

# California Listed Plants and Ratings

Robert Price, Primary State Botanist, CDFA

- *Mantiscalca salmantica*, daggerflower, A-rated, not established in CA [Photo: Philmarin, Wikimedia Commons]
- *Convolvulus arvensis*, field bindweed, C-rated noxious weed, widespread in CA [Photo: S. Dewey, Utah State Univ., Bugwood.org]



# Common Features of Noxious Weeds

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- Hard to control; may spread vegetatively as well as by seed, may establish a soil seed bank
- Spread easily [by natural means and human activities]
- Degrade agricultural lands, rangeland, or natural terrestrial or aquatic environments
- *Alternanthera philoxeroides*, alligatorweed, A-rated noxious weed in CA, Photo: Robin Carter



# Noxious Weed Lists

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- The U.S. Federal government (USDA APHIS) and most states maintain official lists of noxious (or invasive) weeds subject to prohibition or control, posted online in a variety of formats
- U.S. Federally listed noxious weeds are prohibited from entry into the country or interstate transport without a restrictive permit  
[[https://www.aphis.usda.gov/plant\\_health/plant\\_pest\\_info/weeds/downloads/weedlist.pdf](https://www.aphis.usda.gov/plant_health/plant_pest_info/weeds/downloads/weedlist.pdf)]
- Some common themes: Aquatic invasive plants that can occlude bodies of water; non-native parasitic plants; invasive weeds spreading both vegetatively and by seed, or with a long-term soil seed bank; spiny and thicket-forming plants; exotic species toxic to livestock and wildlife
- *Orobanche aegyptiaca*; A-rated, Federal noxious weed, Photo: Reuven Jacobsohn, Agricultural Research Organization, Bugwood.org



# State of California plant lists and rating system

- CDFA maintains several official plant lists:
- CA Noxious weeds, 3 CCR section 4500
- All CA noxious weeds are also Prohibited (section 3854) or Restricted noxious weed seeds (rest of CCR 4500 list), posted nationally for all states by the USDA Agricultural Marketing Service
- CA Agricultural and Vegetable crop species (section 3899), implicitly rated as beneficial plants in almost all cases
- Plants are rated under ABCD organismal rating system, which undergo the posted Pest Rating Proposal (PRP) system of assessment (section 3162)



# California noxious weed history

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- California has a long history of state and county regulations focused on control of noxious weeds, dating back to weed laws from 1872 focused on prevention of the spread of Canada thistle and Scotch thistle
- These species are still California listed noxious weeds and prohibited noxious weed seeds today
- Steve Schoenig's CallIPC presentation on history of the California noxious and invasive weed control is available online [<https://www.cal-ipc.org/wp-content/uploads/2018/02/2017-Symposium-100-years-statewide-coord-eradication-invasive-weeds-Steve-Schoenig.pdf>]
- Photo: *Cirsium arvense*; Matt Lavin via Wikimedia Commons

# California noxious weeds (CCR 4500 list)

- 175 taxa currently listed, mostly species, but some species groups or genera (e.g., of non-native parasitic plants)
- Prohibited from movement into the state or sale within the state
- Coded “W” in identifications by the CDFA diagnostic labs communicated to the County Ag Commissions or border stations
- Controlled in agricultural seeds or commodities offered for sale in California: Contaminating seeds of species also listed as Prohibited noxious weed seeds will result in stop-sale orders when found in commercial seed lots (zero tolerance); Restricted noxious weed seeds in commercial seed lots must be declared on the label and kept within strict tolerance limits

# Pest risk assessment for CA noxious weeds

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- Some CA listed noxious weed species are not established in the state (e.g., Federal noxious weeds or other high-risk species that have been intercepted in CA) and here the goal is prevention of entry or establishment in the state; these species would generally be rated “A”
- Many CA noxious species are established within the state to varying degrees, and assessment under the CDFA ABCD organismal rating system helps set priorities for control
- Management of noxious species varies depending on how widespread they are in the state; from immediate quarantine and eradication for high-risk weeds newly introduced into the state, to biocontrol and local control by landowners for long-established and very widespread naturalized pest species

# CDFA Rated organisms under Pest Rating Proposals

- System is used for all plant pest organisms (insects, snails, weeds, fungi, protists, bacteria, viruses etc.)
- Current system with publicly posted online PRPs dates to within the last ten years, but the criteria and rating system have been in use for a longer period
- Taxa are numerically rated 1-15; 3 points each for potential geographic distribution range, host range, reproductive and dispersal potential, economic impact, and environmental impact
- 0-3 points are then deducted for current California geographic distribution depending on how widespread the species is within CA
- Final scores: Low ( up to 8 points), Medium (9-12), High (13-15) provide support for a letter rating of A, B, C, or D



# “A” rating criteria

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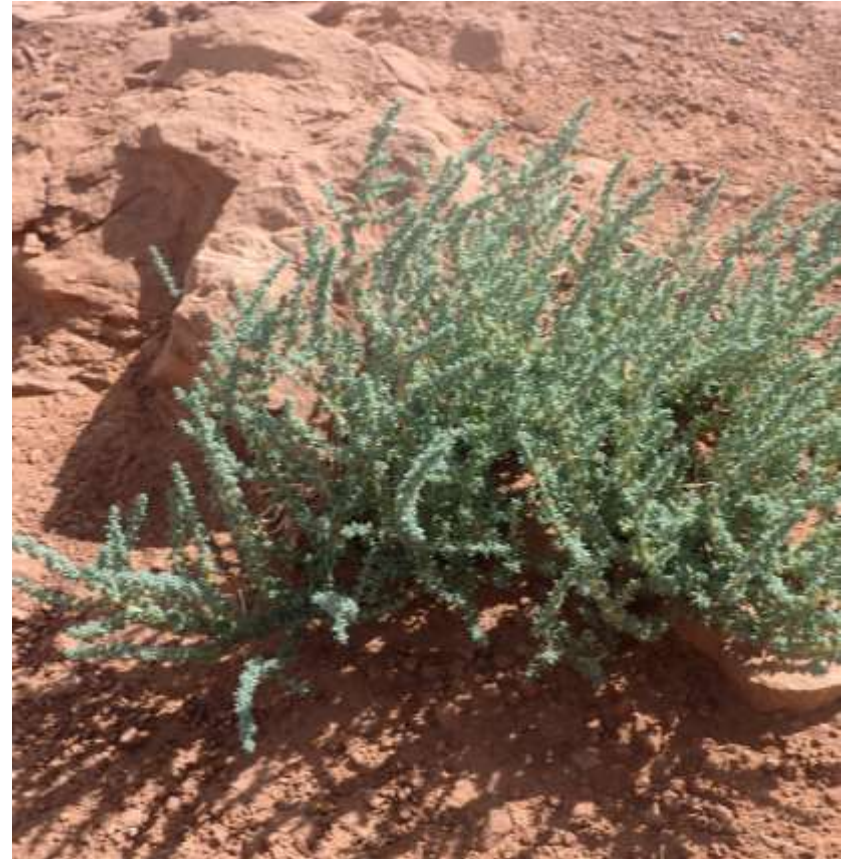
- Pests of agriculture or environment that score as high risk and are not known to occur in CA or are extremely limited in distribution in the state
- Prohibited from sale or introduction into the state without restrictive permit
- Priority for control by County Ag Commissions and other agencies
- Some examples: *Cuscuta japonica*, an introduced species of Federal noxious weed parasitic on a variety of trees and shrubs in urban areas of California
- *Hydrilla verticillata*: an introduced species and Federal noxious aquatic weed that obstructs bodies of water, under very active control in California
- *Heracleum mantegazzianum* (giant hogweed): an introduced invasive species and Federal noxious weed of urban and wildland habitats, not naturalized in California
- Photo credits, Bugwood.org. *Heracleum*: L. Mehrhoff, Univ. of Connecticut; Bugwood.org; *Cuscuta japonica*, Kim Camilli, Texas A&M Forest Service; Bugwood.org



# “B” rating criteria

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- Pests of agriculture or environment that score as medium to high risk and are of limited distribution in the state but have the potential to spread further
- Priority for control at the discretion of the County Ag Commissions and WMAs; subject to nursery hygiene control as contaminating weeds. Where horticultural plants, sale as nursery plants subject to the discretion of the County Ag Commissions (unless they are listed as CA noxious weeds and totally banned from sale).
- Example: *Halogeton glomeratus* (halogeton), an introduced Eurasian species invasive in sagebrush scrub and desert habitats in eastern CA, toxic to livestock due to high oxalate levels. CA noxious weed, previously rated “A”.
- *Iris pseudacorus* (yellow-flag iris), an invasive species of wet environments
- Halogeton, Photo credit: U.S. Kenraiz via Wikimedia Commons



# “C” rating criterion

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- **Pests of agriculture or environment that are of common occurrence and generally distributed in California**
- Common weeds of disturbed areas will often have this rating
- Can be noxious weeds that are very broadly distributed, or low-rated weedy plants of limited pest potential
- Not under statewide official control unless they are also listed noxious weeds, subject to nursery hygiene measures when present as contaminating weeds
- **If listed as noxious weeds are subject to prohibitions on being sold in CA and entry into the state and have stringent tolerances in crop seeds offered for sale**
- Widespread noxious species are often good targets for biocontrol efforts
- Example: *Convolvulus arvensis* (field bindweed), an exotic naturalized species widespread in urban and agricultural habitats. This is a CA noxious weed and restricted noxious weed seed. Photo: S. Dewey, Utah State Univ.; Bugwood.org





## “D” rating criteria

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- **Plants that have a low risk of invasiveness or are beneficial to agriculture or the environment of California**
- **Non-invasive cultivated plants, crops, and almost all native plants will be assigned this rating, usually without a formal PRP analysis**
- One group of native plants that is rated C are native species of *Cuscuta* (dodder), of which at least 2 species are frequent parasites of horticultural and agricultural crop plants.
- Cultivated Hibiscus, photo credit: R. Baalbaki, CDFA Seed Lab

# Changes over time in our CDFA ABCD ratings

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- ABCD ratings are subject to change over time as species distributions or behavior change and our knowledge of the plants improves
- In the last two decades we have used the 15-point Pest Risk assessment system (PRPs) to produce ABCD ratings. We are currently re-evaluating the letter ratings of many species that are listed as noxious by California using posted Pest Risk proposals
- In the meantime, our CDFA diagnostic scientists work from the CDFA rating history of the species
- Species that are on the CCR 4500 list [coded “W”] are considered noxious and subject to legal restrictions, usually for very good reasons

# Flexibility in the system

- California is a large and diverse state
- Habitat types, land use, and population density vary substantially from area to area
- County Ag Commissions have substantial discretion under state regulations in setting priorities for control of B-rated species
- Priorities for control of B [or noxious C] rated pests are appropriately regional to allow for the local environmental situation and prevalence and behavior of the pest species

# Changed circumstances (*Ailanthus*)

- Widespread weedy tree along streambanks and roadways in CA; brought into CA in the Gold Rush period; rated C and on CCR 4500 list
- Cause for current concern as a primary host for Spotted Lanternfly (*Lycorma delicatula*), not yet in CA but a very serious threat to vineyards and horticultural plantings
- Photo: L. Fernández via Wikimedia Commons



THANK YOU!