



CONSERVING NATURAL RESOURCES IN MASSACHUSETTS

June 2016

Seventy percent of the land in the United States is privately owned. Farmers, ranchers, forest landowners, tribes and others who own rural lands make daily decisions about natural resource use and management, impacting soil, water, and air quality and wildlife habitat.

NRCS provides technical assistance and offers financial assistance to producers who install conservation practices through Farm Bill programs.

NRCS technical assistance is supported with discretionary and mandatory funds. Discretionary funding, provided annually through the Conservation Technical Assistance Program (CTA), is pivotal to NRCS' success. CTA supports everyday operations, scientific research, technology transfer, and is key to the development of individual conservation plans.

The land user, in consultation with NRCS specialists, develops a conservation plan that is suited to his or her individual operation. Once a producer has a conservation plan, he or she can implement it with or without further assistance from NRCS.

Financial assistance is available to eligible applicants to implement their conservation plans. Mandatory funds provided through Farm Bill programs are used to cover the costs of detailed planning needed to implement conservation practices and provide financial assistance to help defray some of the costs of conservation practices installation.

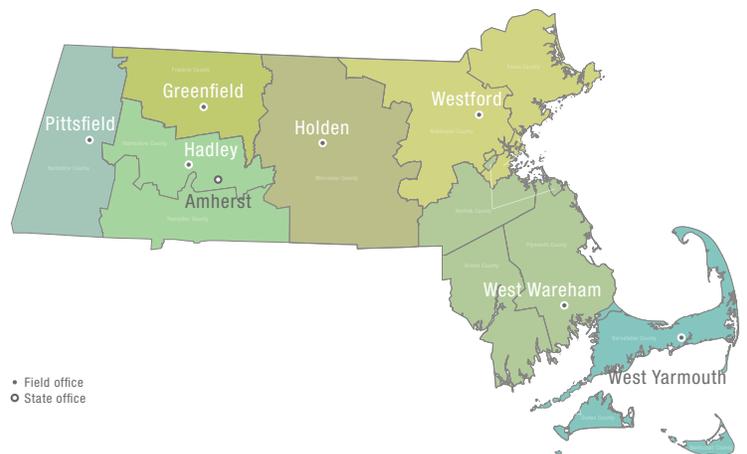
See page 4 for Massachusetts-specific Farm Bill Program funding details.



Photo: Diane Pettit, NRCS

Scenic and productive farmland in Worcester County, Mass.

Massachusetts NRCS Offices



Massachusetts Quick Facts:

Number of NRCS Employees = 43

Number of NRCS Field Offices = 7

Acres of Cropland = 237,700 acres

Acres of Forestland = 2,589,000 acres

No-till: It's just so easy

Jay Galusha | Fairfield Dairy Farm | Williamstown, Mass.

The 400 acres of hay land and 220 acres of corn at Fairfield Dairy Farm in Williamstown, Mass. are set among sweeping vistas of the Berkshire hills. The beauty belies the challenges faced by the five generations of the Galusha family who have farmed this rugged land. Jay Galusha, who, with other family members, milks 240 cows, has found a solution with the help of USDA's Natural Resources Conservation Service.

"I've got quite a bit of hilly ground, so spreading manure's a challenge. Corn planting is a challenge," said Jay Galusha. "I've got some steep ground. That's where no-till fits right in."

Galusha was referring to no-till farming, a conservation practice that involves growing crops without disturbing the soil through tillage. No-till increases the amount of water that infiltrates into the soil, organic matter retention and cycling of nutrients. It can reduce or eliminate soil erosion. Done in conjunction with cover crops, it increases the amount and variety of microbial life in the soil, which makes soils more resilient.

In no-till agriculture, the farmer uses a no-till planter to create a narrow furrow just large enough for seed to be placed. By not plowing or disking, cover crop residue remains on the surface, protecting the soil from crusting, erosion, high summer temperatures and moisture loss. Additionally, the soil structure remains intact and improves every year.

Of the 220 acres of corn that Galusha planted in 2015, 90 were planted no-till. Those fields yielded 25 to 26 tons of corn silage to the acre, compared with 23 tons with conventional planting.

"I mean it blew the conventional corn right out of the water," said Galusha. "It was such a dry year but being no-till, it held the moisture in the ground. It worked phenomenally well. The weed control was just as good, if not better, in the no-till field than it was in the conventional. There wasn't a weed in it."

Galusha's conservation corn planter is equipped with liquid starter fertilizer, one wavy coulter – a type of disk -- ahead of the double disk opener, and one spiked and one smooth cast iron closing wheel. Galusha planted directly into the rye cover crop or hay and terminated it with an herbicide at planting time. The residue and



Photo: Diane Pettit, NRCS

Jay Galusha of Fairfield Dairy Farm, Williamstown, Mass.

a pre-emergent herbicide prevented weeds from germinating. Nitrogen needs were met with fall manure and sidedressing with urea.

"It sure saved a lot of money, fuel and labor," said Galusha. "Next year everything is going to be no-till. I've got no desire to go back to conventional."

Kate Parsons, NRCS Resource Conservationist, provided Galusha with technical help and encouragement in adopting a soil health management system. She said that Galusha planted corn seed directly into two hay fields and several corn fields planted to a winter rye cover crop.

Sugars exuded by the hay and rye feed microbes in the soil and helps with soil aggregation, which results when soil particles bind to each other more strongly than to adjacent particles. The spaces between the aggregates provide pore space for retention and exchange of air and water. No-till planting into a cover crop encourages earthworms, which feed on the residue and help with the aggregation process. They also create pores and add nutrients.

Digging a hole in the field, Parsons pointed out aggregation in the soil. "We just saw about three or four earthworms here in this one small area. Look at all the worms," said Parsons, pointing out an earthworm mound called a midden.

The earthworm pulls the plant residue over and down into its hole where it attracts bacteria and fungi, which it eats, along with the residue. Then the channel is lined with slime from the worm's body and is higher in nitrogen, phosphorous, potassium, calcium than the surrounding soil.

"With the price of fuel, the price of equipment, the price of labor, and the price of milk's not great, I'm just trying to eliminate some costs," said Galusha, adding that no-till has been the answer. "It's thousands of dollars of savings and it works. It's so easy. It's just easy."



Photo: Diane Pettit, NRCS

NRCS Resource Conservationist Kate Parsons (left) examines healthy soil with Jay Galusha in his no till corn field.

A Bunny's Tale: Protecting New England Cottontail habitat on Cape Cod

Cape Cod's beautiful seashore, inlets, salt marshes and woodlands are a natural draw for year-round and vacation home owners, and tourists. A boon for the local economy, the associated development is not so good for an elusive little creature: the New England cottontail rabbit. Habitat loss has New England's only native rabbit as a candidate for listing under the Endangered Species Act.

Private landowners, conservation groups, a tribe and government agencies have joined forces to restore New England Cottontail habitat throughout New England. In Mashpee, Mass., on Cape Cod, habitat restoration work at three sites is yielding results.

A total of nearly 100 acres of habitat are being restored on land owned, respectively, by The Trustees of Reservations land trust, Orenda Wildlife Land Trust and Mashpee Wampanoag Tribe. Because the three sites border each other, the conservation benefits are even greater as they provide a larger footprint for habitat.

USDA's Natural Resources Conservation Service, (NRCS), and the U.S. Fish and Wildlife Service, (USFWS), provided financial and technical help through the departments' Working Lands for Wildlife partnership. The Massachusetts Division of Fisheries and Wildlife also provided technical assistance.

New England cottontails need brush, shrubs and densely growing young trees – known as young forest or early successional habitat – where they can find food, rear young and escape predators. Much young forest has been lost to development or has grown up into older woods, where cottontails don't live.

More than 100 kinds of wildlife in the Northeast use shrubland and young forest during part or all of their life cycles, so restoring New England cottontail habitat benefits many other species, as well.

The New England cottontail – which looks similar to the more abundant Eastern cottontail, an introduced species – lives in



Photo: courtesy of the U.S. Fish and Wildlife Service

A New England Cottontail rabbit.

coastal southwestern Maine, southeastern New Hampshire, Massachusetts, Connecticut, Rhode Island, and southeastern New York – less than a fifth of its historic range.

At the Mashpee River Reservation, owned by The Trustees of Reservations land trust, 50 acres of dense forest canopy have been cleared. Black huckleberries, low-bush blueberries, bracken fern and scrub oak were being suppressed by the dense canopy but with the tree clearing, the plants have really taken off, which will provide flowers for pollinators and fruit for wildlife.

"There's a whole suite of bird species including grouse, turkey, eastern towhees, prairie warblers; we hope to see these things increase," said Russ Hopping, the land trust's ecology program director, noting that invertebrates, including rare moth species, also rely on this type of habitat.

In late May 2013, the Orenda Wildlife Land Trust began prescribed burning, a conservation practice that helps plants to regenerate by exposing soil and controlling competing vegetation. Administrator Elizabeth Lewis said that they saw results by that October.

NRCS and the Cape Cod Conservation District helped the Mashpee Wampanoag Tribe with a 32-acre New England cottontail habitat project on tribal land. The project holds historic, as well as environmental, significance for the tribe.

"Maintaining the environment is a part of my history, my culture, my life. To us all creatures are our brothers and sisters," said George "Chuckie" Green, Assistant Natural Resources Director for the tribe.

"We started seeing plants that we hadn't seen in our lifetime come back," said Green who also noticed a small blue moth that he had never seen before. "This spring those little blue moths were all over the property."

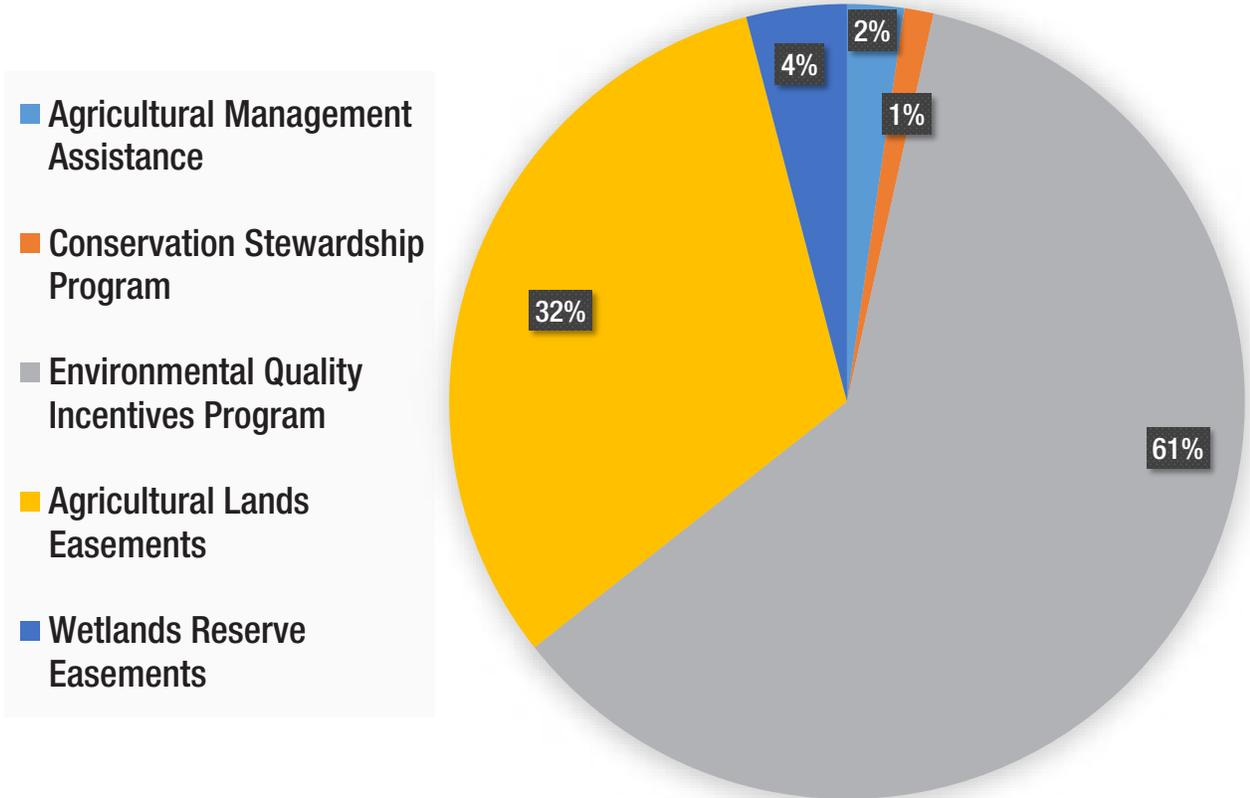
"What we did, and what our partners are doing, achieves something people said can't be done," said Green. "But we're doing it. We are doing it."



Photo: Diane Pettit, NRCS

Project partners (left to right) Russ Hopping of the Trustees of Reservations, Chuckie Green of the Mashpee Wampanoag Tribe, and Elizabeth Lewis of the Orenda Wildlife Land Trust.

FY 2015 percentage of financial assistance to Massachusetts participants by program



FY 2014 and FY 2015 contracts and financial assistance to Massachusetts participants by program

| Program | Number of Contracts/Agreements | | Financial Assistance Dollars to Producers | |
|--|--------------------------------|------------|---|--------------------|
| | FY 2014 | FY 2015 | FY 2014 | FY 2015 |
| Agricultural Management Assistance | 6 | 11 | \$88,292 | \$119,736 |
| Conservation Stewardship Program | 1 | 7 | \$19,953 | \$61,504 |
| Environmental Quality Incentives Program | 146 | 164 | \$2,408,513 | \$3,157,835 |
| Agricultural Conservation Easement Program | | | | |
| Agricultural Lands Easements | 15 | 6 | \$3,545,598 | \$1,635,425 |
| Wetlands Reserve Easements | 1 | 1 | \$440,538 | \$211,500 |
| Grand Total | 168 | 189 | \$6,062,356 | \$5,186,000 |

Sources: FMMI, ProTracts and NEST.

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