

Weathering Drought

on your agricultural operation



You can't change the weather, but you can be ready for it. NRCS can help.

The USDA's Natural Resources Conservation Service can help your farm operation become more resilient in the face of drought in future years. Through conservation planning and practices that will improve soil health and water conservation, you can reduce future crop loss due to drought and enhance resiliency to changing climatic conditions.

Financial help for implementing conservation practices may be available through the Environmental Quality Incentives Program (EQIP) or the Agricultural Management Assistance (AMA) program.

Not all practices identified here are available for financial assistance under EQIP or AMA. For specific questions about how NRCS can help your farm and available practices, contact your local USDA Service Center.

Here are general considerations and recommendations to help you keep your operation sustainable during drought. Following these tips could lessen the impact of drought conditions on your farm.

First, Save the Soil

Increasing soil organic matter levels is the key to building healthy soil. Soil organic matter acts like a sponge and holds large quantities of water; soil organic matter can hold 18-20 times its weight in water and recycles nutrients for plants to use. Consequently, soils with large soil organic matter content lose less water to runoff and evaporation and require less irrigation.



Soil organic matter levels build as farmers reduce tillage and keep the soil covered with plant residues or cover crops.

One percent of organic matter in the top six inches of soil can hold approximately 27,000 gallons of water per acre! You can increase your soil organic matter in three to 10 years if you adopt conservation practices such as planting cover crops, residue management, converting to crops that use less water, or mulching.



What impacts can drought have on your operation?

- Increased plant stress
- Decreased water quantity due to limited irrigation supply and reduction in water use
- Soil erosion
- Wind erosion
- Loss of plant cover
- Degraded soil quality
- Degraded air quality due to increased dust from wind and soil erosion
- Increased fire risk
- Reduction in animal food/cover/ shelter
- Increased animal stress
- Reduced stream levels for aquatic habitat

Contact Us

Massachusetts USDA Service Centers

Greenfield: 413-772-0384 ext.3

Hadley: 413-585-1000 ext. 3

Holden: 508-829-4477 ext. 3

Pittsfield: 413-443-1776 ext. 3

Westford: 978-692-1904 ext. 3

West Wareham: 508-295-5151 ext. 2

West Yarmouth: 508-771-6476

Stretch Every Drop of Water

Make every drop of water count by developing an irrigation water management plan with your NRCS conservation planner. Financial assistance may be available to improve your irrigation system to use less water.

Massachusetts

Natural
Resources
Conservation
Service

www.ma.nrcs.usda.gov

Tips to Minimize the Effects of Drought by Land Type

Pastureland

Protecting pastureland during a drought means balancing the needs of livestock with the capacity of natural resources that have been made more fragile by lack of water. Following are some of the conservation practices recommended by NRCS:

Grazing Management Plans - Developing a grazing management plan helps protect the long-term condition of the pasture by balancing the needs of the livestock with the capacity of the soil and plants.

Rotational Grazing - Controlling where and how long livestock are permitted to graze, allows farmers to protect their soil and plants and make use of their remaining forage.

Livestock Water Systems - Providing water across the farm with sources such as livestock wells and springs makes it possible to distribute livestock according to the capacity of the soils and plants. Producers should evaluate and improve livestock water systems to increase efficiencies of system delivery.

Fallowed land

The most commonly prescribed practices for protecting vulnerable farmland fallowed by drought are:

Tillage & Residue Management - Leaving residues from the previous crop undisturbed on the soil surface can help reduce wind and water erosion.

Cover Crops - Planting or maintaining vegetation, living or dead, will provide cover on the soil surface and reduce erosion. Plants with low water demands like barley are typically used as cover crops during droughts.

Mulching - Covering bare soil with wood chips, straw or other plants material can help to hold the soil in place.

Conservation Crop Rotation - Switching to crops that require less water can allow a field to remain productive and provide erosion protection.

Irrigated cropland

The most commonly prescribed practices for protecting irrigated cropland from drought are:

Irrigation System Improvement - Evaluating irrigation systems, improving management of existing systems, replacing poorly performing components or converting to pressurized irrigation systems will improve the uniformity of water application. It takes less water to irrigate when the irrigation is uniform.

Irrigation Scheduling - Irrigating at the optimum time and applying the amount the soil can hold minimizes undesirable water loss below the root zone of the crop. Good scheduling or "Irrigation Water Management" will help stretch limited water supplies.

Vegetative Practices & Mulching - Growing certain crops, either interplanted in or in sequence with production crops can increase infiltration and retention of valuable rainfall and reduce evaporation loss from the soil surface. Mulching by covering the soil surface with wood chips, straw or other plant materials can also reduce water loss to evaporation.

Tillage & Residue Management - Modifying tillage to retain residues from a previous crop left on the soil surface can help reduce water loss to evaporation.

Getting Financial Help

NRCS typically has funding available to help you lessen the impacts of drought through the following conservation practices.

Cropland

- 430 – Irrigation Pipeline
- 441 – Irrigation System Micro Irrigation
- 442 – Sprinkler System
- 449 – Irrigation Water Management
- 533 – Pumping Plant
- 587 – Structure for Water Control

Pastureland

- 516 – Livestock Pipeline
- 533 – Pumping Plant
- 574 – Spring Development
- 614 – Water Facility



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