The First Ten Years

Based on knowledge and input from the academic and scientific community, ongoing research and evaluation by our own department biologists and extensive studies of how other agencies handled the situation, the Indiana Division of State Parks and Reservoirs concluded that reducing deer numbers was the only way to avoid further damage to our parks' ecosystems. It was a difficult decision at first, but one that provided the most humane, practical and ecologically sound method of restoring and maintaining park ecosystems.

From 1993 to 2001, seventeen parks held deer reductions. Most hunts took place over the course of 4 days during late November and early December.

Parks were evaluated by resource professionals each year to determine if a herd reduction was necessary. Assessment of a park's vegetation was the main factor in the decision process.

Following each hunt, data on the recovery of plant diversity and plant abundance became a documentation of success and an indication of what further work was needed. The visual appearance of parks where deer hunts have taken place is a striking affirmation that the program of deer management and ecosystem restoration is working.

Control plot at Pokagon State Park in 1996. Notice the height of plants just beginning to show signs of recovery. Note the definite "browse line" showing the height the deer can reach to eat vegetation.

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Same control plot at Pokagon in late summer of 2001. Notice height of recovering plants compared to DNR researcher standing in center of plot.

Phase II: The Maintenance Phase

During Phase I, we maintained records of the number of deer removed per hunter per day and the number of deer removed per square mile of park area. Correlating this information with the recovery of the vegetation gives us a method to determine if further reductions are needed in following years.

It was determined that a 0.22 deer per hunter effort and/or 12 to 16 deer removed per square mile of park area are levels that allow the park's vegetation to recover. Once a park achieves those numbers, it is considered to be in the maintenance phase.

When the deer removal rates for parks in the maintenance phase exceed those mentioned above, a hunt is needed the next year. Parks that do not have a hunt one year will need one the following year. Parks that have had no hunts will continue vegetation assessments, including exclosures, transect studies looking at special indicator plant species, and regular photographic studies from designated points.

Resource professionals will continue to evaluate the program as we collect more data. We will continue to build on our years of successful deer management that focuses on restoration of healthy ecosystems for future generations to enjoy.

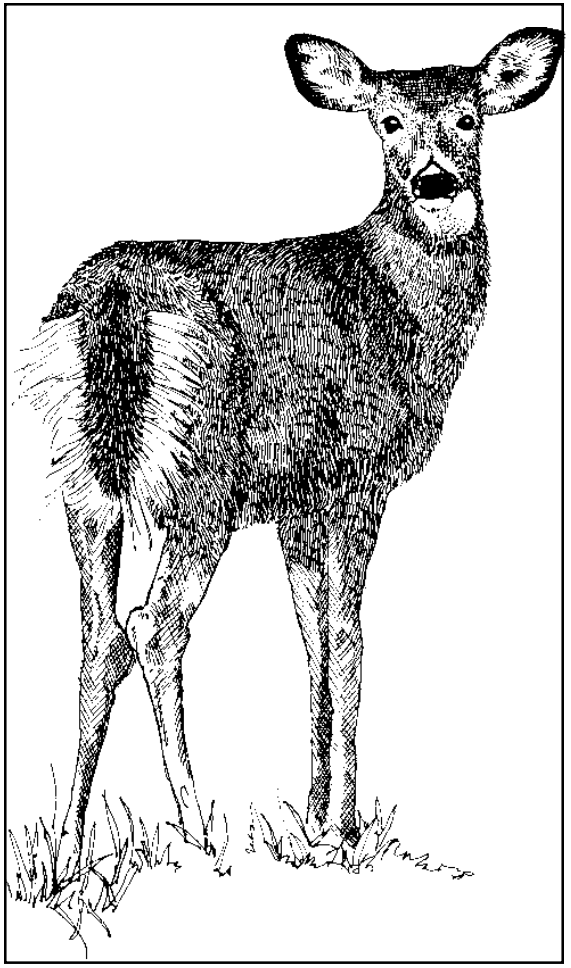
Our Mission…

in the Division of State Parks and Reservoirs is to manage and interpret our unique natural, wildlife, and cultural resources; to provide for compatible recreational opportunities; and to sustain the integrity of those resources for future generations.

DEER MANAGEMENT

and Ecosystem Restoration

in Indiana State Parks



DNR

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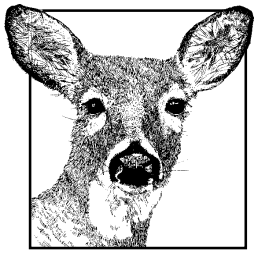

Maintaining a Healthy Ecosystem

Our Hoosier state is very rich with natural resources. Part of the mission of Indiana State Parks and Reservoirs is to manage and interpret these important parts of our native and natural landscapes. Our goal is to show Indiana residents and guests what these few remaining parts of Indiana looked like before European settlement and in the early days of our state's history. Maintaining healthy, natural ecosystems within our parks is an overriding goal.

A healthy ecosystem is one that contains a variety of plants normally found in that geographic region. Supported and interconnected with those plants is a myriad of associated animal life. All of these plants and animals interact with each other, respond to immediate climatic conditions, naturally fluctuate somewhat in numbers and exist in the dynamic balance sometimes referred to as the "web of life."

The key to maintaining a healthy ecosystem is maintaining an area's **biodiversity**. In other words, maintaining the vast numbers of different species of plants and animals that are woven into this magnificent web. Sometimes the very consequences of human presence and activity weaken this web. At those times, we need to respond with sound natural resource management.

Such was the case with growing deer herds in our state parks. We responded with sound management practices and we continue to fine tune them and build on our successes.

Deer Details

Part of the web of life in our state parks is the white-tailed deer. Deer were native throughout what is now the eastern United States in pre-settlement times. Their main predators were wolves, mountain lions and American Indians. With the destruction of habitat by farming and lumbering and the unregulated hunting by increasing numbers of settlers, deer were eliminated from the state in the late 1800's. All their natural predators were also eliminated.

Young people today are surprised to hear that there were no white-tailed deer in Indiana by 1900.

Deer were actually reintroduced in the 1930's and 1940's and became well adapted to the new landscape. They received no pressure from human hunting or from natural predators, which were gone from the more modern Indiana landscape.

By the 1950's, deer numbers had grown in the state and regulated hunting began. Their numbers steadily increased during the next four decades. Hunting has now stabilized the statewide deer population.

In specific areas such as state parks, which had no deer predators or hunting pressure, deer numbers exploded. Indiana State Parks saw the impact of too many deer. A well-thought out, active plan to manage our deer population was implemented in the mid 1990's. Its goal was to fulfill our mission of managing our unique natural resources and sustaining their integrity for future generations.

Leading up to Phase I: The Impact of Too Many Deer

The growing number of these large, browsing plant eaters had a tremendous impact on park vegetation and ecosystem integrity.

Deer Diet

Deer eat a wide variety of plants, including wildflowers, fruits, nuts, farm crops, grass and succulent parts of trees and shrubs. An adult deer can eat up to 12 pounds of food a day but can survive on 3 to 4 pounds.

In some of our state parks, deer ate so much vegetation that there was little left from 5 feet above the ground to ground level. In some parks, wildflowers and tree seedlings were things of the past. Deer were seen in these parks standing on their hind legs to reach food. At these locations, they were forced to eat mostly grass, which is less nutritious for them. In wooded areas, the ground was nearly bare except for stinging nettle, garlic mustard, paw paw, barberry and a few other plants deer found mostly inedible.

With the drastic change in both abundance and diversity of plants came the reduction or elimination of animals that counted on those plants for food and cover. For instance, the number of insects that fed on certain plants were reduced, which affected the birds that fed on those insects.

A healthy forest should have four healthy layers: ground plants, shrubs, understory trees, and a tree canopy. In some parks where deer over-browsed, the bottom two forest layers were missing. What were once healthy, lush ecosystems became badly degraded.

Studying the Situation

We devoted much thought and research to this problem in Indiana state parks, probably more so than for any other natural resource issue we've faced.

We benefited from the cooperation of several universities and their professors and students who studied the impact of deer populations in our parks.

Deer exclosures were erected in the early 1990's to gather data. Deer couldn't enter these areas, but other plant eaters could. By comparing the number and size of plants inside each fenced exclosure with a similar unfenced area available to deer (a control plot), we could determine deer impact. Numerical data and clear visual evidence were produced at these sites.

Beginning in 1992, a special 14-member committee met for 18 months in an extensive study of the problem. The committee included scientists from the state's universities, representatives from environmental groups and IDNR personnel.

By 1992, this issue had been thoroughly researched and discussed by numerous agencies and private organizations throughout eastern North America. Many possible alternatives for solutions were examined for Brown County State Park, where the problem was severe.

The Alternatives

Seven alternatives were studied in detail:

1. Do nothing, let nature take its course
2. Trap and transfer
3. Predator reintroduction
4. Supplemental feeding
5. Fencing of deer in pens
6. Fertility control
7. Lethal removal of deer