

The Case for Preserving Natural Stream Buffers and Floodplains

An Assessment by the Loudoun Wildlife Conservancy

Natural Stream and Floodplain Interaction

Streams channels are naturally very dynamic, changing shape quickly and moving sideways across the land as water and sediment flows shape them. Human impacts on the land magnify natural changes. When rain falls faster than it can be absorbed into the ground, streams overflow into floodplains-- the land next to streams that repeatedly gets flooded. Floodplains are also subject to change based on the movement of the stream channel and human impacts on the land upstream. Trees and shrubs along a stream help to reduce the rate of change by slowing the velocity of floodwaters and causing sediments to drop out of suspension. The less smaller streams are disturbed, the better the overall stream system functions.

Economic Benefits of Protecting Floodplains and Forested Stream Buffers

Reduces downstream flooding & property damage

- Floodplains provide flood control at minimal cost by storing stormwater, helping to protect downstream landowners from flood damage
- Forested floodplains slow down and lower stormwater levels, providing a place for sediment and debris without causing damage to property
- Undisturbed floodplains provide space for natural stream channel shifts without property damage and costly restoration projects
- Protection provided by floodplains decrease property insurance costs and increase property values

Provides water quality protection

- Forested stream buffers trap nutrient-rich waters and pollutants preventing these substances from reaching streams & drinking water intakes to reduce filtering costs and health effects
- Streams with 100 foot buffers provide natural forest cover and protects up to 5% of watershed from impervious surfaces
- Forested buffers provide tree roots that reduce streambank erosion
- Forested buffers protect steep slopes, reducing severe erosion
- Floodplains protect valuable wetlands that act as water filters

Provides wildlife habitat and improved stream-based recreation

- Forested floodplains provide water-dominated wildlife habitat, with food and shelter for a wide variety of wildlife
- Forested stream buffers provide an attractive alternative habitat for nuisance wildlife found in backyards and corridors for wildlife movement.
- Forested buffers provide healthy stream habitats, keeping streams cooler for aquatic insects and fish that act as natural mosquito control
- Floodplains and forested buffers provide habitat for amphibians

Provides social benefits to the entire community

- Floodplains and forested buffers provide community open-space for passive recreation and offers foundation for future greenways
- Provides wildlife watching opportunities for young and old

What's Wrong With Ball Fields and Golf Courses in Floodplains?

Ball fields and golf courses destroy forested buffers; require filling of floodplains and wetlands; require structures to prevent lateral stream channel movement; require fences to keep off sediments and debris, and increase impervious surfaces that contribute to downstream flooding and further erosion. Locating ball fields and golf courses outside floodplains reduces cost of field maintenance and increases safe field access requiring fewer fields for overall cost savings.