

November 12, 2014  
Tamarisk Coalition  
Funding Webinar Series



*Webinar #12 – Opportunities for Coordinating with Utility Companies to Accomplish Restoration and Save Money*

*Town of Clarkdale, AZ*



# *The Sustainable Clarkdale Initiative*

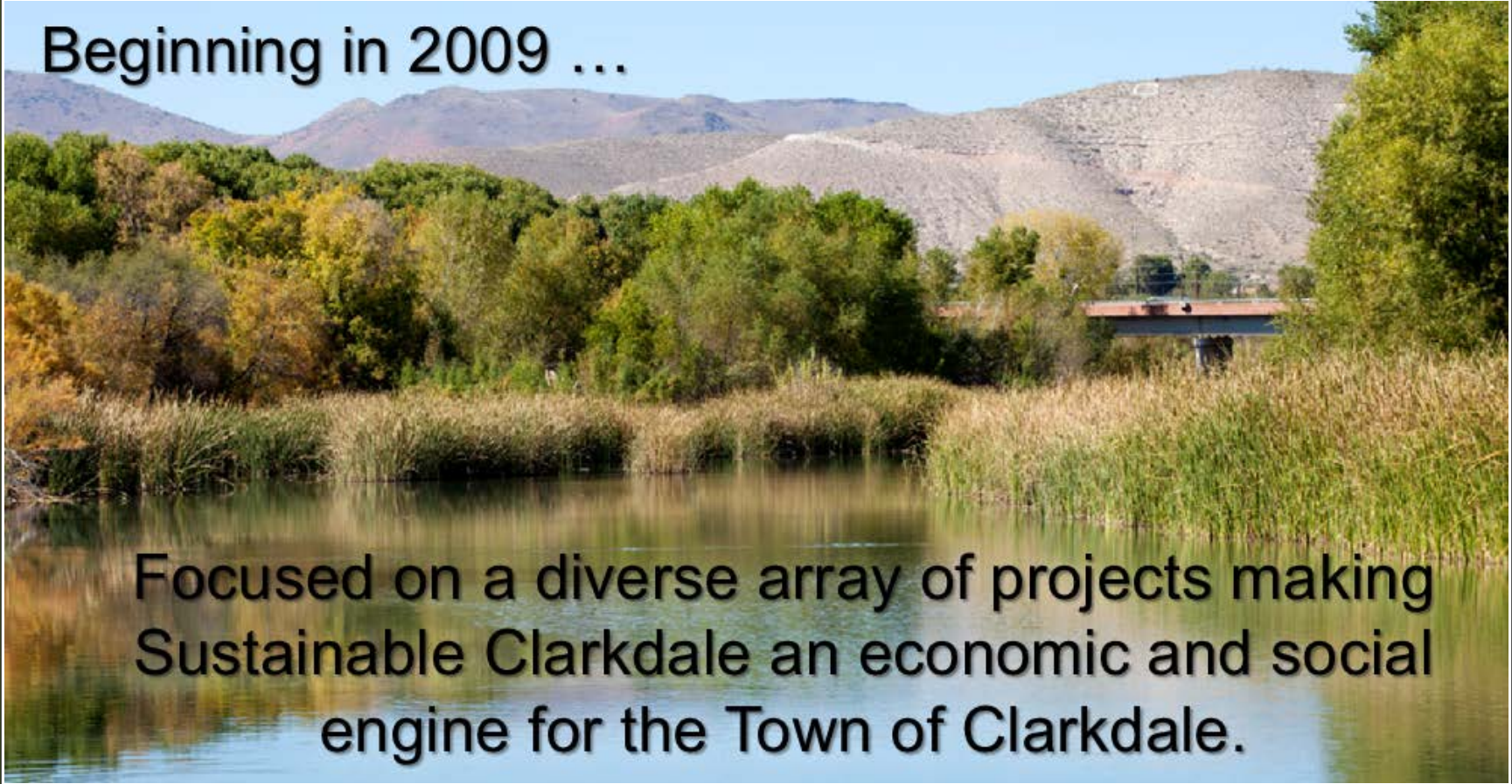


Vision: To Be An Evolutionary Solution For a Sustainable Community



# *Adjusting to a New Economic Reality*

Beginning in 2009 ...



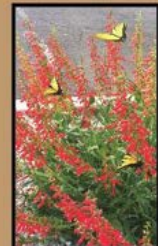
Focused on a diverse array of projects making Sustainable Clarkdale an economic and social engine for the Town of Clarkdale.

# Sustainable Clarkdale Projects

## Centennial Plaza



Native and Adaptive Plants  
Clarkdale, Arizona

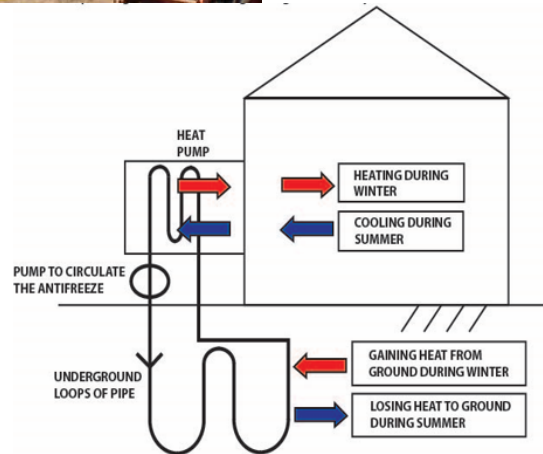


# Sustainable Clarkdale Projects

## Geo-Thermal Energy in Historic Building



Listed on National Register of Historic Places in 1983





# *Sustainable Clarkdale Projects*

## **Verde River @ Clarkdale** Est. 2011

**Overarching Principle – A River At Risk** - Public knowledge and understanding is vital to the protection and preservation of the Verde River – getting folks onto the river to form personal connections is key



# Sustainable Clarkdale Projects

## Clarkdale Kids Conserve



A Water Conservation and Water Resource Education program for the Clarkdale-Jerome Elementary School.

A partnership of the Town of Clarkdale and the Verde Natural Resource Conservation District (Verde NRCDC).



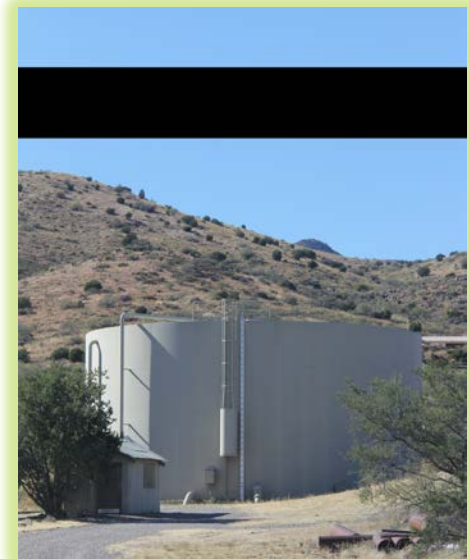


# Clarkdale Municipal Water Utility

A 100-Year Old Water System that was private until purchased by the Town of Clarkdale in January, 2006.

Town implemented a tiered-rate structure and included monthly user fees for multiple special purposes, including:

- \* Water Resource Development
- \* Regional Water Organization Membership
- \* Legal Fees for Water Rights Issues
- \* **Water Conservation Programs**  
(\$0.25 per month per customer)



# Clarkdale Municipal Water Utility

## Annual Special Purpose Annual Revenues

Base Rate/Usage Fees	\$1,251,000
Water Resource Development	\$ 85,344
Water Rights/Legal Fees	\$ 8,748
Regional Water Organizations	\$ 5,700
Water Conservation	\$ 5,334*

Primary Method of Encouraging Water Conservation is through Rate Structure

In past 8 years, we have reduced daily per capita water use from 141 gallons per day to 70 gallons per day.

\* Accumulated Fund Balance in Water Conservation is approximately \$20,000

### Drought and Water Shortage Notification



#### Strategy I "Water Alert"

For Information Call  
Clarkdale Utilities (928) 639-2450



Town of Clarkdale

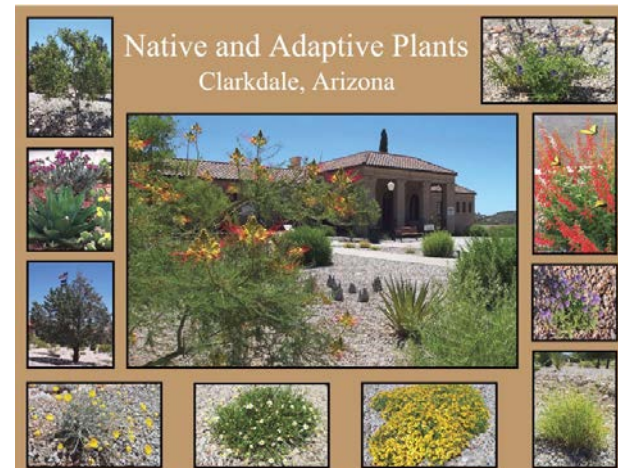
<http://www.clarkdale.az.gov>

Pursuant to Clarkdale Town Code 19-1

# Water Conservation Program Funding

*One Time Projects*  
Centennial Plaza

*Multi Year Support*  
Project WET  
Clarkdale Kids Conserve





## A Sustainable Clarkdale Project Partnership

Town of Clarkdale Water Utility



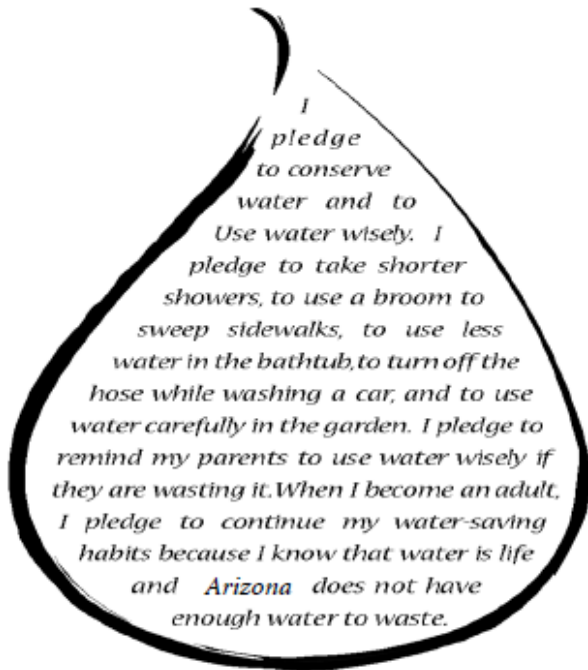
Verde Natural Resource  
Conservation District



Clarkdale-Jerome School District



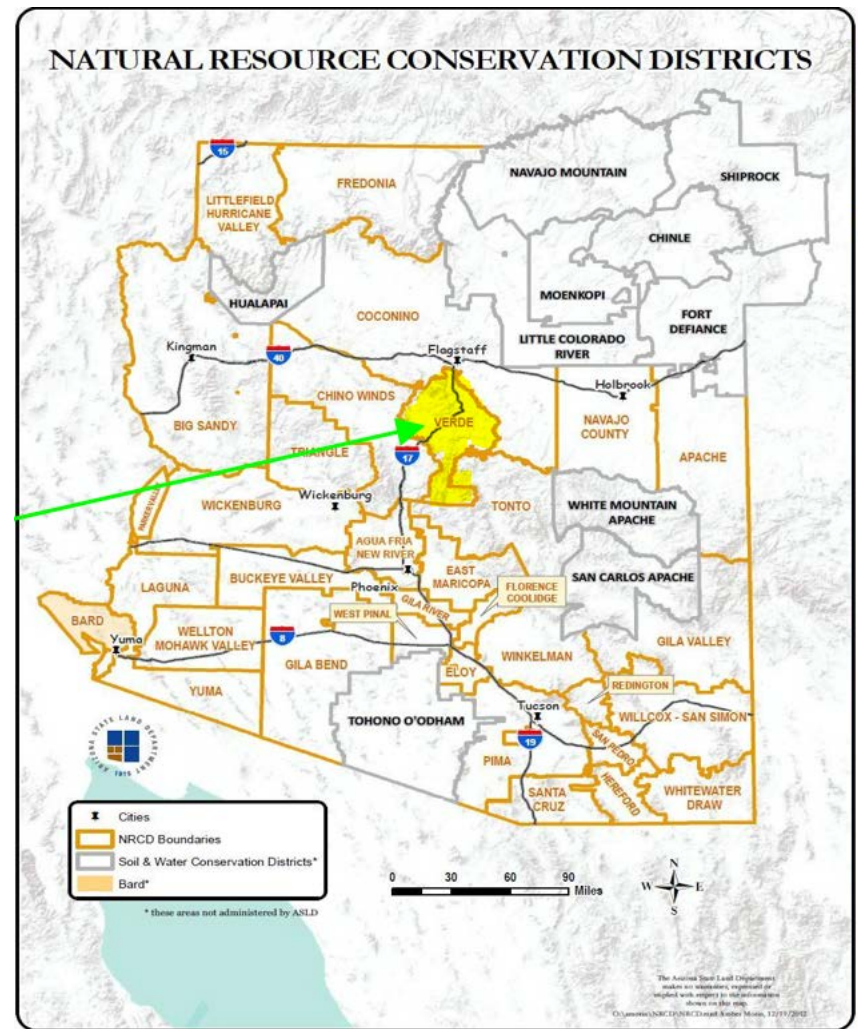
Clarkdale-Jerome School



# Verde Natural Resource Conservation District

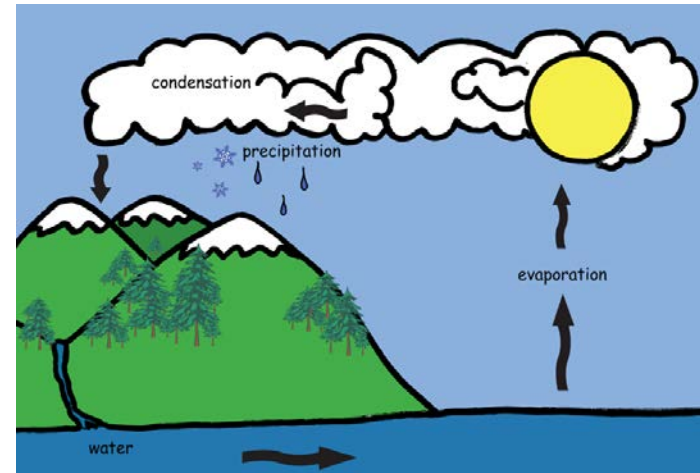
Established 1941

Mission – Local People Promoting Natural Resource Conservation Through Education and Partnerships



# Clarkdale-Jerome Elementary School

A Kindergarten – 8<sup>th</sup> grade school serving 450 students and their families in the communities of Clarkdale and Jerome, AZ, including students from the Yavapai-Apache Nation.



1615 Main Street  
Clarkdale, AZ 86324

P.O. Box 248  
Clarkdale, AZ 86324

Phone: (928) 634-5035

Fax: (928) 639-0917

**Clarkdale-Jerome School**



# Clarkdale Kids Conserve The Program

Kindergarten – 4<sup>th</sup> Grade

- Classroom curriculum
- Workbooks
- Class participation
- Various Activities

Grades 5<sup>th</sup> – 8<sup>th</sup>

- Field Trips
- Classroom Projects

Quarterly Newsletter

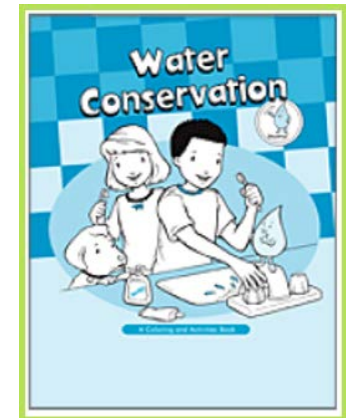


# Clarkdale Kids Conserve Kindergarten – 4<sup>th</sup> Grade

EMPHASIZES THE IMPORTANCE OF  
CONSERVING WATER

ESSENTIAL QUESTIONS:

- Where is water found on earth
- How does water get into and out of houses?
- Why is it important to SAVE and NOT WASTE water?
- How can we conserve water?





# Clarkdale Kids Conserve 5<sup>th</sup> Grade



"Connections"

3-Day Program

Field Trip to the  
Verde River guided  
by Park Rangers

Investigating the  
connections  
between: Physical  
Science & Nature;  
The World & Water

# Clarkdale Kids Conserve 6<sup>th</sup> Grade



"Groundwater"

Understanding the  
Link Between  
Groundwater and  
Surface Water

Create  
Groundwater  
Model

Design Maps of All  
Watersheds in  
Arizona

# Clarkdale Kids Conserve 7<sup>th</sup> Grade

## WANTED DEAD

 <p><b>Tree of heaven</b>, also known as <i>Ailanthus</i> is a fast-growing tree and a prolific seeder that can take over sites, replacing native plants and forming dense thickets from root sprouts. <i>Ailanthus</i> also produces chemicals that prevent the establishment of other plant species nearby.</p>	 <p><b>Russian olive</b> is a deciduous tree or shrub growing to 35 ft. in height. Russian olive is easily recognized by the silvery, scaly underside of the leaves and woody thorny stems. It can form a dense shrub layer which displaces native species and closes open areas.</p>
 <p><b>Salt cedar</b> competes with willows, cottonwoods and other native riparian vegetation, and may reduce water quantity and quality. As stems and leaves drop to the soil surface salinity increases, forming a crust above and below ground that inhibits other plants.</p>	 <p><b>Giant reed</b> creates a fire hazard from the long dried leaves and stalks produced from dead giant reed plants. They crowd out native plants species, reduce wildlife habitat, and modify river hydrology.</p>
 <p><b>Himalayan blackberry</b> is highly invasive and difficult to control in riparian areas. Himalayan blackberry is a perennial shrub native to Eurasia. As stems touch the ground they root at the nodes, producing a dense thicket that chokes out native species.</p>	 <p><b>Yellow/Malta Star Thistle</b> displaces native and agricultural plants in rangelands and pastures. As it grows and spreads dense, impenetrable stands are formed. It is also very toxic to horses.</p>
 <p><b>Red-eared sliders</b> are turtles that people release into natural waterways. Red-eared sliders get their name from the distinctive red patch of skin around their ears. These turtles have become invasive since they compete for nesting sites, food sources, and disrupt the ecosystem.</p>	 <p><b>Uruguayan pampas grass</b> is a perennial grass six to thirteen feet tall with long leaves. Pampas grass competes with native vegetation, reduces the aesthetic and recreational value of areas, and also increases the fire potential.</p>
 <p><b>Bullfrogs</b> compete with and prey on native species. Tadpoles are mainly herbivorous, but adults are carnivorous. Bullfrogs can eat an impressive variety of other species, including fish, amphibians, and snakes and have even been known to eat bats and baby ducks.</p>	 <p><b>Crayfish</b> are negatively impacting native species and the aquatic ecosystems that support these species. Streams and pools inhabited by crayfish are usually devoid of any submerged vegetation or a diversity of other living organisms and the water is degraded by the silt they stir up.</p>

Verde Natural Resource Conservation District • Walton Family Foundation • The Community Foundation

Understanding  
the economic,  
social and  
ecological  
impact of  
native and  
invasive  
species

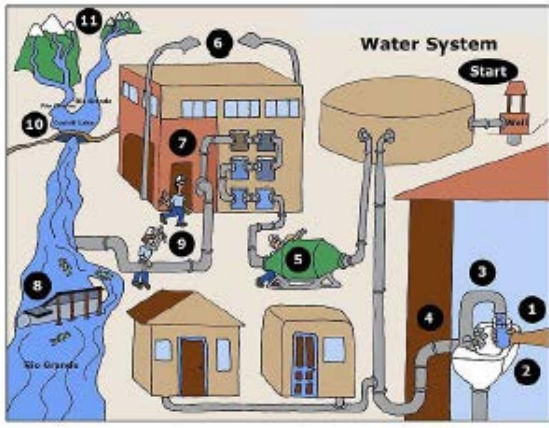
## WANTED ALIVE

 <p><b>Arizona Sycamore</b> is a large deciduous tree that can grow up to 80 feet tall with many branches. The tree has lobed maple-like leaves and smooth whitish bark. Seeds occur in light brown ball-like clusters.</p>	 <p><b>Arizona Walnut</b> is a deciduous tree that grows up to 50 feet tall with widely spreading branches. Trees produce a small edible nut enclosed in a round 1 inch seed husk.</p>
 <p><b>Cottonwood</b> is a large tree with furrowed gray bark and shiny triangular leaves, found primarily along water ways and in moist areas. It has been used for a variety of medicinal purposes: as survival food, for fuel wood, in construction, and to make kachana dolls.</p>	 <p><b>Velvet Mesquite</b> grows up to 30 feet tall, and is an important source of food for bees, wildlife, and native people of the southwest. The tree adds nitrogen to the soil and provides valuable habitat for wildlife. Native people used bark for baskets and medicine.</p>
 <p><b>Desert Willow</b> is a shrub or small tree grows up to 25 feet tall, and has fragrant flowers which may be lavender or yellow colored. Native people have used desert willow for roofing material, bows, and baskets.</p>	 <p><b>Blue Yucca</b> has stiff, pointed, sword-like leaves and fruits that are eaten by animals and people. Leaves are an excellent source of strong fiber for cordage and clothes, and the roots have been used for soap, shampoo, and medicine.</p>
 <p><b>The Common Blackhawk</b> is a unique raptor that requires mature, riparian forests with perennial streams for nesting and foraging. They are negatively impacted by invasive species such as crayfish and bullfrogs.</p>	 <p><b>Bald Eagle</b> was once considered an endangered species. Arizona bald eagles frequent riparian forests for foraging, and will place their nests within a mile of edge, rock pinnacles, and in cottonwood trees.</p>
 <p><b>Roundtail Chub</b> is native to Arizona. The body is thick and streamlined and colored dark olive-gray with silver sides. Breeding males develop red or orange coloration. Many reach 6 years of age.</p>	 <p><b>River Otter</b> was once found in many major Arizona rivers. Alteration of these rivers by people for farming, livestock, industry, and cities caused significant changes in the otter's habitat and led to its extinction. Transplanted otters to the Verde River now number about 100.</p>

Verde Natural Resource Conservation District • Yavapai Community Foundations

"Top 10 Wanted Dead & Alive Species"

# Clarkdale Kids Conserve 8<sup>th</sup> Grade



Field Trip to Clarkdale  
Wastewater Treatment  
Plant

On-Site Chemical Tests  
of Water & Microscopic  
Viewing



## "Properties of Water"

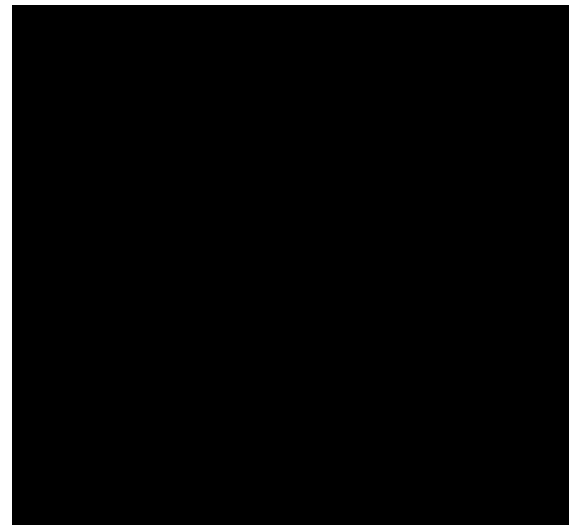
Gaining Understanding of How the  
Quality of a River Affects All Water Users

# Clarkdale Kids Conserve A Sustainable Water Program ... And So Much More!



7<sup>th</sup> Grade Students removing  
invasive "Tree of Heaven"  
(Ailanthus) from Natural Area  
along the Verde River during  
Clarkdale Kids Conserve Field Trip

Educators Take the  
Opportunity to Build on  
Other Natural Resource  
Messages



# Clarkdale Kids Conserve

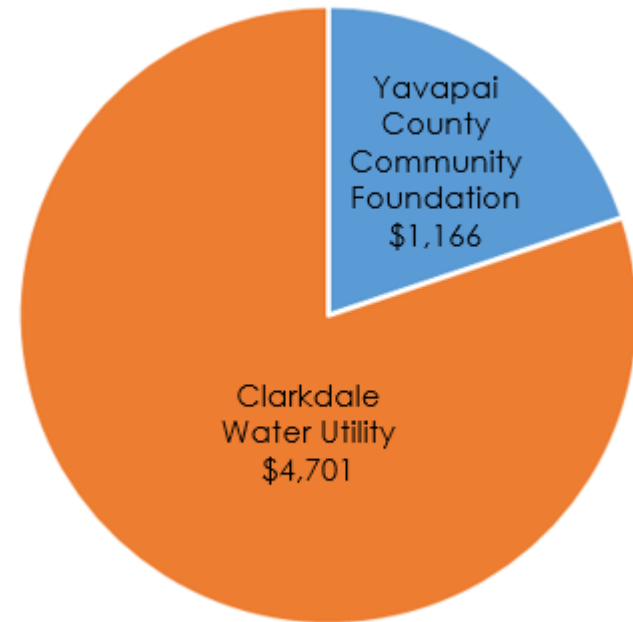
## 2013-14 Program Total Student Contacts

Program		# of Classrooms	Student count	Total Student Contact
• K- 4th "Kids Conserve"		10	288	1152
• 2nd Grade "Nature Outdoors"	Field trip with 3 activities (Dead Horse Ranch SP)	2	60	180
• 4th Grade "Project WET Water Festival"	Field trip (Dead Horse Ranch SP) with 4 events & follow-up classroom visit	2	60	240
• 5 <sup>th</sup> Grade Connections Program	2 days in class 1 day field trip (Red Rock State Park) w/3 activities	2	60	300
• 6th Grade "Ground Water"	3 days in class	2	55	165
• 7th Grade "Top Ten Wanted Dead & Alive Species"	2 days in class 1 day field trip w/4 activities (Montezuma Well) ½ day field trip (Tuzigoot RAP) w/2 activities	2	60	360
• 8th Grade "Properties of Water"	2 days in class 1 day field trip w/ 4 activities ½ day field trip (Clarkdale WWTP)	2	60	360
<b>TOTALS</b>		22 Classes	643 Students	2757 Total Student contact

# Clarkdale Kids Conserve

## 2013-14 Program Funding

Yavapai County Community Foundation Grant (20%)	\$1,166
Clarkdale Water Utility Funding (80%)	<u>\$4,701</u>
Total Annual Program Costs	<u>\$5,867</u>



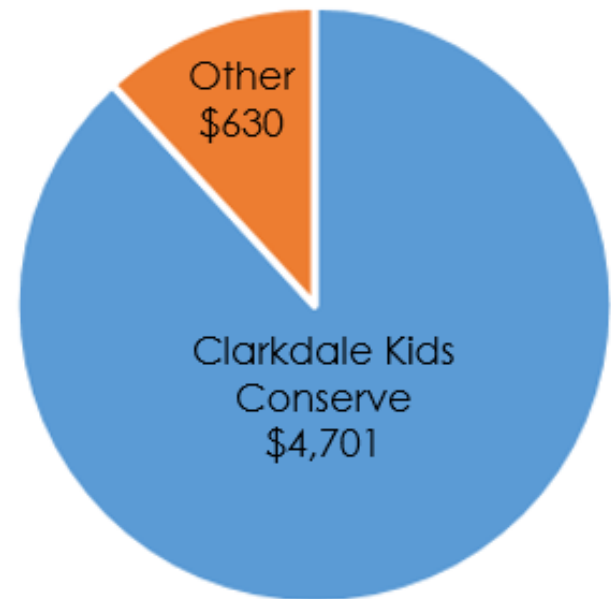
Additional in-kind support from partner agencies who provide Rangers for interpretive programs/field trips and who provide input on curriculum development.

# Clarkdale FY15 Funding

## FY 2015 Clarkdale Water Conservation Funding

Our kids offer the biggest bang for our buck! We invest heavily in Clarkdale Kids Conserve!

Clarkdale Kids Conserve (88%)	\$4,701
Other Programs (12%)	<u>\$ 630</u>
Total Program Funding	<u>\$5,331</u>





For More Information:

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Town Manager

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