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Cove State Park, Laguna Beach, CA) were within this range, indicating ideal germination temperatures occurred as early as January and continued through May. A greenhouse experiment was undertaken to determine how surface conditions and planting depth affect emergence and development of *C. cardunculus*. Surface condition treatments included covering the surface with artichoke thistle thatch, *Bromus* spp. thatch, or no thatch (bare soil); planting depths were 0 or 1 cm. Germination percentage was greatly reduced in the bare soil treatment with seeds planted on the soil surface. Regardless of planting depth, both thatch treatments resulted in shoot apices elevated in the soil profile with respect to the bare soil treatment. The information from these experiments can be utilized in a management plan for simultaneously promoting germination to exhaust the seed bank and elevating the shoot apex, leaving it exposed and vulnerable to removal.

Terrestrial Fauna Community Composition of *Arundo Donax* (*Poaceae*) Root Masses

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The giant reed, *Arundo donax*, is an exotic invasive plant that has become widely established along riparian corridors in the southwestern United States. It is widely known to form dense thickets and negatively affect riparian systems in many ways, however little is known about the faunal communities associated with this plant. In this study, faunal composition from root masses of the giant reed, *Arundo donax* was analyzed from the Santa Margarita River at Marine Corps Base Camp Pendleton, San Diego County,

California. A total of 41 root ball masses were analyzed in this study. No sensitive species and almost no vertebrates were found in association with *Arundo donax*. A total of 2590 macroinvertebrates were collected and identified, and represented 64 species from 7 classes. Three exotic invertebrate species made up 41% of the total number of captured invertebrates, and only 31% of the sampled invertebrates could be con-

firmed as native species. Those species that were confirmed as native (n=901, 29 species) had a diversity of 1.03, and an evenness of 71% (1.46), while confirmed exotic species (n=1201, 8 species) had a diversity measure of 0.62, and 68% evenness (0.90). The native versus exotic species Shannon Weaver diversity indices were significantly different ($t = 10.51$, $df = 996.0$, $p < 0.001$), with native species diversity being significantly greater than exotic species diversity. This study demonstrates that *A. donax* root masses are suitable habitat for some native macroinvertebrate species, but are dominated by a greater abundance of few exotic species. Our results also suggest that in localized and ruderal stands of *A. donax*, removal by means of heavy equipment may not compromise sensitive species in southern Calif. riparian systems.

***Tamarix aphylla*: An invasive threat in the Desert Southwest**

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In the Southwestern United States, the athel pine (*Tamarix aphylla*) has been considered to be an innocuous introduction. However, at the Lake Mead National Recreation Area, populations of the tree have spread beyond their original boundaries, forming monospecific stands and creating a threat to native flora and fauna. *Tamarix aphylla* has been thought to be sterile and unable to reproduce by seed in this area. We examined the germinability of *T. aphylla* under laboratory conditions and found that the trees in this area do produce viable seeds. While some trees produced no viable seeds, other trees produced seed sets with eighty-eight percent germination. With estimated seed production of large trees over a season of up to 250,000 seeds, the Lake Mead population of *T. aphylla* is producing millions of viable seeds. On examination of areas surrounding our study sites, we found seedlings of *T. aphylla*. This suggests that if favorable environmental factors exist, seedling establishment is probable for *T. aphylla*. The possibility of sexual reproduction of this exotic species, combined with rapid vegetative reproduction, makes *T. aphylla* an invasive threat along the shores of Lake Mead and other mesic areas in the southwestern deserts.