

HABITAT PROTECTION AND RESTORATION



Wayne County Elizabeth Park in Trenton.

Habitat is an increasingly important quality of life component for many Southeast Michigan communities. While previously viewed as an issue of preserving plants and animals, there is growing recognition about the value of habitat to humans. Preserving and restoring habitat has several benefits, including:

- recreational and aesthetic opportunities (e.g., birdwatching, wildlife hikes, fishing, and hunting are just a few of the many recreational activities that depend on the availability of wildlife),
- economic values for homes and businesses, and
- environmental protection and protection from flooding, resulting from increased storage and/or infiltration of storm water runoff.

However, these important functions are often lost as a result of land use practices that lead to elimination of natural areas, fragmentation, and degradation of the natural resource. The potential loss of habitat could be exacerbated by major land use and demographic changes occurring in developing areas of Southeast Michigan. SEMCOG forecasts that 390,000 additional acres will become urbanized by 2030.

KEEPING IT CONNECTED

Think broadly about your environmental ordinances such as those reducing storm water runoff and those protecting floodplains, steep slopes, woodlands, and wetlands. These areas can all work toward creating and maintaining both site and corridor open space areas which also serve to support habitat and provide recreational opportunities.

Planning and Regulatory Considerations

At the federal level, certain areas are protected under the Endangered Species Act of 1973 (ESA). Section 9 of the act prohibits the “taking” of an endangered species. Through various court cases, the U.S. Fish and Wildlife Service began to use a definition of “taking” of an endangered species to include any significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

These areas are also directly affected by the following state laws:

- Part 303, Wetlands Protection, of the Natural Resources and Environmental Protection Act 1994 PA 451 (NREPA), as amended,
- Part 31, Water Resources Protection, of NREPA, and
- Part 301, Inland Lakes and Streams, of NREPA.

A detailed summary of these laws can be found in the Wetlands and Floodplain/Stream Corridor chapters.

Tools for Implementing Habitat Protection and Restoration

Local land use decision making is a vital element in protecting and maintaining habitat. There are numerous opportunities for local communities to incorporate habitat preservation and restoration into their planning and zoning process, including:

- Utilizing the master plan.
- Developing a natural areas plan.
- Utilizing regulatory approaches for habitat protection and restoration.
- Incorporating native landscaping.

Utilizing the master plan

If habitat is a valued community asset, it is necessary to include provisions for habitat protection and restoration in the master plan. Below are some suggested goals and policy statements for the master plan:

Goal

- To the maximum extent possible, preserve existing natural features and the systems that support them so that these ecosystems can continue.

Policies

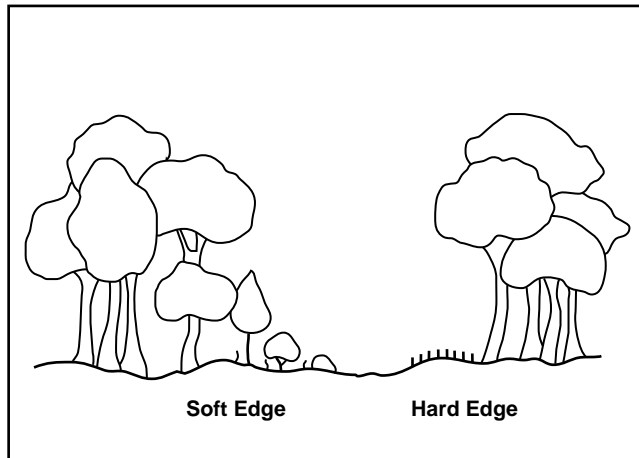
- The intensity of the land use should depend on the natural capability of the land to support the degree of development.
- Preserving/restoring of natural areas is essential to maintaining the community's unique heritage and character.
- Preserve patches of high-quality habitat, as large and circular as possible, feathered at the edges and connected by wildlife corridors. (Figure 21)

Source: Holly Township Master Plan, September 1998 and Ewing, *Best Management Practices*, 1996.

Developing a natural areas plan

The purpose of a natural areas plan is to identify environmentally significant areas of the community that should be preserved in their natural state and those that can be compatibly integrated with development. Furthermore, the natural areas plan can work toward creating a system of open spaces that are linked to one another through naturally-occurring or human-made corridors. It can be included as a chapter of the master plan, or can be a stand-alone plan. If stand-alone, the natural features inventory and background data should be included as part of the plan.

Figure 21
Soft vs. Hard Edge for Habitat Areas



Habitat areas should be as large as possible and circular in nature to minimize edge effects. Edges result in increased competition from predator species and human disturbance. The edges themselves should be gradual and meandering rather than hard and straight. This provides better habitat for certain wildlife by reducing problems from predator species.

Source: American Planning Association Habitat Protection Planning, 1994.

L.W. Adam. *Urban Wildlife Habitats – A Landscaped Perspective*. Minneapolis: University of Minnesota Press, 1994, p.108.

The natural areas plan represents an ecosystem approach to open space planning because it helps preserve both the natural areas themselves, but also the functioning of the systems these areas represent. It is an “ecosystem” approach to land preservation, which takes into account not only the natural feature identified as significant, but also the other adjacent land elements that allow that natural feature to be sustained.

A natural areas plan can be developed using the following steps:

Combining the available data

Available natural features data are combined on a map that identifies important natural and human-made features. This data can include:

- **Natural feature inventories.** Any natural feature inventories conducted for parcels within the community, such as wetlands, woodlands, high quality wildlife habitat, etc.
- **Wetland riparian systems.** These data include rivers, streams, floodplains, lakes, and wetlands. These landscape features are important because, with their plant and animal communities, they filter out pollutants and protect water quality for all the organisms that use surface waters and protect the physical health of citizens through clean groundwater.
- **Upland landscape fabric.** These data include woodlands, tree rows, and severe slopes. These elements offer an opportunity for establishing a network of natural landscape corridors linking patches, and larger natural areas establishing habitat corridors. Linkages provide continuity between various areas of the landscape fabric, offering more and varied landscape types for wildlife.
- **Publicly owned properties and recreational lands.** All publicly owned recreational lands, including state, county, and locally owned parcels are identified.
- **Other corridors.** These data include human-made corridors such as natural beauty roads and utility corridors. Also included are existing and planned bicycle paths and trail systems.

Analyzing the data

Once the data are combined on a map, it is possible to see where several data elements overlap, signifying the environmentally important areas. Areas should be identified as “ecosystems,” or combinations of natural features that impact one another.

Identifying connections

The next step is to connect the environmentally significant sites to create an interrelated network of natural areas. The connecting corridors, such as rivers, existing tree rows, natural beauty roads, and utility lines,

help preserve the natural functioning of these systems. If kept in their natural state, these corridors preserve the hydrologic connections between the river and its wetlands, between wetlands, and between adjacent uplands and wetlands. The corridors also provide spaces for wildlife to move between the natural areas and allow them to play their role in the functioning of the entire system.

Prioritizing areas and identifying protective tools

The last step in the process is to prioritize the natural areas based on their quality. This can be done by assessing the areas size, intactness (level of fragmentation), riparian corridor, upland/wetland connection, restorability, and known occurrence of rare plant communities or species. Some of this information, such as “restorability” and “rare plant communities or species” can be assessed on a case-by-case basis as land is being developed through the site plan review process.

As part of the Shiawassee & Huron Headwaters Resource Preservation Project — a partnership between Oakland County, six local communities, and other parties to protect the unique landscapes in western Oakland County — Michigan Natural Features Inventory (MNFI) developed a ranking system for evaluating natural areas. This enables the community to use objective information to prioritize areas for further inventorying or preservation efforts. Table 18 summarizes the ranking criteria developed by MNFI. For

more information on MNFI, visit their Web sites www.msue.msu.edu/mnfi or contact them via e-mail at mnfi@msue.msu.edu.

Utilizing regulatory approaches for habitat protection and restoration

Enacting new zoning regulations or revising existing regulations is often one of the most effective ways to protect and restore important habitat areas. Following are specific areas in the zoning ordinance that can affect habitat preservation in the community:

Use restrictions

Often, the most dramatic way to protect habitat is to control the permitted uses on habitat and surrounding areas. Through its listing of uses by right, conditional uses, and the criteria for approval of conditional uses, a zoning ordinance can prevent traffic-intensive or people-intensive activities from occurring close to prime habitat areas.

Density restrictions

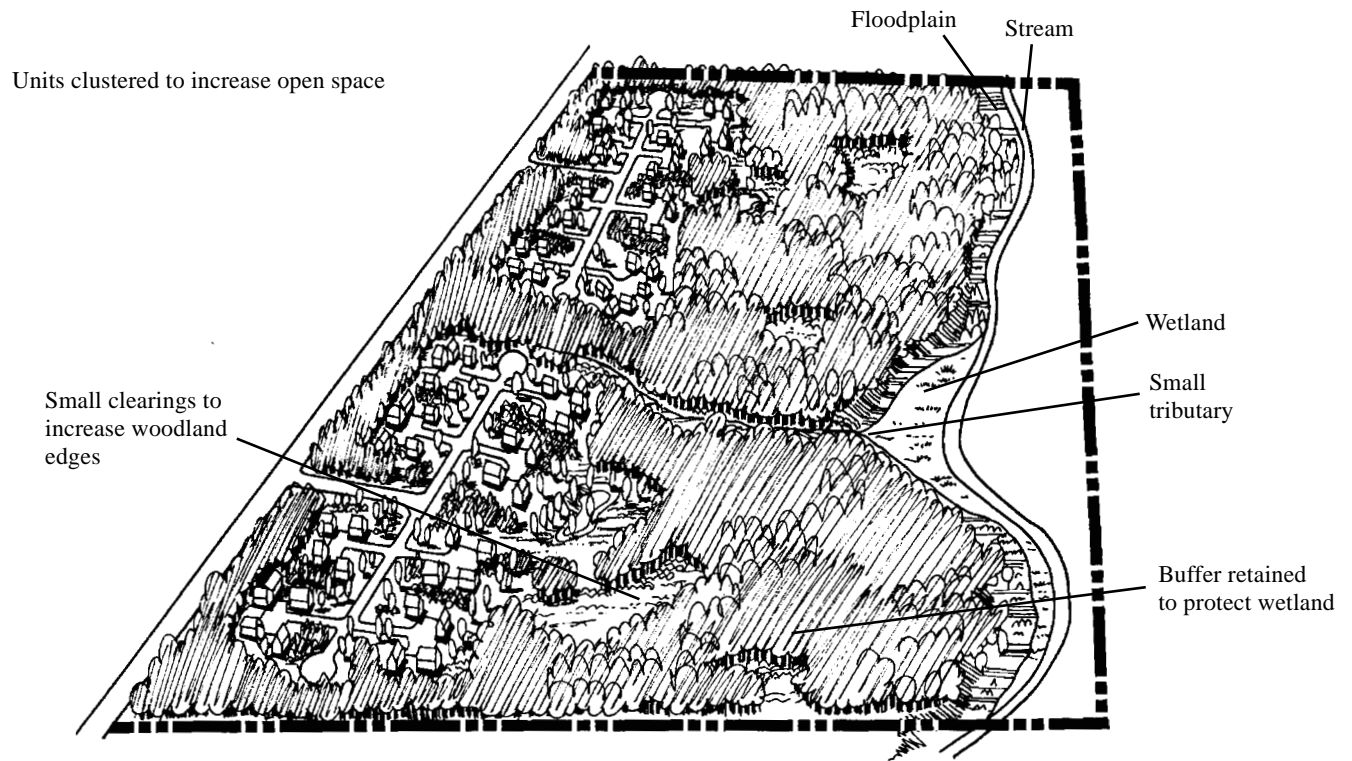
Another effective way to reduce impacts on habitat and the accompanying wildlife is to control the density of development in and around these areas. One alternative that allows development to occur while protecting habitat is to cluster houses in an area away from the sensitive habitat areas.

Table 18
Ranking Criteria of Natural Areas

Criterion	Detail	Points	Detail	Points	Detail	Points
Size	<40 acres	1	40-160 acres	2	>160 acres	3
Intactness	High level dispersed fragmentation	1	Low level dispersed fragmentation	2	Little or nondispersed fragmentation	3
Riparian corridor	No	0	Minor corridor	1	Major corridor	2
Upland/Wetland Connection	No	0	Yes	1		
Restorability	Low	0	Medium	1	High	2
Known rare community or species	No	0	1-2	1	3+	2

Source: Shiawassee & Huron Headwaters Resource Preservation Project, March 2000.

Figure 22
Utilizing Cluster Development for Habitat Protection



Source: SEMCOG.

Phasing development

In some cases, significant wildlife benefits can be gained by requiring new development to occur in phases, with the first development occurring far from the prime habitat areas. This would prevent a dramatic disruption of habitat and would allow animals unable to adjust to nearby development time to find alternative habitat areas.

Other zoning mechanisms

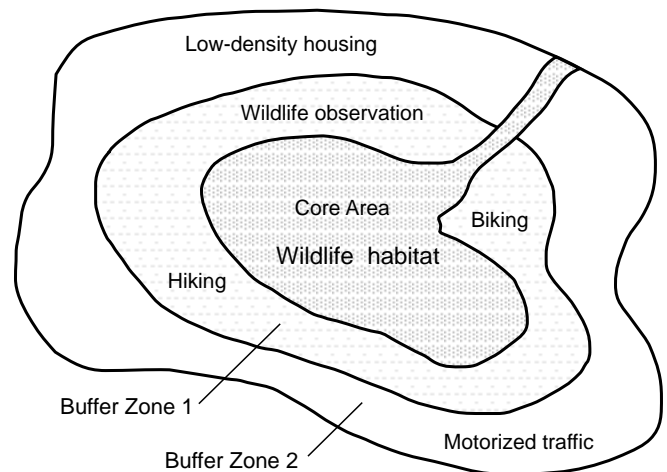
Tree, wetlands, floodplain, and corridor protection are all elements that should be incorporated in a habitat protection plan. To learn more about the zoning mechanisms available for each of these areas, see the corresponding chapters in this book.

Incorporating native landscaping

Using plant species that are native to the area and adapted to the particular climate and soil conditions has many benefits including reducing the need for water, pesticides, and fertilizers; providing habitat protection and restoration; and reducing the amount of storm water runoff.

Native plants are the trees, shrubs, flowers, grasses, and ferns that have evolved in a particular area, such

Figure 23
The Core/Buffer Concept



Buffers help protect core wildlife habitat areas. Consider two types of buffers. Buffer zone one is directly next to the core area is limited to wildlife observation, biking, and hiking. Buffer zone two could allow motorized traffic, but primarily include low-density housing.

Source: American Planning Association Habitat Protection Planning, 1994.

as Southeast Michigan, over thousands of years, and existed in the area before European settlement. Over this long period of time, these plants have adapted to the particular growing conditions present here, including temperature, rainfall, winds, soils, slopes, and fauna. A native plant community is a combination of different plant species that have evolved together, and share the same site conditions, including soils, climate and hydrology. An example of a plant community native to Southeast Michigan is an Oak-Hickory woodland, which occurs in upland areas on dry, well-drained soils, and where drought is a major habitat characteristic.

When selecting native plants for landscaping it is important to ensure that a variety of different species are used, and that the species planted are disease and pest resistant. Diversity in planting helps protect against large-scale decimation of landscaped areas, should a destructive disease or pest invade the area. When a community relies heavily on single plant species in its landscaping, the risk of losing plants to disease or pests is greater. One example of this is the large-scale replacement of elm trees with ash trees in Southeast Michigan. Since the 1930s, almost all of the elm trees in the northern United States have been killed by Dutch elm disease. Many of the elm trees in Southeast Michigan were replaced with ash trees, which are now being destroyed by the Asian emerald ash borer. The cost to local governments to remove and replace the ash trees on public land will likely run into the millions of dollars, at least some of which could have been avoided with more diversified landscaping techniques.

Local communities can modify ordinances and municipal procedures to accommodate native landscaping:

- Provide leadership by increasing the use of native landscaping on public properties.
- Provide information to residents and businesses on the benefits of habitat preservation and native landscaping.
- Develop a multi-year plan for retrofitting natural landscaping on existing sites.
- Develop policies and specifications for new site planning to encourage the use of natural landscaping.
- Include prohibited plant species, such as exotic invasive species, in the landscaping ordinance requirements.
- Review and amend or replace the local weed ordinance so that it encourages natural landscaping.
- Ensure that your storm water management program utilizes native landscaping in the design, to perform their vital functions of water quality protection, flood and storm water storage, runoff attenuation, shoreline and streambank protection, floral diversity and

wildlife habitat, fishery and herpetile habitat, and community character and recreation.

- Retain the unique character and desirability of the community as a place to live, work, and play, maintaining and promoting the abundance of recreational opportunities. Preserve natural features, to the maximum extent possible, to protect residents' health, safety and welfare through protection of vital air, land and water resource quality, buffering air and noise pollution, moderate local climate, and preserve aesthetic value and the community's beauty.
- Utilize native plants to enhance and restore existing natural resources that have suffered degradation.

CASE EXAMPLE

Shiawassee & Huron Headwaters Resource Preservation Project

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In March 2000, Oakland County Planning and Economic Development Services, along with White Lake Township, Milford Township, Village of Milford, Highland Township, Rose Township, and Springfield Township completed initial work on the Shiawassee & Huron Headwaters Resource Preservation Project. This partnership was formed to protect the unique landscapes in western Oakland County. There were three goals:

- to comprehensively identify and prioritize natural resources and ecosystems,
- to identify and develop implementation tools and techniques that conserve natural resources and create open space linkages while allowing for economically viable development, and
- to provide public information and education regarding the natural resource ecosystem.

In fulfilling goal two, the project:

- investigated current land use policies, master plans, and zoning ordinances,
- identified methods of acquiring and conserving natural resources, including land conservancies, easements, and homeowners associations,

- identified new and existing successful tools and techniques,
- developed model ordinance language, and
- explored the advantages of resource preservation for the benefit of property owners, developers, and the community.

As of this writing, many of the six communities are striving to incorporate the findings and recommendations of this project into their local plans and ordinances.



Shiawassee and Huron Headwaters Resource Preservation Project in northwest Oakland County.

Photo courtesy of Oakland County Planning and Economic Development Services.

Additional Resources

American Planning Association. *Habitat Protection Planning: Where the Wild Things Are*. Chicago, IL: American Planning Association, 1994.

Ewing, Reid. *Best Development Practices: Doing the Right Thing and Making Money at the Same Time*. Chicago, IL: American Planning Association, 1996.

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Marsh, William M. *Landscape Planning: Environmental Applications*. New York: John Wiley & Sons, Inc. 1991.

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SEMCOG, the Southeast Michigan Council of Governments. *Headwaters: The Lifeline of a River*. Video. Detroit, MI: SEMCOG, the Southeast Michigan Council of Governments, 1995.

U.S. Environmental Protection Agency (native landscaping). www.epa.gov/greenacres

Wild Ones (native landscaping). www.for-wild.org