Trees in the Riparian Zone

from the TREE CITY USA® BULLETIN

Whether it is a creek small enough to jump across or the shore of a major river, America's waterways and the land that surrounds them are valuable, finite resources. Action by individuals and communities is needed now to protect or restore the trees that complete the wholeness of riparian habitat.

Wildlife Habitat

Wooded riparian zones are a boon to some species of wildlife as they struggle to survive in an urbanizing land. In New Mexico, for example, the vast majority of rare and endangered species are found in or near riparian ecosystems. In all areas of the country, riparian forests serve as corridors between remaining blocks of fragmented habitat. These corridors are essential lifelines if viable populations of wild birds and mammals are to remain part of our environment.

Recreation

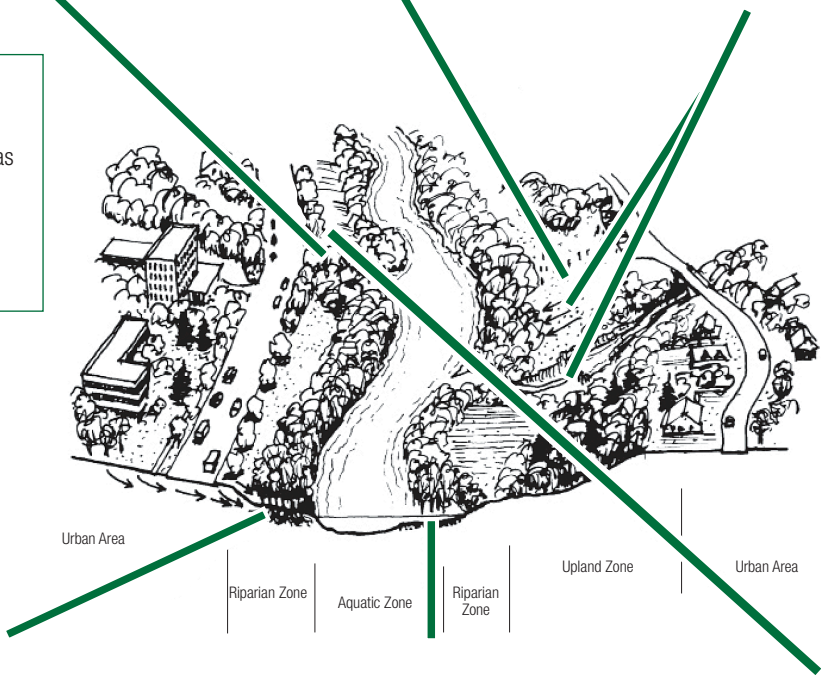
In a study near Indianapolis, "the presence of trees and shade, natural areas, wildlife and birds" were attributes selected from a list of 44 possibilities as being most important to riverside park users. Whether it is a meandering creek through a county park in Kansas or San Antonio's highly developed River Walk (Paseo del Rio), riparian parks are popular. With careful planning, they can serve the needs of wildlife and watershed management while at the same time providing myriad recreational opportunities.

Stormwater Management

In some cases, developers can design broad, gentle slopes of lawn or parking areas that direct water toward an adjoining riparian woodland. This spreads runoff and reduces the cost for expensive drain pipe systems. Where stormwater detention ponds are required, instead of cutting trees and scouring out ugly basins to occasionally catch storm runoff, steel sheet piles can be driven perpendicular to a drainage to create a temporary dam during storms. These techniques aside, riparian zones provide natural floodwater storage and an earthen sponge to retain massive quantities of water for slow, steady release.

ALSO IN THIS ISSUE:

- Techniques for better management of riparian areas
- Width recommendations for wooded buffers
- Suggested tree species for flood zones
- Bioengineering for streambank stabilization
- And more



Pollution Prevention — Filters, Sinks, and Transformers

Riparian zones with trees and other vegetation filter excessive chemicals that wash from lawns, gardens, and fields. In some cases, such as phosphates that cling to soil particles and move downslope in runoff water, the soft soil and leaf litter of the riparian zone act as a trap for the particles and associated chemicals. The phosphates stay on-site, absorbed into the soil from which they are taken up by tree roots. Nitrates move either on the surface or in groundwater. These chemicals, too, can be intercepted and used by tree roots rather than being allowed to enter the waterway as pollution. Even pesticides are transformed into non-toxic compounds in a riparian woodland.

Slower Flood Waters, Less Sediment

When trees, shrubs and other plants cover a stream's floodplain, they slow the rush of high water. Since fast-moving water can carry a higher amount of soil particles than slower water, sediments are dropped by the flood waters in the riparian zone rather than ending up downstream in reservoirs, channels, and harbors. Slowing the water also helps to reduce streambank erosion.

Water Temperature Control

Shading creeks and rivers helps keep the water cool. Cool water carries more oxygen and provides a more livable environment for many species of wildlife, including game fish such as trout. The warmer water of denuded creeks also slightly increases the release rate of certain pollutants from sediment particles.

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100 Arbor Avenue • Nebraska City, NE 68410