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## **Wildlife 'Corridors' Save Species from 'Islands' of Habitat**

In the rolling coastal hills and canyons of Southern California, encroaching urbanization on open lands threatens to isolate animals in blocks of habitat too small to sustain them.

Larger, more adventurous animals like deer and mountain lion will travel for miles and even cross highways to seek food, mates, and shelter from predators, but other creatures, like the tiny Pacific pocket mouse, remain confined to their shrinking habitat.

Isolation of the species, a result of development, disrupts biodiversity and causes long-term consequences for survival of the species.

"Animals need large blocks of habitat to sustain a robust population," said Ron Rempel, a biologist for the California Department of Fish and Game. "If they lose access to adequate habitat, their populations can be wiped out."

Birds, plants, and other terrestrial life also suffer from habitat fragmentation. Wildlife deprived of an adequate gene pool become in-bred and lose genetic diversity, which gradually weakens and diminishes the ability of their species to adapt and survive. Reducing even a single species' population may upset the balance of biodiversity.

If coyote habitat is fragmented, for instance, fewer will be left to control populations of skunk, possum, raccoon, and smaller animals they feed upon. Populations of their prey will increase, upsetting nature's balance all the way down the food chain.

Deer, bobcats, cougar, and the threatened California gnatcatcher, a small songbird that lives in coastal sage scrub, are some of the species that are vulnerable to habitat shrinkage in Southern California.

Many birds will not fly to habitat they cannot see, and snakes, tortoises, and other slower-moving creatures cannot maneuver successfully in trafficked areas.

Plants isolated from access to cross-pollination by insects also lose genetic diversity. Vernal pools, those dish-shaped seasonal wetlands that dry up in summer, are especially vulnerable if isolated.

### **Linking Habitat Blocks**

To protect California's biodiversity, local, state and federal agencies that manage wildlife and oversee land-use planning are working with landowners and developers to maintain habitat linkage for animal access.

These natural passageways are so vital to preserving biodiversity that the state of California and federal government requires them under the Wilson administration's Natural Community Conservation Planning (NCCP) program in Southern California.

Fish and Game, the California Department of Parks and Recreation, Forestry and Fire Protection, U.S. Fish and Wildlife Service, U.S. Forest Service, Santa Monica Mountains Conservancy, and the U.S. Bureau of Land Management all work to protect biodiversity through preserving habitat linkages.

These linkages, also called corridors, provide animals and other living things a lifeline between "islands" of habitat, serve as escape routes from danger and avenues to food supplies and mating prospects.

Corridors can be narrow as a culvert or wider than an eight-lane freeway. They may be short or extend for miles, perhaps crossing over or under roads.

### **Saving Coal Canyon**

Establishing and protecting wildlife corridors can be lengthy, difficult, and costly.

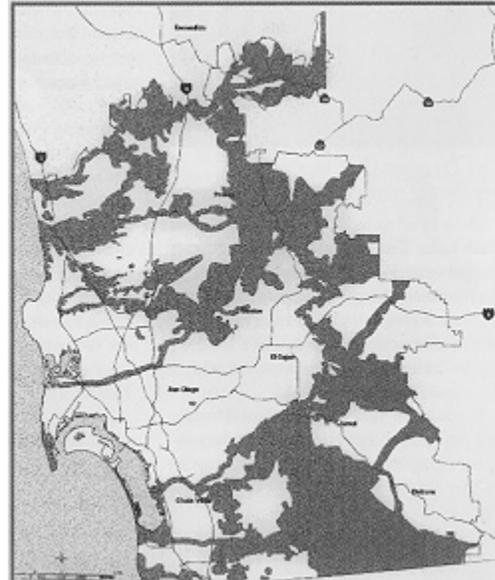
One such effort underway in Orange County would protect access to Coal Canyon, the only links between two biologically significant areas of wildlife habit totaling 512,000 acres in Orange, Riverside, and San Bernardino counties.

Coal Canyon links two large habitat "islands" -- the Puente-Chino Hills, including the 12,000-acre Chino Hills State Park, and the Santa Ana Mountains, Cleveland National Forest, Orange County's Central Coastal NCCP lands, the state's Tecate Cypress Reserve, and Irvine Company's Gypsum Canyon Preserve.

Wildlife migrating from one area to the other must cross the busy 91 (Riverside) Freeway, which bisects Coal Canyon, using culverts next to an underpass. This vital corridor is accessible only from two privately owned pieces of land on either side of the freeway.

"It's a real key linkage," said Geary Hund, a California State Parks resource ecologist. "The Puente-Chino Hills are too small to support many of the species that are there now. The area has to be connected to other areas, and Coal Canyon is the last viable connection."

Unless acquired and preserved, these parcels of 32 acres and 653 acres stand to be developed, which would block terrestrial wildlife access to the passage, virtually trapping many species in confining areas.



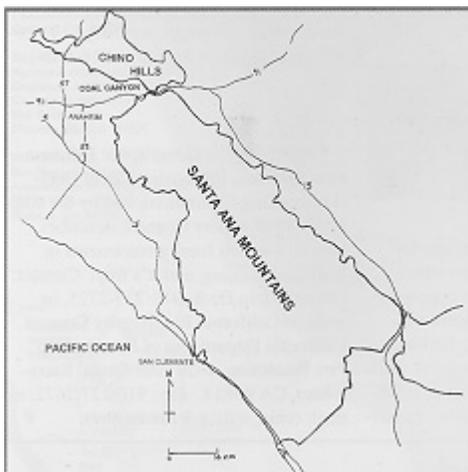
In San Diego County, habitat linkages, as shown on the map, are part of Natural Community Conservation Planning.

A scientific study completed in 1995 documented three cougars that used the corridor, including one that made the trip 22 times.

State agencies and local activists are working to obtain funding to purchase the two parcels.

The cities of Brea, Diamond Bar, Whittier and La Habra Heights, State Parks, Fish and Game, the Conservancy, and numerous citizens groups, including the nonprofit Hills for Everyone, formed the Wildlife Corridor Conservation Authority to acquire the Coal Canyon access and other linkages in the Puente-Chino Hills.

"People need a connection to the land, to rest their eyes on ridge lines as they drive through the concrete jungle," said Claire Schlotterbeck, president of Hills for Everyone.



Coal Canyon provides the only corridor linking a half-million acres of wildlife habitat that includes Chino Hills State Park and the Santa Ana Mountains.

She describes the open space linked by Coal Canyon as "a beautiful island in a sea of urbanization" that has almost 15 million people.

"If we lose this corridor and the deer and mountain lion can't go through, the wildlife population will change and the richness of biodiversity will be gone," Schlotterbeck said.

Scientists estimate that half the species north of the freeway would be lost. Species using the corridor or found nearby include rare and listed species, such as the California gnatcatcher, cactus wren, southern willow flycatcher, cactus and sage scrub, Braunton's milk-vetch, prairie falcon, golden eagle, and bobcat.

### **Linkage Required**

Fish and Game and the Fish and Wildlife Service identify linkage locations in all NCCPs and habitat conservation plans (HCPs) under their jurisdiction. The NCCP program was established to protect large blocks of coastal sage scrub habitat in five Southern California counties. Its plans encompass areas designated for habitat preservation and allow "incidental take" of listed species in certain other areas.

NCCPs specify minimum width of corridors, and one plan, the Multiple Species Conservation Program in San Diego County, requires linkage of habitat areas that comprise 172,000 acres of reserve.