

Setting and Implementing Regional Strategies for Landscape-scale Invasive Plant Management

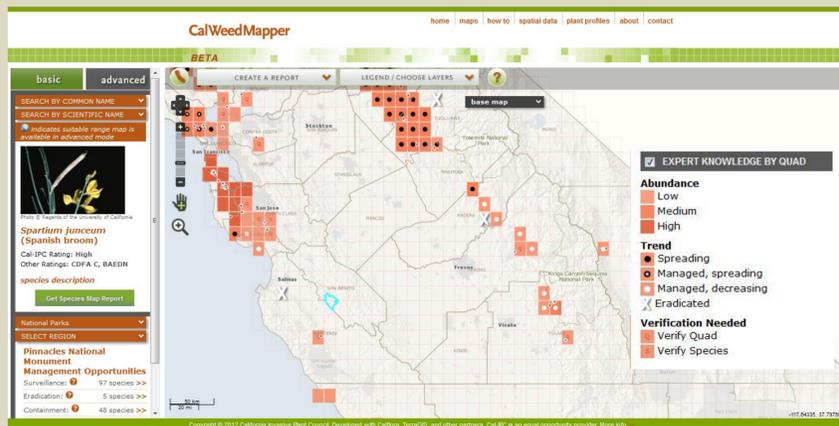
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Cal-IPC is working with partners in several regions of California to develop consensus strategies based on CalWeedMapper, our online mapping tool that incorporates expert knowledge and occurrence data on >200 invasive plants statewide. We're charting a strategic course to help regions be shovel-ready to apply for funding for high priority eradication targets. We are actively supporting several types of regions, including counties, Weed Management Areas, National Parks, National Forests, State Parks and watersheds.

calweedmapper.cal-ipc.org

Data

CalWeedMapper combines two types of data: expert knowledge and occurrences (GIS). GIS datasets provide specific population locations. Expert knowledge fills in gaps in quantitative datasets and adds information on population trends and management programs. These data are also linked to existing online occurrence databases from Calflora and the Consortium of California Herbaria (CCH).



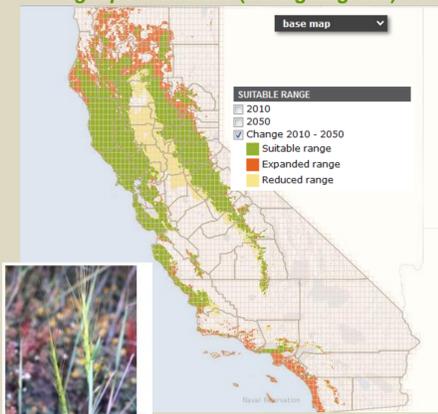
Spartium junceum (Spanish broom)

Potential Spread

CalWeedMapper also maps suitable range based on climate. This suitable range information can help managers assess the potential for future spread of a species. This modeling uses Maxent modeling software, occurrence data documenting where the plant currently grows in California, and climate data for California.

CalWeedMapper displays suitable range (2010), projected suitable range (mid-century), and the expansion or reduction in range between those dates. Our projections are based on climate only and do not consider factors such as soil, habitat, and dispersal.

Change in suitable range for *Aegilops triuncialis* (barb goatgrass)



Management Opportunities

CalWeedMapper is designed to increase the effectiveness of invasive plant management by providing landscape scale maps that serve as the basis for setting regional priorities, tracking progress and justifying funding.

Land managers can see management opportunities for their region divided into surveillance, eradication or containment targets. These reports are derived from maps of current distribution combined with projected suitable range for 2010 and 2050 climate conditions. Land managers can download reports at several scales, including counties, Weed Management Areas, Ecoregions, Jepson Regions, National Parks, National Forests, National Wildlife Refuges, State Parks and watersheds.

Surveillance opportunities: when a plant is not found within the region, but is found within 50 miles. The proximity of neighboring populations and the suitability of the region can inform an assessment of the likelihood of establishment. Regular surveillance is important for early detection.

Eradication opportunities: when a plant exists in the region but only in small isolated populations. The spatial pattern for eradication is 1 infested quad surrounded by at least 2 concentric bands of absent quads. The size and isolation of populations and the suitability of the region can inform an assessment of the strategic importance and feasibility of eradication.

Containment opportunities: when a plant exists in the region and is too widespread for eradication. The strategic importance and feasibility of a containment opportunity can be further assessed based on how distinct the boundaries of the infestation are, how isolated it is, and the suitability of the surrounding area.



Regional Strategies

Cal-IPC works with land managers to use CalWeedMapper to devise regional strategic management plans. This landscape level collaborative planning takes place in regions covering multiple counties. The goal is to focus on a handful of early detections species within a region and work collaboratively as region for eradication. Land managers are also encouraged to practice surveillance for species of concern that have been identified as absent from the region but occurring within 50 miles.

Steps in regional strategy:

1. Translate information from CalWeedMapper to **regionwide** opportunities for surveillance & eradication
2. Draft **Strategic Plan** for review by land managers
3. **Eradication** targets: apply for funding to address top regional species
4. **Surveillance** targets: learn and survey for early detection and rapid response
5. Watch for **new detections** of these species submitted to Calflora!



Above: Shasta and Siskiyou counties (North Central region) meet to discuss a strategic plan based on CalWeedMapper, July 2012.
Right: Excerpt from Regional Strategy

Regions and Funding

Central Sierra: Alpine, Amador, Calaveras, El Dorado, and Tuolumne prioritized 10 eradication and 15 surveillance species in their Strategic Plan. Has funding from the National Fish and Wildlife Foundation for eradication of 3 priority species.

Central Coast: Monterey, Santa Cruz and San Benito WMAs identified 8 eradication and 8 surveillance species in their Strategic Plan.

North Central: Siskiyou, Shasta, and Trinity WMAs identified 9 eradication and 15 surveillance species in their Strategic Plan. Now working on a funding proposal for WCB.

Northwest: Del Norte and Humboldt WMAs identified 12 eradication and 17 surveillance species in their Strategic Plan. Proposal drafted for WCB (see below).

South Central Coast: San Luis Obispo and Santa Barbara WMAs identified 8 eradication and 6 surveillance species in their Strategic Plan. Now working on a funding proposal for WCB.

North Sierra: Butte, Nevada, Placer, Plumas, Sierra and Yuba WMAs identified 11 eradication and 9 surveillance species. Has funding from US Forest Service/Calfire for on-the-ground management. Also funding from Wildlife Conservation Society to control species threatening Sierra meadows.

South Coast: Ventura and Los Angeles WMAs identified 12 eradication and 17 surveillance species in their Strategic Plan.

Bay Area: Cal-IPC has absorbed the Bay Area Early Detection Network (BAEDN). Cal-IPC is working with the BAEDN Steering Committee on a WCB funding proposal to eradicate 7 early detection species from riparian areas. There is also strong interest in a WCB proposal to eradicate Canary Island St. Johnswort (*Hypericum canariense*) from the San Mateo coast.

Northwest Funding Proposal to California Wildlife Conservation Board (WCB)

Cal-IPC has funding from the California Wildlife Conservation Board (WCB) to scope high-priority, landscape-scale invasive plant management projects based on each region's Strategic Plan. The WCB supports the regional collaborative process and transparent rationale for eradicating priority species before they spread and have much greater ecological impact.

The two-county Northwest California region has submitted a proposal to focus on region-wide eradication of 6 species because of their limited distribution and early detection status. Ninety-four sites and 3 species of knotweed (*Fallopia* spp. and *Perisicaria wallichii*), 2 sites of rush skeletonweed (*Chondrilla juncea*), 7 known sites of giant reed (*Arundo donax*) and 7 sites of shiny geranium (*Geranium lucidum*), a new detection from Oregon, have been identified in the Northwest Strategic Plan as eradicable species of greatest concern to the region. If funded, this 5-year \$800,000* project will engage multiple partners from the Humboldt and Del Norte WMAs in a long-term effort to eradicate these species from their region.

*\$400,000 funding from WCB, \$400,000 in-kind match from local partners.

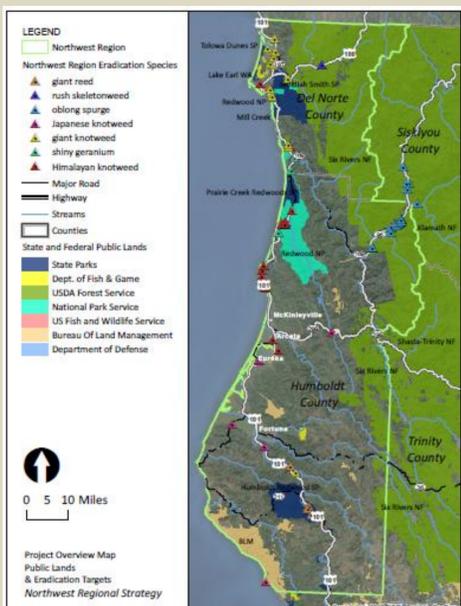
Acknowledgments

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CalWeedMapper's Regions Page (calweedmapper.cal-ipc.org/regions)



Overview map of the species and occurrences contained within the Northwest Region's eradication proposal to the WCB.