Landscape Notes

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Sabbatical Report II

As my sabbatical comes to a close at the end of September, I wanted to write another issue of landscape notes and talk about some more of my observations here in the Chiricahua Mountains of Arizona. The Chiricahua's are the largest set of mountains in the "sky islands" in this part of Arizona. They are called sky islands because they rise up out of the Sononoran/Chihuahuan deserts to quite high elevation but are distinct from each other each range surrounded by lower desert lands. As you know islands tend to develop their own biologies because species may not travel between them that much. The diversity of insects, plants, animals and fungi here are quite highly developed. This area of Arizona is also unique as it receives most of its water as precipitation in the summer.

Monsoon rains from tropical depressions and storms often edge into southern Arizona producing spectacular rain showers in the months of July, August and September. Late spring and early summer are dry periods and water also occurs in winter if storms that hit California have enough energy to move into Arizona. Trees are adapted then for wet winters and summers. They should then have potential for use in Southern California were we have wet winters and irrigate during hot summers.

I began my sabbatical with the Chiricahua Rendezvous an intense study of the trees in these mountains. I am also ending my study leave with another version of the same meeting which is October 7-11. There is still room if you have a last minute urge to drive a thousand miles from California to this remote place. During this year I discovered many trees I think we should cultivate in California. I list four of these here…

Figure 1a: Hackberry growing in full sun and no indication of a central leader.

Figure 1b: Hackberry in Portal, AZ growing with a strong central leader. Note this tree grew as an understory tree to the adjacent walnut.

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Figure 2: Netleaf hackberry with its veins clearly showing. Note orange fruit.

Net Leaf Hackberry

Celtis reticulata is the netleaf hackberry. Celtis is a member of the Canabaceae or the Cannabis family although it is not known for psychoactive alkaloids. It is a wild thing. The reason I say this is we have it in the Climate Ready Tree Study (CRTS) and it grows wild branches in a tangle every direction possible but upward. It seems to completely lack apical control.

When I first arrived in Portal for sabbatical I noticed lots of hackberry trees but they did not resemble those in the CRTS—they have tree forms here. They are important trees for wildlife as they have berries with edible fruit. These orange fruit ripen in the fall and are abundant when other fruits have ripened and passed. The berries are readily consumed by overwintering birds. As a result perching birds sit in trees and poop out hackberries which then establish in the shade of shrubs and trees.

For the first years of its life hackberry trees live as under-story species. In reduced light conditions plants etiolate or grow longer shoots upward. This may be why many hackberry trees here have a more tree like form. Hackberry grown in full sun tends to sprawl with no clear central leader. Hackberry trees are deciduous and exhibit fall color as short and cool days of fall develop.

Hackberry is often found along creeks and enjoys plentiful water but will also grow in the mesquite or in granite rocks as a smaller tree or shrub where water is limiting. It is extremely drought tolerant and given the right training may make a nice patio tree or companion tree to other drought tolerant plantings. Pruning for form is essential. In our work pruning the climate ready tree species it is one of the most pruned trees due to its overproduction of lateral branches.

Figure 3: Fall color of P. Wrightii in Portal, AZ

Arizona Sycamore

The Arizona sycamore is *Platanus wrightii.* It is similar to the native California sycamore *Platanus racemosa*. The tree seems to weep because the leaves have a habit of pointing their lobes downward. The leaves are more deeply lobe and seem to have fewer lobes than the California species. Like California sycamore, Arizona sycamore has a very white trunk, and is even ghost-like in appearance. It is also a riparian tree, growing along stream and creak beds in its native range. Unlike its California cousin, the Arizona sycamore seems to have little or no sycamore anthracnose disease here in Southern Arizona (at *least* in the last two years).

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Figure 5: The white trunks of P. wrightii in winter with snow.

Figure 6: Mature bark at lower trunk and exfoliating bark plates

The tree is quite limber. We have seen many 50 mile an hour winds down our canyon with little loss of limbs. The tree is however very susceptible to cavity formation by *Phelinus* spp., and its hollowed branches are habitat for many cavity nesting birds here. Woodpeckers and owls are frequent visitors to *P. wrightii*. Overall Arizona sycamore just looks different from the California version, the trunk is more striking and the bark plates less contrasting, the weeping effect is very pronounced. Sycamores are deciduous, and they produce a huge quantity of leaves during the fall. In their native habit, these accumulate and a deep mulch layer is provided to these trees. Around gardens, leaves are usually raked up as drifts of their leaves would cover many garden plants. The fall color display from these trees is striking and one of their defining features.

Platanus wrightii seems fairly pest and disease free (aside from wood decay) and easy to culture. I am not sure if it can breed with California sycamore and so some caution should be advised on introductions.

Figure 4: Downward pointing leaf margins of P. Wrightii.

Recently Published

Downer, A.J. and E.J. Perry. 2019. Wood Decay Fungi in the landscape UCANR Publication #74109. http://ipm.ucanr.edu/PMG/PESTNOTES/pn74109.html

Downer, A.J., and B.A. Faber. 2019. Mulches for Landscapes ANR publication #8672 https://anrcatalog.ucanr.edu/pdf/8672.pdf

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Arizona Madrone

Figure 7: Arizona madrone has colorful fruit attractive to birds.

The Arizona madrone is Arbutus arizonica and is actually being grown now in some California nurseries. It is a demure relative to its California cousin. I has appealing red new growth on young stems and exfoliating bark on young stems. It develops a mature bark that does not exfoliate in the same manner as *A. menziesii (California madrone)*. The tree is slow growing in riparian areas on well drained gravels and poor soils. Seeds germinate easily after cold stratification and hot water treatment. Keeping them growing after germination can be difficult as they are susceptible to root rot fungi and damping off disease. I suspect this tree while it has value in California landscapes will be difficult to cultivate. We lost one in the Santa Paula Climate Ready Tree Study after transplanting from a #15 container. The fruit are bright orange and a great resources for birds.

Arizona Cypress

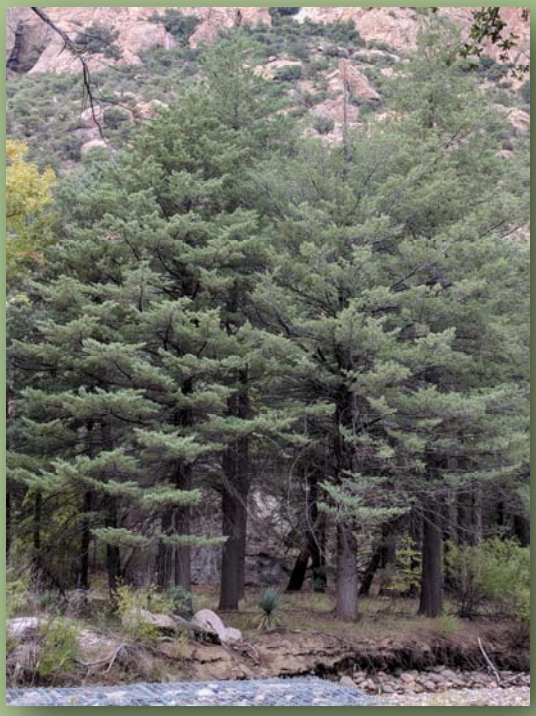

Figure 8: A stand of Arizona Cypress growing next to Cave Creek in Portal, AZ

Arizona cypress is *Cupressus arizonica.* This cypress is found primarily to Arizona especially in the sky islands--it is also found in California especially in cultivation. What some may not realize is that this too is a riparian species and thrives on a constant supply of water. I can think of many languishing Arizona cypress in poorly irrigated California landscapes. The tree is not necessarily drought tolerant as evidenced by its growth in perennial running streams here in Portal. Its growth range is never far from a creek drainage, and some of the largest trees grow along perennial creeks. There are both blue and green forms of this tree when in its juvenile form but the mature tree is a robust green to blue green color. The tree stands very straight often with spiral grain, narrowly furrowed bark that is dark in color. Specimens drop copious amounts of needles causing a thick duff or litter layer, often excluding the growth of other plants (thus saving all the water for itself). Successful cultivation of this evergreen would seem to require even soil moisture and a heavy mulch layer.

There are many more trees to write about and it seems I have shown you all the thirsty (riparian) ones in this issue. I will tackle the Southwestern oaks in my next issue of Landscape Notes.

Trees of the Chiricahua Mountains—
Biology, Ecology and Drought Adaptations.

A meeting of arborists, naturalists, and biologists to study trees and their adaptations in the Chiricahua Mountains of South East Arizona

October 7-11, 2019

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UC CE University of California Agriculture and Natural Resources Cooperative Extension

Arizona College of Agriculture and Life Sciences Cooperative Extension

Registration: Registration includes all meals and lodging (dormitory style), book, seminars, and field trips for five days. The Meeting is held at the SWRS of the American Museum of Natural History, Portal, AZ. **Please fill out the course registration sheet found on the SWRS site https://www.amnh.org/research/southwestern-research-station/education.**

The cost for full registration is $130.00 per day or $680 for the five days. The nearest airport is in Tucson approx. 3 hours drive from the west. We will attempt to coordinate shared rides if enough people require pick up. From California, Los Angeles area, plan for a 10-12 hour drive. **To reserve your spot in the course please contact Alina or Karen at SWRS (520-558-2396) and mail a check made to: Southwestern Research Station, P.O. Box 16553, Portal, AZ 85632.**

Jim's Return from Sabbatical

My official sabbatical end date is Sept 31. I am however doing work here in Arizona as part of a multi-state project until the end of the trees course.

After that I will be on vacation for the remainder of October. I will return to work in the Ventura office on November 4, and will be available to all after that date.

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