



# What do healthy Riparian Areas Do?

When we look at a piece of riparian landscape, we focus on what it does for us. We think about opportunities to fish, graze livestock, or a place to find shelter or shade. As we begin to understand how key riparian areas are, we begin to add water quality, water supply, fish and wildlife habitat, recreation, property value and many more attributes to the list of riparian products, services or values.

A long list of benefits is made possible when eight fundamental ecological functions are performed in healthy riparian areas. These functions are the foundation upon which everything else is built. When all are present, these functions mesh together, like a finely crafted Swiss watch. Riparian health evaluation helps us focus on what produces the benefits - a healthy, functioning riparian landscape. Riparian health represents how well all of these basic functions are being performed.



*A watch keeps the time for us - that's the service. It does this through the correct meshing of many interconnected parts. We depend on riparian areas to do many things for us. Their ability to do these things also depends on the correct meshing of a complex series of interconnected functions.*



# What do Riparian Areas Do?

## *Key Ecological Functions*



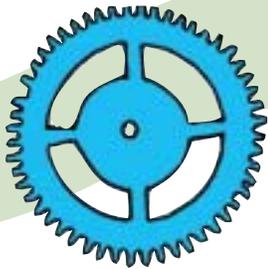
### 1. Trap & Store Sediment

- ◆ Sediment adds to and builds soil in riparian areas.
- ◆ Sediment aids in the ability of soils to hold and store moisture.
- ◆ Sediment can carry contaminants and nutrients - trapping it improves water quality.
- ◆ Excess sediment can harm aquatic animals like fish and insects.



### 2. Build & Maintain Banks & Shorelines

- ◆ Erosion is balanced with bank building - the effects of erosion are reduced by adding bank and shore elsewhere.
- ◆ Increase stability, resilience and recovery.
- ◆ Maintain or restore profile of channel - extends width of riparian area through higher water tables.

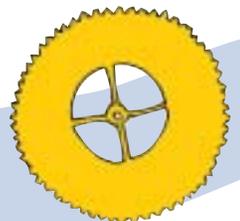


### 3. Store Water & Energy

- ◆ Watershed safety valve - storage of high water on the floodplain during floods.
- ◆ Reduce flood damage by slowing water and reducing erosion.
- ◆ Slow flood water allowing absorption and storage in underground aquifer.



### 4. Recharge Aquifers

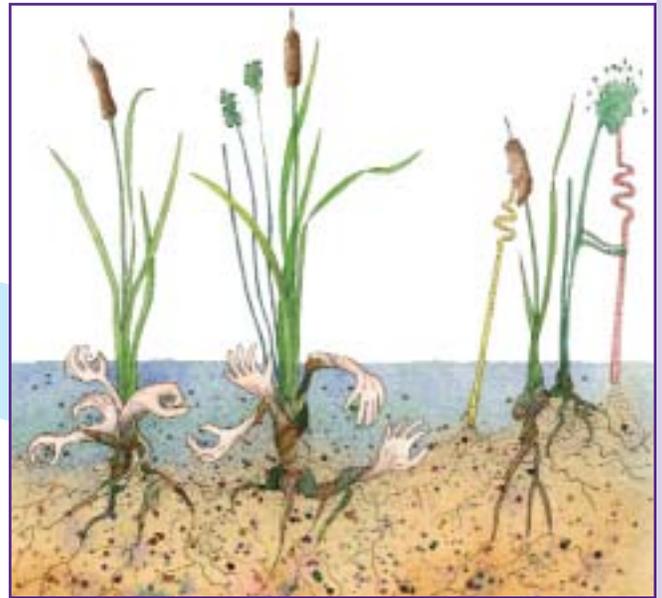


- ◆ Store, hold and slowly release water.
- ◆ Maintain surface flows in rivers and streams and levels in lakes and wetlands through storage and slow release.
- ◆ Maintain high water table and extend width of productive riparian area.

## 5. Filter & Buffer Water



- ◆ Reduce amount of contaminants, nutrients and pathogens reaching the water.
- ◆ Uptake and absorption of nutrients by riparian plants.
- ◆ Trap sediment, reduce water quality issues and enhance amount of vegetation to perform filtering and buffering function.



## 6. Reduce & Dissipate Energy



- ◆ Reduce water velocity, which slows erosion and sediment transport.
- ◆ Resist erosion and slow channel and shoreline movement.
- ◆ Aid in sediment capture.

## 7. Maintain Biodiversity

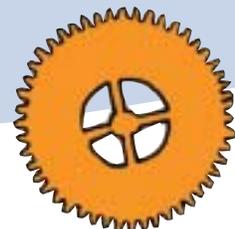


- ◆ Create and maintain habitats for fish, wildlife, invertebrates and plants.
- ◆ Connect other habitats to allow corridors for movement and dispersal.
- ◆ Maintain a high number of individuals and species.



## 8. Create Primary Productivity

- ◆ Vegetation diversity and age-class structure creates links to other riparian functions.
- ◆ High shelter and forage values.
- ◆ Enhance soil development .
- ◆ Capture and recycle nutrients.



*These are the basic functions; read on to see how they translate into products, services and benefits.*

# Riparian Products, Services & Benefits



## Functions

1. Trap and store sediment
2. Build banks and shores
3. Store water and energy
4. Recharge aquifers
5. Filter and buffer water
6. Reduce energy
7. Maintain biodiversity
8. Create primary productivity

products  
services

### *Clean water*

- ◆ lower risk of human illness
- ◆ reduced water treatment costs
- ◆ fish populations maintained
- ◆ healthier livestock
- ◆ greater livestock weight gains

### *Water supply*

- ◆ domestic, agricultural, industrial needs met
- ◆ reduce risk and cost of supply
- ◆ competitive advantage for business
- ◆ maintain fish and wildlife populations
- ◆ waste assimilation
- ◆ drought management and amelioration
- ◆ tourism, recreation



*When all of these functions mesh together, in healthy riparian zones, look at what comes out of the tap. . .*

# Products benefits

## *Fish & Wildlife*

- ◆ hunting and fishing
- ◆ recreational opportunity
- ◆ tourism, economic opportunity
- ◆ fur production
- ◆ subsistence use
- ◆ commercial fisheries

## *Plants*

- ◆ sustain livestock, fish and wildlife
- ◆ economic opportunities
- ◆ shade, shelter
- ◆ reduce risk to livestock
- ◆ moderate stream temperatures
- ◆ large woody debris supply
- ◆ maintains channel processes
- ◆ habitat connectivity, migration routes
- ◆ timber, fuel wood production
- ◆ trap carbon

## *Buffering Capacity*

- ◆ decreased incidence, risk and costs of floods
- ◆ decreased incidence, risk and costs of erosion.
- ◆ local climate control
- ◆ resilience to allow more rapid recovery from disturbance
- ◆ more stable production of other goods and services

## *Aesthetics*

- ◆ tourism
- ◆ recreation
- ◆ competitive advantage for individuals to relocate
- ◆ higher property values
- ◆ enjoyment and pleasure in healthy ecosystem

## *Soil Creation*

- ◆ higher agricultural production
- ◆ nutrient recycling
- ◆ higher property values
- ◆ greater water storage

**Wow!**  
all of  
that in a  
small  
package!