WHERE WILL WILDLIFE LIVE?

More People, Changed Climate, Lost Land Threaten Many Species

Eighty-eight acres of forest and wetland habitat near Totopotomy Creek, Virginia, may soon be destroyed by the construction of a transmission line. Wayne Watkinson, a local resident, is trying to stop that from happening. "In the evenings," he explains, "you can hear the different birds and see the squirrels foraging for nuts... Species in trouble, like the bald eagle and tiger salamander, also appear here. The power line will put an end to this, requiring that both sides of Totopotomy Creek be cleared and sprayed with herbicides."

Mr. Watkinson, like others who see a rapidly changing landscape, finds something deeply disturbing in the continuing loss of nature—sometimes in small parcels, such as the acreage near Totopotomy Creek, and sometimes in huge chunks, such as new airports, reservoirs, or suburban centers across the United States. What will become of wild life and nature if such losses continue to mount?

Vanishing Wildlife

No one knows the full extent to which our wildlife is declining. One indicator, however, is data on endangered species compiled by the U.S. Fish and Wildlife Service (FWS). Current data show that between 1,500 and 4,500 species of animals and plants domestic ally are in danger of extinction currently or in the foreseeable future. (More than 120 others are known or feared extinct in recent decades.) Among those species most clearly in danger are at least 66 mammals, 93 birds, 51 reptiles and amphibians, 96 fishes, 164 insects, spiders, mollusks, and other invertebrates, and 1,057 plants.

Unfortunately, the actual number of species clearly in trouble appears even greater than FWS records indicate. A recent Center for Plant Conservation estimate of plants considered to be at risk of extinction is about 14 percent higher than federal records show; a recent study at Cornell University suggests that 7 additional species of birds—Vermilion flycatcher, seaside sparrow, spotted owl, loggerhead shrike, snowy plover, Harris's hawk, and Hermit's sparrow—are threatened; and the State of Colorado's list of endangered species includes lynx, wolverine, river otter, and other species that are not yet recognized by FWS as being in jeopardy.

Another indication that the problem is greater than the records now show is the rapid growth of the official list of U.S. endangered and threatened species. Between January 1986 and January 1990, the number of entries rose an astounding 47 percent. There was a 40 percent increase in listings for mammals, one of the groups better known to science.

Among invertebrates, many experts believe that only a fraction of actually endangered or recently extinct species has been listed. By the time many of these species are recognized as endangered, it may be too late. Consider, for example, the American burying beetle. It was only recently listed despite the fact that, as

Left: A brown pelican in Florida's Everglades National Park is representative of one of the few species lucky enough to recover from certain extinction. Above: Pesticide use damaged this brown pelican egg, dooming its chick.
Can We Save Our Wildlife?

The U.S. Endangered Species Act of 1973 recognizes that declining wildlife is "a consequence of economic growth and development untempered by adequate concern and conservation" and that it is U.S. policy to conserve endangered wildlife and the ecosystems they depend upon for survival. According to the Act, "it is the policy of the United States to conserve and restore the野生 species..." and to protect their habitats. The Act lists various factors that contribute to species decline, such as habitat destruction, pollution, and introduced species. It also establishes procedures for identifying, listing, and protecting endangered species, as well as requirements for recovery plans.

The growing number of U.S. endangered species provides a stern warning that the ecological health of the land continues to worsen. While much of nature has been lost, what can be said about the future of what remains—habitats areas that, while modified, continue to support many native species and natural communities. Our eastern forests, covering nearly 30 percent of the total land mass, retain only marginal lands for roosting and nesting species. The ecological effects of habitat destruction and the elimination of wildlife can be devastating. A human population increase of about 2 million persons a year is expected to more than 280 million. How will these new people distribute themselves over the land? What natural resources will they use?

Climatic changes—the result of human pollution of the global atmosphere—should also concern us. If the planet warms by 5.5 degrees Fahrenheit into the next century (the average of a range of recent estimates by atmospheric scientists), we could expect a climatic shift of 155 miles toward the poles and 1,640 feet up a mountain. Wildlife, which is adapted to certain climatic conditions, would encounter two major problems. The climate shift may happen so quickly that many species will not have the time to migrate successfully. Given that much of the landscape has already been converted to agricultural and urban uses, even species that can move fast enough may not find suitable areas to colonize. Under these conditions, losses of wildlife could be massive.

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upon which they depend.

Despite this, the world's wetlands and ecosystems continue to falter. Why? A primary reason is that our society has grossly underestimated the task of conservation. Wetland and natural resource protection are undertaken for the "more charismatic" species such as California condors and black-footed ferrets, and while "game" species such as deer are managed to offset habitat loss, few Americans know of the thousands of other species that are declining and facing extinction.

If we truly are to "conserve wildlife," we must keep the land in good enough condition for the existence of all 500 species of mammals, 1,000 birds, 600 amphibians and reptiles, 2,200 butterflies, 90,000 insects, 20,000 clams, snails, spiders, and other invertebrates, 26,000 plants, a great number of subspecies and (plant) varieties, and a wide range of simple forms of life such as fungi and algae.

To do this, a broad diversity of habitats must be preserved. Much of our wildlife is dependent on specific kinds of vegetation, forest growth, topography, aquatic conditions, congeners habitat, or local resources.

The second fundamental need is enough habitat. Adequate habitat gives wildlife populations an opportunity to avoid extinctions due to chance events or genetic problems. Estimates vary as to how many animals are needed for a "viable" population but probably at least 250 individuals. Recent information indicates that for the existence of all 500 species of mammals, 1,000 birds, 600 amphibians and reptiles, 2,200 butterflies, 90,000 insects, 20,000 clams, snails, spiders, and other invertebrates, 26,000 plants, a great number of subspecies and (plant) varieties, and a wide range of simple forms of life such as fungi and algae.

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