

PMC Studies Deep Planting Methodology

Unusual Method Works in Riparian Environment

The Los Lunas Plant Materials Center (PMC) is experiencing success with a new deep planting methodology for planting native shrub transplants on a 33-acre riparian site on the Rio Grande in Bosque, New Mexico south of Belen. They are using shrubs grown in the one gallon, 14-inch deep treepots. What is unusual is these shrubs are being planted into 6-foot holes where the plants root crowns are buried. Typically, this practice would kill most transplants.

“Riparian shrub species have evolved over thousands of years in association to flooding and seem to be tolerant to being buried in sediments, or in this case, being planted deep in the soil,” said Greg Fenchel, PMC manager. “The roots of the transplants are placed to the depth of the capillary fringe of the water table. Because the root system is in moist soil, it will not be necessary to irrigate these plants unless the capillary fringe of the water table drops below the root zone.”

The Bosque, New Mexico location being used in the study had an adequate stands of cottonwoods and herbaceous understory, but only a few native understory shrubs. Subsequently, only

native understory shrubs were planted here.

These transplant shrubs were grown to have shoot systems (biomass above the root crown) that can be up to seven feet tall even though their root systems are generally 12 inches in length due to the restriction imposed by the pot. Typically one would conclude that the shoot system is not in balance with the root system.

“With this new deep planting methodology that is exactly what you need for success,” says Fenchel. “We bury these plants four to five feet deep and try to have at least the top three feet of the shoot above the soil surface so they are not shaded by other low growing plants.”

Prior to the PMC planting this site, it was cleared of exotic phreatophytes using the cut stump method with ‘Garlon 4’ and vegetable oil and was done with only minimal surface disturbance. This method involves felling the trees by hand with chain saws, painting the stumps with herbicide, and then cutting the mainstem and branches for firewood, and finally chipping the 6 inch diameter or less into surface mulch. Continued monitoring and spot treating sprouts of the exotic species with herbicide is necessary for

control. With only limited surface disturbance, very few weeds emerged which provided for favorable planting conditions. Dense stands of weeds can be more competitive than the desired plants for water, light and nutrients.

The PMC planted 1,000 transplants using the deep planting methodology in 2004, and they recently planted 800 more in 2005. The plants are watered once after planting to provide for good root to soil contact. Those planted in 2004 were not irrigated during the 2005 growing season, and as of November 2005, show a 95% survival rate.

For further information about the deep planting methodology call the PMC at 865-4684.



Auger used for deep planting.