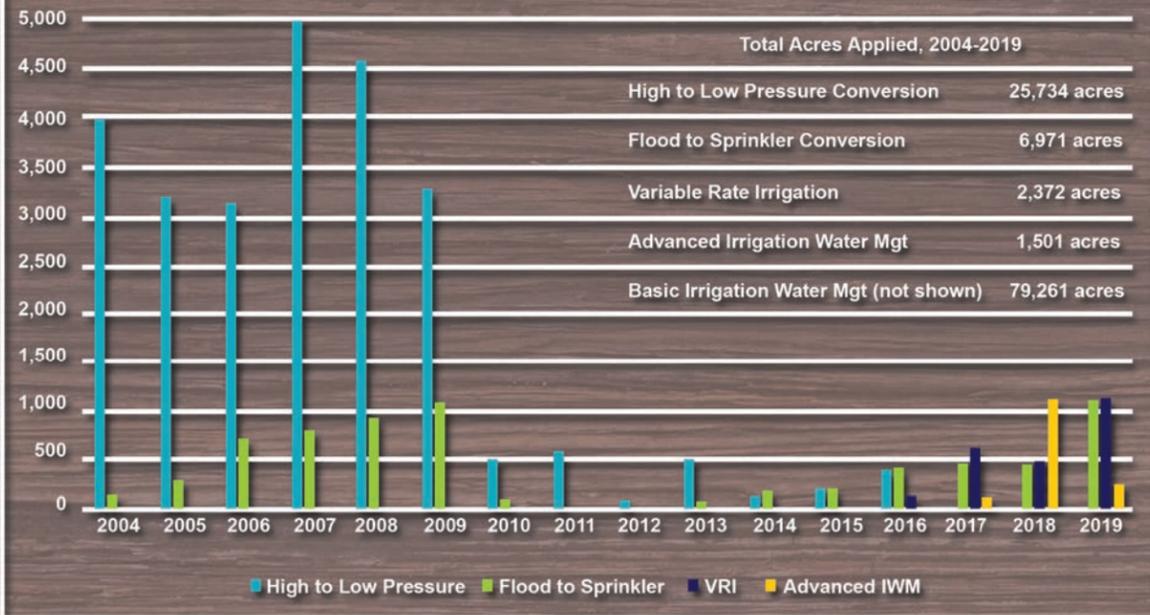


### Acres of Irrigation Practices Applied, By Year



Total Acres Applied, 2004-2019

High to Low Pressure Conversion	25,734 acres
Flood to Sprinkler Conversion	6,971 acres
Variable Rate Irrigation	2,372 acres
Advanced Irrigation Water Mgt	1,501 acres
Basic Irrigation Water Mgt (not shown)	79,261 acres

## Irrigation Conservation Practices Back on the Rise in ND

Farm Bill programs administered by the NRCS provide opportunities for a variety of conservation measures targeted to irrigation systems. During the 2004-2009 time period, NRCS targeted conversion of existing high-pressure pivot systems (impact sprinklers mounted on the top of the pivot span) to low-pressure sprinklers mounted on drops. These projects result energy savings through a reduction in operating pressures, water savings due to reduced evaporative losses and wind drift, and improved crop production due to increased uniformity of water application. Conversion of surface irrigation systems (furrows, graded borders, and wild flood) to sprinkler irrigation systems (center pivots and linear moves) generally result in substantial water savings due to increased efficiencies of lower volume/higher frequency water applications and reduction of both seepage and evaporation from irrigation ditches. Most of those projects involve replacement of thousands of feet of open delivery and tailwater runoff ditches with buried pipelines. On steeper ground, conversion to sprinkler systems may have an added benefit of reducing erosion in crop fields, as well as sediment and nutrient delivery to streams and wetlands. In recent years, NRCS sprinkler system designs have incorporated linear moves and swing arms at the request of producers. Note that sprinkler systems are not suited to all soils and sites, therefore planning involves an assessment of feasibility and potential for the development of salinity issues. In some cases, it has been more appropriate to work to improve the efficiency of an existing surface irrigation system rather than transition to a sprinkler system.

Responding to the advent of technological advances in irrigation systems, ND began offering installation of zone control variable rate irrigation (VRI) technology on existing sprinkler systems in 2016. These systems are particularly well suited to fields with interior wetlands, substantially different soil types, and topographic variability as they allow individual nozzles, or banks of nozzles, to be controlled as the sprinkler traverses the field. While they do result in both water and energy savings, one of the primary benefits of these projects is typically to reduce nutrient leaching below the root zone in lower elevation, coarse grained soils within the field. Particularly in high water table sandy or loamy soils, these projects provide important protections for groundwater quality. Applications for VRI continue to far outpace available EQIP funds for implementation, indicating high interest by ND irrigators. Also keeping pace with technology, Advanced Irrigation Water Management (IWM) has been implemented through both the CSP and EQIP programs over the last three years. ND NRCS engineering staff continue to work with producers and irrigation dealers to identify practices and technological advances that would benefit resource conservation in the state.

Helping People Help the Land

USDA is an equal opportunity provider, employer and lender.



## FY 2019 Accomplishments North Dakota

### Top 10 Conservation Practices

1. FENCE (Facilitates prescribed grazing)  
1.28 million ft / 549 Applied
2. WINDBREAK/SHELTERBELT ESTABLISHMENT  
1.02 million ft / 334 Applied
3. LIVESTOCK PIPELINE (Facilitates prescribed grazing)  
697,522 ft / 432 Applied
4. CONSERVATION CROP ROTATION  
362,366 ac / 4,726 Applied
5. WINDBREAK/SHELTERBELT RENOVATION  
264,995 ft / 138 Applied
6. PEST MANAGEMENT CONSERVATION SYSTEM  
240,584 ac / 3,610 Applied
7. PRESCRIBED GRAZING  
186,278 ac / 1,559 Applied
8. NUTRIENT MANAGEMENT  
171,607 ac / 2,244 Applied
9. RESIDUE AND TILLAGE MANAGEMENT, REDUCED-TILL  
167,830 ac / 2,443 Applied
10. UPLAND WILDLIFE HABITAT MANAGEMENT  
102,494 ac / 4,511 Applied

"National action may be led and aided by the government, but the soil must be conserved ultimately by those who till the land and live by its products."

~ Hugh Hammond Bennett

## Financial Assistance

CSP

### Conservation Stewardship Program

CSP helps agricultural producers maintain and improve their existing conservation systems and adopt additional conservation activities to address priority resources concerns. Participants earn CSP payments for conservation performance—the higher the performance, the higher the payment.

General Sign-up -

\$15.9 Million / 261,836.6 ac / 117 contracts

Renewal Contracts -

\$17.7 Million / 135,541.6 ac / 128 contracts

Grassland Conservation Initiative -

\$607,200 / 6745.1 ac / 72 contracts

Total funds obligated to new and existing CSP contracts -

\$34.3 Million

EQIP

### Environmental Quality Incentives Program

EQIP provides financial and technical assistance to agricultural producers to address natural resource concerns and deliver environmental benefits such as improved water and air quality, conserved ground and surface water, increased soil health and reduced soil erosion and sedimentation, and improved or created wildlife habitat.

\$19.9 Million / 286,463.6 ac / 463 contracts

ACEP

### Agriculture Conservation Easement Program

ACEP helps landowners, land trusts, and other entities protect, restore, and enhance wetlands, grasslands, and working farms and ranches through conservation easements.

\$145,000 / 145 ac / 1 Easement

WBP

### Water Bank Program

In Fiscal Year (FY) 2019 Congress appropriated \$4 million to fund the Water Bank Program (WBP) and NRCS is opening enrollment into the program in Minnesota, North Dakota and South Dakota. The purposes of WBP include: Preserving and improving major wetlands as habitat for migratory waterfowl and other wildlife, conserving surface waters, reducing soil and wind erosion, contributing to flood control, improving water quality, improving subsurface moisture, and enhancing the natural beauty of the landscape.

\$2.7 Million / 6,940.1 ac / 71 contracts

GRANTS

### Conservation Collaboration Grants and Agreements

There were 20 proposals submitted by partners for approximately \$8.6 million. North Dakota was able to award approximately \$4 million to 7 partners under the grant opportunity. Funded proposals were awarded to the following partners:

- Burleigh County Soil Conservation District
- Dakota College at Bottineau
- North Dakota Grazing Lands Coalition
- Pheasants Forever
- Strengthen ND
- North Dakota Association of Soil Conservation Districts
- North Dakota Conservation District Employees Association

## Technical Assistance

### Conservation Planning

The Natural Resources Conservation Service is requiring all states to certify conservation planners. All NRCS employees must complete a curriculum that allows for different levels of certification which includes apprentice, certified, technical and master planners. All employees must have a certification by January of 2021. North Dakota's goal is to have most employees be certified conservation planners. In order to achieve this goal North Dakota NRCS provided the following formal trainings allowing employees to move toward achieving the certified conservation level.

Conservation Planning Course for - 20 employees and 5 partner employees.

Conservation Planning on Rangeland Course for - 21 employees and 4 partner employees.

Modules 7 and 8 Cultural Resource Course for - 93 employees.

Conducted Nutrient Management Training for - 27 employees 15 partner employees.

Assisted with implementing NEDC Soil Health Training for - 67 Employees

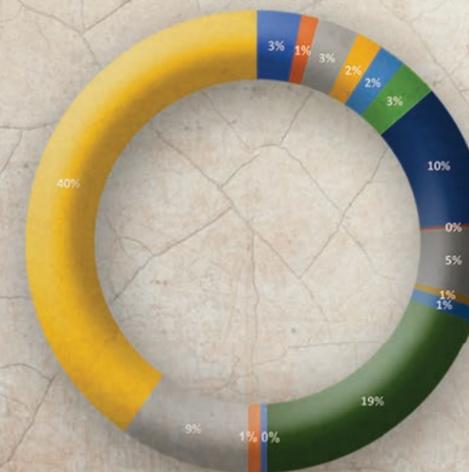
### Conservation Compliance

North Dakota agricultural producers continue to find mitigation to be a favorable option for wetland management. In fiscal year 2019, 41 on-farm plans were completed with assistance from NRCS and four engineering firms. Funding remains for 50-75 additional mitigations plans to be completed. NRCS completed 3,100 certified wetland determinations and highly-erodible land determinations from October 2018 to September 2019. Requests for certified wetland determinations greater than 60 days old have been reduced from 213 in 2017 to 50 in 2019.

### Soil Science

NRCS soil scientists in North Dakota documented 1,243 Technical Soil Services (TSS) provided affecting over 9,579,800 acres and serving over 8,110 people. A conservative estimate as not all instances recorded document acres and/or people served. A major responsibility of TSS within NRCS is to assist users with understanding and properly using the soil survey and to provide users with predictions and interpretations about the behavior of each kind of soil mapped or identified under defined situations. Two new interpretations, Pesticide and Nutrient Leaching Potential — NIRR (ND) and Pesticide and Nutrient Runoff Potential (ND), were designed, developed, and are delivered via Web Soil Survey to identify areas at risk for pesticide and nutrient leaching and runoff respectively.

- 39 / 3.1% Application of ecological site information
- 15 / 1.2% Conservation plan resource inventory
- 36 / 2.9% Create custom maps, reports, data files, etc.
- 23 / 1.8% Develop or validate interpretations
- 24 / 1.9% Highly erodible land (HEL) determination
- 34 / 2.7% Maintain or update eFOTG
- 125 / 10% On-site investigation, conservation practice design or install
- 2 / .2% On-site investigation, geophysical
- 63 / 5.1% On-site Investigation, other (non-soil survey)
- 7 / .6% On-site Investigation, soil health management
- 14 / 1.1% On-site Investigation, wetland determination or delineation
- 231 / 18.5% Provide training to NRCS and partners
- 36 / .4% Public information articles, pamphlets, booklets, etc.
- 12 / 1% Soil judging contests, envirothons, etc.
- 112 / 9% Teaching, lectures, presentations, displays, posters
- 501 / 40.2% Technical consultation



## ND Leads Nation in the Production of 7 Crops

**DRY BEANS** - 10.8 billion cwt / \$233.5 million

**DRY PEAS** - 8.03 million cwt / \$131.2 million

**CANOLA** - 3.09 billion cwt / \$383.1 million

**FLAXSEED** - 3.7 million bu / \$64.2 million

**WHEAT** - 363.4 million bu / \$1.6 billion

**HONEY** - 38.1 million lb / \$71.7 million

**OATS** - 8.6 million bu / \$16.3 million

## Restructure Update

North Dakota NRCS is in the midst of implementing a modernized organizational structure focused on providing technical assistance to our clients. The flattened structure has allowed us to consolidate supervision from 72 to 32 employees and improve our Employee: Supervisor ratio from 3:1 to 7:1. We have also dedicated more staff to the field offices by transitioning the Area Office level of the agency into direct contact with our customers. The new structure is also grouping field offices to develop a stronger local support network to foster teamwork, reduce the stress caused by employee vacancies, and help employees devote more effort towards the aspects of the agency for which they have the most passion.