

## CHALLENGES OF MANAGING URBAN BLACK-TAILED DEER IN NORTHERN MONTEREY COUNTY, CALIFORNIA

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**ABSTRACT:** Disagreement between publics over the desirability of large numbers of deer within a suburban forest environment pose challenges for effective management to address the concerns between those inclined to total protection of deer and those seeking relief from damage to cultivated ornamental plants and golf course vegetation. There needs to be developed effective strategies to guide actions by resource managers; some combinations of such strategies may contribute to moderation of urban development impacts on deer populations surrounding urban areas.

**Key Words:** Black-tailed deer (*Odocoileus hemionus*), urban habitat, depredation, population reduction

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The Del Monte Forest at Pebble Beach on the Monterey Peninsula has a long history of depredation conflicts between resident black-tailed deer (*Odocoileus hemionus*) and the extensive complex of residences and golf courses within this world-famous private resort. The Del Monte Forest, managed by the Pebble Beach Company, has exercised considerable effort to maintain the atmosphere of a village within the pine-forest wildland. This has contributed to a large and relatively predator-free population of coastal black-tailed deer. The latter exists in an ecologically benign setting, and deer survival is in turn further sustained by extensive (and expensive) individual home parcel and golf course landscaping that provides ample forage for the deer. Homeowners and golf course managers are split on acceptable solutions to redress the often extensive impacts of the deer on cultivated ornamental plantings about their residences, and on the many golf fairways with the Del Monte Forest. Efforts to provide measures to control herd size have floundered on the challenges presented by intensive residential development, public use, and the resistance to the concept of sport hunting take.

At intervals of approximately every 5 years, a segment of the citizenry of the Pebble Beach Development in the Del Monte Forest arise to complain regarding the excess deer population and associated landscape damage. The Department of Fish and Game (DFG) is then approached to provide a solution, and to participate in a citizen's committee specifically convened to address the situation. Twice, a wildlife consultant has also been engaged to join in the committee's discussions. I have participated through 4 of these evaluations in my 18 year tenure in Monterey and present here some implications for the various remedial proposals and their ultimate results.

As may occur in other urban depredation sites, the basic conflict is between an element of the public that supports the presence of the deer, and often actively encourage them by providing supplemental feed. At the other extreme are those property owners who contend that their landscaping amenities have been damaged by

the deer, and that financial stress to redress the damage, and annoyance, even threat of injury from the habituated animals, demand their reduction.

The calls for suppression of deer numbers frequently stress proposed application of sterilants. The ultimate goal of sterilants would be to result in a pattern of exponential attrition that would eventually eliminate the deer problem. Regretably, the results to date of this approach are inconclusive. Most recent extensive experimentation has been conducted with white-tailed deer (*Odocoileus virginianus*) in the eastern United States (*pers. comm.* Bill Clark, DFG Wildlife Investigations Laboratory, Rancho Cordova). The major drawbacks, in addition to the labor-intensive aspect of application, is that current techniques cannot effectively administer a single prophylactic inoculation restricting conception, and the process must be repeated at intervals, as frequently as annually (Botti 1985). The process of marking each treated animal and then relocating them for a successful new treatment is beyond the staff capabilities of most wildlife agencies. Even with the limited herd of 500 deer on the Del Monte Forest, anticipation of the logistics are staggering. Recent efforts to utilize this approach at Coyote Hills Regional Park in Alameda County over a 2 year period resulted in an expenditure of over \$60,000 and minimal effective results.

Relocation is yet another oft-cited solution. It is also a financial and logistical quagmire. In DGF Region 3, we have the experiences of relocations from relatively confined areas such as Ardenwood Park in Alameda County where 29 deer were removed and relocated; 1 year later, at least 25 of them were verified dead, most by mountain lions (*Felis concolor*). In the mid-1970s the infamous Angel Island deer herd relocation occurred. A over-population of deer originally estimated at about 150 deer on the 299 ha island State Park was 100 animals over the presumed upper carrying capacity of approximately 50 animals. Ultimately, DFG captured and removed 203 animals from the recesses of the island woodland to Sonoma County. Telemetry sampling subsequently revealed that within a year 90% of these ani-

mals were deceased, most within 3 months of relocation. And notwithstanding these extensive relocation efforts, a sufficient number of deer remained on the island to permit an increase in the island's herd size to over 200 animals within 5 years in spite of an ongoing contraception program conducted by the San Francisco SPCA. Eventually, State Park rangers had to cull large numbers of deer from the island to obtain a viable balance of animals and habitat (Botti 1985, Mayer et al. 1995, Avanzino 1996).

The prospect of extensive trapping and darting activities within the Del Monte Forest, an area supporting 5128 residents within its approximately 600 ha area, and entertaining approximately 1.75 million visitors annually, is unappealing. The public relations activity related to the operation alone would be substantial and the attitude and prior actions of those publics opposed to any disturbance of deer would probably result in significance interference with deer reduction operations and equipment.

Finally, there is the issue of removal by sport harvest. In a strict wildlife management sense, efficient application of this strategy could eventually attain the herd reduction levels desires. At Pebble Beach, the density of residential housing immediately precludes consideration of firearms, but archery hunting has been suggested by local sport hunting groups as a partial solution to the overpopulation of deer. From a deer management perspective, our experience with archery hunt success rates at about 4% suggests that a significant take could not be attained without introducing nearly as many archers as permanent residents. The estimated deer population here is at least 500 deer, and a kill suitably significant to reduce the existing depredation damage would require take of 50% to 60% of that number. Also, past public hearings on the prospect of hunting within the Del Monte Forest indicated little public support for the concept and its myriad of deer-inhabited golf courses.

At this point, one may well ask, "well, what?" In the past, the furor over the deer impacts has died-down as quickly as it arose, for reasons that are not clear. Monterey is one of the State's Busch Bill counties, which provides the option for the county board of supervisors to conduct a public hearing to discuss any proposed deer hunt for other than mature bucks (i.e. "special hunts"). The county board may veto any special hunt proposed, and the prospects for a board of supervisors' approval of any hunt activity within the Del Monte Forest has no realistic prospect of success. The Department of Fish

and Game and the deer-hunting public grapple annually in rancorous public hearings before this same board of supervisors to gain approval for any special deer hunt in Monterey County, even in the remote Los Padres National Forest.

However, this begs the question as to what a resource-management entity can do when equally-divided constituencies equivocate on whether the deer are indeed a problem or an enhancement, and emotion directs the choice of alternatives to address the matter in an objective manner. In the past, we have been able to moderate the public discussion and hope that the proponents for the opposing views can between themselves attain some mutually acceptable conclusion. With California's increasing trend toward extensive urbanization, the problems increase with other wildlife species impacts as well, which we are already experiencing in many urban areas with damage by wild pigs (*Sus scrofa*) and tree squirrels (*Sciurus* spp.). There is an obvious need to begin to develop some effective strategies to address public calls for action by resource managers. Increased emphasis on cultivation of ornamental domestic plants that are not favored by deer for food; greater utilization of 'low-profile' outrigger fencing designs that meet local municipal zoning codes, but effectively preclude deer access to cultivated areas; and development of effective single application sterilants to restrain the size and growth of local urban deer populations may in combination serve to moderate a symptom of our intrusion of urban development into surrounding deer habitat wildlands.

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