

Federal Farm Bill Conservation Programs and Water Conservation

Discussion & Recommendations



National Sustainable Agriculture Coalition

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National Sustainable Agriculture Coalition

- Our mission:
 - to support, build, develop, and engage the grassroots of sustainable agriculture for the health and vitality of the sustainable agriculture movement; and
 - to research, develop, and advocate federal policies relating to farm, food, and environmental issues, appropriations, and implementation to support and advance sustainable agriculture.

- An alliance of **grassroots organizations** that advocates for federal policy reform to advance the sustainability of agriculture, food systems, natural resources, and rural communities.



NSAC Background

- Started in 1988; currently have 80+ member organizations from around the country
- We work on the Farm Bill, agricultural legislation, budget and appropriations, USDA, EPA, FDA, etc.
- *In short: our job is to make sure that federal policy helps farmers succeed while protecting the environment and keeping our food safe and accessible!*
- We are a DC voice for farmers and grassroots advocates across the country, and we work as a coalition.

www.sustainableagriculture.net



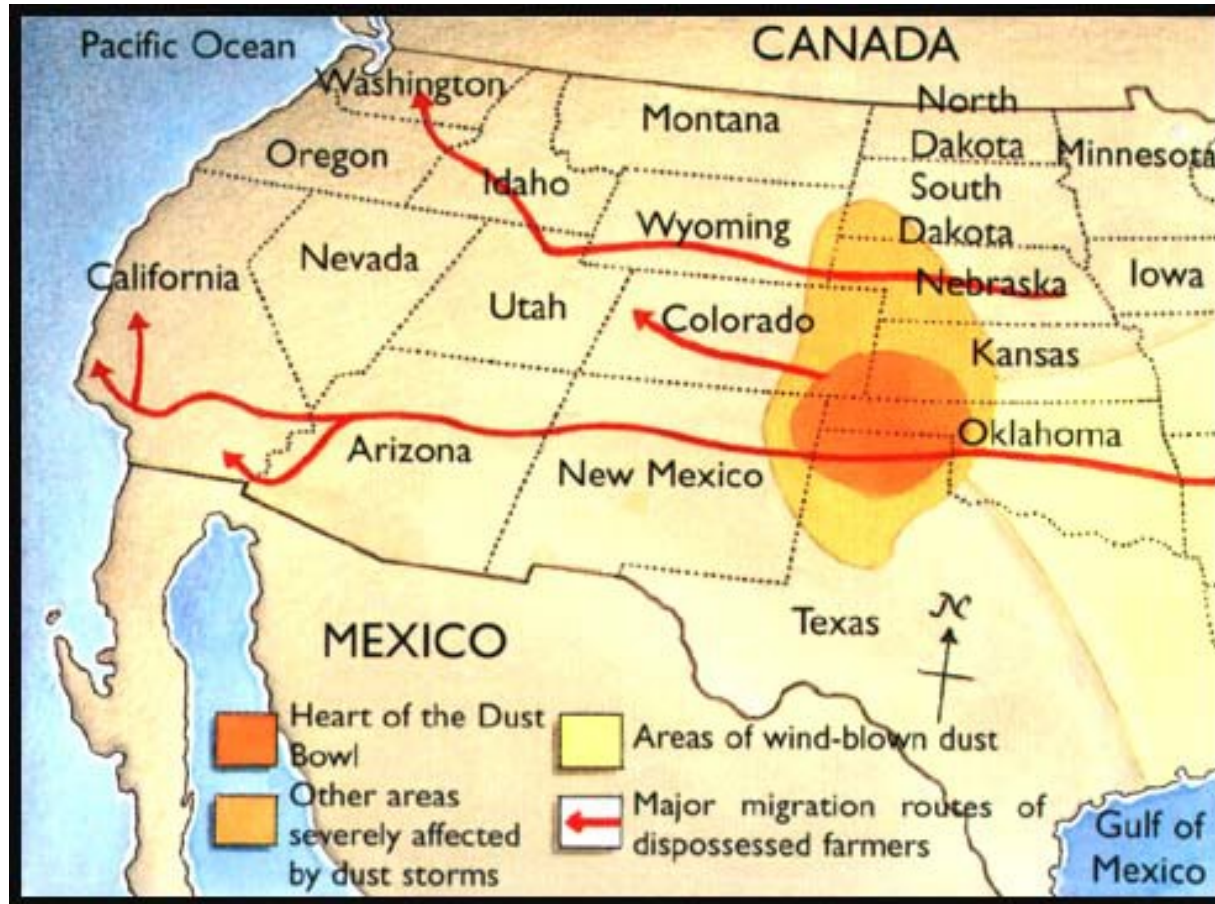
Walton Family Foundation Funding

- Funding for this Report was provided by the Walton Family Foundation to the National Sustainable Agriculture Coalition as part of our work on improving the performance, accessibility, and use of the Farm Bill's conservation programs to protect the Nation's waters.

Colorado Scene in 1930's Dustbowl



Areas Hit Hardest by 1930 - 1940 Dustbowl Dust Storms





Natural Resources Conservation Service

- Grew out of the Soil Conservation Service – created in 1935 to deal with on-farm soil erosion and water management.
- First focus of SCS: technical assistance to farmers and ranchers to control soil erosion
- After WWII, SCS also providing financial assistance, e.g. Agricultural Conservation Program and 1950s drought – Great Plains Conservation Program.



Present NRCS Programs

- Agricultural Land Retirement Programs:
 - Wetlands Reserve Program
 - Conservation Reserve Program (w/Farm Service Agency)

- Grassland Reserve Program: working land program focused on protection of grassland



NRCS Agricultural Working Lands Programs: Environmental Quality Incentives Program

- Focus on individual practices
- 1-10 year contracts
- In FY2008, about 10% of farmers financing irrigation did so through public programs.
- About 57% of those participated in EQIP that year – so only about 4% of farmers making investments used EQIP.

NRCS Agricultural Working Lands Programs: EQIP

- BUT . . . Over time, EQIP funding has had an important impact on irrigation investments, amounting to \$1.4 billion from 2004 through 2010.
- Nationally, irrigation practices accounted for roughly a quarter of total EQIP funding obligations (\$5.7 billion) during 2004-10.
- EQIP funding has helped many farmers improved the efficiency of the irrigation delivery system

Furrow Irrigation



NRCS Photo


Spray Irrigation



NRCS Photo

Drip Irrigation





Integrating Efficiency with Reduction in Consumptive Water Use in Ag Systems

“Sustainability of irrigated agriculture will depend partly on whether producers adopt more efficient irrigation production systems that integrate improved onfarm water management practices with efficient irrigation application systems.”

Glenn D. Schaible & Marcel P. Aillery, *Water Conservation in Irrigated Agriculture: Trends and Challenges in the Face of Emerging Demands*, USDA Economic Research Service, Economic Information Bulletin No. 99 (Sept. 2012).



Growing Body of Research on On-farm Management of Cropping Systems (1)

Delgado et al., Journal of Soil & Water Conservation 62(5):110A-117A – summer cover crop (sorghum-sudan grass) in potato production system increased overall water efficiency and maximized yield production (San Luis Valley CO). Also found benefits from winter cover crops irrigated with high nitrate groundwater – the crops scavenged nitrate. Cover crops turned into soil improved soil organic carbon, which enables soil to hold more moisture.



Growing Body of Research on On-farm Management of Cropping Systems (2)

Hansen et al., *Water-Conserving Cropping Systems: Lower South Platte Irrigation and Demonstration Project*. Colorado Water (2007): research on rotational crop system that included non-irrigated crops and fallow periods decreased consumptive water use and scavenged excess nitrates from water.

Lease fallow period water for instream flow??

Growing Body of Research on On-farm Management of Cropping Systems (3)

- Mitchell et al. *No-tillage and High-residue Practices Reduce Soil Water Evaporation*. California Agriculture (2012). No-till, high-residue systems reduced summer evaporation by 13%.
- Authors noted factors to be addressed before wide-scale adoption: ease of adapting existing crop systems to new system, need and cost of new equipment, learning curve for new management practices, and net income from new system.



NRCS Conservation Practice Standards (CPS)

- “Building Blocks” for NRCS Programs for working agricultural land
- Wide array of practices, many of which focus on irrigation, water management, cover crops, crop rotations, etc. that can affect the consumptive use of water in a farming operation and increase efficient use of water.

CPS 449 – Irrigation Water Management

- Focuses on timing and amount of irrigation, runoff control, salinity issues, etc. but no link to cropping systems that can reduce consumptive use of water.
- Recommend:
 - New purpose – soil management to reduce water loss from soil (reduced tillage, etc.)
 - New purpose – reduce soil loss from plant transpiration.
 - Add instream flow increases and riparian habitat protection to purposes.
 - Ensure that the Irrigation Water Management Plan provides consideration and criteria for these purposes.



CPS – Irrigation Infrastructure

- NRCS has 9 Conservation Practice Standards for irrigation infrastructure
- Add a “stock statement” to these CPSs –
“The use of this CPS shall be included in a new or existing Irrigation Water Management Plan that meets the requirements of NRCS CPS – 449 – Irrigation Water Management.”



Agricultural Working Lands: Conservation Stewardship Program (1)

- Builds on CPS with Conservation Enhancements that require a higher level of conservation performance.
- Rather than a practice approach, CPS takes a “resource of concern” farming system approach. Water quantity is a “resource of concern.”



Conservation Stewardship Program (2)

- In 2012 CSP signup, there were 5 Conservation Water Quantity Enhancements
 - Irrigation system automation (GPS guided variable rate irrigation)
 - Irrigation pumping evaluation
 - Remote monitoring of pumping plant operation
 - Using regional weather networks for irrigation scheduling and
 - Decreasing quantity of irrigation water.
- Also numerous Conservation Enhancements for resource conserving crop rotations, cover crops, tillage systems etc. that can help reduce consumptive use



Conservation Innovation Grants (1)

- Grants can be used to evaluate and demonstrate ag practices that help farmers and ranchers adapt to drought.
- FY2013 announcement for projects on:
 - Cropping and grazing systems that improve soil health and system resiliency.
 - Enhance soil organic matter with reduced tillage, cover crops, organic amendments
 - Improve water use efficiency
 - Coordinate with NRCS Plant Material Centers in using drought resistant plants and practices
 - Develop recommendations for appropriate nutrient management following a drought



Conservation Innovation Grants (2)

- Analyze on a regional basis how agricultural and conservation systems fared during drought conditions
- Assess agricultural approaches that appear to flourish in low precipitation areas
- Traditional/historical production practices that have proven effective in dealing with drought
- Drought tolerant feedstocks for Confined Animal Feeding Operations (CAFOs)
- Alternative housing or feeding for CAFOs that improve energy efficiency and climate control
- Technologies that reduce CAFO technology use.



Agricultural Water Enhancement Program

- Carve out from EQIP
- Provides funds to projects with sponsor “Partners” through conservation program payments (EQIP) to farmers establishing practices in the project areas
- Many commentators have noted problems with farmers receiving technical assistance from NRCS rather than project sponsors, etc.



Conclusion

- Growing evidence that on-farm management practices can decrease consumptive use of irrigation water.
- Need better linkage within Conservation Practice Standards for irrigation efficiency and onfarm management.
- Need to ensure that good Conservation Innovation Grant projects are carried forward
- Need changes to AWEP (some provided in pending Senate and House Farm Bills).



NSAC CIG Grant

- 10 Teams reviewed Conservation Practice Standards for improvements for sustainable and organic production systems. Recommendations submitted to NRCS.
- Includes, Conservation Crop Rotation/Cover Crops; Nutrient Management; Integrated Pest Management; Residue & Tillage Management; High Tunnel Systems, Grazing, Biomass and Energy Conservation, AgroForestry Permaculture, Wildlife-Biodiversity-Wetlands, and Conservation Buffers.