

Implementing an early detection program on Catalina Island: prioritizing landscaped grasses

Julia A. Parish

Catalina Island Conservancy, PO Box 2739 Avalon, CA 90704 USA

Introduction

Recent trends in Southern California landscaping have increased the demand for drought resistant grasses, and the most popular species tend to be non-native. These ornamental, alien grasses thrive in the region's mild, Mediterranean climate and disperse readily via its strong wind patterns. Santa Catalina Island sits just 41 km off the coast of Los Angeles and has no biosecurity measures in place, which leaves it highly susceptible to invasion from the continent, especially from landscaping choices made by island residents and businesses. The Catalina Island Conservancy's Catalina Habitat Improvement and Restoration Program's invasive plant project developed an early detection and rapid response project, the Avalon Grasses Initiative, in 2016 to address recent introductions of four highly invasive grass species installed in landscaping. Leveraging survey and control work with non-mandatory compliance and the offer of free native plant landscaping, the Conservancy removed over 85% of target species populations within a year. This early detection rapid response program prevents the spread of invasive grasses into the interior of the island and introduces the ideas of prevention and biosecurity to an island community in an intimate and immediate way.

Materials and methods

I identified priority target species using lists of common landscaping grasses that are ranked as high risk by the California Invasive Plant Council (CAL-IPC) Weed Risk Assessment. Botanists from the Santa Barbara Botanical Garden and Conservancy staff conducted roadside surveys throughout Avalon. Once a plant is detected on a property, we contact the property owner regarding the risk the species pose and discuss control options. Removal requests are voluntary and control work is offered free of charge. For each grass removed, we offer a native, drought and deer browse resistant plant as a replacement. All native plants are grown at the James Ackerman Native Plant Nursery on Catalina Island.

Results

In the first year of this multi-year project, the first naturalized population of *P. setaceum* in the wild was detected and controlled. We have started control of the largest population of *A. donax* in Avalon, though it will take several years to remove and control this one (1) acre infestation. All but one population of *C. selloana* has been controlled. Two properties still retain *Stipa tenuissima* in their landscaping, and we are working with the homeowners to gain access permission to remove them. Overall, the response from the community has been very supportive. Only two property owners expressed concerns regarding removal, and one of which has subsequently given permission for removal and replacement and the other landscaped their yard with a new plant pallet, removing all *S. tenuissima* individuals.

Arundo donax 2.3 tons of vegetation 2 properties	Cortaderia selloana 203 plants treated 6 properties
Pennisetum setaceum 1,011 plants treated 19 properties	Stipa tenuissima 2,736 plants treated 23 properties



Figure 1: *P. setaceum* in Avalon residential landscaping



Figure 2: *P. setaceum* removal and native plant replacement

Conclusions

The Avalon Grasses Initiative is very successful in removing high threat invasive grasses from landscaping throughout the community. It detected populations naturalizing in wildlands, documented the potential invasiveness of an emerging invasive species, *Stipa tenuissima*. It allows for door to door education about Santa Catalina's unique flora and fauna and the impacts invasive species have on this island ecosystem, strengthen the communities bonds with the island and the Conservancy. By replacing landscaped invasive species with native plants, we are slowly transforming the island's diversity and resilience, tipping the balance back to a more native ecosystem. Early detection surveys will be conducted on a monthly basis for at least five more years to keep pace with plant imports. The next phase is to gain support to create biosecurity legislation for the City of Avalon.

Target Species



Arundo donax

Cortaderia selloana



Pennisetum setaceum

Stipa tenuissima



Figure 3: *P. setaceum* establishing above Avalon.

Further information

Julia Parish
PO BOX 2739
Avalon, CA 90704 USA
jparish@catalinaconservancy.org
Office: (310) 510-1299 ext. 229
www.catalinaconservancy.org

Literature cited

Bossard, C.C., Randall, C.C. and Hoshovsky, M.C. 2000. *Invasive Plants of California's Wildlands*. University of California Press, Berkeley, CA.

Burt, J. et al. 2007 Preventing horticultural introductions of invasive plants: potential efficacy of voluntary initiatives. *Biological Invasions* (9) 909-923.

Conser, C. et al. 2015. The development of a plant risk evaluation (PRE) tool for assessing the invasive potential of ornamental plants. *PLoS ONE* 10(3): e0121053. <https://doi.org/10.1371/journal.pone.0121053>

Imada, C. et al. 2007. Implementing Early Detection in Hawaii, Year One. Hawaii Biological Survey Report.

Acknowledgments

I thank the American Conservation Experience interns who assisted with the removal of invasive grasses, Peter Dixon of the Catalina Island Conservancy for providing native plants to use as replacements in landscaping, Margie Pfeffer of Rancho Santa Ana Botanical Garden for all her hard labor and coordination skills, Steve Junak and Matt Guilliams from the Santa Barbara Botanical Garden for plant species determinations, and the Oahu Invasive Species Committee for introducing me to invasive species management concepts and protocols. Photo credits: Catalina Island Conservancy staff: B. Dion, P. Dixon, and J. Parish.



**CATALINA ISLAND
CONSERVANCY**
Conservation. Education. Recreation.