Creating a Sustainable Mindset

An Experiential Workshop

Butte Creek Wash

Prescott College

January 2014

Acknowledgements

Many thanks to Joel Barnes for providing the background information and plant species for the Butte Creek Restoration Project.

About the workshop

Facilitators:

Jamie Wenzel
Sarena Randall Gill
Shellie Zias-Roe

This workshop is a combination of information, activity, and modeling. We hope you use the contents and process as ideas for your practice.

The included list of species is a comprehensive reference for how flora and fauna identification can guide an individual towards a sustainable mindset though spending time with and in the great outdoors and is not exhaustive species identification.

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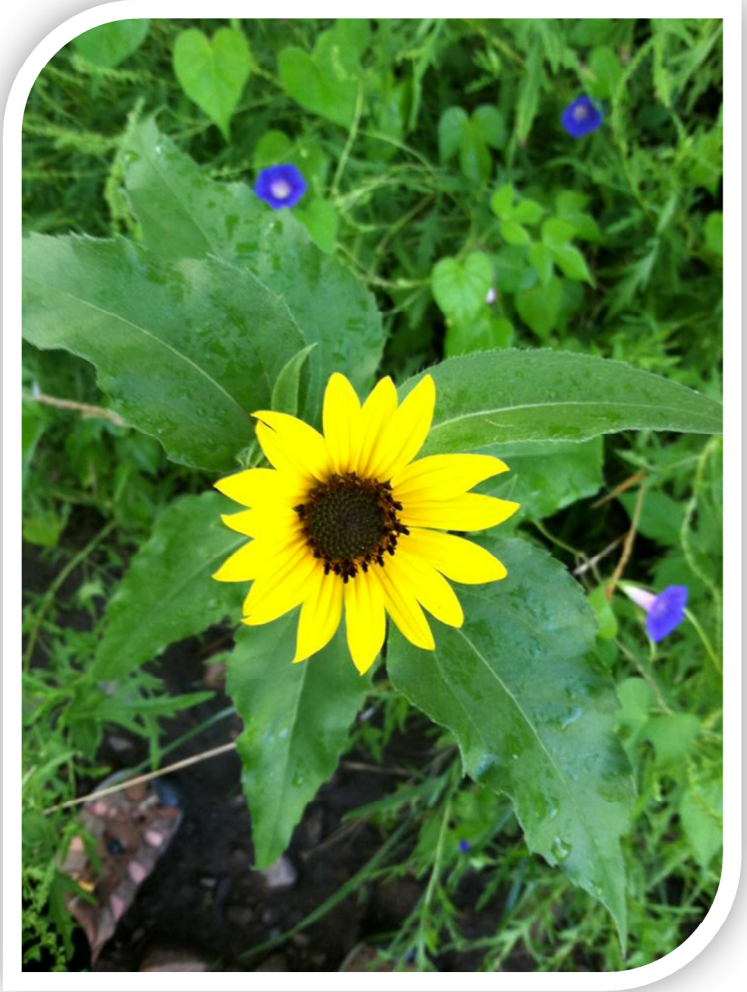
Butte Creek Restoration Project

Three visionary RDP students, to address the degraded ecological condition of Lower Butte Creek, originally formed the Butte Creek Restoration Council (BCRC) in 1996. At that time, Garden Street ran straight through the streambed; both the road and the creek experienced daily traffic. They did their best to mitigate these impacts with revegetation projects.

It was not until 2006 that the College convinced the City to close this section of Garden Street, and shortly thereafter, the College began expanding its campus across the stream to include the entire floodplain. In 2011, the student dorms were completed.

Restoration-minded RDP students and faculty reformed the BCRC in 2012 with a mission to engage the Prescott College community, our surrounding neighbors, and the larger Prescott community in projects that help to restore, enhance, and celebrate Lower Butte Creek as the centerpiece of our expanding campus and a vital part of the Upper Granite Creek Watershed.

The BCRC enables the College to truly "walk its talk" when it comes to stewardship of the planet. The way we care for our section of Butte Creek is a direct reflection of who we are as academic community and institution "for the environment".

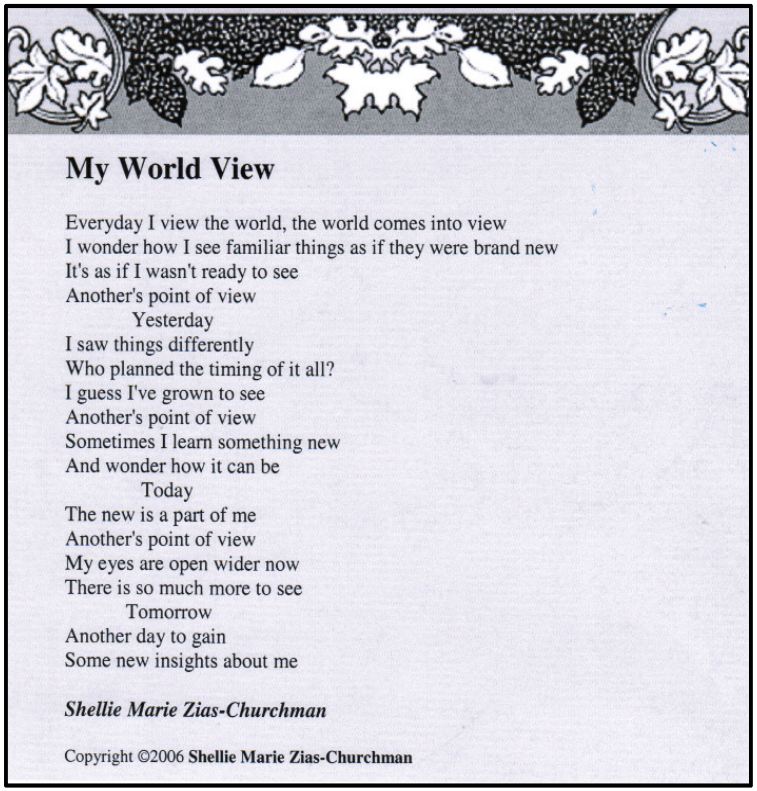


Journal Entry, Field Notes, Observations, Reflections

Creating a Sustainable Mindset

Fixed Mindset and Transmissive Teaching/Learning

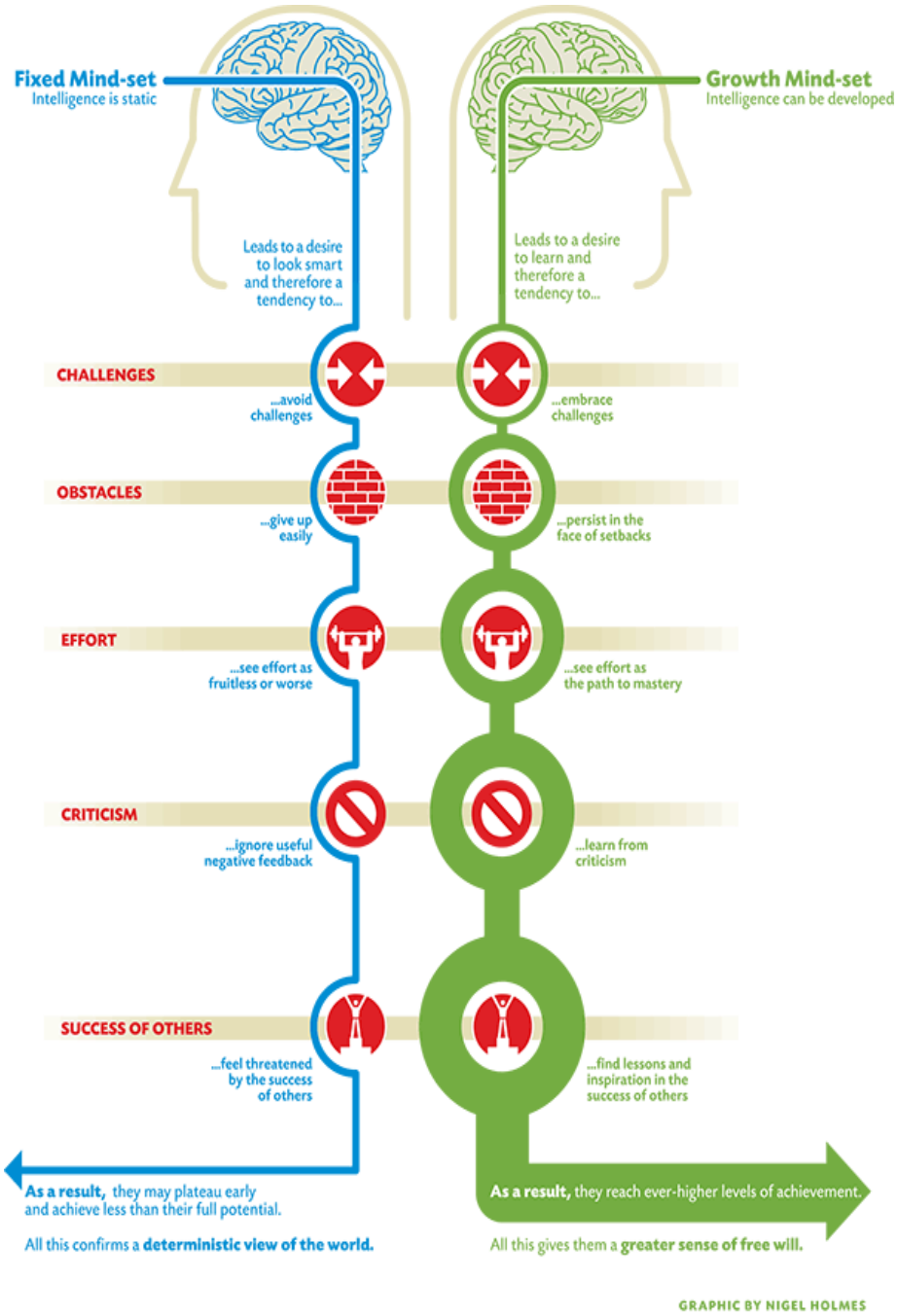
- What is a fixed mindset and how does it shape our thinking?
- What does a fixed mindset look like with regards to the way we manage a resource?
    - Engineered Channelization – controlling nature.
- How can a connection with nature foster the necessary change towards a sustainable mindset?



My World View

Everyday I view the world, the world comes into view
I wonder how I see familiar things as if they were brand new
It's as if I wasn't ready to see
Another's point of view
Yesterday
I saw things differently
Who planned the timing of it all?
I guess I've grown to see
Another's point of view
Sometimes I learn something new
And wonder how it can be
Today
The new is a part of me
Another's point of view
My eyes are open wider now
There is so much more to see
Tomorrow
Another day to gain
Some new insights about me

Shellie Marie Zias-Churchman



Journal Entry, Field Notes, Observations, Reflections

Wax Currant (*Ribes inerbrians):*

Smaller shrub, up to five feet;
simple heart-shaped leaf with crenate rounded teeth; pink flowers, red-orange seeded fleshy berries.

Whitestem Gooseberry (*Ribes inerme*):

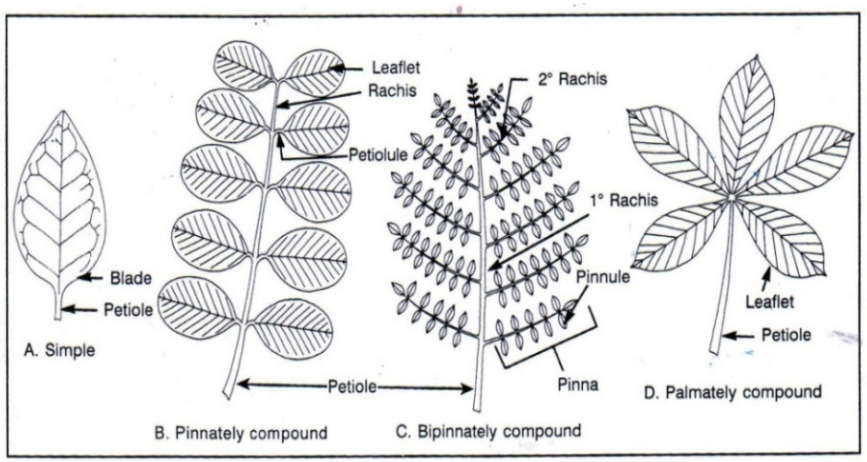
Sprawling to erect shrub with slender and smooth stems with prickles; leaves are generally ovate with a rounded to more commonly heart-shaped base from shorter to longer than the blades; pink flowers.

Growth Mindset and Transformative Teaching/Learning

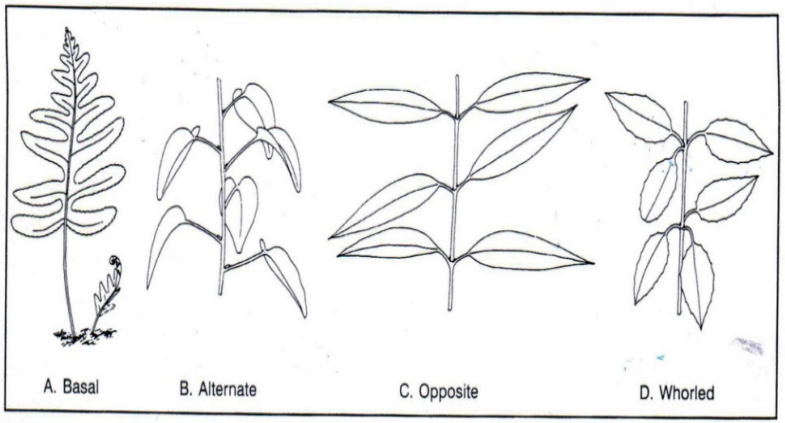
- What is a growth mindset and how does it expand our thinking?
- What does a growth mindset look like with regards to the way we manage a resource?
    - Creek Restoration – preserving and working with nature.

Eco-mindset and Holistic Teaching/Learning

- What is an Eco-mindset and how does it change our thinking?
- What does an Eco-mindset look like with regards to the way we see the world?
    - Connecting or Re-Connecting with Nature (Biophilia)



Features of Simple or Compound Leaves



Leaf Arrangement

Mock Orange (*Philadelphus lewissi*):

An erect to spreading shrub that grows 4 to 12 feet tall and 3 to 9 feet wide; leaves are oblong to broadly lance shaped, 1 to 3 inches long; scented flowers are white with four petals.

Silktassle Bush (*Garrya flavescens*):

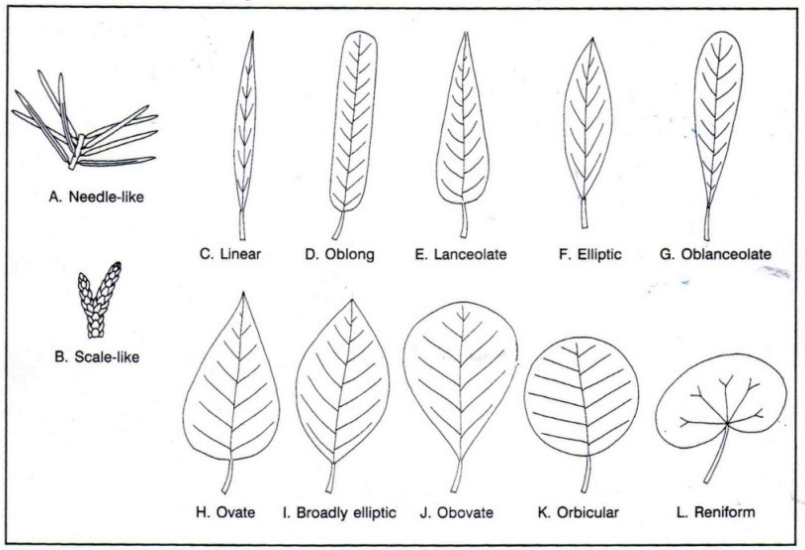
Erect bushy shrub, 7 to 16 feet; flowers are concentrated and cascade down the plant; waxy convex leaves coupled with dense individual hairs on the leaf undersides.

Littleleaf Mock Orange (*Philadelphus micophyllus*):

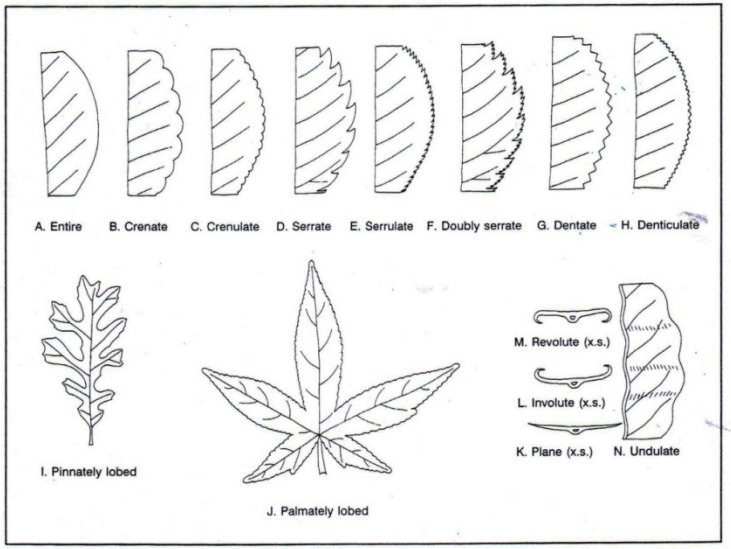
A fine-textured
compact shrub with slender twigs, brown & white bark & small, narrow, dark green leaves; blooms with masses of white flowers and delightfully fragrant citrus smell.

Manzanita (*Archtostaphylos pringlei*):

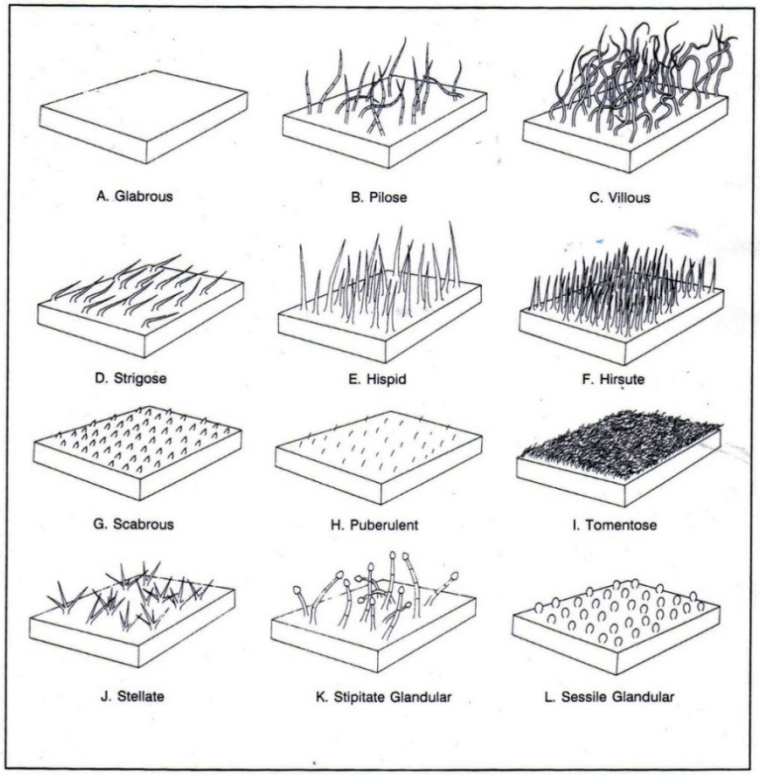
Small to large shrub; reddish (occasionally gray) rough, shredded bark; leaves are ovate to elliptic, hairy or/and glabrous; berries are red-brown and edible.



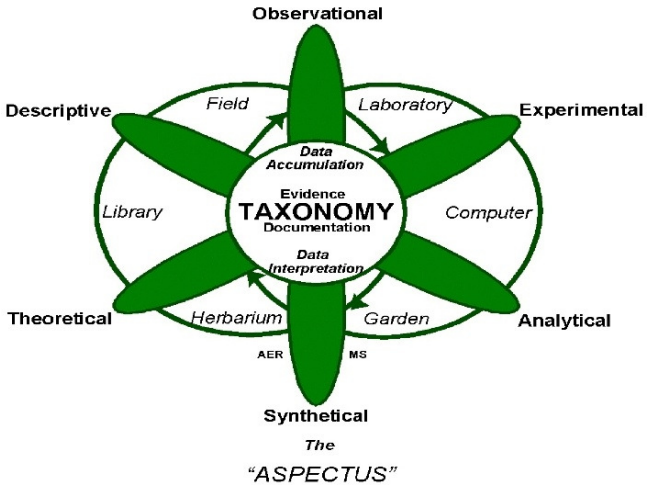
Common Shapes of Leaf Blades



Common Leaf Blade Margins



Surface Features



Coyote Willow (*Salix exigua*):

Grows in large thickets (not clumps) more narrow and columnar instead of spreading, 2 to 9 feet tall; long slender leaves often with red to brown stems; prefers coarse soils.

False Mock Orange (*Fendlera rupicola*):

Small to medium shrub usually 3-7 feet tall; flowers have four entirely separate, white, clawed petals; leaves are opposite, oblong, entire, thick and twisted, with three veins.

Choke Cherry (*Prunis virginiana*):

Medium shrub with frequently crooked trunk; leaves are alternate, simple, lobed; lobes with rounded tips; cherry-like fruit is found on short stems in clusters similar to grapes. It is nearly black and is edible when ripe.

Coffeeberry (*Rhamnus californica*):

Fast growing shrub; leaves are dark green, 2-3 inches in length with rounded under margins; greenish-yellow flowers that are followed by showy berries that are first green then red and finally black when ripe; best in sandy soil.

The Art of Drawing What You See

Is the leaf simple or compound? _____

What is the leaf arrangement? _____

What is the leaf shape? _____

What type of leaf margin does it have?

_____

What type of surface does it have?

_____

The Art of Drawing What You See

Is the leaf simple or compound? _____

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_____

Shrubs of Butte Creek on the Prescott College Campus

Shrubs are a versatile group of plants that give form and substance to a landscape. In order to keep the landscape composed and better organized, shrubs should be plentiful. They can divide large areas into smaller manageable sites for restoration projects. They also work well to hide any unsightly views and many shrubs provide beautiful and colorful blooms.

For Butte Creek, shrubs are very plentiful and oftentimes have to be removed from designated walkways. However, native shrubs must be continually replanted or the invasive shrubs tend to take over the whole project.

Medium to large rounded tree with fast growth rate; leaves pinnately compound, usually 3-5 leaflets per stem; new growth twigs are velvety.

Water Birch *(Betula occidentalis):*

Prefers wet areas but is very adaptable to all regions; small to medium tree that usually grows in several stems together; up to 25ft tall; finely toothed leaves; cone-like catkins hang from its branches.

The Art of Drawing What You See

Is the leaf simple or compound? _____

What is the leaf arrangement? _____

What is the leaf shape? _____

What type of leaf margin does it have?

_____

What type of surface does it have?

_____

Trees of Butte Creek on the Prescott College Campus

Trees are the biggest plants in our landscapes and deliver the greatest benefits. They add enduring structure to the design and can become the canopies and fortifications of our outdoor living spaces.

For the Butte Creek Restoration Project, trees are a very important part of the current plan to remove invasive species, namely the Siberian Elm. Through a succession-based removal plan, smaller invasive trees are removed and then replaced with native tree species. Once the native trees grow enough to dominate the landscape, removal of the larger invasive elms occurs. The goal is a gradual succession from invasive tree dominance towards a more native tree canopy along Butte Creek.

Please use the following pages as a guide to identifying some of the trees and shrubs found along Butte Creek around campus. Spending time outdoors with the trees can enhance your minds capacity to be one with nature.

inches in length; bark resembles a jigsaw puzzle and smells like vanilla.

Red Willow (*Salix laevegata):*

A stream-side small to medium size tree that is excellent for stream stabilization; broad lanceolate leaves; twigs are red to yellow-brown; white "pussy-willow" flowers in spring.

Velvet Ash *(Fraxius velutina):*

Narrowleaf Cottonwood *(Populous angustifolia):*

Medium size tree with narrow crown; shiny green, narrow lanceolate to ovate 2-5 inch leaves with short stem; pale long yellow catkins give way to small dry capsule contacting numerous cottony like seedlings.

Ponderosa Pine *(Pinus ponderosa):*

Trees often grow to massive proportions; needles usually 2-3 inches in length in clusters of three; egg shaped pine cones usually 2-3

Arizona Sycamore *(Platanus wrightii):*

Grand tree reaching very large proportions; bark is smooth and peeling; leaves are hand-shaped and can be up to 30 cm across; young leaves are velvety; tiny red flowers followed by dangling seed balls distinguish this tree.

Arizona Walnut (*Juglands major):*

Narrow, somewhat curved ovate leaves in groups of 8-12 on a stem; hanging catkin flowers make way for 1 inch round nuts that mature in the fall and is edible.

Box Elder *(Acer negundo):*

Small to medium tree in AZ; shiny dark green leaves with red stems should not be mistaken with poison ivy; small flowers without petals form in long pendulous spikes.

Desert Willow *(Chilopsis linearis):*

15-40 ft., slender-twigged, small tree, often with leaning trunk; leaves are deciduous; flower is dark pink or purple; replaced by slender dangling seedpods in autumn.

Fremont Cotton Wood *(Populus fremontii* or *angustafolia):*

Trees grow to giant proportions; deeply furroughed bark; large leaves with blunt-tipped teeth; non-petal flowers called catkins; spiked fruits release seeds with cottony filaments taken away by the wind.

Gooding Willow (*Salix goodingii):*

Medium size tree that develops a massive trunk; dark, slender, lanceolate in shape leaves; cone-shaped capsules that contain many small, cottony seeds borne on catkins.