Invasive Species

California's Environment, Specialty Crops, Resources & Habitat are Worth Protecting

What can Californians do about invasive species?

Do you farm? Fish? Hike, bike, boat, camp? Garden? Ride horses? Swim, ski, surf, sightsee or birdwatch? **Californians resoundingly reply "Yes" — and they do it all without leaving the state.** Californians know their home is among the most beautiful and varied places on earth. Its wild ocean beaches, its flowery mountain meadows, its streams and lakes, its **rich farmland and unmatched variety of specialty crops** — these treasures are in our keeping, the heritage we guard for posterity.

Unfortunately, the same attractions that make California so desirable to us are **equally inviting to many invasive species** — plants, insects, mollusks, diseases. More arrive every day, courtesy of growing international travel and transport and the disruptions caused by climate change.

Our best response to this influx varies from one species to another, although **prevention is always the best approach.** When prevention fails, the most effective (and usually the cheapest) way to handle it is prompt action to control and — if possible — eradicate while the problem is still small and localized. Some species quickly become so widespread that ongoing control measures are necessary.

You can help. **If you travel, don't bring back food, animals, plants or other articles** that might be or might harbor an invasive species. If you see a situation that might lead to a new infestation, point it out. **Prevent it.** California deserves no less from those who call this unmatched destination "home."

Invasive Plants

Hydrilla*

Hydrilla verticillata

Slows water flow, clogs irrigation and flood control systems, lakes, rivers; also displaces native plants.

Medusahead*

Taeniatherum caput-medusae

Winter annual grass that crowds out native species and reduces forage for livestock.

Red sesbania*

Sesbania punicea

South American native small tree with pea-like red-orange flowers; poisonous to both people and animals.

Water hyacinth*

Eichhornia crassipes

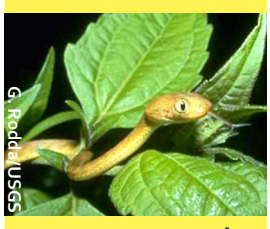
Forms dense colonies that deprive native species of sunlight; also clogs water delivery systems.

Japanese dodder*

Cuscuta japonica

Aggressive, parasitic plant that can completely engulf and kill host crops, ornamental trees and plants.

Invasive Vertebrates



Brown tree snake

Boiga irregularis

Alters ecology by eradicating native forest birds; also feeds on other native species and their eggs.

Nutria

Myocaster coypus

A voracious herbivore that carves up marshland plants; their burrowing habit also destabilizes waterside banks.

Norway rat*

Rattus norvegicus

Spreads diseases affecting humans, including plague, murine typhus, leptospirosis, ricketsialpox and others.

Snapping turtle*

Chelydra serpentine

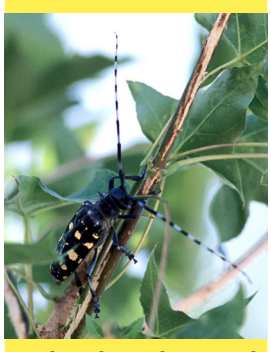
Often dumped by pet owners in ponds and creeks; competes with native species for food and habitat.

Invasive Arthropods

Mediterranean fruit fly

Ceratitis capitata

Lays its eggs inside fruit and the emerging larvae tunnel through its pulp, rendering it unmarketable.



Asian longhorned beetle

Anoplophora glabripennis

Tunnels through hardwoods, killing timber, nursery stock, shade trees and others.

Red imported fire ant*

Solenopsis invicta

Painful stings are a threat to people, livestock, pets and wild animals; often spread with beehives.

Gypsy moth

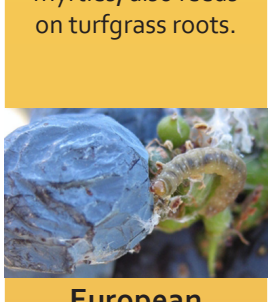
Lymantria dispar

High populations defoliate oak, aspen and other trees; successive years of defoliation may result in tree mortality.

Japanese beetle

Popillia japonica

Skeletonizes the leaves of 200+ plants including rose bushes, grapevines, crape myrtles; also feeds on turfgrass roots.



European grapevine moth*

Lobesia botrana

Larvae of multiple generations feed primarily on grapes and their flowers, exposing clusters to rot and disease.

Invasive Invertebrates

Quagga mussel

Dreissena rostriformis bugensis

Often spread as microscopic larvae in the bilges of boats, quaggas alter the local food chain by filtering out substantial amounts of phytoplankton, decreasing chlorophyll concentrations.

Golden mussel

Limnoperna fortunei

Highly adaptable, reproduces rapidly; attaches to native bivalves, suffocating, starving and killing them.

Zebra mussel*

Dreissena polymorpha

Clogs water systems and crowds out natives; especially prolific — one female can release up to one million eggs.

New Zealand mudsnail*

Potamopyrgus antipodarum

Tiny snail (dozens fit on a dime) reaches phenomenal densities, eats algae, impacts natives and fisheries.

Chinese mitten crab*

Eriocheir sinensis

Competes with native species, and its burrowing nature damages embankments and drainage systems.

Burrowing nematode

Radopholus similis

Plant parasite destroys roots, degrading plants' physical stability and nutrient/water uptake, reducing yields.

Invasive Diseases

Plum pox

Potyvirus species

A devastating viral disease of stone fruit that can ruin its marketability by causing bitterness and deformities. Tree destruction is the only eradicative option.

Laurel wilt

Raffaelea lauricola

A fungus spread to host trees by the redbay ambrosia beetle; can kill an avocado tree in a few months.

Sudden oak death*

Phytophthora ramorum

A plant pathogen that kills oaks; it damages other trees and can infect more than 100 plant species.

Huanglongbing

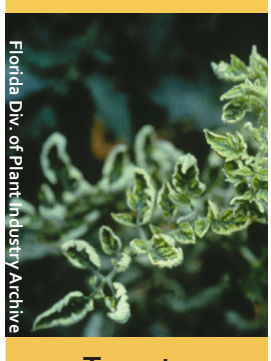
Candidatus liberibacter

Citrus disease spread by the Asian citrus psyllid; causes leaf yellowing and misshapen/bitter fruit and kills the tree.

Oak wilt

Ceratocystis fagacearum

A fungal disease that kills oaks by blocking water-conducting tissues; can cause entire crown to wilt before a tree dies.

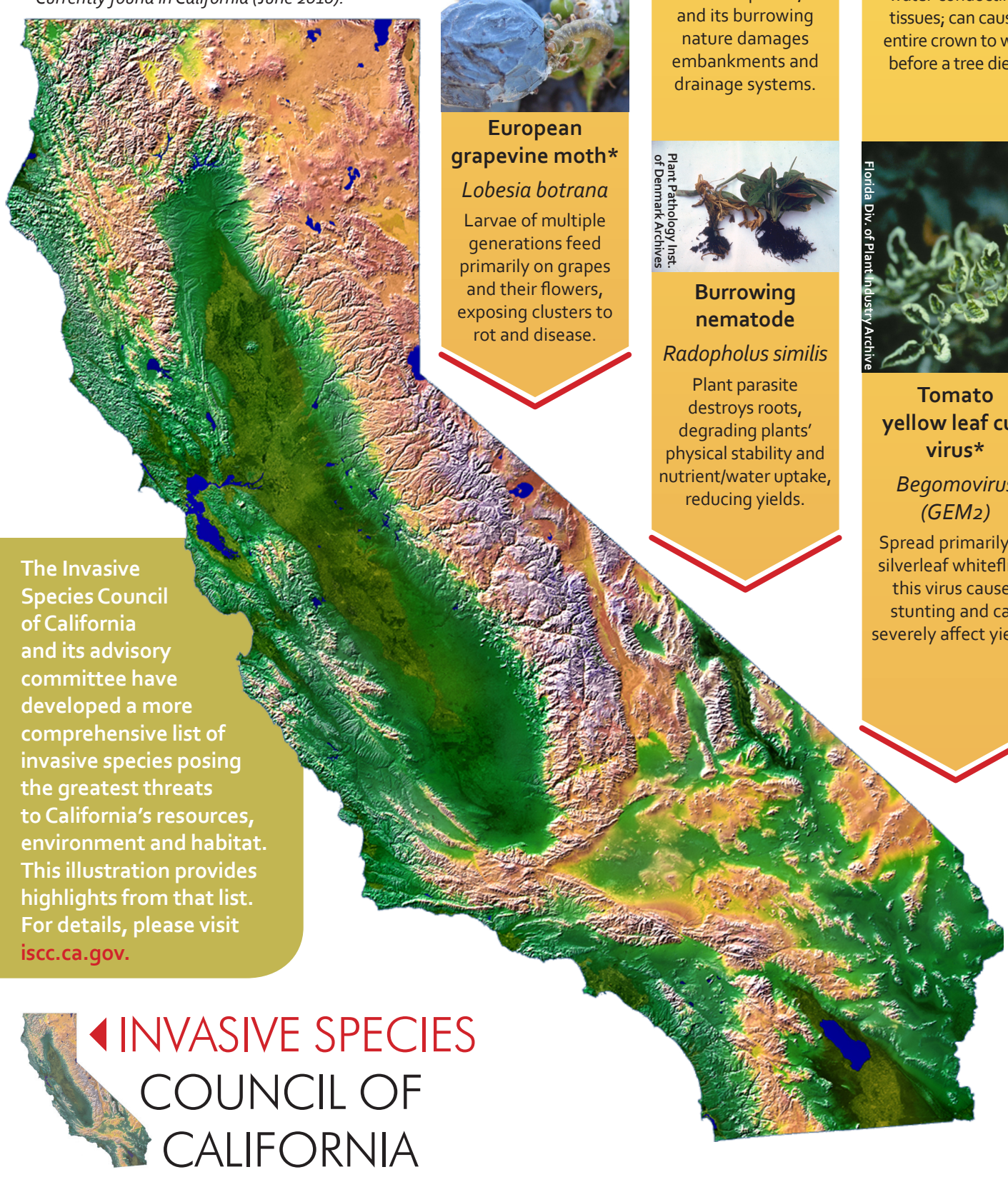


Tomato yellow leaf curl virus*

Begomovirus (GEM2)

Spread primarily by silverleaf whiteflies, this virus causes stunting and can severely affect yields.

**Currently found in California (June 2010).*



The Invasive Species Council of California and its advisory committee have developed a more comprehensive list of invasive species posing the greatest threats to California's resources, environment and habitat. This illustration provides highlights from that list. For details, please visit iscc.ca.gov.

INVASIVE SPECIES COUNCIL OF CALIFORNIA