

It's All One Piece: The Unraveling of an Ecosystem

Sudden Oak Death Affects More Than the Oaks

Big Sur, an area of California along the Pacific coast, home to dramatically rugged terrain, crashing waves and towering redwoods, ecologists say is home to a unique collection of plants and animals. It is also considered ground zero in the fight against sudden oak death. *Phytophthora ramorum* is the fungus that causes the disease that threatens California's oak trees. Like the native redwoods, the fungus thrives in the cool, moist climate of the fog belt, the ecosystem that is synonymous with Big Sur.

The sudden oak death is coupled with an invasion of exotic plants. Three plants top the list of destructive weeds in the Big Sur: Andean pampas grass (*Cordateria jubata*), cape ivy, a plant indigenous to South Africa, (*Delairea odorata*), and French broom, (*Genista monspessulana*). Other invasive plants of concern include ice plant (*Mesembryanthemum crystallinum*), poison hemlock (*Conium maculatum*), eucalyptus (*Eucalyptus globulus*), kikuyu grass (*Pennisetum clandestinum*), sticky eupatorium (*Eupatorium adenophorum*), yellow star thistle (*Centaurea solstitialis*) and fennel (*Foeniculum vulgare*).

Dead oaks that are not hazardous are allowed to fall naturally. Such snags provide some wildlife habitat but also increase the danger of fire. Many trees with sudden oak death break off halfway up the stump, an unusual feature of the disease.

The animals of the region use the oaks for a variety of purposes but their key benefit is the acorns they produce. Acorns are an important source of food for deer, squirrels, wild turkeys, bears and a variety of birds, most notably the acorn woodpecker. The California spotted owl, cousin of the northern spotted owl of the Pacific Northwest, and itself a species of concern, relies heavily on the dusty-footed wood rat as food. The rat, in turn relies on acorns in its diet. Biologists worry that the owl species may need to be placed on the endangered species list.

The loss of oaks creates openings in the forest canopy, allowing brush and invasive plants to take over. Using Highway 1 along the coast as an access corridor, a dozen exotic plant species have invaded the Big Sur coastline and are crowding out native plants. The millions who drive the scenic Highway and the thousands who hike the back country trails of the Big Sur often unwittingly spread the seeds of the weeds in their car tires and hiking boots.

Spraying the invaders with herbicides or pulling them out by hand are the only ways to remove exotics. This is impractical or impossible in many areas of Big Sur because of the ruggedness of the terrain, so eradication efforts focus on the highway and trailheads in an effort to stem the spread.

A spokesman for Forest Service says that efforts to control invasive plants center around protecting a small butterfly with dark-spotted wings, called Smith's blue butterfly. It is federally listed as endangered and inhabits Big Sur's coastal scrubland.

The butterfly relies on two species of buckwheat that are highly vulnerable to being overrun by invasive plants, particularly French broom and Jubata grass. The Forest Service is hampered in its control efforts by limited budgets.

In the xx issue of the WOJ we reported that it was feared that sudden oak death had spread to the east traveling on horticultural stock from nurseries in California and Oregon. Infected oaks have been reported in Pennsylvania.

APHIS reports that on January 10, 2005 an Emergency Federal Order took effect establishing restrictions on the interstate movement of nurseries in California, Oregon, and Washington.
