Module 2: Building Resilience Part I >> Water Resources and Infrastructure

Fact Sheet 3: Manage Flood-Prone Areas to Mitigate Excess Rainfall

Many areas of the country are experiencing more extreme weather as a result of global climate change: On the one hand, more drought and longer dry spells; on the other hand, periods of excessive and more intense rainfall. Higher rates of rainfall present a number of challenges including flooding, soil erosion, and crop loss. You already explored several strategies for managing rainfall in the fact sheet ***Stretch Water Resources in the Dry Season****. In this fact sheet, we focus on tools and strategies for dealing with excessive amounts of rainwater, particularly in areas that are prone to waterlogging and flooding.*

How to Use This Fact Sheet

This fact sheet includes tools and strategies that are generally applicable across a range of climates and production systems in the U.S. However, every farm or ranch exists within its own environmental context, and not all tools and resources will suit your particular operation. Therefore, use this fact sheet as a starting point for your own process of exploration and discovery, focusing on what would work best in your circumstances. Before making any changes to your production system, do your research, talk to your Extension advisor or other experts, and get input from your own farm team and other farmers in your area. Then see how well those changes align with your own goals, priorities, and resources. If you decide you want to move forward with any changes, test out your ideas in a small section of your farm/ranch before scaling up to a larger area.

Managing Areas Prone to Waterlogging and Flooding

Note any areas of your farm or ranch that may be prone to flooding or waterlogging during periods of high rainfall (your Module 1 assessment included this information). These conditions could be a result of topography, soil type, compaction, or other factors. In these areas, you have a few options to consider: First, you can avoid growing crops in these areas of your farm/ranch. If that is not a possibility, then you can try diverting water from these areas through earthworks or tile drains. Or you can use practices that promote better drainage of water through the soil, such as: increasing soil organic matter, adding cover crops to your rotation, mitigating soil compaction, and other practices. Below are several resources on these subjects:

- ☑ Soil Compaction (University of Minnesota Extension). Provides information about how compaction happens, how it can be avoided, and how it can be remediated on cropland.
- ☑ Manure, Compaction, and Cover Crops (Michigan State University Extension). Discusses some additional tools for addressing compaction.

- ☑ Ponding, Plugging, and Pugging: How to Care for Wet Spring Soils (Oregon State University Extension Service). Provides an overview of factors that can lead to waterlogging and flooding as well as some information about how to mitigate those factors and manage those conditions.
- ☑ Managing Small-Acreage Horse Farms in Western Oregon and Western Washington (Oregon State University Extension Service). Discusses many considerations relevant for managing land and livestock in periods of high rainfall. Although this publication is written for small-acreage horse farms, many of the recommendations in it apply to farms with livestock other than horses as well.
- ☑ Understanding the Economics of Tile Drainage (Iowa State University Extension). Provides more information about how to decide whether tiling is a good option for improving drainage on your farm, and how to design and install it if you determine that it is.
- ☑ Improving Drainage (Washington State University Extension). Describes best practices for improving drainage by installing French drains and using dry wells as well as diverting water using berms and grassy swales.
- ☑ Vegetated Buffers and Swales (Queensland Government). Discusses design considerations, construction, and operation of vegetated buffers and swales.
- ☑ Water-Quality Swales: Low-impact Development Fact Sheet (Oregon State University Extension)

Where to Find Local Assistance

Whatever your goals are for managing your water resources, we encourage you to connect with other people who can provide expertise and advice, and support you in your efforts to build greater climate resilience. Below, we include an initial list of potential contacts to get you started. In addition to offering technical guidance and information, some state and federal agencies may also have funds available for farmers and ranchers in the form of grants, cost-share programs, or loans that can help cover some of the costs of implementing the climate resilience and water management strategies highlighted in this course.

Extension Service. You can find your local county Extension Service by searching your county name followed by 'Extension Service'.

USDA Natural Resources Conservation Service. To find your local office, see NRCS—Find Your Local Service Center.

Resource Conservation Districts. Conservation districts are local units of government established under state law to carry out natural resource management programs at the local level. Districts work with millions of cooperating landowners and operators to help them manage and protect land and water resources on private and public lands in the United States. Search this website to see what is available in your area: List of Resource Conservation District's nationwide by region.

Other types of conservation districts and rural development organizations. In addition to Resource Conservation Districts, your state may also have other organizations with similar goals and are ready to support you in your climate resilience work. Search this website for more information on your state (scroll down for clickable map): Land Conservation Assistance Network / Soil and Water Conservation Districts.

State and local nonprofits who work with farmers and ranchers. Ask your Extension advisor or other farmers in your area for suggestions.

Farmer-to-farmer networks. Ask your Extension advisor or other farmers in your area if they can recommend any groups that work in your region.

In addition, check with your:
-Local water regulatory agency (in Oregon this would be Oregon Water Resources Department).
-Local irrigation district or ditch organization.

September 2025