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Sustainable Management of a Public Resource: The White-tailed Deer in Indiana

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Conversion of the Indiana landscape to agricultural use and the unregulated hunting of white-tailed deer resulted in their elimination from the state by 1893. Wildlife managers, recognizing the aesthetic and recreational value of white-tailed deer, reintroduced them into southern Indiana beginning in the mid-1930s. The recovery of the deer population was remarkable. The number of deer in Indiana was estimated as 5,000 animals in 1951. In 1991, 40 years later, deer in the state numbered an estimated 350,000. The sport hunting of deer now adds an estimated $110,000,000 annually to the state's economy. However, this additional revenue is not without off-setting costs. Deer-vehicle accidents and deer-related crop damage result in annual losses in Indiana approaching $40,000,000.

An appropriate management strategy for Indiana's deer herd is one that recognizes that deer are a publicly-owned resource with multiple values that ought to be provided on a continuing, sustainable basis. The goal of **sustainable resource management** is to assure the future availability of a natural resource yet provide for use of the resource. This suggests that Indiana's white-tailed deer population should be maintained at a level that provides deer-related recreation, yet minimizes deer damage to habitats, agricultural crops, and personal property. The recent decisions regarding the management of white-tailed deer in Indiana state parks is an example of an effort to achieve sustainable resource management policy.

The first-ever regulated hunting season for white-tailed deer in Indiana occurred in November of 1951 when Brown County State Park, among other sites, was opened to hunting because of unacceptable levels of deer damage to crops and woodlands. More recently, studies were begun in order to document current impacts of white-tailed deer in Indiana state parks. Studies by state parks naturalists Jim Eagelman (Brown Co.), Tim Cordel (Potato Creek), and Fred Wolley (Pokagon), and studies by Dr. George Parker, Dept. Forestry and Natural Resources, Purdue University, determined that over-browsing by white-tailed deer was responsible for a decline in plant species state parks. Similarly, Drs. Robert Swihart and Harmon Weeks, Dept. Forestry and Natural Resources, Purdue University, have determined that the poor condition of deer habitat has resulted in poor growth and body-condition of deer in state parks. These studies indicated that deer populations in certain Indiana state parks had exceeded habitat carrying capacities.

Visitors to Indiana state parks have traditionally valued the opportunity to view deer, other wildlife, wildflowers, and the forests of the parks. Studies have indicated, however, that over-browsing by deer severely impacted plant species upon which other wildlife species and the future health of

park forests depend. In fact, deer had significantly damaged their environment to such a degree that their own condition was adversely affected.

These observations led to public discussions of the options available for control of deer in Indiana state parks. Among the alternatives considered were a no-management alternative, live-trapping and transfer of deer, fencing to exclude deer, predator reintroduction, controlling deer fertility by contraception, and controlled harvest of deer by shooting. After considering these alternatives, in 1993 the Natural Resources Commission approved of the controlled shooting of white-tailed deer for damage control in Brown County State Park. In order to further habitat recovery, the State Assembly passed a law in 1995 requiring the Indiana Department of Natural Resources to reduce deer populations in parks sustaining deer-related ecological damage. Subsequently, deer populations have been reduced by hunting in four Indiana state parks: Brown County, Harmonie, Pokagon, and Potato Creek. Because regulated harvest by shooting is currently the most effective technique available, it should be expected that it will be used for future herd reductions in state parks where deer-related ecological damage occurs.

Regulated shooting of deer for damage control is a technique that has been used successfully for sustainable resource management of Indiana state parks. Its careful and judicious application in controlling deer populations has assisted in the recovery of over-browsed wildflowers, shrubs, and tree seedlings upon which other animals and the health of the parks depend.

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