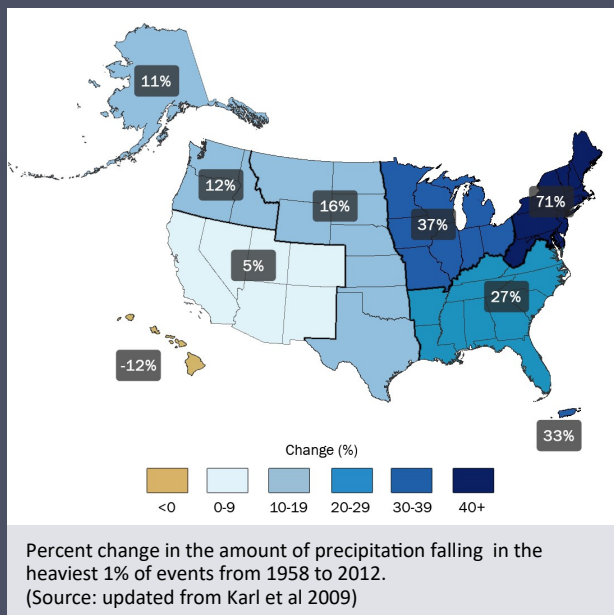


More rain is concentrated in very heavy events than in previous decades.

This trend is most extreme in the northeast where we're experiencing a 71% increase!

Big storms have gotten bigger, which means that managing runoff is more important than ever.



BE A GOOD NEIGHBOR

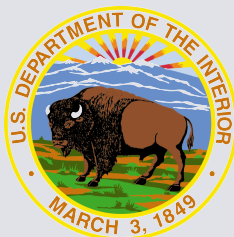
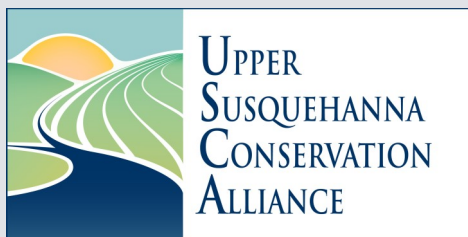
The small steps that you take to manage runoff from your property and maintain healthy stream systems will combine with efforts of your neighbors to reduce flooding and erosion damage in your community.

Upper Susquehanna Conservation Alliance (USCA) Flood Work Group

Website:

<https://www.fws.gov/northeast/nyfo/USCA/FP.htm>

The objective of the USCA Flood Work Group is to collaborate on strategies for protecting and enhancing the natural and beneficial functions of floodplains, stream corridors, and stream channels.



FLOODING PROBLEMS?

Small Solutions with Large Results



Photo credit: Steuben County Sheriff's Office

When floodwaters rush downstream and across the valley, it is hard to imagine how all of that water can be managed safely.

FLOODING IS NATURAL

Flood damage can be reduced by managing runoff near where it falls. Managing runoff across the landscape can be summarized as

SLOW IT DOWN SPREAD IT OUT SOAK IT IN

Slow it down. Water flowing across smooth surfaces quickly finds its way into rivers and streams, with much of this water arriving at the same time and contributing to high peak flows. Vegetation, low spots, and uneven surfaces can reduce flooding by holding back the water.

Spread it out. Allowing runoff to spread out, rather than concentrating flows in ditches or channels, slows the water and absorbs its energy. This reduces erosion and peak flows.

Soak it in. Water that soaks into the soil is water that does not contribute to flooding.



A meandering river channel slows the flow and reduces downstream water levels.

Photo credit: The Nature Conservancy

WHAT CAN YOU DO ON YOUR LAND?

Minimize impervious cover. Rain that falls on buildings and pavement runs off quickly and is unable to soak into the soil. Reduce the amount of hard surfaces and capture roof runoff in rain barrels to be used for irrigation or other purposes.

Direct runoff onto vegetated soils. Direct roof drains onto lawns or other areas where the water spreads out and soaks into the soil. Grade driveways to direct runoff onto adjacent land rather than funneling it onto the road. Wash cars on the lawn instead of in the driveway.

Maintain healthy soils. Compacted soils cannot soak up much water. Amend soils with compost. De-compact soils after construction.

Maintain healthy vegetation. Plants draw water out of the soil and return it to the atmosphere. They also intercept falling rain and slow down overland flow. Protect or establish natural areas with a diversity of plants. Leave leaf litter on the soil.

Preserve/create areas for water to pond. The landscape can store water in a variety of features ranging from small puddles to large wetlands. Terrace hillsides to create numerous small ponding areas. Create rain gardens to collect water from developed areas. Use ponds to store runoff.

FLOODPLAINS FLOOD!
The best way to avoid flood damage is to locate vulnerable development outside of the floodplain.



Wetlands and undeveloped floodplains can store large amounts of water water that does not contribute to downstream flooding.

Photo credit: The Nature Conservancy

The amount of water in a stream or river varies seasonally and with weather events. Natural features of undeveloped streams and their floodplains can moderate the severity of extreme storms and reduce the impacts of flooding.

Stream channels adjust to changing conditions. When the bed or banks are altered, a stream is likely to change its shape or even location, resulting in increased erosion. For example, straightening a stream increases its erosive power because water moves faster in the shorter and steeper channel.

The floodplain is an important part of a stream system because it provides a place for water to spread out and slow down during floods. This temporary storage reduces downstream flooding. And the slower moving water has less energy for eroding streambanks. Berms, levees, or high banks can disconnect a stream from its floodplain and cause downstream problems.

Floodplain vegetation slows down water and dissipates its energy, while the roots hold streambanks in place. Retaining or restoring a variety of plants along the bank of a stream is the easiest and most effective way to protect a stream system.

Wetlands store water and delay flow into streams. Whether they are located near streams or in uplands, they can alleviate flood potential.