The flood waters have receded. Some trees have died. Additional trees might die. Some will survive. What about the mud and sand flats that are left behind? What will happen naturally?

**Safety**
Think safety before venturing into your property. Three months of standing water has weakened the root systems of some trees. Avoid going into the woods on very windy days that could cause trees to fall or limbs to snap off. Be alert to stumbling and tripping hazards.

**What We Have - What We Had**
Vegetation will return in the spring on most areas. It may take several years before vegetation is well established on the deep drifts of sand. The type of vegetation will vary depending upon how long the area was covered with water, as well as the depth of flood deposits and nearby seed sources. This fact sheet addresses revegetation after all the grasses, forbs, shrubs, and small trees have drowned from months-long inundation. Many think this flood will start a vast new cottonwood forest. However, much of the area flooded is normally too high and dry for cottonwood establishment.

For many decades smooth bromegrass, reed canarygrass and Kentucky bluegrass have prevented green ash, hackberry, boxelder, bur oak and other trees from establishing naturally. The dense sods prevented the seed from reaching the ground and left little precipitation for any germinating seed. The bare mud left after the flood provides an opportunity to rejuvenate our riparian forests. Many seeds will have floated in with the flood waters and many will be dispersed by wind from nearby trees. The potential for a mosaic of young riparian forest is high.

**What to Expect**
The new forest will not be pretty as it develops during the first one to three years. It will not be a uniform mix of tree species. There will be patches dominated by one species or another, and openings where only grasses or weeds predominate. Depth to the water table and the type of sediment deposited will influence tree species establishment. Once vegetation greens up in the spring, it will be natural to see a carpet of annual weeds colonize the site. Later, additional weeds such as thistle may establish a foothold. As long as there is a presence of trees and shrubs, the weeds are rarely a hindrance to reforestation. Often they act as a cover crop.
Though not what many people want to see, a dense mass of thistles discourages deer browsing, allowing the new seedlings to establish. Management of thistles is often a factor of neighborhood pressure, county weed control authority, and physical access to the sites. The increasing tree canopy will shade the thistles and thin them within a few years.

Herbicides commonly used to kill broadleaf weeds in yards also kill trees. However, there are a few herbicides that effectively control some weed species without damaging trees. Weed control methods will be addressed in another fact sheet within this series.

Initially, the patches of newly regenerating forest will be incredibly dense. This density often means some trees will escape deer browsing. The new forest will naturally thin to fewer stems per acre as the trees mature. Other plants will come in, such as anemone, grasses, and shrubs. As before the flood, thistles will always be present, but will diminish with time.

This flood and the resulting mud flats provide an opportunity to naturally regenerate riparian forests that were in a state of decline. The mix of species will not be uniform in the regenerating forests and there will be gaps between the trees due to differences in soil and moisture. Vast acreages of even-aged cottonwoods should not be expected. The species mix will vary depending upon the proximity of seed sources. Cottonwood seed can blow to any part of riparian forests while boxelder, ash, oak and hackberry may float in or must be near parent trees for wind dispersion of seed. Just as the flood waters greatly changed the look of riparian forests, succession over the next few years will greatly change the look of the recovering young forests. This is a once-in-a-lifetime opportunity to encourage a young vibrant forest while vegetative cover is temporarily absent as a result of the flood waters.

Federal, state, and city foresters can answer additional questions you may have about forest regeneration.

The following fact sheets may be of interest.
Effects of Flooding on Woody Landscape Plants
http://learningstore.uwex.edu/assets/pdfs/A3871.pdf
Understanding the Effects of Flooding on Trees
http://www.extension.iastate.edu/publications/SUL1.pdf

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