“Irrigation Practices to Preserve our Agricultural Future”

Legislative Subcommittee on Water Policy
June 7, 2021
Keith Olander, AgCentric Executive Director

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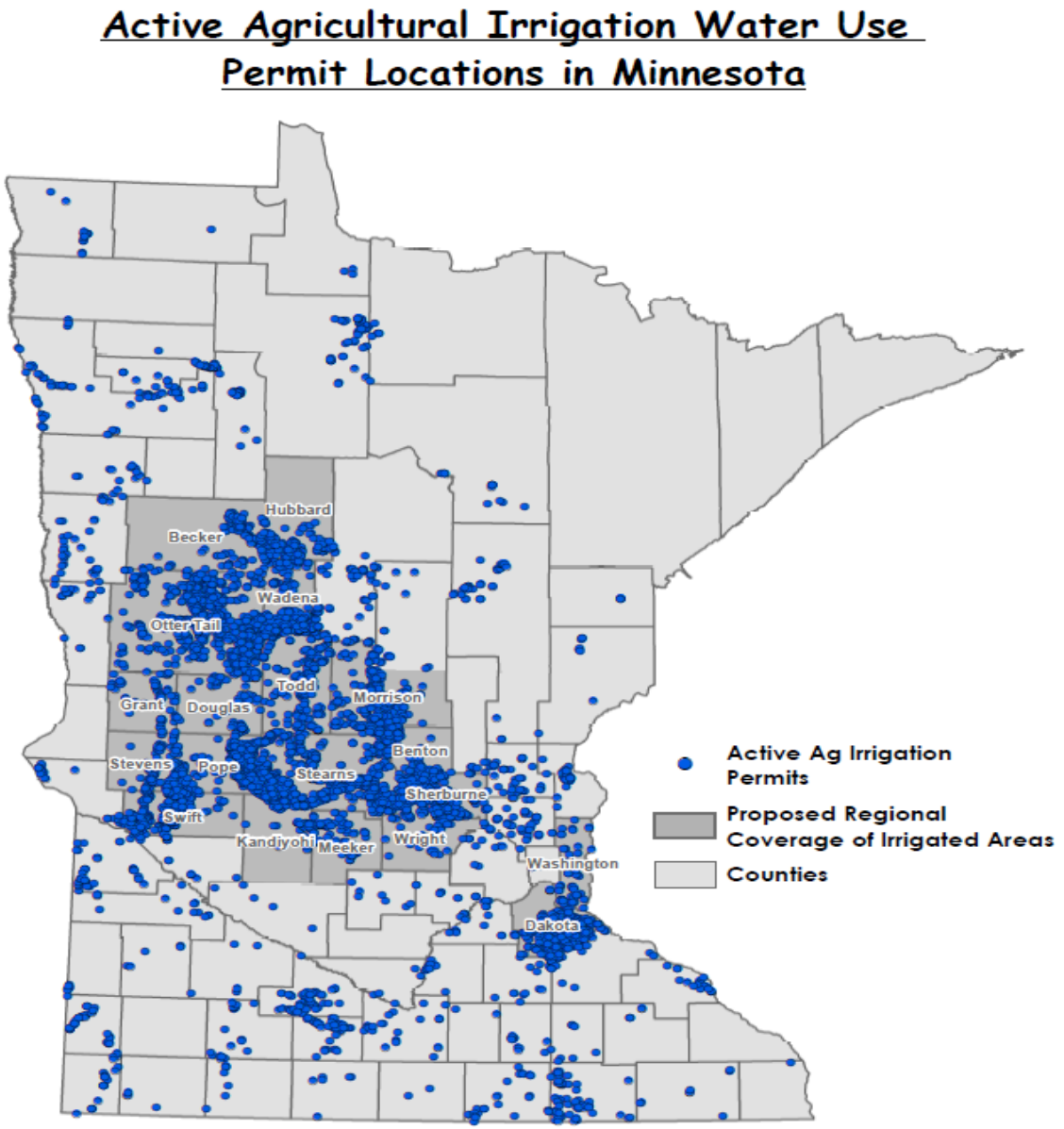
Topics to cover:

- Economics of irrigated agriculture.
- How has irrigation impacted my farm?
  - Jake Wildman, Farmer, Irrigators Association of MN, President
- Technology in Irrigation
- NRCS State Grant to drive innovation in irrigated agriculture

- Minnesota has over 500,000 acres of irrigated land.



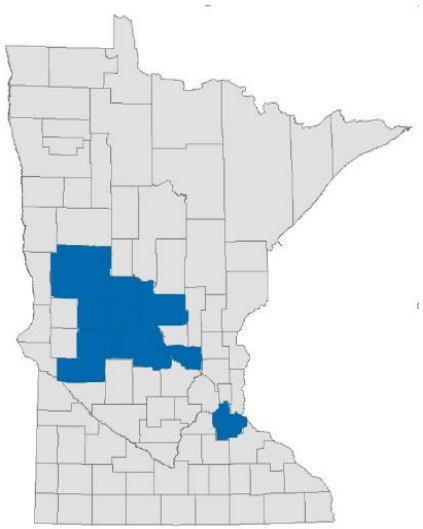
ata Source: Water Appropriation permit locations from MN DNR MPARS permitting database
https://www.dnr.state.mn.us/waters/watermgmt_section/appropriations/wateruse.html

Corn Comparison

Date range: 2009-2018, 9 counties

- Irrigated corn yield (189 bu) and net return per acre was $111/acre N=569 farms

- Dryland corn (160 bu) during that same time frame net return was $71/acre N=2222 farms



- ***Irrigated land planted to corn was 52% more profitable in selected region.**

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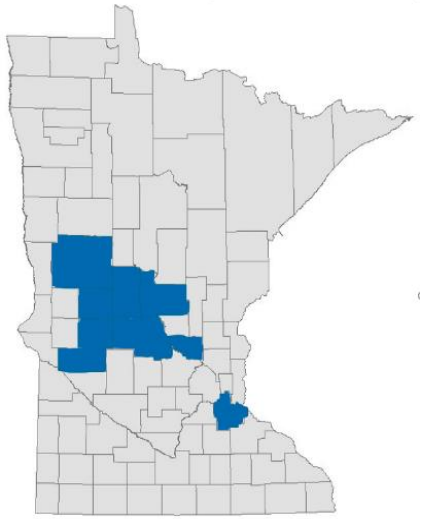
Soybean Comparison

Date Range: 2009 – 2018, 9 counties

- Irrigated soybean yield (49 bu) net return was $126/acre N=293 farms



- Dryland beans (43 bu) during that same time frame net return was $72/acre N=1441 farms

- ***Irrigated land planted to soybeans was 75% more profitable in selected region.**

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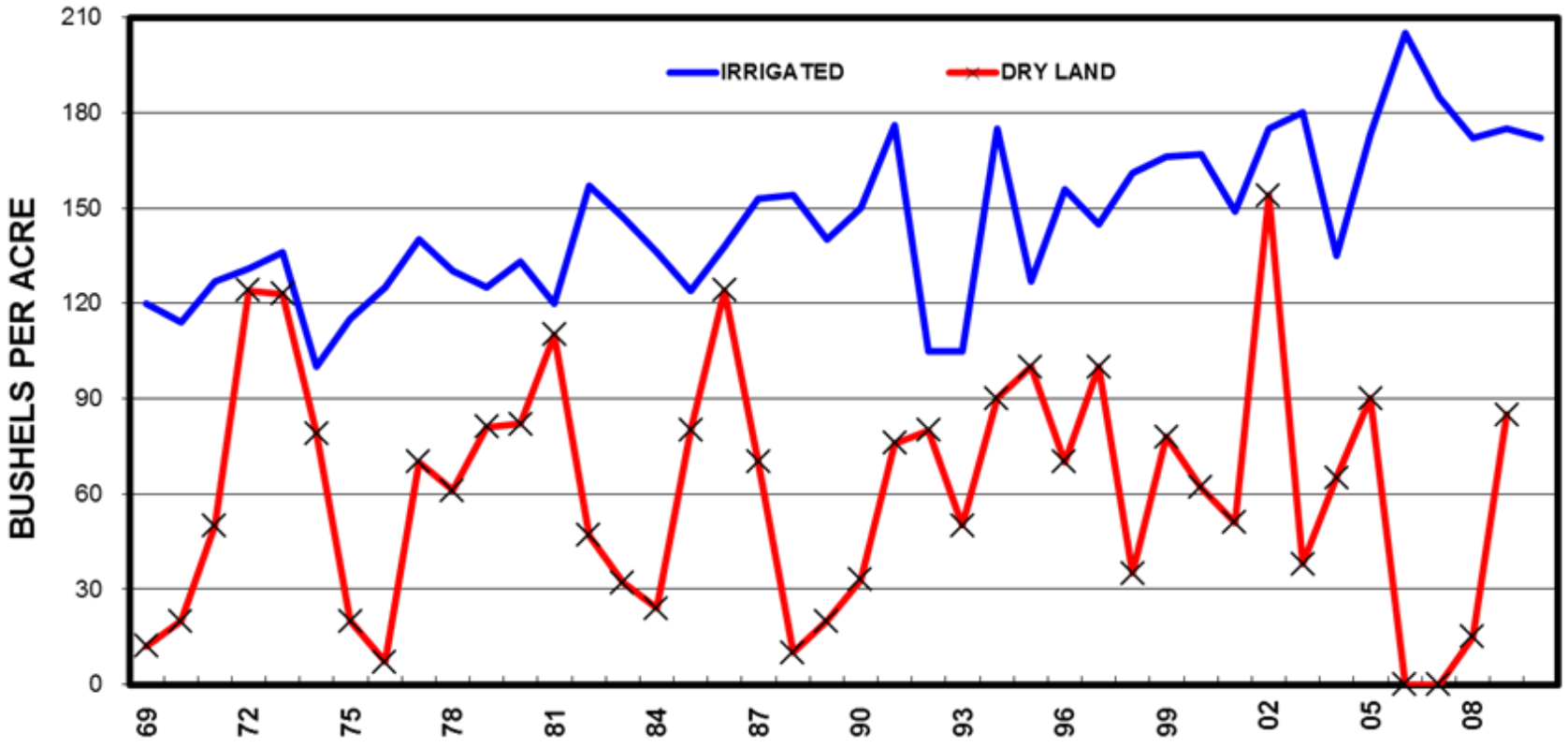
IRRIGATED & DRYLAND CORN YIELD RESPONSE - 42 YEARS

Staples Research Site - Central Lakes College- Ag Center & University of Minnesota

1969 - 2010 at Staples, Minnesota

Avg Irrigated = 145 Bus (24 Stdev) and Avg Dryland = 61 Bus (38 Stdev)



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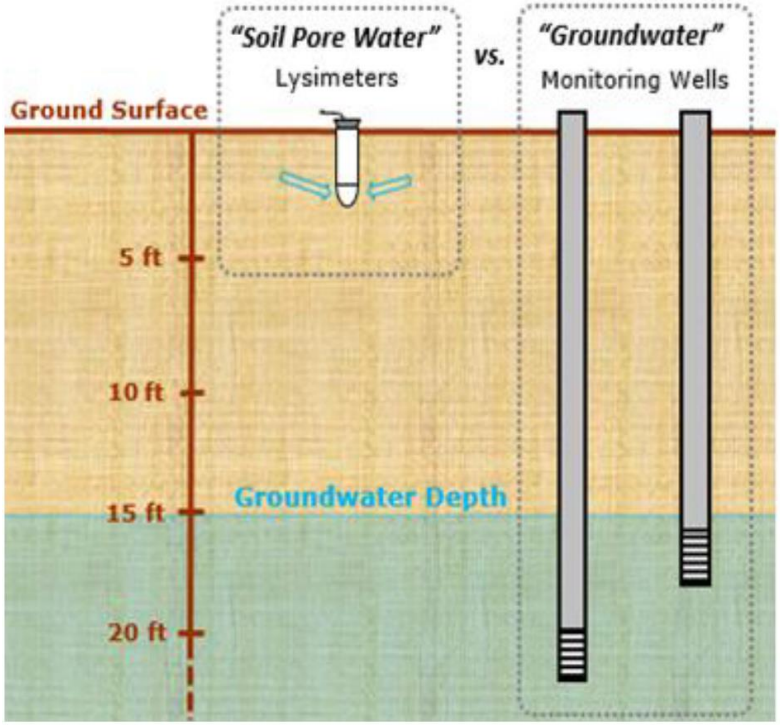
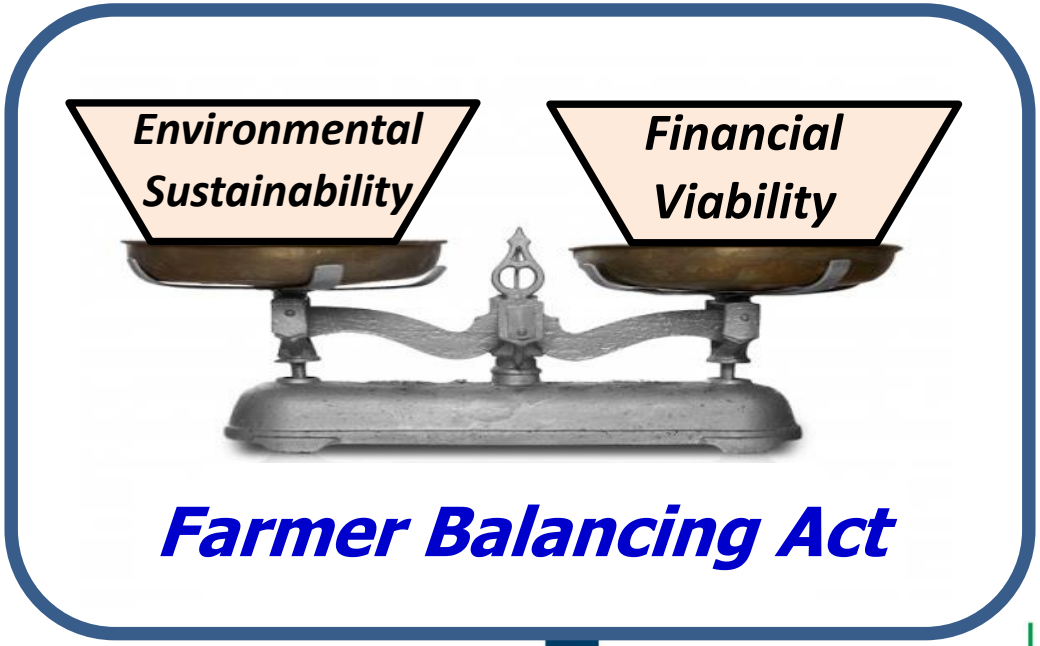
Knowing your terminology: Groundwater vs. soil pore water



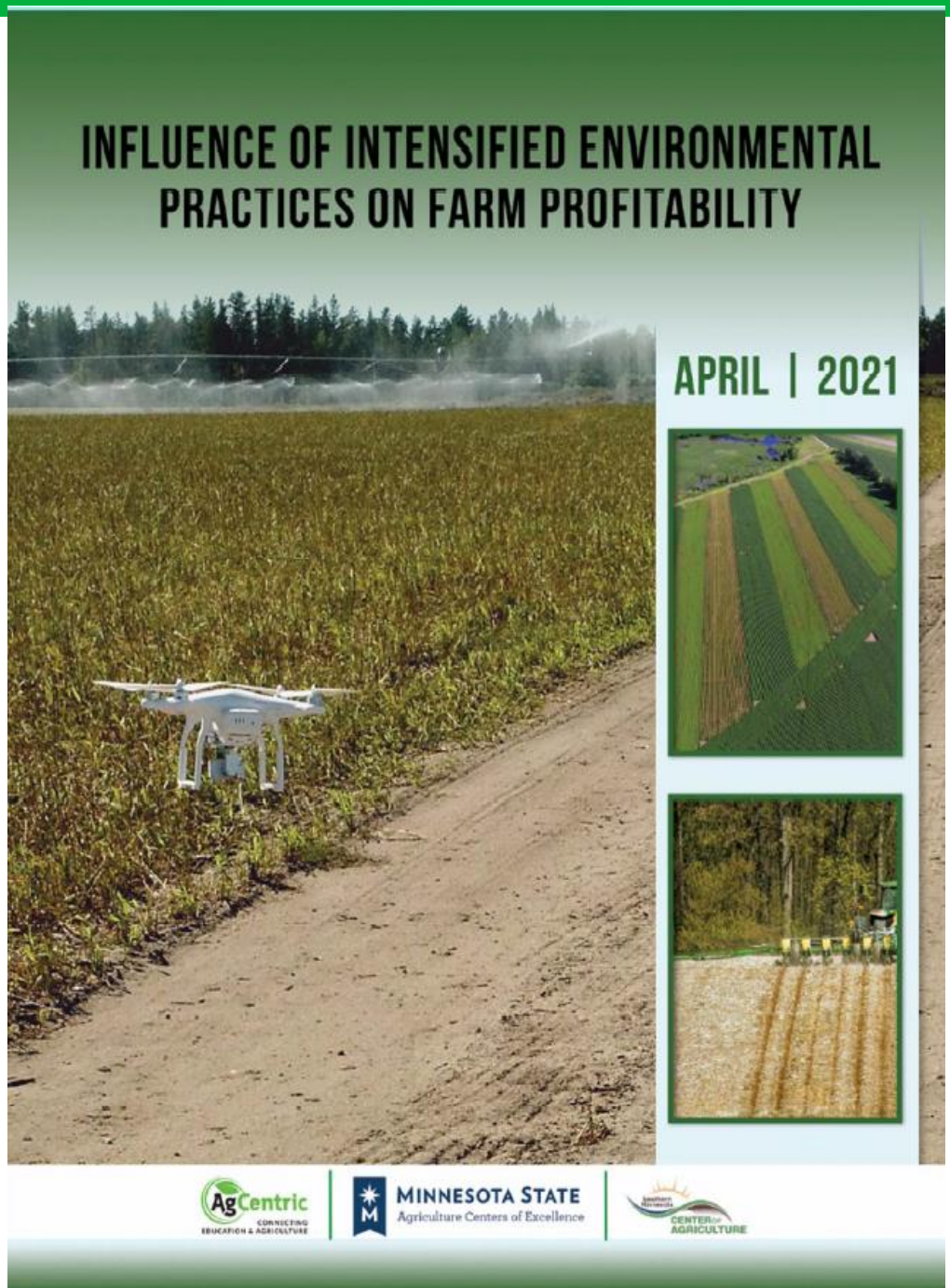
This image illustrates the vertical difference between soil pore water collected in lysimeters versus groundwater collected in monitoring wells.

Influence of Intensified Environmental Practices on Farm Profitability

There are costs and benefits from implementing farm practices that exceed normal practices in supporting environmental sustainability. Decisions to implement new practices are impacted by the balancing act of Environmental Sustainability and Financial Viability.

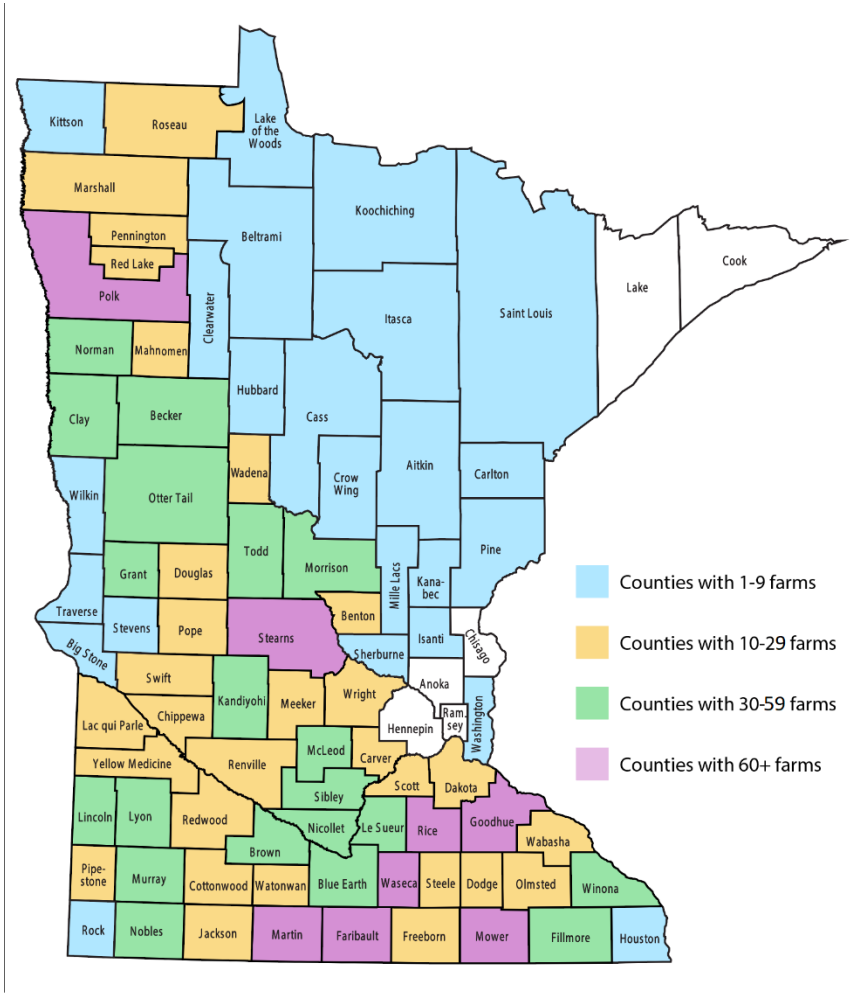


- Agcentric.org

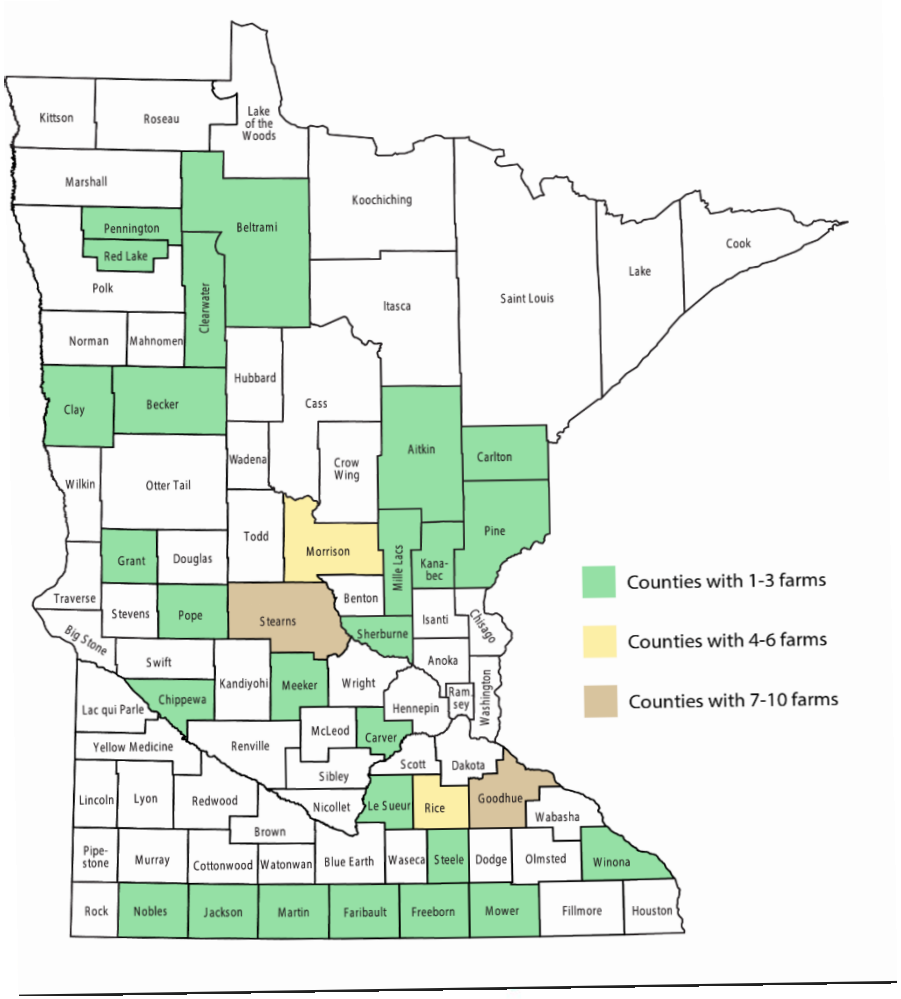


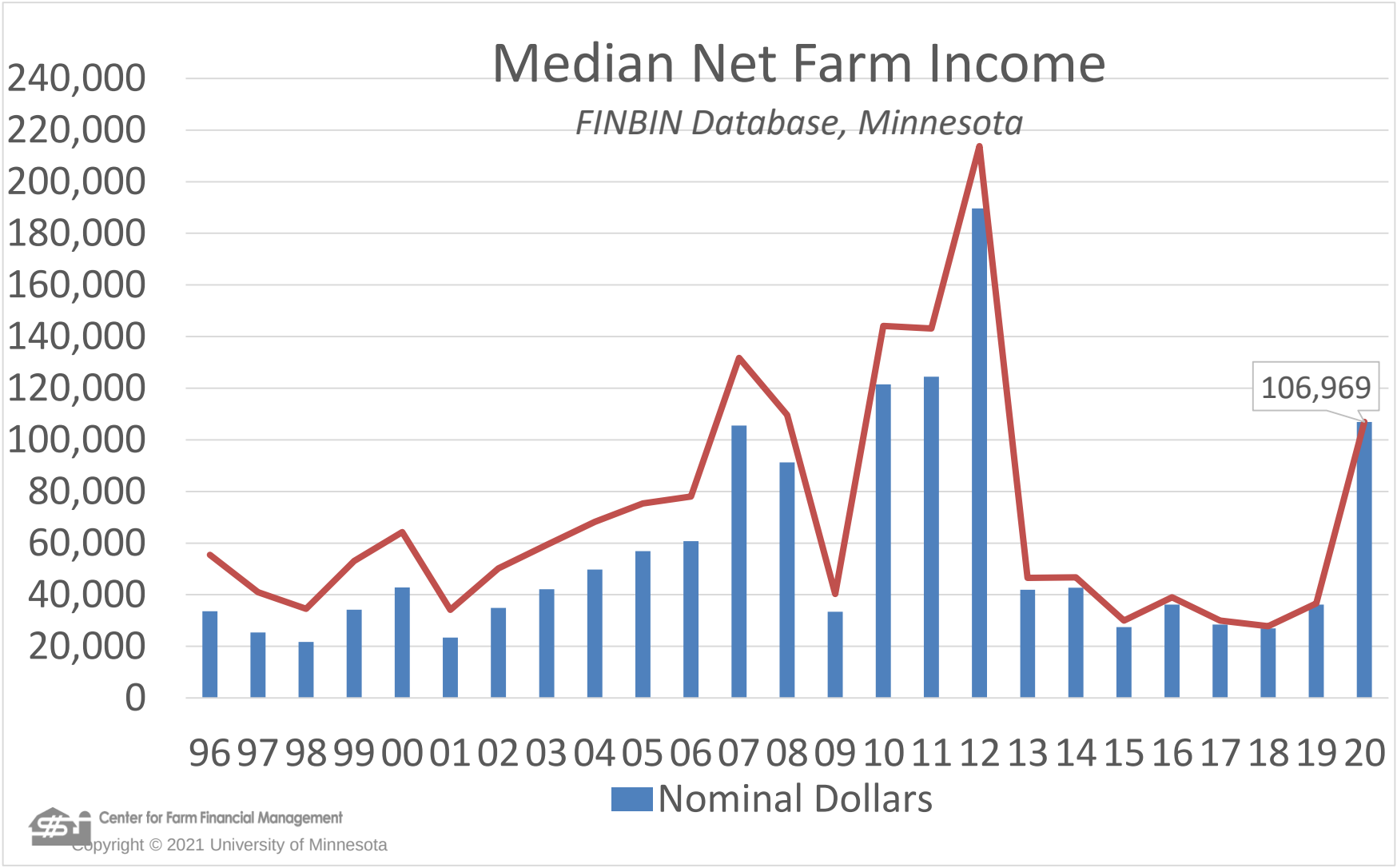
Where the farms are located…

State FBM Database



Water Quality Sort





Center for Farm Financial Management

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What is Net Farm Income used for?

Net Farm Income dollars are used to pay for Family Living, Social Security and Income Tax, Retirement Accounts, Medical and Health expenses, and loan principle payments. The list below shows the data for the current year. A positive balance indicates that there is revenue available for other uses,

		2020	2019	2018	2017
Net Farm Income		$172,678	$73,643	$49,068	$59,543
Depreciation	(plus)	$51,676	$50,364	$49,692	$51,002
Family Living (Excl Health/Med)	(minus)	$50,274	$46,127	$45,702	$49,652
Social Security and Income Tax	(minus)	$11,546	$8,112	$8,123	$9,829
Health and Medical Expense	(minus)	$9,523	$9,597	$9,701	$9,891
Retirement Accounts	(minus)	$8,717	$4,735	$6,638	$1,781
Principal Payments	(minus)	$60,177	$58,043	$59,201	$63,286
Balance		$84,117	-$2,607	-$30,605	-$23,894

Jake Wildman

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Future of Precision Irrigation

- $3.5 Million Dollar Award from NRCS – RCPP program
  - https://agcentric.org/rcpp-precision-irrigation/

Operations Team

- **Project Sponsor:** Minnesota Department of Agriculture.
- **Project Partners:** 20 Soil and Water Conservation Districts: Becker, Benton, Cass, Dakota, Douglas, East Otter Tail, Grant, Hubbard, Kandiyohi, Meeker, Morrison, Pope, Sherburne, Stearns, Stevens, Swift, Todd, Wadena, Washington and West Otter Tail.
- Central Lakes College Ag and Energy Center, AgCentric, Northern Center of Agricultural Excellence, Mille Lacs Band of Ojibwe, Irrigators Association of Minnesota, Central Minnesota Irrigators, Todd-Wadena Electric Coop, Reinke Manufacturing, RD Offutt Farms, RESPEC Consulting, University of Minnesota, Minnesota Board of Water and Soil Resources, and Minnesota Department of Health

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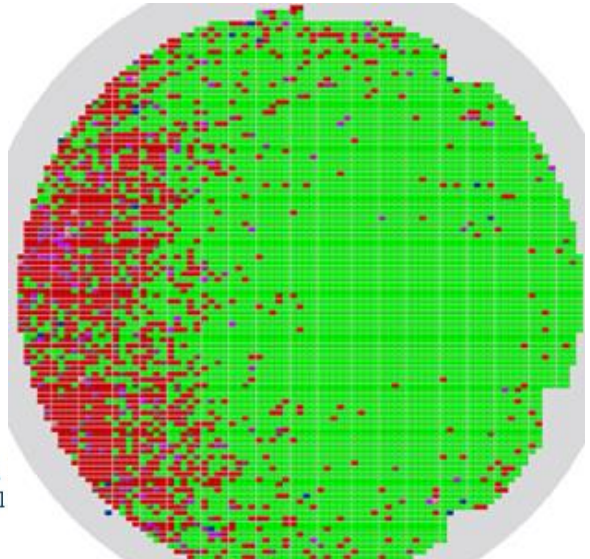
Project Impact



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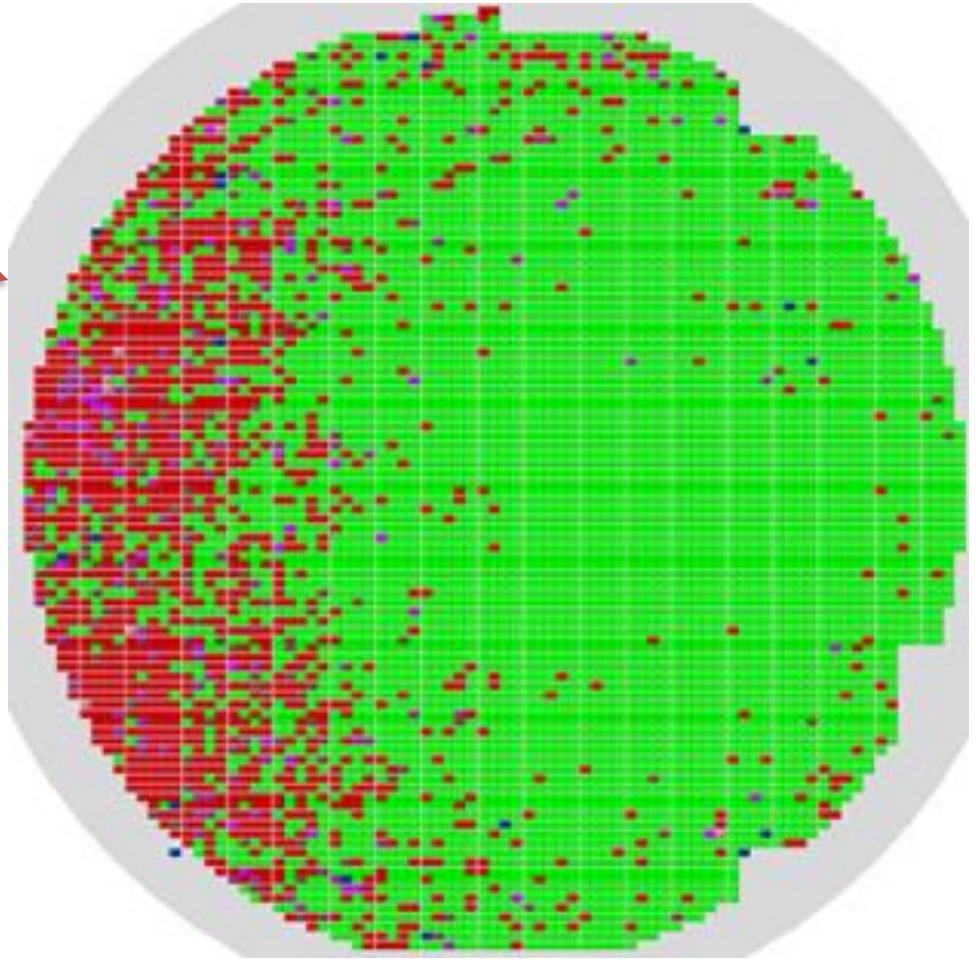
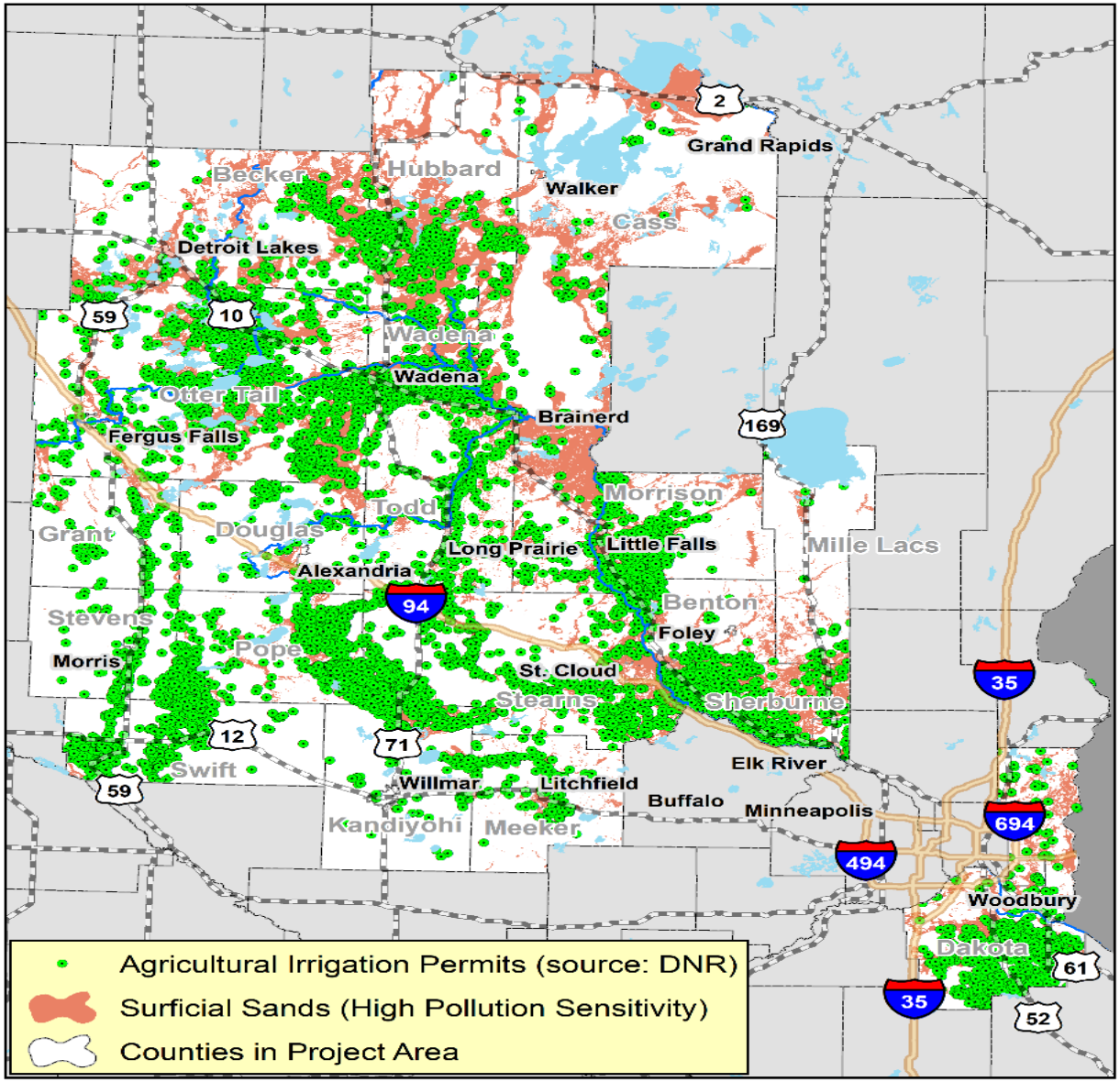
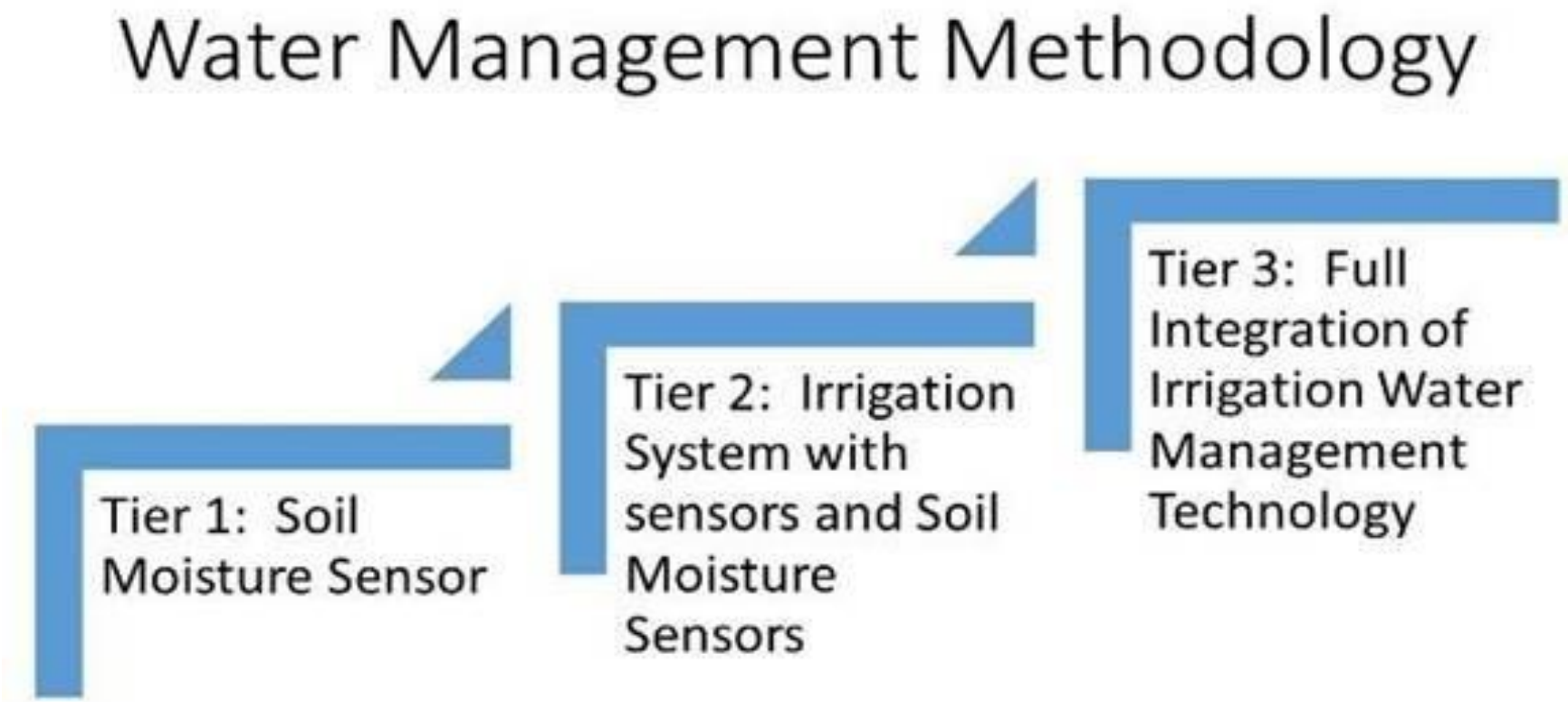
Transforming Water Use



Project Area



Project Methodology



Summary

- Farmers irrigate to utilize soil capacity and minimize wasting crop inputs
  - Edible Beans
  - Potatoes
- Farmers desire minimal water use to get sufficient crop and grow soil quality for future crop years and generation
- Economics control the rate of adaptability of environmental practices
- New, focused effort through grant to support farmer adaption of new technologies

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