A Functional Group Approach to Managing Large Invasive Grasses: Case Studies with *Arundo* and *Phragmites.*

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Large invasive grasses (LIG) constitute a distinct functional group with characteristic life history traits that facilitate colonization and aggressive growth in aquatic ecosystems, particularly those modified by human activities. These species typically form monocultures in the systems they invade and have wide ranging and negative impacts on biodiversity and ecosystem processes. I present a functional group approach to studying a suite of LIG with similar morphological and physiological characteristics that cause them to colonize and establish in similar environments, resulting in similar ecosystem impacts. *Arundo donax* L. (giant reed) and *Phragmites australis* (Cav.) (common reed) are two of the most widely distributed invasive reeds in coastal riparian and wetland ecosystems in North America. These reeds share a unique invasive life form – primarily vegetative reproduction and dispersal through rhizomes, rapid growth rate, substantial allocation of energy to belowground biomass, and adapted to disturbance. These grasses interfere with water management and transportation systems, and are also known to compete with native plants, provide inferior quality habitat for wildlife, promote wildfire, and affect erosion and sedimentation dynamics in many ecosystems, and can also be major consumers of groundwater in arid regions. Management and control of invasive populations cost millions of dollars each year. Biological control programs have been established for both species as sustainable and cost effective alternatives to conventional control programs. Further experimental studies are needed to tie the distribution patterns of *A. donax* and *P. australis,* and other LIG to in situ environmental conditions such as climate, soil conditions, nutrient availability, and moisture requirements. Moving past the species-specific treatment of invasive plant problems to a functional group analysis may provide greater insight into the causes of and potential for LIG invasion and more accurately portray the ecosystem level impacts these species are causing.