

Silent Threats

Non-Native Species Invading Our Wildlands



Our Mission

The mission of California State Parks is to provide for the health, inspiration and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation.



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Visit the California State Parks, California Department of Fish and Game, and California Invasive Plant Council websites for more information on the threat of invasive non-native species to California's natural resources.

www.parks.ca.gov • www.dfg.ca.gov

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Natural Resources Division (916) 653-6725

◀ *Cover: Decorative pampas grass quickly spreads into natural areas by tiny wind-blown seeds.*

Intro Panel: Exotic iceplant chokes out native plants and changes the ecology of coastal dunes. ▶

Exotic species invade our wildlands, attack native plants and animals, and destroy our natural heritage. They pose one of the most dangerous threats to California's biodiversity.



Silently, sometimes quickly, non-native plants and animals are invading our natural areas and crowding out native species. The assault is often difficult to recognize. Although they are not always obvious, there are significant differences between how native species and non-native exotic species interact with the environment. For



Just small pieces of vine can start Cape ivy infestations in new areas.

California's native plants and animals it can mean the difference between life and death.

Some disturbances by non-native species are easy to see. When non-native Cape ivy is introduced it aggressively spreads, completely covering native plants and eventually killing native shrubs and trees.

Other effects of non-native species are more difficult to detect. The endangered Smith's blue butterfly feeds, mates, and lays its eggs only on the native buckwheat plant. When exotic plants displace the native buckwheat, essential habitat for the butterfly is lost . . . and so are the butterflies.



Smith's blue butterfly

Together all of these small changes are making a big difference. Exotic species interfere with the relationships between native plants and animals, and an ecosystem overloaded with non-natives is unbalanced and unhealthy.

biological diversity.

The state has more than 6,300 native plant and 770 native animal species. Of these, 2,100 plants and 40 animals occur naturally nowhere else on earth. Many of California's natural landscapes and native species have been damaged by exotic plants, animals, and diseases, and many more are threatened. New invaders of all kinds continue to appear in California, arriving by accident or introduced intentionally. Over 1,000 types of exotic plants alone have been introduced into California's wildlands.

The landscape may look the same to us, but each small change, each broken connection, each disrupted relationship increases the silent threat to California's biodiversity.

A GROWING DANGER

Because of a diverse geography and climate, California is world-renowned for its many remarkable landscapes and exceptional

PLANTS

Non-native plants have found their way into our wildlands from agricultural seed and livestock feed, or from plantings used to stabilize the land or to provide windbreaks. Many have escaped from neighboring gardens. Once introduced, exotic plants can spread rapidly through plant fragments and seeds carried by animals, water, or the wind, and as "hitchhikers" on vehicles, clothing and recreational equipment.

Invasive exotic plants often outcompete natives for space to grow and for soil nutrients, literally crowding out native vegetation. Tall plants may shade others from needed sunlight. Some produce substances that inhibit the growth of other plants, and others consume large amounts of water, depleting this precious resource in dry areas.



Non-native species evolved in different ecosystems with different enemies and survival strategies. In new areas without their natural predators and diseases, many non-natives, such as this European beachgrass, crowd out native species and severely reduce plant and animal diversity.



Native species have evolved together over time, each organism depending on others for survival. Complex relationships between plants and animals create the intricate balance of a natural ecosystem.



Yellow starthistle, a very spiny invader, can take over grasslands and be a painful nuisance for hikers.

Some highly flammable exotics form dense overgrowth, and increase the frequency or intensity of wildfires. Non-native plants can also affect soils, accelerate erosion, and clog wetlands, all of which can worsen flooding. They can cover trails and waterways, interfering with recreation and decreasing the scenic values.

By displacing native vegetation, invading plants often harm natural habitats that wildlife depend on for food and shelter. Non-native plants now threaten the habitats of over a thousand native plant and animal species in California.



Wild pigs are not native, and their rooting causes extensive damage to grasslands and oak woodlands.

ANIMALS

Non-native animals have been introduced by accident and for special purposes, such as for sport hunting and fishing. They have also been released by irresponsible pet owners.

Exotic animals can be aggressive competitors, consuming food and water, and stealing the limited nesting sites needed by native species. Introduced predators kill native animals, competing with and preying upon native predators, many of which are already struggling for survival due to other threats.

AQUATIC NON-NATIVES AND DISEASES

Aquatic species may be introduced by international ships' ballast water, by home aquarium owners, and by sport fishermen. They can quickly spread through our waterways. Exotic shellfish, such as the quagga mussel, can occur in extremely high numbers, using habitat resources but not serving as a food source for native species. Non-native fish have created widespread changes in aquatic ecosystems because they eat native species and compete with them for food and habitat. Diseases arrive with exotic species and attack native plants and animals that have no natural defenses against them. A resulting disease outbreak may reach epidemic proportions, with the potential to change forever the appearance of familiar California landscapes.

NON-NATIVE SPECIES IN CALIFORNIA'S STATE PARKS

The mission of California State Parks to preserve California's rich

biodiversity and natural ecosystem processes includes protecting native species and their habitats from the direct and indirect threats of exotic species.

The mission also focuses on the preservation of representative examples of California's native ecosystems, yet landscapes invaded by exotic species do not portray an accurate view of natural California.

CONTROLLING THE INVASION

California State Parks land managers have been taking aggressive action for more than 20 years to control or eliminate the most invasive and damaging exotic species, particularly when the invaders pose a serious threat to native plants and animals or other park resources, interfere with recreational opportunities, or create a public safety hazard. Some exotic species are so widespread and difficult to control that eliminating them is not economically feasible. Efforts then focus on stopping the spread and preventing further damage.



Sudden oak death fungus can kill many kinds of trees in California's forests, and can be spread by park visitors.



Wild turkeys, introduced into California for sport hunting, are conspicuous non-native birds and compete with many native species, particularly in oak woodlands.

YOU CAN MAKE A DIFFERENCE

- ✓ Volunteer for exotic species control projects in your local wildland areas.
- ✓ Do not release or abandon unwanted pets such as cats, ducks and reptiles in or near wildlands.
- ✓ Clean boots, vehicles, boats and equipment to avoid spreading exotic “hitchhikers.”
- ✓ Use only certified weed-free feed for horses or pack animals in natural areas.
- ✓ Learn to identify invasive exotic species, and do not plant them near wildlands.

Most actions to remove non-native species take several years. In many parks infestations have been greatly reduced, and in some parks the most harmful exotic species have been eliminated.

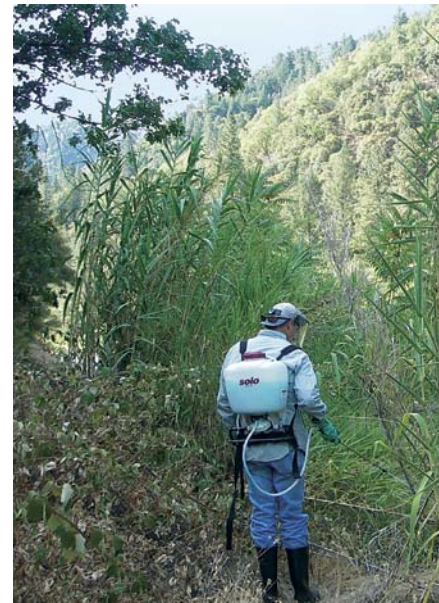
Invasive exotic plants are still widespread, however, and their control is one of the largest natural resource problems facing State Parks today. Control methods include hand or mechanical removal (sometimes using heavy equipment), prescribed

burning, and pesticides when other methods are inadequate.

State Parks is also involved in experiments with biological control, the control of an invasive species by using its natural

predators. In each case, the most effective and least environmentally damaging treatment or combination of methods is used to keep exotics from invading new areas and from returning to areas previously cleared. Volunteers have played a significant role in battling exotic plants, and partnerships between federal, state, and local agencies maximize project funding.

There is a difference between native and non-native species, and between a healthy and an unhealthy ecosystem. Exotic species control efforts are making a difference, a positive step toward restoring our natural heritage for the benefit, enjoyment, and education of future generations.



The battle against invasive exotic species is fought in many ways, including pulling by hand, using heavy equipment, eradicating with prescribed burns, and controlling by spraying.

Bullfrogs are having a devastating effect on California wetlands by eating native frogs, newts, and other amphibians, and by competing with them for food.

