


## Protecting Our Living Streamsid

Catherine Skalda  
CSBI Program Coordinator  
Delaware County Soil & Water Conservation District



**Catskill Streams  
Buffer Initiative**  
*At the Root of Streamside Protection*

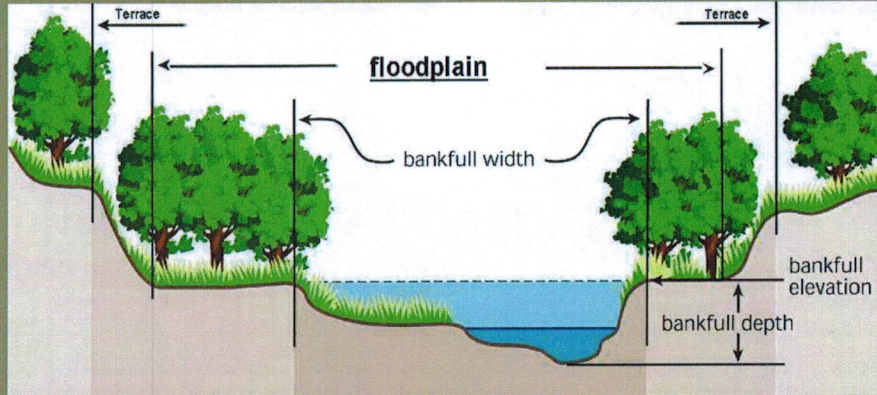
## What is a Riparian Buffer?



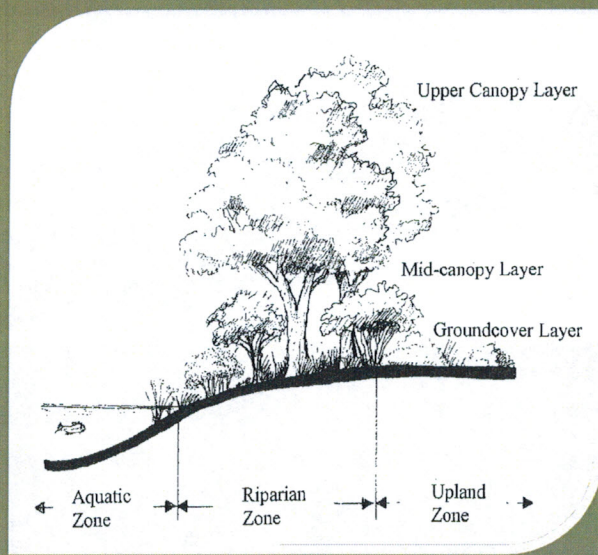
**Riparian Buffers** are the vegetated land areas adjacent to streams that are strongly influenced by the presence of water.



## Where is a Riparian Zone?

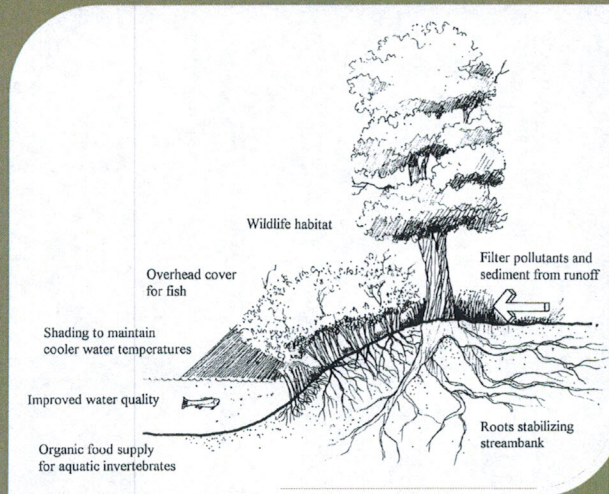


## Riparian Canopy





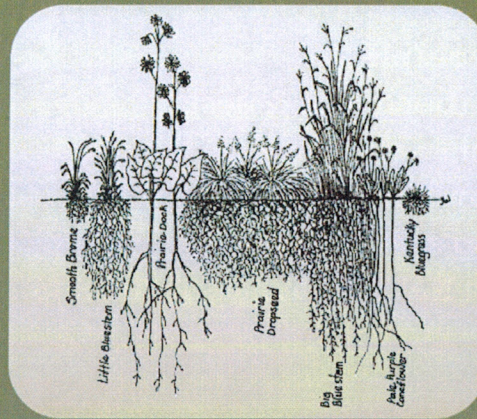
## Riparian Buffer Functions



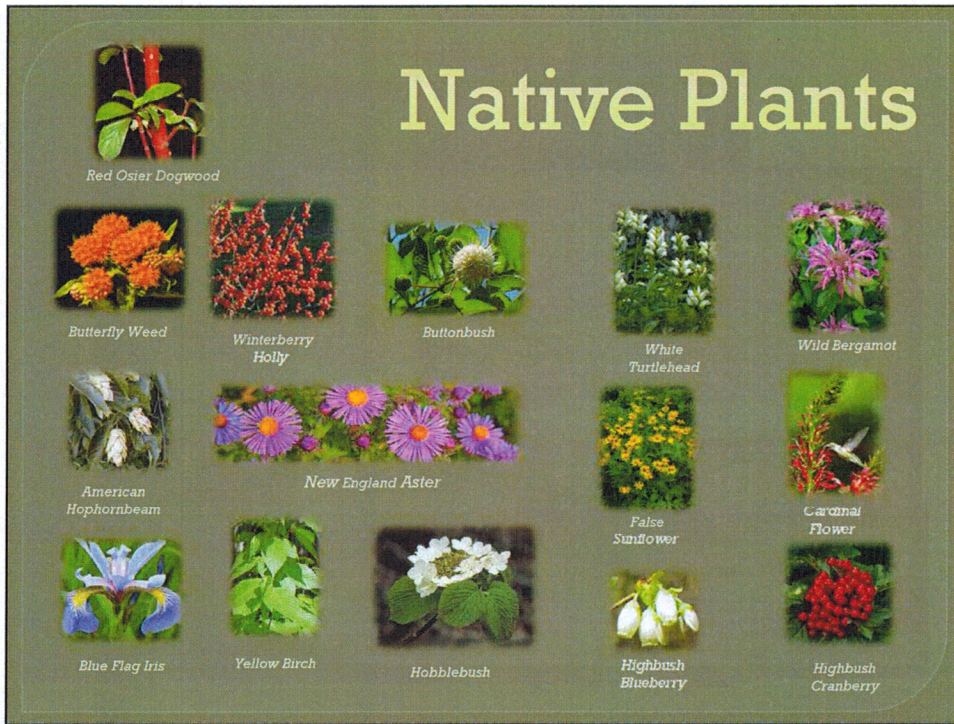
- Filter overland runoff
- Protect water quality
- Stabilize streambanks
- Protect properties from flood and ice flow damage
- Provide for recreation
- Shade aquatic habitats and reducing water temperatures
- Provide habitat and food supply for aquatic and terrestrial wildlife

## Riparian Vegetation

- Riparian zones, or buffers, along the banks naturally consist of deep-rooting, flood-tolerant, disturbance adapted plants and trees that provide multiple benefits:







# Native Plant Adaptations

- Adapted to local conditions
  - Temperatures
  - Rainfall
  - Soils: type/pH
  - Insects (beneficial & pests)
  - Sunlight
  - Water availability
  - Growing season length
  - Support NATIVE fauna - pollinators







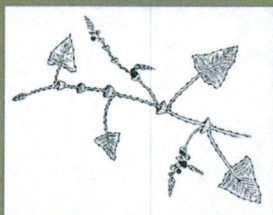


## Common IS Characteristics

- Tolerate wide variety of conditions (opportunistic)
  - Full sun, full shade, low pH, high pH, wet, dry
- Fast growth rate – can displace native plants
- Dispersed easily by humans and animals and other routes
- Propagates vegetatively
- Profuse seed
- Persistent seed bank
- Does not rely on special relationships (native insects)
- Produce chemicals that suppress growth of other plants (allelopathy)
- Few or no natural enemies

## IS Problems

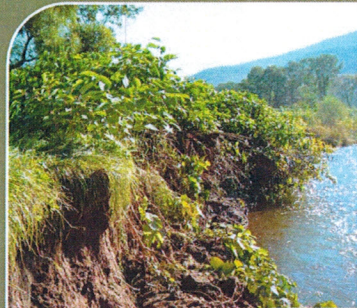
- **Water Quality**
  - Small/shallow root structure
  - More likely to erode banks
- **Biodiversity**
  - Spread quickly
  - Create monocultures



- **Habitat quality**
  - Prevent native plant establishment
  - Change or loss of food source

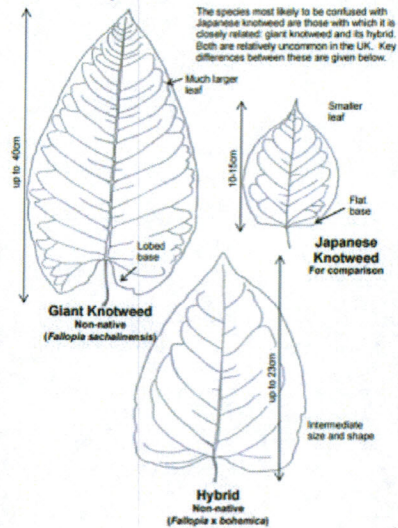


# Japanese Knotweed



## Similar Species

The species most likely to be confused with Japanese knotweed are those with which it is closely related: giant knotweed and its hybrid. Both are relatively uncommon in the UK. Key differences between these are given below.



## Knotweed Types:

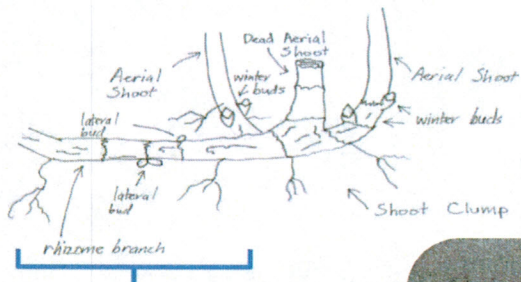
*Reynoutria japonica*: Japanese Knotweed  
*Fallopia japonica*,  
*Polygonum cuspidatum*

*Reynoutria sachalinensis*: Giant Knotweed  
*Fallopia sachalinensis*,  
*Polygonum sachalinensis*

*Reynoutria x bohemica*: Bohemian Knotweed  
*Fallopia x bohemica*,  
*Polygonum x bohemica*



## Knotweed Rhizome Tough to Kill!



**Key Problem:** older parts of rhizome and dormant buds are weak sinks. (Bashtanova et al. 2009.)



## Treatment Methods





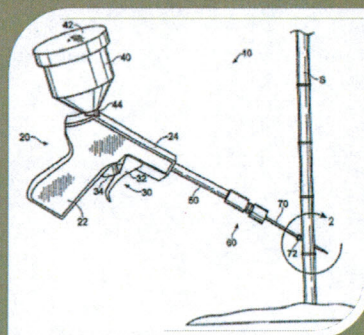
## Stem Injection

### Advantages:

- Precision
- No stem disposal
- Avg control: 91 – 100%  
(Prather & Miller 2009)
- Reduced non-targeted injury

### Disadvantages

- Time-consuming
- Identifying treated stems
- Difficulty in treating small stems



## Herbicides

### Glyphosate (RoundUp, Rodeo, Accord):

- Aquatic label
- Injection
- Foliar
- Non-selective
- Not mobile in soil

### Imazapyr (Arsenal):

- Aquatic label
- Foliar application only
- Non-selective
- Soil mobility pH dependent





# Japanese Knotweed Control

BEFORE: JULY 2011 AFTER: AUGUST 2014



Epicormic Growth of Knotweed

Treated Fall 2013



## Multiflora Rose



## Wild Parsnip



### Look-A-likes:

- Golden Alexander (*Zizia aptera*),
- Queen Anne's lace (*Daucus carota*),
- Cow parsnip (*Heracleum lanatum*),
- Angelica (*Angelica atropurpurea*),
- Poison hemlock (*Conium maculatum*)
- Giant Hogweed (*Heracleum mantegazzianum*)  
grows 12 feet tall with 2 foot wide inflorescences





# Knotweed! Strong Stuff!



## Questions?



Catskill Streams  
Buffer Initiative  
At the Heart of the Catskills Watershed

