



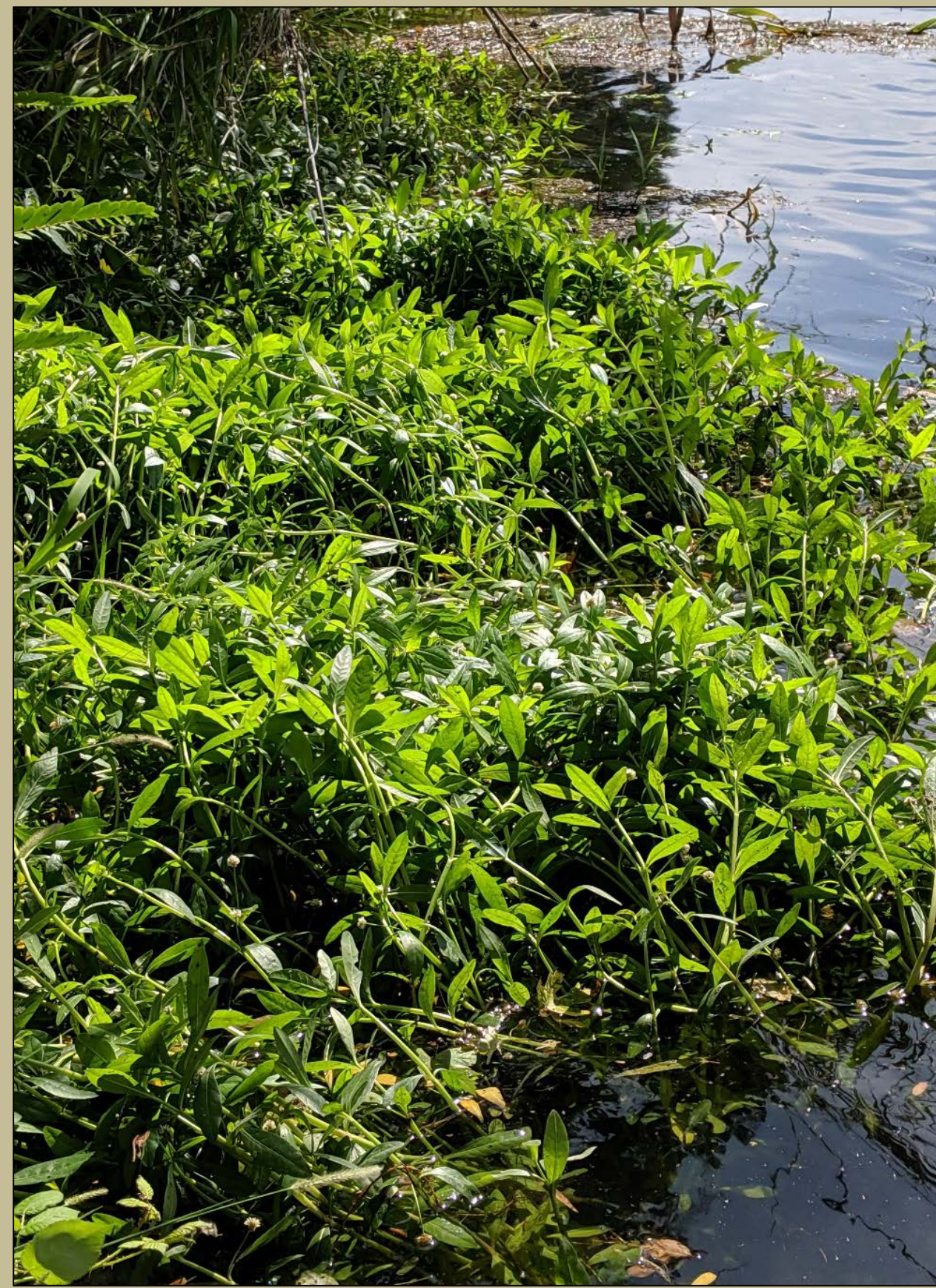
Invasive Alligator Weed (*Alternanthera philoxeroides*) Expands Range in Northern California

Robin Carter-Ervin, Environmental Scientist, California Department of Water Resources, Oroville Field Division
Brenda J. Grewell, Caryn Joy Futrell, Rebecca Reicholf: USDA-ARS Invasive Species & Pollinator Health Research Unit, UC Davis

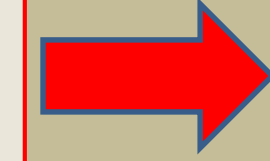


Introduction

California Department of Water Resources environmental staff recently encountered a new Northern California population of a highly invasive plant, Alligatorweed (*Alternanthera philoxeroides*). Do to the invasive potential of this plant And the environmental damage it is capable of, land managers throughout Northern California should be aware of this new discovery.

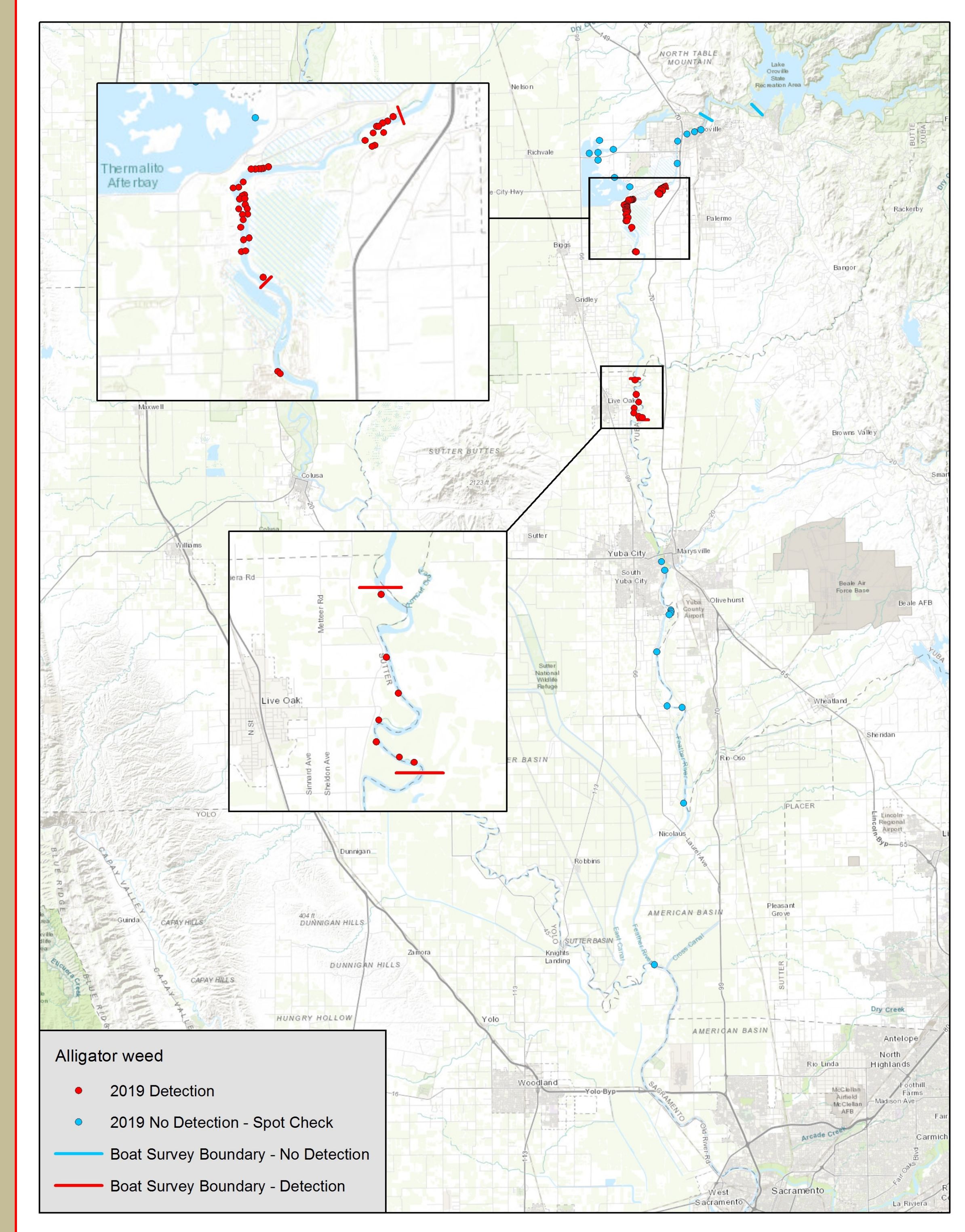


Map showing alligator weed population patches in the Feather River (Butte County) documented in 2019 by Department of Water Resources Environmental staff, and USDA-ARS.



Early Detection

DWR implements Early Detection and Rapid Response (Cal-IPC 2019), a process where new invaders are documented, mapped, and reported so that managers can prioritize invasive plant control efforts.



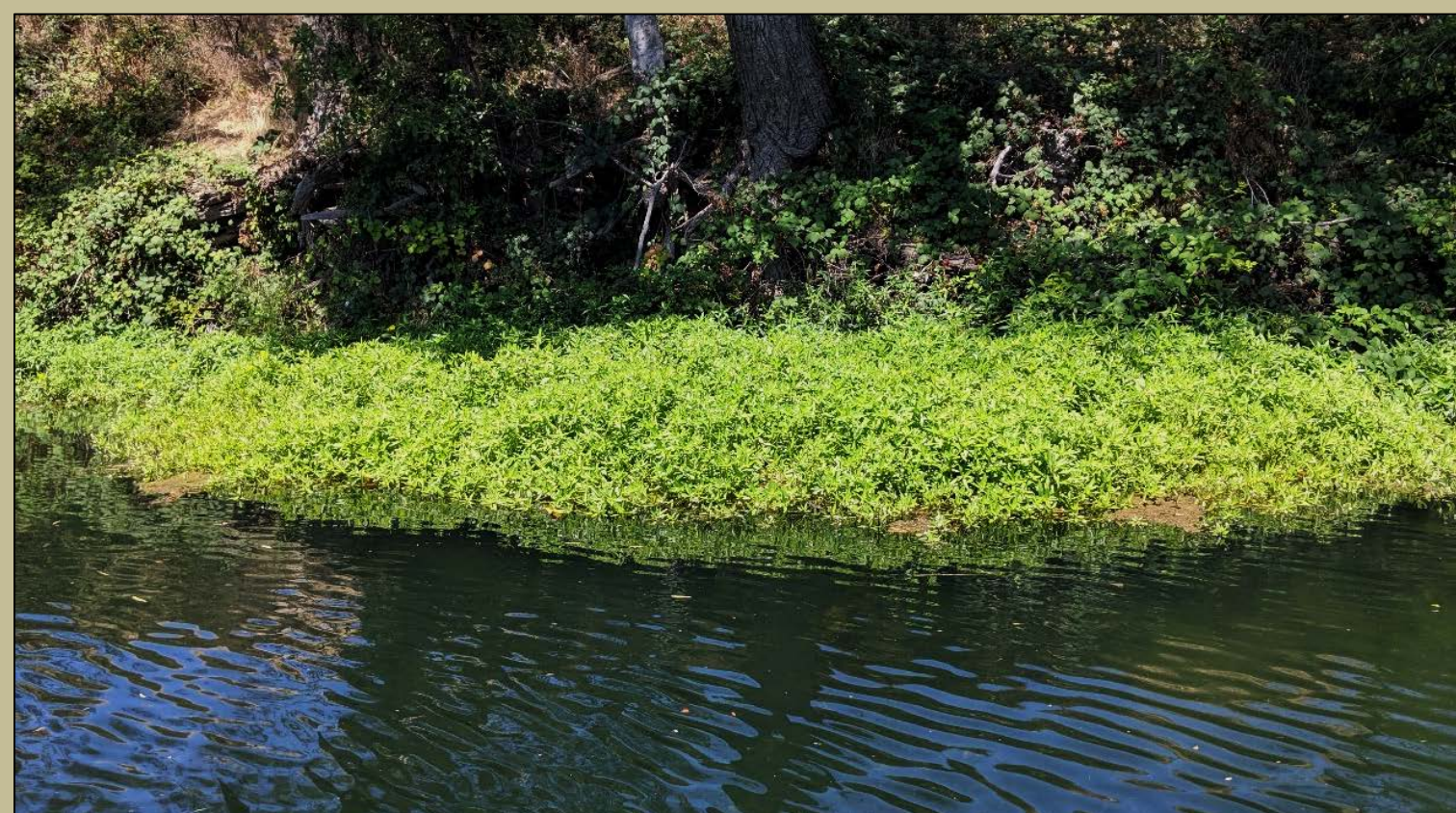
Alligator weed Biology

Alligator weed is a perennial plant in the Amaranth Family. It is native to the Parana River Region of South America. It is capable of colonizing both aquatic and terrestrial environments It spreads via vegetative reproduction, with each stem fragment capable of developing into a new infestation. In shallow aquatic environments it can be rooted or free-floating.



Invasion History

Alligator weed is relatively new to Northern California. In the U.S., it was first observed in Alabama and Florida in the 1890s (USGS NAS). In California, it was first observed in Los Angeles in 1946 (USGS NAS). It wasn't until late 2017 that Alligatorweed was discovered in the Delta, Suisun Marsh, and lower Sacramento River in Northern California. Then in 2019 DWR environmental staff discovered numerous alligatorweed populations in the Feather River. This new infestation consists of numerous populations throughout a 23-mile section of the Feather River, from about 7 miles south of the Oroville Dam and to the city of Live Oak. So far, a total of 44 locations have been mapped within the Feather River and it is assumed that there are many more. Alligatorweed appears most abundant near the Thermalito Afterbay Outlet Boat Ramp on the Feather River just south of Oroville, CA.



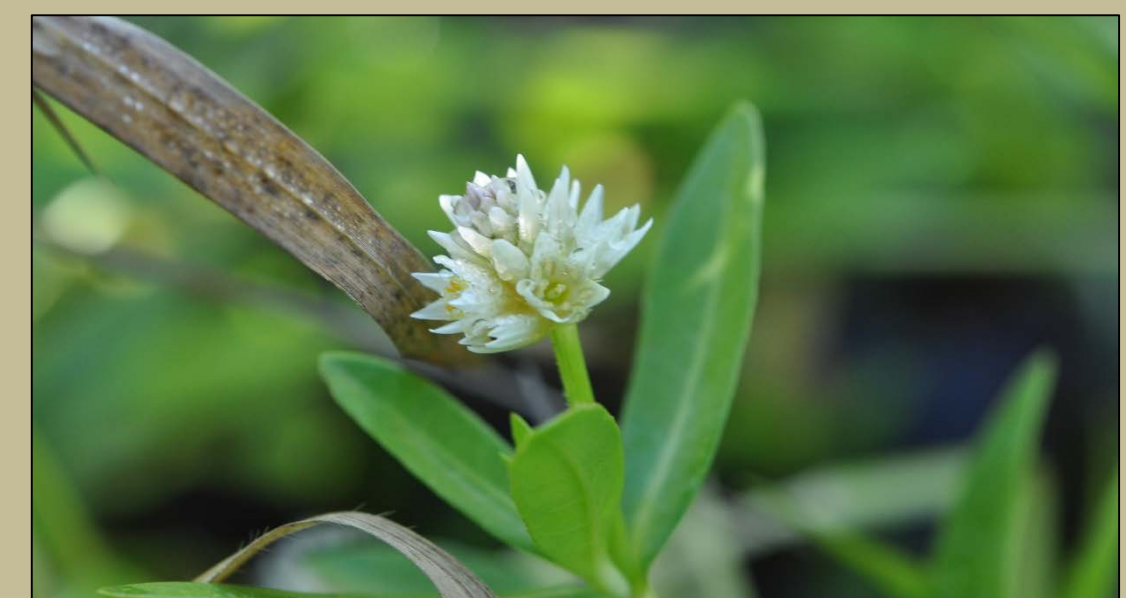
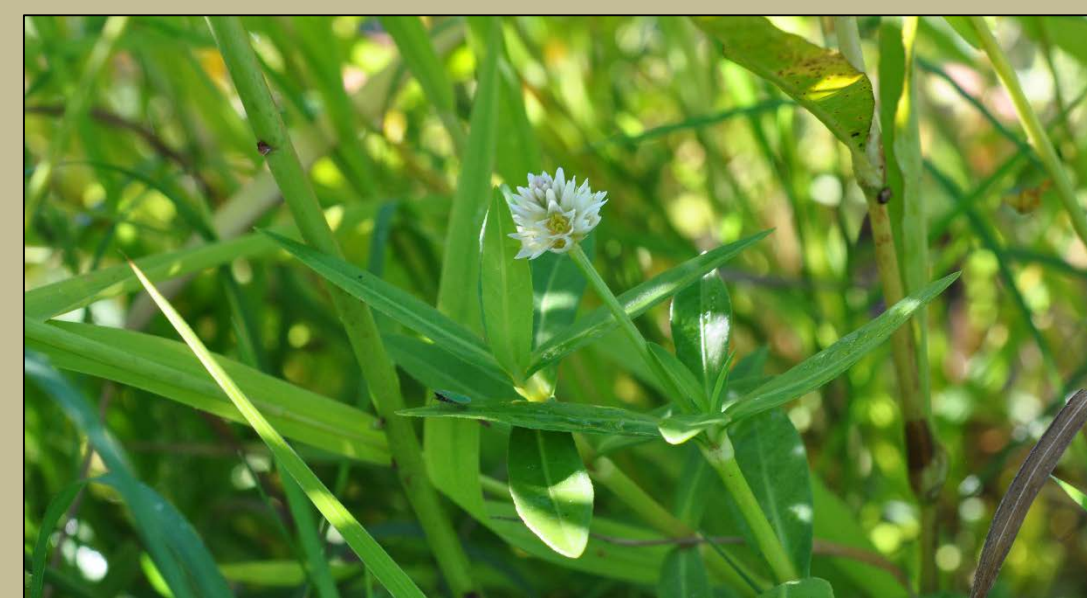
Why do we care?

Alligator weed is known to be detrimental to the environment and economy. Alligatorweed is an A-rated plant on the California Department of Food and Agriculture's Noxious Weed list. This means it is a pest with high importance and has a distribution limited enough that eradication from California could be possible. Alligator weed also receives a Statewide Rating of "High" by the California Invasive Plant Council. This means it is highly damaging to natural areas.

Alligator weed spreads rapidly by clonal shoot fragments to invaded lakes, streams, canals, ponds, and irrigation ditches. It quickly grows into large mats that compete with native plants, depletes dissolved oxygen levels, and obstructs waterways. A rapid management response is needed to reduce negative impacts on flood conveyance, water deliveries, and endangered species habitat.

Control Options

Alligator weed is extremely difficult to eradicate once it has established aquatic environments. For this reason, the focus of control efforts is preventing the plant from becoming established in new areas. Because alligator weed spreads via watercraft and other human activities, outreach and public awareness is an important component of control efforts. Boats should be inspected and both private and professional boat operators should be encouraged to implement best management practices for the spread of invasive weeds, including inspecting boats for reproductive material that could be spread to new environments. Further research needs to be done to look into the suitability of biocontrols for alligator weed in California (e.g. alligator flea beetle, stem borer moth, alligator weed thrips).



Literature Cited

Cal-IPC. 2019. The Cost of Invasive Plants on California. California Invasive Plant Council: Berkeley, CA. Available at: <https://www.cal-ipc.org/solutions/research/cost/> 145: 153–164.

Cal-IPC. 2012. Preventing the Spread of Invasive Plants: Best Management Practices for Land Managers 3rd Ed. Cal-IPC Publication 2012-03. California Invasive Plant Council, Berkeley, CA. Viewed online at <https://www.cal-ipc.org>

California Department of Fish and Wildlife (CDFW). 2018. Protocols for Surveying and Evaluating Impacts to Special Status native Plant Populations and Sensitive Natural Communities. Available at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline>

Acknowledgments: Gina Darin, CA DWR Division of Environmental Services; Evan MacKinnon, CA DWR Division of Regional Assistance.

