



Above: Shaded structures at the Civano Garden Center. Right: The Shipleys (l to r): Nick, Les, Alex, Chris. (Photo at right courtesy of Civano Nursery; all other photos courtesy of Mary Stoerp.)



CIVANO NURSERY:

Reclaiming the Sonoran Desert

Heat, monsoon-like rain and sandy soil may be a deterrent to some growers, but Civano Nursery has embraced the desert climate and turned it to their

By Mary Stoerp

When the entire root-ball has been totally excavated, a staff member will climb into the pit and assemble a box around the base. Once the soil has been perfectly tamped to eliminate any air pockets and a thorough watering has been applied, the tree is left in the ground for a minimum of 3-5 weeks to acclimate. After this acclimation period, the tree is bottomed by tilting it on its side and simultaneously severing its taproots.

Using this side-boxing process, Civano Nursery is able to maintain an inventory of Blue Palo Verde, Foothills Palo Verde, Velvet Mesquites and Ironwoods for a variety of Tucson and Phoenix developments.

GEOGRAPHIC PROBLEMS

For all of the desert's inherent beauty and Civano Nursery's success, grower problems do exist in such an arid region of the world. Heat, wind and water can create situations that the best of nurserymen struggle with.

The wind, which Les says can easily reach 80 mph, can topple those Mesquites and Palo Verdes if they have not yet been braced in their boxes. If the tree should root lodge in the box, exposing its roots to the dry desert air and high temperatures, it will certainly die.

Water can be a huge problem when it comes in a monsoon-like downpour. It will quickly escalate into a flash flood raging across the mesa when it has not been properly channeled. This can lead to landscape damage, of course, but it also wreaks structural havoc on homes and businesses in its path.

WATER SYSTEMS

Although water is not yet in short supply for Tucson, the threat is ever present. An underground aquifer supplies Tucson with potable water, but the water table is dropping on an annual basis.

The community of Civano recognizes the importance of this scarce and life-giving resource by strictly using reclaimed or tertiary treated sewage water for all private and public landscaping irrigation. In fact, Civano Nursery uses reclaimed water as its only source of irrigation.

Initially, Civano Nursery was very concerned about the phytotoxic effects that the reclaimed water might have on the health of their container-grown plants. They started out irrigating more mature, 5-gallon container plants with reclaimed water. No problems were experienced. One-gallon, less mature plants were then exposed to reclaimed

A few years back, Les Shipley was contacted with an interesting challenge that would change his life. Would he be willing to leave retired life in the Victoria Rain Forest in British Columbia and transplant himself into the Arizona desert to start a nursery operation, from scratch, for a proposed sustainable community? The idea was intriguing, but his answer entirely depended on his family's wishes.

Luckily his progenies agreed. Chris Shipley handles tree salvaging sales and client contact; Alex Shipley serves as operations manager, overseeing the day-to-day tree salvaging activities; and Nick Shipley, as head arborist, takes care of the native plant preservation ordinances.

Civano Nursery was established in 1999 and has since grown and flourished. It is now a recognized and well-respected establishment among the majority of Tucson landscapers, some of whom recommend Civano Nursery as a plant standard in the industry.

Initially, the focus of the nursery was to provide native landscape materials for the sustainable community. Instead of bulldozing away the cacti, woody shrubs and trees that lay in the path of potential urban sprawl, Civano has developed a process to reclaim (or salvage) this precious Sonoran Resource. To date, the Shipleys have saved over 500 mature trees with a near 99 percent success rate.



Above left: Salvaged trees average 16,000 to 20,000 pounds; Right: A fully-assembled tree box.



HARVESTING NATIVE PLANTS

The 15- to 20-foot Mesquites and Palo Verdes that dot the desert landscape may look rather insignificant standing out there upon the mesa, but their size is deceiving when it comes to the salvaging process. These rather diminutive trees, when accompanied by their six-foot boxes filled with native soil, generally average between 16,000 and 20,000 pounds.

The trees are literally dug by hand. The root-ball must be carefully carved and shaped with hand shovels so that the lower branches are not damaged.

water, and again, there were no problems. Now, the entire nursery is being irrigated using reclaimed water, from seedlings to 50-gallon containerized trees.

Mark White, nursery manager for Civano, has seen no evidence of phytotoxicity and in fact has

seen marked improvement over potable water. The beneficial effects are derived from a measurable amount of N-P-K and minor elements found in tertiary treated sewage water.

From the change to reclaimed water, the nursery has not only

seen a beneficial improvement in plant quality and growth but also a \$12,000–\$15,000 per year savings on their water bill.

GREENHOUSE STRUCTURES

The Civano Garden Center sits on exactly one acre, while the nursery occupies another three acres. A shade structure encompassing 16,000 sq. ft. covers an assortment of 539 species of native and native-adapted plants grown on site. Four commercial greenhouses (30 x 96 ft.) line the east edge of the nursery; one serves as the main propagation house. In preparation for the spring busy season, which in Tucson begins very early (Feb. 15), the nursery erects three additional poly “tunnels” between the green houses. These unheated tunnels prevent the woody ornamental plants from freezing back, thus gaining two to three weeks on the season.

The seasonal tunnel houses give Civano Nursery the capacity to provide two major botanical gardens with an early product for their spring sales. They provide Tucson Botanical Gardens and Tohono Chul Park with 80-90 percent of their retail Spring and Fall Garden Sale plants.



Civano Nursery digitally creates their own signs due to a lack of off-the-shelf signage for indigenous plants of the Southwest.

WHAT'S GROWN AND HOW

Grower Mark White is a true New Mexican native, born and educated. It was an easy jump from the native New Mexico plants he studied in graduate school to the diverse plant palate of Arizona. Mark grows 539 species; 30 percent of these are native and 40 percent are drought tolerant plants that have adapted to the Sonoran Desert climate. The balance are traditional landscaping plants.

Heat is controlled passively in the propagation house. They utilize a computer-controlled intermittent mist system that can control six different zones for heat and mist. Sixty percent of their plants are propagated vegetatively, the balance via sexual (seed) propagation. Spring is one of the prime periods for vegetative propagation, depending upon what is available from their stock plants.

Color, Mark and Les acknowledge, is currently only a 5 percent focus at Civano Nursery, much lower than industry standards. This, they believe, is due to their location in a developing area of new housing where buying is focused on foundation plantings, such as trees, to produce shade. In time, Les believes that annuals will become a larger percentage of net sales as the developments mature and people begin to accent their landscapes.

EXISTING VS. FUTURE SPACE

Civano Nursery currently grows 2,000 24-inch box native trees, along with 2,000 15-gallon containers, 5,000 5-gallon containers and 60,000 1-gallon containers.

At present, they are expanding their tree seedling area onto an additional five acres of their total 10-acre spread. Additionally, they are planning a one-acre site exclusively for

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cacti, succulents and Yucca. And with the future in mind, they've ensured room for nursery growth by purchasing another 17 acres.

DATABANKING FOR THE FUTURE

Of the 539 species grown on site,

90 percent have been catalogued with cultural information under the direction of Mark White. For growth analysis, it is necessary to address critical timing and growing space issues, such as:

- How long does this seed species take to germinate?

• How long does it take for this plant to reach maturity in a liner? 1-gallon? And 5-gallon container size?

- How long should the tree seedling be grown in an RL tube before bumping into a 5-gallon or 15-gallon container?

For production analysis, a

different set of questions is asked:

- Will we have enough space to grow sufficient numbers of each plant species in their particular container size?

• If we take cuttings in March, will the finished plant be of sufficient size to market by a set date?

- When will the 1-gallon containers be ready to bump into 5-gallon containers? And, at a predetermined assessment time, will they be ready for sale?

Completing this daunting databanking task will prepare Civano Nursery for their ultimate expansion.

THE NEXT FIVE YEARS

Down the road, it's foreseeable that the nursery will expand to 65 acres. A landscape architect is now drawing up plans for the Garden Center expansion being proposed. The next 18 months will see Civano Nursery and Garden Center developing architectural building elevations and a site plan that will house not only an expanded garden center, but also a café and a hardware store.

The shaded retail greenhouse structures that now comprise 16,000 sq. ft. will expand another 25,000 sq. ft. They will be gutter connected ridge and furrow, designed for open air, walk-through simplicity. A 25,000 sq. ft. enclosed retail center will be built housing hard goods, fountains, pottery and other related merchandise. Expansive glass garage doors will be installed along the side of the building to allow free customer access. The overall plan is European-based; customers will walk in past the coffee shop, proceed through the retail section and stroll out into the greenhouses.

The fully developed community of Civano will boast 2,600 homes with three neighborhood centers. The Shipleys plan for Civano Nursery and Garden Center to not only remain an integral part of the Civano community, but to become known throughout the region as a destination garden center and providers of "Civano-quality" plants.

Mary Stoerp is an associate editor for GPN.

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