

After the Flood - Managing Weeds

USDA Natural Resources Conservation Service - North Dakota

Floods are devastating to homes, families, and infrastructure but often benefit the riparian woodland. Flood waters deposit nutrients and seeds. Bare mud flats remaining after the water recedes will quickly revegetate; however, not every plant that establishes is desirable. Identification and control of key weeds that may colonize the area are important to successful revegetation.



*Canada thistle

- perennial plant
- colonizes quickly after floods
- creates vast, dense stands
- spiny leaves
- not shade tolerant
- managed through mowing, herbicides, and bio-control
- protects young trees from deer

Inundation for three months killed much of the smooth brome, Russian olive, Canada thistle, leafy spurge, canarygrass, and Eastern redcedar infestation in riparian woodlands. These aggressive species prevented native riparian plants from establishing and growing on much of the bottomland. Without proper management, the above listed species will quickly reinfest the area, from roots and rhizomes, from seed that has floated or blown in, or from seed transported and deposited by birds and animals. There is also a possibility that saltcedar, a state-listed noxious weed, could establish in areas where it has never been seen before. Purple loosestrife is another noxious weed that may have been spread by flood waters. Regular



Russian olive

- medium tree
- large seed
- sprouts through sods
- thorns
- legume
- somewhat shade tolerant
- spread by birds
- overtakes riparian areas
- controlled by pulling when small, sawing and herbicides when larger

inspection is critical to prevent these two weeds from gaining a new foothold.

Riparian areas are rich in nutrients, water, and seeds. Following a flood, most areas will grow back quickly, though the deep sand drifts may take longer. As waters recede, some areas will grow dense stands of trees, while others may germinate grasses and weeds. Management



Smooth brome grass

- sod-forming grass spreads by rhizomes and seeds
- hinders tree regeneration
- severely stresses tree vigor
- large seed banks in the soil
- suppressed by tillage and herbicides

efforts must be initiated at appropriate times to match the site conditions. In this series, 5 addresses management of natural woody regeneration. Control of annual weeds is not as critical as control of perennial weeds. Annual weeds, such as foxtail and smartweed, will be killed by frost each fall.

Weed control methods consist of mowing, pulling, tilling, grazing, or herbicides. Effectiveness of each method is dependent upon time of year, physical access to the weeds, and species of weed. The presence of weeds will diminish as the stand becomes established with a young forest or with desirable grasses and forbs.



Eastern redcedar

- spread by birds
- shade tolerant
- drought tolerant
- able to grow in dense sod
- overtakes riparian areas
- controlled with mowing, fire, and cutting

Specific Weed Control Options

Regular inspection throughout the growing season is necessary to spot infestations while they are small and treatable. Quick establishment of dense tree cover through natural regeneration or quick establishment of dense stands of grass through timely seeding will decrease likelihood of a dense weed crop. Refer to *After the Flood – Managing Natural Regeneration* and *After the Flood – Seeding Grasses*.



*Leafy spurge

- spreads by rhizomes and seeds
- deep-rooted
- large seed banks in the soil
- suppressed by mowing, herbicides, goats, and sheep
- hard to control without damaging trees

photo credit: Chris Evans, River to River CWMA, Bugwood.org

Grazing

For guidance on grazing, contact your local NRCS office, Soil Conservation District, or Extension Agent. Many weedy forbs are quite nutritious and if grazed at the correct time are beneficial to the animal. Timing and duration are critical to avoid damage to trees and desirable plants by the grazing animal. Additional riparian grazing references are listed in the final publication of this series *After the Flood - References*.



*Saltcedar

- aggressive deep-rooted plant
- survives long floods
- plant parts float downstream and become established
- long-term herbicide program needed for control

photo credit: Steve Dewey, Utah State University, Bugwood.org

*Species identified with an asterisk * are state listed noxious weeds. It is the responsibility of the landowner to control noxious weeds.

Vegetation

For guidance on using vegetation to control weeds in the remaining mature forest, contact your local NRCS office, Extension Agent, or refer to the series publication, *After the Flood - Seeding Grasses*.

Herbicide

For herbicide recommendations, contact your local Extension Agent or county weed control officer, or refer to *Weed Control in Trees* <http://www.ag.ndsu.edu/pubs/plantsci/weeds/w1097w.htm>. This document gives herbicide recommendations for controlling specific weeds with respect to specific tree species. It is important to remember that herbicides which control weeds in yards are usually deadly to young trees and forbs, and can kill or injure young grass seedlings.

Mowing

Mowing only suppresses weeds and must be done multiple times per year. Dead wood and debris on the site needs to be cleared prior to mowing. Mowing can benefit a newly emerging forest if done properly. Avoid mechanical damage to new trees and do not mow off the tops.

Mowing is a good weed control method for newly established grasses. Set the mowing height to minimize cutting of the new grass seedlings.

Tillage

Tillage can effectively set back weeds and should continue until some other weed control method is selected. Avoid damaging the trunks and roots of desirable trees with tillage implements. Tillage depth should be 2 inches or less.

This publication is part of a series that addresses management of the after effects of flooding in riparian areas. The series includes:

After the Flood - Managing Tree Regeneration
After the Flood - Seeding Grasses
After the Flood - Managing Weeds
After the Flood - References

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