

Chapter 26: Wildlife

Few experiences add as much to the enjoyment one derives from their home as watching a squirrel forage a lawn, a deer graze along a forest edge, or listening to the song of wood thrushes from a deep forest. With these benefits may also come human-wildlife conflicts, such as when that deer leaves the forest edge to browse your ornamental trees. Fortunately, biologists, planners and other professionals have learned a great deal about how to maintain healthy, diverse wildlife populations, while minimizing conflicts, as an area develops. However, there are some wildlife species which are so important and sensitive that their habitat must be preserved in a natural state.

PRINCIPLES OF HABITAT PROTECTION

A 1998, *Planning and Development for People and Wildlife*²⁰⁵, presented 19 principles for shaping growth to minimize adverse effects on wildlife and wildlife-human conflicts. The principles were divided into three categories. First, seven operational principles for habitat protection.

Principle 1: Be willing to use rules of thumb based on scientific findings that may someday prove to be false.

Principle 2: Understand that complex environmental problems do not have a single scientific solution founded on "truth."

Principle 3: Begin all conservation plans with clearly stated, specific goals for wildlife protection. Identify what species are most important, and whether you are trying to make sure that some of the animals remain, or that many of the animals remain, or that the animals remain over a wide area of land.

Principle 4: Insist that the analysis used for setting conservation priorities can be understood by everyone who is affected by it.

Principle 5: Realize that all models are wrong, but some are useful.

Principle 6: Make plans adaptive by evaluating the consequences of actions. Learn by doing.

Principle 7: Seize opportunities to enhance wildlife habitat by intelligent design of developments.

Next, the author presented seven biological principles for habitat protection at the landscape scale.

Principle 1: Maintain large, intact patches of native vegetation by preventing fragmentation of those patches by development. If all other values of habitat are equal, larger patches of habitat should be protected in preference to smaller ones.

²⁰⁵ These principles are reprinted with the author's permission. The paper *Planning and Development for People and Wildlife* can be viewed online at: <http://www.planning.org/thecommissioner/19952003/spring98.htm>

Principle 2: Establish priorities for species protection and protect habitats that constrain the distribution and abundance of those species.

Principle 3: Protect rare landscape elements. Guide development toward areas of landscape containing "common" features.

Principle 4: Maintain connections among wildlife habitats by identifying and protecting corridors for movement. Identify and protect small patches of vegetation that provide "stepping stones" among large, core patches described above.

Principle 5: Maintain significant ecological processes in protected areas. Examples of ecological processes include periodic fires, floods, and scattering of habitat materials by wind.

Principle 6: Contribute to the regional persistence of rare species by protecting some of their habitat locally. In other words, local communities need to "think regionally, and act locally."

Principle 7: Balance the opportunity for recreation by the public with the habitat needs of wildlife. Assure that some protected areas remain in private ownership not open to the public, in order to reduce intensity of use by recreationists. Regulate recreational use of protected habitat on public land to minimize impacts on sensitive species.

Finally, five biological principles for wildlife conservation at the site scale were presented:

Principle 1: Maintain buffers between areas dominated by human activities and core areas of wildlife habitat. Limit human activities to one or more buffer zones surrounding a core area, with more intense activities restricted to more distant zones. If people must pass through the core area on foot or bicycle, limit them to a well defined trail.

Principle 2: Facilitate wildlife movement across areas dominated by human activities. Provide alternatives to crossing busy roads, such as underpasses, especially during road construction. Minimize fencing types that inhibit the movement of wildlife species that are likely to occur in the area.

Principle 3: Minimize human contact with large native predators. Prevent wildlife from associating food with humans by exercising tight control over potential sources of nourishment such as garbage or food for domestic animals.

Principle 4: Control numbers of mid-sized predators, such as some pets and other species associated with human-dominated areas. Prevent domestic pets, especially dogs and cats, from roaming freely. As an alternative provide designated areas where people can exercise or "run" their pets.

Principle 5: Mimic features of the natural local landscape in developed areas. Keep levels of disturbance to trees, the understory, and other structural features to a minimum during construction. Design house lots in a fashion consistent with local natural habitats-by using native vegetation, for instance.

Following is a brief discussion of the relationship between development and two categories of wildlife: birds and endangered species.

BIRDS

Everyone knows of endangered birds such as the bald eagle, though thankfully its not so endangered anymore. But there is a larger group of birds, known as *neotropical migrants*, which are declining. These are species winter in Mexico or further south and migrate north. About half the bird species nesting in North America are neotropical migrants. Researchers have found that many of these species are declining, particularly those of eastern deciduous forests.

The leading causes of the decline are the fragmentation of the eastern forests and those of Central and South America due to agriculture and development. It is thought that forest fragmentation harms these species by increasing predation and nest parasitism. Predators like raccoons and cowbirds are usually not very abundant in deep forests. But when large blocks of forest are fragmented their numbers increase along with the rate at which they decimate neotropical migrants through predation and nest parasitism.

How much forest do you need to preserve neotropical migrants? Well, what you need to *begin* preserving these species is forest interior. And forest interior does not start until one travels 300 feet in from the edge of a woodland. Blocks of forest 100 acres or larger begin to provide good habitat, provided they are not long and narrow. Obviously a 100-acre strip that is only 400 feet wide provides no usable forest interior.²⁰⁶

If you can gain access to the site then identify all of the birds present, particularly those that are nesting. Do the same on areas adjoining the site. Be particularly watchful for any nests larger than a foot that are made mostly of sticks - not leaves - which may be used by large raptors or wading birds. If there is an unusually high abundance of *Forest Interior Dwelling* birds, then special protection measures may be warranted. Share your findings with ornithologists and ask if they feel your data indicates that the site supports uniquely important bird populations.

ENDANGERED SPECIES

The U.S. Fish & Wildlife Service (USFWS) is the official guardian of the nation's rare, threatened and endangered (RTE) species. But many states have their own lists of species which are RTE within their borders. Additionally, these states have *natural heritage* programs which monitor and conserve the State's RTE species.

²⁰⁶ For further detail visit the Cornell University Birds in Forested Landscapes website at: <http://birds.cornell.edu/bfl/index.html>

To learn if RTEs occur on or near a proposed development site contact the natural heritage program for your state. Usually a natural heritage program is part of agencies such as natural resources, wildlife, fish and game, conservation, or environmental protection.²⁰⁷

Natural heritage program staff may ask you to submit a written request for information on RTE species. In the letter ask not only if RTE species are known to occur on the site, but also on adjoining lands, and downstream along any waterways associated with the site. It is usually helpful to include a map showing the site location. The map should be reproduced from the U.S. Geological Survey topographic sheet for the area.²⁰⁸

The presence of an RTE species on or near a site does not preclude development. What it will do is cause regulatory agencies to take a closer look at development activities which may affect the species. Frequently an RTE species can be protected with buffers and other BMPs. It is quite unusual for a species, like a snail darter or a spotted owl, to halt all development activity.

For the most part you'll find that the natural heritage program has not surveyed the specific site of concern to you for RTE species. If you can gain access to the site, then look for species found in similar habitat in the area. Also examine areas adjacent to and downstream of the site. If you think you have found an RTE then **do not** disturb it in any way. Instead, notify natural heritage program staff.

In addition to the natural heritage program contact all other organizations and institutions that may have information on endangered species and other important plant, fish, bird, or wildlife species. These organizations/institutions may include: birding clubs; botanical societies; college or university biology, zoology or ecology departments; nature center staff; the [U.S. Fish & Wildlife Service](#); state wildlife agency staff; personnel with parks or refuges located near the site; and environmental or conservation organizations.

If wildlife species of unique importance may be affected by site development then ask natural heritage or other wildlife agency staff to call for species protection. Ask the staff to describe what steps would be needed to fully protect the species, not just what may be politically acceptable. Make certain development review staff are aware that the species are present and what the wildlife experts feel is needed to safeguard the resource.

²⁰⁷ Visit the following U.S. Fish & Wildlife Service website for endangered species contacts in your area: <http://endangered.fws.gov/contacts.html>

²⁰⁸ Topographic maps can be obtained from the U.S. Geological Survey by calling 1-800-USA-MAPS or visiting: <http://store.usgs.gov/>