

Aquatic/Riparian Weeds: State-Level Rapid Response Issues
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Discussion Session Summary
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Background and Summary:

New infestations of aquatic and riparian weeds in California should be met with expeditious, “Rapid Response” actions. These actions include verification of the species, delineation of the infestation and immediate containment and control.

However, due to a multiplicity of state and federal agencies with different authorities to act, differing aquatic site and water-use responsibilities, and highly variable resources, effective rapid response actions often delayed from weeks to months, or longer. This situation is further complicated because some agencies such as California Department of Boating and Waterways (BWW) have legislative authority for control of only two non-native aquatic weeds: Brazilian waterweed (*Egeria densa*) and water hyacinth (*Eichhornia crassipes*). Thus, when a new invasive aquatic weed, South American spongeplant, was found in the Delta in 2007, BWW had no authority or mandate to use its resources in a “rapid response” mode. Even though its crews were able to detect and physically remove some of the plants, they could not apply effective foliar-type herbicides that are already part of their water hyacinth control program (WHCP). Historically, the California Department of Food and Agriculture (CDFA) would have responded to such as invasion, and indeed, CDFA took initial steps to eradicate this plant from a small site in northern California, and removed some plants in the San Joaquin River in 2007-2008. However, CDFA staff, programs and resources in general have been reduced in the past year, and further reductions are likely.

Two overarching issues also tend to interfere with rapid response and even general aquatic plant management: Compliance with NPDES, and the Endangered Species Act (ESA). The discussion focused on these and several other issues that are outlined below.

Lastly, participants identified several potential options for developing sustained resources to mount effective prevention, early detection, and rapid response capacity.

Topic 1: Identification of Impediments and related issues to Rapid Response in California

ISSUES:

- ▶ Water Usage (storage) and impacts: How do we better identify costs and other impacts of aquatic weeds on overall water use and storage?
- ▶ Managing ballast water (new infestations): What is CA doing re ship movements (e.g. along the west coast- not just trans-Pacific)?
- ▶ Who and where to **Call** or **Contact** when some unusual aquatic plant is found? At the local level, Tahoe Basin is pretty well coordinated; CDFG website is fairly good for reporting. There is a need for more uniform approach by agencies to do the following:
 1. Coordinate materials for outreach and Education
Example models are Minnesota and Oregon: both have great existing state wide program
 2. Involve Public (“Citizen Science”); more **useful smart phones apps**
- ▶ Mosquito and invasive aquatic weeds connections:
 1. Displace native flora, not just mosquito control problem.
 2. Cited Carl Bell successful project on *Ludwigia sp.* → successful
 3. Opportunity for collaboration with mosquito abatement programs
Cited example in Colorado and purple loosestrife management
- ▶ Aquaculture: Both freshwater and marine (mariculture) areas have been neglected (e.g. algae control and off-flavor; interference with harvest, oyster production).
- ▶ Landscape Level management: Too many state (and federal) projects focus on just the current “high priority” weed –not a multispecies (i.e. multitarget) approach. This results in cascade and replacement effects whereby successful management of on target simply open the niche for another.
- ▶ ESA (endangered species act): Several months to year- long delays in being able to take rapid action. There needs to be **a streamlined process** and some “generic” programmatic approvals so that rapid responses can be implemented when listed species are present.
- ▶ NPDES: Need to resolve both state (Ca) and interstate issues so that rapid responses can be implemented with minimum delay in compliance with NPDES. For example, when is it an emergency situation?
 - Knowing ID, management techniques, roles and responsibilities
 - Knowing authorities: These are essential to compliance with both ESA and NPDES
- Advocacy and NGO’s: Need to connect and network with NGO’s so that there is a common message to the public and to funders (State legislative bodies).

Topic 2. What actions are likely to resolve these issues?

SOLUTIONS:

1. Resource limitations:

- ▶ Increase State Boat Registration Fee. There are approximately 800,000 boats registered in California. If the average annual cost of registration were raised by just \$5 (<14 cents/day!), this would generate \$40 million per year. If 20 % of this \$40 million (\$8 million) could be kept in a cumulative, revolving, rapid response fund, then effective responses to new or recently introduced AIS could be handled effectively assuming adequate coordination among state agencies.
- ▶ Aquaculture/mariculture: User fees for aquaculture businesses: Since aquaculturists are both potential pathways of AIS and benefit from the absence of AIS, a fee is a reasonable approach- just as a “gas tax” is paid by all users of the roadways.
- ▶ Aquarium-related retail fee: Since “hobbyists” aquarium owners and related suppliers are a known pathway for AIS, a small user fee could be attached to purchases of tanks, animals, plants and other paraphernalia related to this hobby. Even a 1% fee would generate millions of dollars.
- ▶ Aquatic Plant Nursery User fee: Same rationale as for aquaculture business and aquarium trade. Note: Some program are in place the aim to reduce “releases” of non-native AIS:

★ Note:

Habitattitude: A there is currently a national public awarness program aimed at reducing “releases” of AIS into the environment (i.e. not releasing fish and aquatic plants into the wild) <http://www.habitattitude.net/>

However, this program doesn’t generate revenue for use in EDRR, nor does it actually restrict what is sold. It is primarily a public-awareness, voluntary campaign to encourage people to NOT toss their AIS into lakes, ponds the oceans, etc.

2. Improve Coalitions and Network Partners:

- ▶ Re invigorate AIS coalitions to better coordinate EDRR and to lobby for new approaches to increase resources: Example approaches
 - ★ CaliWac: California Invasive Weeds Awareness Coalition--
<http://www.cal-ipc.org/policy/state/caliwac.php>
 - ★ BioSecurity: <http://www.fao.org/biosecurity/>
 - ★ NAISN (North American Invasive Species Network)
 - ★ Use *Special Districts* (These often have more specific authority to act compared to state-wide governmental agencies): Regional Water Control Boards, Water and Sewer Districts, Resource Conservation Districts (RCD’s)
- ▶ Empower and fund the California Invasive Species Council: Can this Council form the basis for statewide EDRR with the diversity of new resources suggested? What is the current roadblock?

- ▶ Re-define Aquatic weeds (and AIS in general) as “hazard” and “pollutant”: Put an acceptable level at **zero!**
- ▶ Balance levels of concern and the threats from impacts from AIS with adequate and proportional responses.
- ▶ Re-examine how “restoration” projects are funded with regard to sustainability: *Is adequate research and funding provided to stop AIS from negating restoration efforts in the “out- years”?* Redirect “restoration” money so that adequate support is allocated to EDRR and sustained management of AIS.

3. Priority Target Aquatic Weed Species:

a. *Ludwigia* spp. (Water Primrose, Primrose willow groups): The group noted the rapid increase in populations of the genus *Ludwigia* in a range of aquatic and riparian habitats, including new infestations in some California rice fields.

b. *Limnobiium laevigatum* (South American Sponge plant). No sustained, state wide, coordinated and funded effort has being mounted yet. Some specific areas have been targeted (e.g. by CDFA and by chance by BWWS), but there has been no formal delineation of occurrence in the Sacramento-San Joaquin Delta.

c. *Undaria pinatifida* -Marine kelp: This species has been expanding northward from earlier introductions in Santa Barbara and more recent introductions in Half-Moon Bay and San Francisco Bay.

d. Multi-species strategies: Regardless of the “single” high priority species identified, unless there is an fully coordinated, holistic (landscape) scale approach taken where multiple invasive aquatic weeds persist, even the successful reduction or eradication of a few of those plants will simply allow the weeds of “lesser” impact to attain large populations and probably more detrimental impacts.

Recommendations:

The group suggested that CAL-IPC take the lead in championing one or more of the suggested solutions that emerged from this discussion. This effort could also be done in concert with both the California Invasive Species Council (or its Advisory Committee) and with the ANST/ Western Regional Panel.