

# Riparian Corridors: An Opportunity to Connect to Nature



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*A river seems a magic thing. A magic, moving, living part of the very earth itself.*

Laura Gilpin

# Riparian Corridors: An Opportunity to Connect to Nature

## Riparian Corridors: A Missed Community Asset and Opportunity

Not every community is fortunate enough to have a significant river or stream flowing through its landscape. Too often in the past, riparian resources have fallen into a state of decay because they were not managed as a community asset. River corridors were the primary economic asset in early town development, providing water and power for agricultural and industrial activities. Impacts caused by these activities, or the subsequent neglect that often followed the end of river-based economic activities, often make it challenging to preserve riparian resources or utilize them as community assets today.

In the past, river corridors have been:

- Used as waste places or dumping grounds
- Used for less desirable, polluting industrial land uses (out of sight, out of mind)
- Cleared of valuable riparian forests
- Drained and filled
- Built up inappropriately in the floodplain or too close to eroding banks

- Built with road crossings that erode and contribute sediment to the river
- Applied with “hard” methods for stabilizing stream banks that are unsightly and detrimental to habitat
- Delivered untreated sewage
- Had their channels straightened or placed in concrete pipes
- Had their hydrologic regimes altered through impoundment, groundwater withdrawal, and increased stormwater runoff from impervious surfaces

- Missed opportunities to enhance recreation
- Had community development oriented away from the river instead of taking advantage of the river

In addition, neglect and natural processes have resulted in some of the following:

- Invasion of riparian corridors by invasive, exotic species
- Decay of archaeological and historic resources
- Destruction of scenic resources



The banks of the Paint Creek in the City of Rochester Municipal Park are stabilized by gabion baskets.



This home is threatened by bank erosion along the Clinton River in Rochester Hills.

## What Makes Riparian Corridors So Special?

Riparian areas provide critical wildlife habitat. Because of their location in the transition zone between aquatic and terrestrial ecosystems, riparian areas provide access to food, water, and shelter creating diverse habitat types. This diversity in turn supports a great number of unique species found nowhere else in the landscape.

Because riparian areas form corridors in the landscape, they serve as pathways for species movement. Even when the surrounding landscape does not provide adequate habitat for many species, migratory birds, mammals, and fish use rivers and associated riparian habitat to travel upstream and downstream to patches of better habitat. Thus, riparian corridors provide a key component of the green infrastructure of a landscape, maintaining ecological integrity by providing connections between patches of higher quality habitat in fragmented landscapes.



## River Corridors Provide Valuable Benefits to People

Intact river corridors and associated wetlands provide ecological functions that are important to human health and safety and save us money. These benefits include water filtration, storage of stormwater, flood control, protection of water quality, and protection of shorelines and stream banks. When any of these functions are compromised, costly engineering solutions are often required.

In addition to these functions, intact riparian corridors provide exceptional resources for passive and active outdoor recreation that can benefit local economies. River corridors are ideal for hiking and biking as well as for quieter activities such as nature study and birding. Intact fisheries can attract many anglers to a river, providing a significant boon to the local economy.



## Rivers Connect Us With Our History and Culture

Like plants and animals, humans have historically utilized river corridors for food, water, and transportation. Discoveries of Native American artifacts are often concentrated along riparian corridors, providing evidence that early peoples used these areas as hunting grounds and for settlement sites. River banks were the sites of many early European settlements in southeast Michigan, including Rochester, Holly, Milford, Howell, Plymouth, Mt. Clemens, and the City of Detroit. These villages grew up around rivers as agricultural and milling communities. Later, industry took advantage of the resources that the rivers had to offer.

Because of this rich past, historic structures and stories are clustered around river corridors, providing fertile ground for connecting with our history and culture and rich opportunities for historic preservation and interpretation. Local mill sites, native village sites, sites of first landing, as well as structures such as historic bridges, farmsteads, and dams can help to piece together vivid details of life in past centuries.



Urban: The Rouge River is highly urbanized near its mouth and has been lined with concrete to prevent flooding in downstream communities.



Suburban: The Clinton River is lined with suburban housing in Rochester Hills.



Natural: Stretches of the upper Huron River are natural and pristine, flowing through wetlands and natural areas.

## Rivers Cross Boundaries and Tie Communities Together

Rivers know no political boundaries. They respect only natural boundaries such as the fluctuating lines between stream and wetland, or topographic boundaries that confine rivers to their valleys. They also respect, for a time, structural boundaries created and enforced by humans such as dams, levees, and hardscape shorelines, although time and the power of nature often erode these boundaries.

When one floats down a river by kayak or canoe, it is often difficult to get a bearing on one's location because the usual cues are missing; there are no signs telling us when we have left one country, state, county, or municipality and entered another. The resources provided by a river and the impacts of human activity upstream are carried downstream through the river system, regardless of the political jurisdiction through which the river flows. Because of this, rivers present a great opportunity for tying communities together, as they are oblivious to the political boundaries that separate communities.

## No Two Are Alike: Urban, Suburban, and Natural Rivers

Every river is a unique system, influenced by its geological history and setting, the historical land uses and impacts in the watershed and along the corridor, and the current state of the land, water, and vegetation that surround it today. The character of rivers in populated areas often varies from very urbanized rivers that have been heavily impacted by humans, to suburban rivers that retain many high quality features but are being rapidly affected by a changing landscape, to natural rivers which are relatively unaffected by human impacts and retain pristine natural features. Each river is unique and presents its own set of challenges and opportunities.

Following is a description of the attributes, threats, and opportunities of three distinct river characters: urban, suburban, and natural. It is important to understand that these three characters are really a continuum and blend into one another. Just as a river's natural and physical character gradually changes as it flows from upland headwaters to lowland mouth, so a single river in different parts of the same watershed may be natural, suburban, urban, or somewhere in between, depending on the surrounding and upstream landscape.

River Type	Descriptive Characteristics	Challenges	Opportunities
<b>Urban Rivers</b>	Rivers flowing through communities with densely populated residential areas or commercial or industrial areas	<ul style="list-style-type: none"> <li>Surrounding land uses are likely to be sources of impacts and pollution, such as industrial or commercial landscapes</li> <li>Physical, biological, and water quality conditions are often highly degraded</li> <li>Riparian vegetation is often removed or dominated by exotic invasive species</li> <li>High amounts of impervious surface in the watershed contribute to high volumes of stormwater runoff, rendering most channels unable to support a diversity of aquatic life</li> <li>Hardscape structures or culverts have often removed the river from view or made it very unsightly</li> <li>Years of neglect and damage have resulted in a negative perception in residents' minds about the river</li> </ul>	<ul style="list-style-type: none"> <li>Rich historic resources provide ample opportunity for storytelling and interpretation</li> <li>Redevelopment of blighted industrial or commercial areas provides opportunity to tie the river into revitalization projects</li> <li>Opportunities to “daylight” buried rivers can add vitality to urban areas</li> <li>Communication programs can improve public perception regarding positive aspects of the local river system</li> <li>Use of innovative stormwater management techniques in watershed redevelopment projects may improve stormwater volume impacts</li> </ul>
<b>Suburban Rivers</b>	Rivers flowing through developing communities usually dominated by medium to low-density residential land use with some commercial or light industrial and remnant agricultural and natural landscapes	<ul style="list-style-type: none"> <li>Changing land uses are likely to become more detrimental to the river as development progresses</li> <li>Physical, biological, and water quality conditions are often somewhat degraded</li> <li>Riparian vegetation is often patchy as residents mow to the river; vegetated areas are threatened by exotic invasive species</li> <li>Increasing amounts of impervious surface in the watershed contribute to high volumes of stormwater runoff, causing instability and negative impacts in river channels</li> </ul>	<ul style="list-style-type: none"> <li>Physical, biological, and water quality conditions are often relatively intact and can be prevented from degrading further if correct management practices are incorporated as development occurs</li> <li>Opportunities for restoration and stewardship of the riparian corridor in residential areas and along parkland can improve the river system</li> <li>Use of innovative stormwater management techniques in watershed development projects may prevent further deterioration due to increased stormwater volumes</li> <li>Conservation along the riparian corridor may still be possible in some areas</li> </ul>
<b>Natural Rivers</b>	Rivers flowing through rural, undeveloped areas dominated by intact natural landscapes, with some agricultural areas and low-density residential	<ul style="list-style-type: none"> <li>Agricultural land uses may contribute to impacts such as nutrient and bacterial loading and channel straightening for drainage</li> <li>Riparian vegetation is often intact but may be under threat by exotic invasive species</li> </ul>	<ul style="list-style-type: none"> <li>Significant intact natural areas within the riparian corridor provide opportunity for proactive preservation and development of recreational opportunities</li> <li>Rural communities have a great opportunity to incorporate strong planning goals and policies for protection of the riparian corridor as a community asset</li> </ul>

## Summary

This manual provides information and tools designed to assist communities blessed with river corridors in taking a fresh look at their riparian resources. Riparian corridors are a community asset that is often neglected or underutilized. They provide critical ecological habitat, provide valuable ecological functions that provide economic benefits, and connect us with our history and culture. Rivers cross political and ecological boundaries and tie communities together. No two rivers are alike; they reflect the nature of the landscape they drain, whether it is natural, suburban, or urban.

