

Life on the Edge

When Urban Sprawl Meets Wildlife

WHAT IS URBAN SPRAWL?

Urban sprawl, or “spreading of urban development into areas adjoining the edge of a city,” is what occurs when people move from densely populated areas, such as cities, into less populated rural areas. It is an increasingly “hot” topic in the United States. Just by reading a newspaper or watching the nightly news you can find articles about the effect of urban sprawl on

Over the past changes have occurred. In the early 1900's, automobiles, airplanes, television, computers, and homes were built in small farmsteads surrounded by fields and forests. At that time the majority of the population, ¼ of the population, lived in rural areas. In that time an increasing number of rural areas have seen the development and expansion of land that once belonged solely to



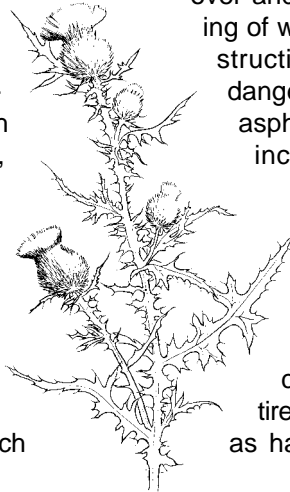
people's daily lives. Over the past century dramatic changes have occurred. In the early 1900's, automobiles, airplanes, television, spacecraft, the Internet, and computers were built in small farmsteads, or on a rural area surrounded by fields and forests. The majority of the population in the country lived in rural areas. Since the increasing number of rural areas have seen the development of land that once belonged to

there. It is not entirely unexpected for wildlife to lose habitat to rural development. However, the last few decades have seen a dramatic increase in the rate of loss. Nearly 1/6th of the total base of developed land in our country was claimed in a single decade (1982 – 1992). This rapid consumption of natural landscapes is known as urban sprawl.

Normally, sprawl is a gradual process that occurs over an extended period of time. As the population density of an area increases it begins to spread outward. People want more space, a better view, quieter living environment. Often sprawl goes unnoticed by the casual observer until they compare the past and the present.

INVASIVE SPECIES

The shift in the human population to rural areas has a dramatic effect on wildlife populations. As natural landscapes are paved over and built on, natural resources are diminished. The filling and dredging of wetlands for houses, commercial buildings, roads, and other construction projects are a primary endangered species rely on wetlands for asphalt and concrete increases the rate of surface runoff. This, in turn, increases the amount of harmful sediments and substances (i.e. fertilizers, salts, gas, and oil) washed into the remaining wetlands. These substances can adversely effect wildlife populations. Even natural habitats left "untouched" for the benefit of the presence of humans. Invasive plant species are often inadvertently introduced into the landscape. Some introductions are the result of non-native species used in landscaping, while others are tracked in on vehicles as hay and grain, imported for livestock. Another source is animal feeds, such as



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Invasive species are distinguished from other unwanted plants by their ability to spread (invade) into native ecosystems. Invasive species enter an area, often where the soil has been disturbed, and compete with native plants for food, water, energy, and growing space. This often leads to the reduction in the abundance of native species. Often times the invasive species is less desirable to the wildlife in the area thus causing a reduction in forage. For example a native fruit-producing shrub may feed as many as 50 or more organisms at from fungi, to large mammals. In comparison an invasive fruit-producing shrub may only feed a handful of organisms during its fruit producing season, and only 2 or 3 organisms during other parts of the year.

SPRAWL AND FRAGMENTATION

Sprawl also results in fragmentation. This is the division of forests and grasslands into smaller, disconnected pieces. Instead of a large continuous landscape it is broken into a patchwork mosaic. Small sites of original habitat separated by lawns and houses. Wildlife can no longer travel from one patch of habitat to another without coming into contact with humans. The effect this has on wildlife varies from species to species.



Often fragmentation threatens animal populations. Many species of wildlife need large areas of natural habitat in order to maintain population numbers. A good example of this is the Fisher (*Martes pennanti*, see left). Found in the same family as mink and otters, the Fisher is a rare forest carnivore. Ranging from 3 to 12 pounds and averaging 20 to 30 inches long, plus another 13 to 17 inches of tail, the

fisher is often said to resemble a small bear. The Fisher is closely associated with large continuous blocks of mature and old growth forests. Studies have shown that as urban sprawl and logging fragment the Fisher's habitat its population declines.

However, not all populations of wildlife are adversely affected by fragmentation. Many hardy species adapt quite well to manicured lawns and neatly trimmed hedges. Often becoming nuisance animals, these species are called generalists and include white-tailed deer (*Odocoileus virginianus*), raccoons (*Procyon lotor*), opossums (*Didelphis marsupialis*), pigeons, skunks (*Mephitis mephitis*), and a variety of squirrels among others. Ironically, the populations of these species often increase, out competing less adaptable species such as fishers and spotted owls (*Strix occidentalis*).

Results of Fragmentation

- *Reduced habitat*
- *Barriers to wildlife*
- *Road kill*
- *Increased possibility of nuisance animals*
- *Negative impacts on fragmentation sensitive species*
- *Increased possibility of disease transmission*

The increase of generalist species often leads to an increase of conflict between wildlife and humans. The risk of being involved in a car-animals collision rises. In addition there are more squirrels in the attic, raccoons in the garbage can, opossums under the porch, and deer in the garden.



NATURALIZING THE LANDSCAPE

So what can individuals do about urban sprawl? It is obvious that it cannot be easily stopped. However, its impacts can be minimized. For areas slated to be developed preserving natural features should be considered. There are many species that don't need huge tracts of land in which to live. These are often the species that you glimpse feeding in your backyard. These species such as songbirds, small mammals, and some large ones, benefit from travel corridors, even narrow ones. By having developers leave trees, natural areas, and stream buffers wildlife is given more space in which to coexist with people.

Creating "greenbelts" and natural footpaths provide wildlife a natural travel corridor that they can use to travel between areas of natural habitat. Often such pathways are located on ridge tops or along waterways, which are common natural corridors. By working with a biologist or other qualified specialist developers can create or maintain natural habitat in areas that are of maximum benefit to the wildlife species present.

Selected Native Plants of Eastern Oregon and Washington

- *Arrow-leaf
balsamroot*
- *Big Sagebrush*
- *Indian Paintbrush*
- *Pentstemon*
- *Purple Coneflower*
- *Purple Sage*
- *Pussy toes*
- *Rabbit Brush*
- *Serviceberry*
- *Western Wallflower*
- *Yarrow*

Selected Native Plants of Western Oregon and Washington

- *Bald-hip Rose*
- *Elderberry*
- *Kinnikinnick*
- *Lady Fern*
- *Mock-orange*
- *Nootka Rose*
- *Oceanspray*
- *Oregon-grape*
- *Pacific Bleeding-heart*
- *Pacific Ninebark*
- *Pacific Rhododendron*
- *Red Huckleberry*
- *Salal*
- *Salmonberry*
- *Snowberry*
- *Spiraea*
- *Sword fern*
- *Thimbleberry*
- *Trillium*
- *Twinflower*
- *Wild Ginger*

This can include planting native grasses, flowers, trees and shrubs that not only helps increase habitat but it also helps minimize the introduction of invasive plant species. For those that own acreage that might be developed one day, implementing a stewardship plan is beneficial. Trusts or conservation easements can also help reduce urban sprawl include contributing time and/or money to conservation projects in local areas. Check with the city's Conservation Commission to see if they have conducted a natural resource inventory, identified priority natural resources, or developed an open space plan¹. Ask local land use boards to rethink land use plans and regulations to ensure they protect critical wildlife habitats. Also, make sure they ask developers to consider subdivisions that promote open space. Volunteering to serve on a land use board, this gives homeowners a direct hand in decisions that effect wildlife.

By using these simple practices the effect of urban sprawl on wildlife can be reduced. The relationship with wildlife should be one of understanding. By understanding wildlife species, the problems that exist at the border between developed areas and wildland can be minimized thus working to reduce the conflict between wildlife and urban sprawl.



For more information, check out these on-line sources:

Terris, J. 1999. Unwelcome (human) neighbors: the impacts of sprawl on wildlife. Natural Resources Defense Council. [online] URL: <http://www.nrdc.org/cities/smartgrowth/pwild.asp>

Theobald, D.M. and N.T. Hobbs. 2002. A framework for evaluating land use planning alternatives: protecting biodiversity on private land. Conservation Ecology 6: 5. [online] URL: <http://www.consecol.org/vol6/iss1/art5>

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