil containing 50% clay is called clay soil.



# Invasive Plants



As you are assessing and transforming your property into a water-wise landscaping, be on the lookout for common weeds to remove, some of which are noxious. The best way to remove weeds is to periodically hand-pull them as necessary. Wear gloves! Herbicides are generally poisonous to all creatures and are not recommended for use.

The weeds listed below are not noxious, but are not native and can take over your gardens!

## COMMON WEEDS IN FLAGSTAFF



## UNDESIRABLE TREES IN FLAGSTAFF



# Watering

- General Watering Guide for Flagstaff

TYPE OF PLANTING	SPRING April-June	MONSOON July-Sept	FALL Oct-Nov	WINTER Dec-March
<b>TREES/ WOODY SHRUBS</b>	Five gallons per week if 6 feet tall or less	No watering needed if precipitation is at least 1/2 inch per week	Five gallons per week if 6 feet tall or less	Five gallons per month unless there is snow cover
<b>FLOWERING HERBACEOUS PLANTS</b>	One gallon per square foot per week	No watering needed if precipitation is at least 1/2 inch per week	One gallon per square foot per week	Generally no need to water until temperatures warm
<b>NATIVE GRASSES</b>	One gallon per square foot per week	No watering needed if precipitation is at least 1/2 inch per week	One gallon per square foot per week	Generally no need to water until temperatures warm

# Promotion

## WHY?

### WHY REMOVE YOUR GRASS?

Exchanging your lawn for a low water landscape with native and drought tolerant plants can reduce your outdoor water use and save money!

Water efficient landscapes can be full of color, texture, and variety – all while providing ongoing water savings.



Because native plants are adapted to local environments, they are more resistant to Flagstaff's extreme conditions like freezing, droughts, local plant diseases, and grazing by elk and deer.

Native plant species also provide excellent habitat for birds, butterflies, and other wildlife.



**AVERAGE 8,000**  
WATER SAVINGS GALLONS PER YEAR

## HOW?

### HOW THE PROGRAM WORKS!



The Low Water Landscape Rebate Program is available for Flagstaff water customers. Water Conservation Program staff will come to your home or business to measure the square footage of grass that you will be converting to low water plants. There are a few rules to keep in mind for the Low Water Landscape Rebate Program:

- Rebate amount is \$0.25/square foot of lawn removed
- Lawn must be replaced with approved low-water use plants
- At least 50% of new plants must be native
- No spray irrigation allowed in the eligible area
- Site must demonstrate a water savings to qualify – your new plants need to use less water than your lawn has historically used

All the information you need, including a recommended plant list, provided in collaboration with the Arboretum at Flagstaff can be found at [www.flagstaff.az.gov/rebates](http://www.flagstaff.az.gov/rebates).

**\$275** AFTER SWITCHING TO  
AVERAGE ANNUAL SAVINGS **LOW WATER LANDSCAPE**

## LET'S DIG IN!

### SAVINGS: STEP BY STEP

1

Schedule a site visit with the Water Conservation Program at (928) 213-2116

2

Schedule a FREE site assessment with The Arboretum at Flagstaff

3

Provide Water Conservation with a to-scale site plan and calculated water savings

4

Remove your grass and replace it with the low-water plants you have selected.

5

Schedule final inspection with Water Conservation Program

6

Receive your REBATE!



# Consulting

- Arboretum staff to provide site visits for Flagstaff Low Water Landscape participants
- Can assist in process of selecting plants that:
  - Will thrive in each person's unique yard
  - Bloom at desired times
  - Thrive on little water input
- COF will pay on an hourly basis



# Results... TBD

- Will be promoting new materials this spring and summer
- Unique situation due to very dry winter season

ARIZONA  
**Daily Sun**

## It's been the driest fall on record for Flagstaff



Emery Cowan Dec 1, 2017  0

# Landscape code... you're next!

- Has been 10 years since Flagstaff reviewed Landscape Code plant list
- Will be convening a committee to address potential issues

3.030 City of Flagstaff Landscape Plant List



Botanical Name	Common Name	Native? (Y/Nat.)	Over-story Tree	Under-story Tree	Sun Req.	Water Needs	Spacing	Special Characteristics	Notes/Comments	Parkways & Medians				Approved for ROW
										Urban	5-8' Wide	8-10' Wide	10' Wide	
<b>Trees (Deciduous)</b>														
<i>Acer ginnala</i>	Amur Maple	Nat.		X	S/PS	M	20 – 25'	Multi-trunked, shrubby, red fall color. Attractive cluster of small yellow fragrant flowers in spring.	Good substitute for oak. Slow growing, prune when young to ensure single trunk. Best in cool partially shaded area.	Y	Y	Y	Y	Y
<i>Acer glabrum</i>	Rocky Mountain Maple	Y	X		S/PS	M		Native riparian, slow growing. Good fall color. Grows well in canyons and washes.	Requires well-drained soil.	N	N	N	N	N

# Thank you!

- Any questions?



<<AZ Water Release - Include as final slide>>



*Professionals Dedicated To Arizona's Water*



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