

Minnesota's Nutrient Reduction Strategy



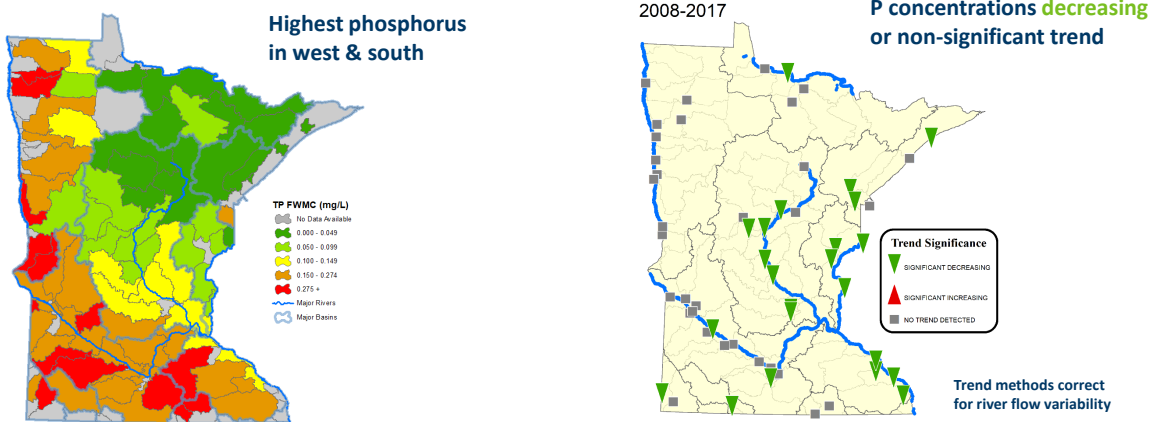
Tracking progress toward milestone goals

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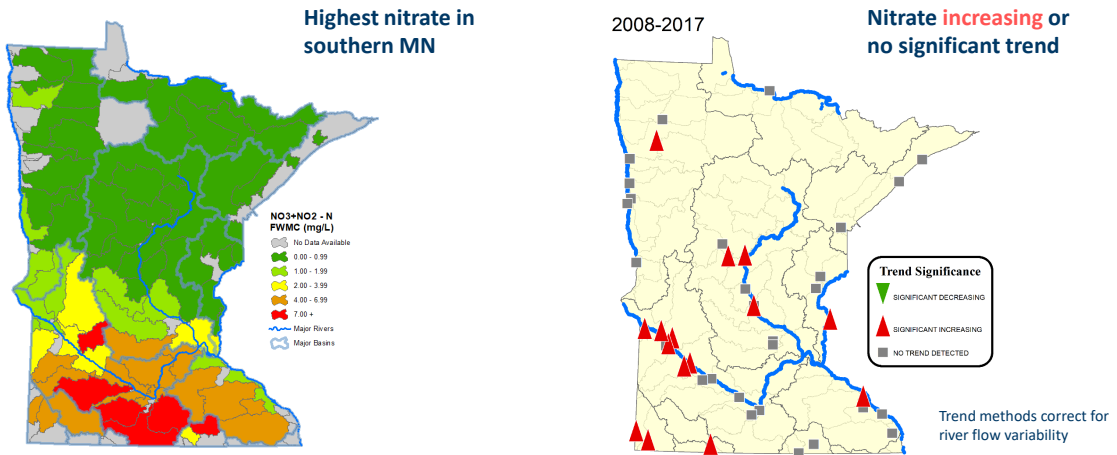
1

River condition, trends - phosphorus



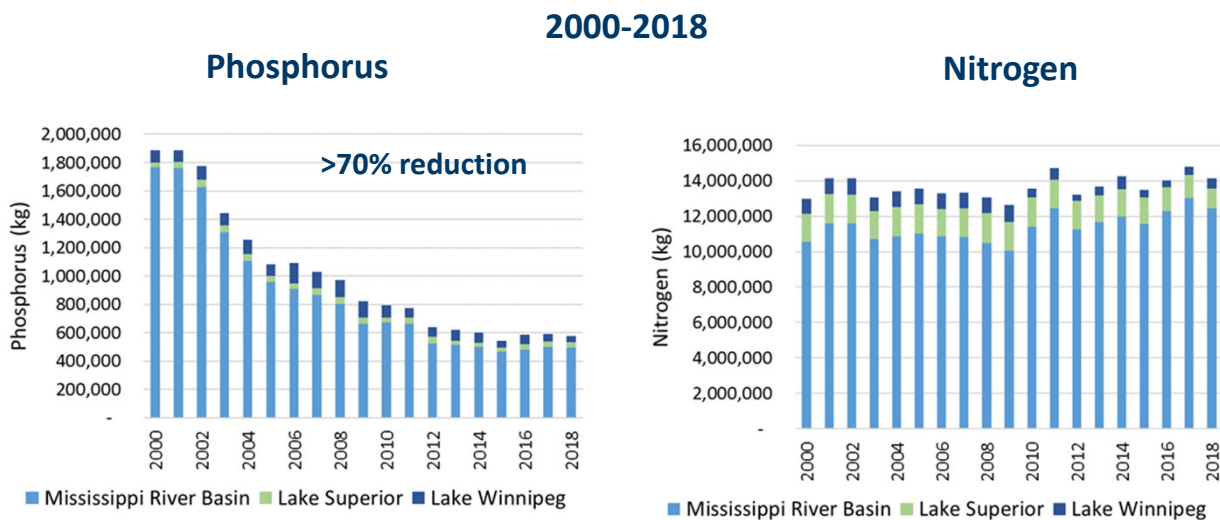
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River condition, trends - nitrate



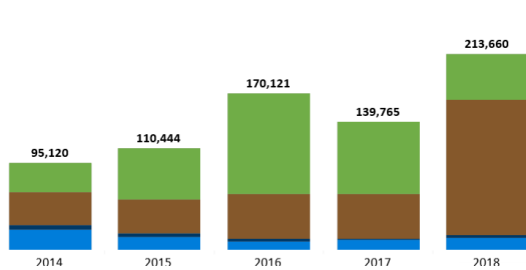
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Wastewater nutrient discharges



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Tracking BMP adoption, Government Programs Statewide



Living Cover (326,657 acres total)

Practices that reduce nutrient and soil loss by keeping plants growing continuously, including the Fall and Spring months. Common practices include cover crops and conservation cover.

Cropland Erosion Control (317,642 acres total)

Designed to reduce runoff and soil losses. This group consists primarily of farming practices that leave crop residue on the surface or structural practices that reduce or capture runoff and eroded soil.

Drainage Water Retention and Treatment (15,678 acres total)

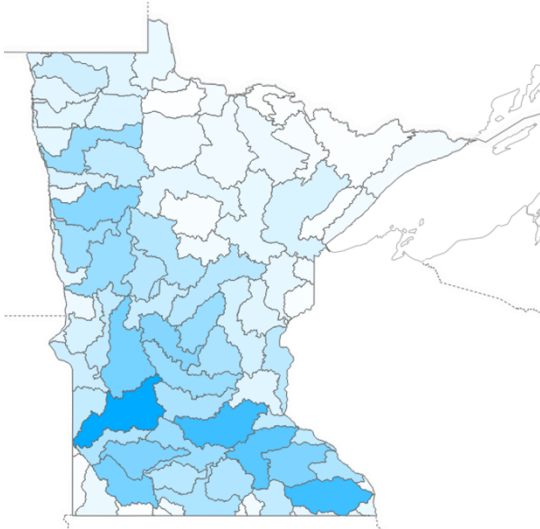
Practices designed to slow down waters leaving tile-drained landscapes or otherwise treat tile-waters for nutrient removal prior to entering streams. Wetland restoration and controlled drainage management are the most common practices, but other emerging practices include saturated buffers and bioreactors.

Nutrient Management (69,134 acres total)

Managing the amount, form, placement, and timing of nutrient and soil amendments such that nutrients are used most efficiently by the crops, at the same time minimizing leaching and runoff to surface and ground water.

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Tracking BMP adoption, Government programs (HUC8 watershed scale)

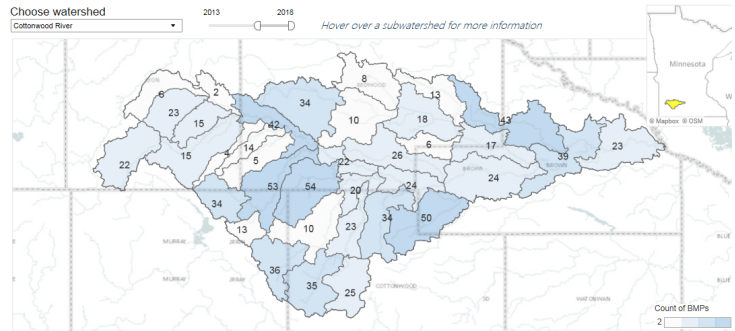


BMPs Installed 2004-2018

| BMPs Installed 2004-2018 | BMP Count |
|--|----------------|
| Tillage/residue management | 11,382 |
| Designed erosion control & trapping | 10,236 |
| Nutrient management (cropland) | 9,992 |
| Septic System Improvements | 7,874 |
| Converting land to perennials | 7,696 |
| Open tile inlet & side inlet improvements | 7,136 |
| Stream banks, bluffs & ravines protected/restored | 6,073 |
| Buffers and filters - field edge | 5,348 |
| Add living cover to annual crops in fall/spring | 4,508 |
| Habitat & stream connectivity management | 4,026 |
| Pasture management | 3,087 |
| Drainage ditch modifications | 2,715 |
| Agricultural tile drainage water treatment/storage | 1,184 |
| Urban Stormwater Runoff Control | 1,114 |
| Changing rotations to less erosive crops | 455 |
| Feedlot runoff controls | 173 |
| Forestry Management | 138 |
| Wetland restoration/creation | 104 |
| In Lake Management | 4 |
| Other | 51,878 |
| Grand Total | 135,123 |

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Tracking BMP adoption, government programs (HUC12 subwatershed scale)



Cottonwood Watershed
2013-18 BMP #s

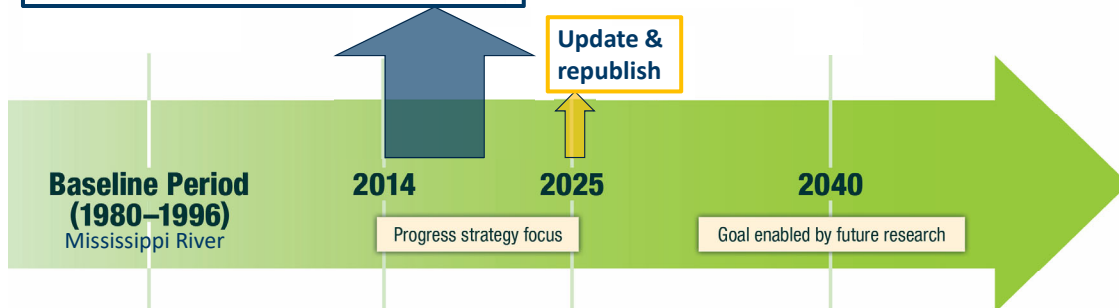
<https://www.pca.state.mn.us/water/healthier-watersheds>

| Strategy | Practice Description | Total BMPs | Number of BMPs (by unit) | Installed Amount (by unit) | Units |
|--------------------------------------|-------------------------------------|------------|--------------------------|----------------------------|-------|
| Designed erosion control | Water & Sediment Control Basins | 100 | 2 | 1,001 | Feet |
| | Grassed Waterway | 98 | 98 | 1,450 | Count |
| | Terrace | 43 | 43 | 113 | Acres |
| Stream banks, bluffs & ravines | Sediment Basin | 14 | 3 | 7,057 | Feet |
| | Streambank and Shoreline Protection | 11 | 11 | 3 | Acres |
| | Structure for Water Control | 1 | 1 | 2 | Count |
| Butlers and filters - field edge | Grade Stabilization Structure | 43 | 43 | 43 | Count |
| | Conservation Cover | 24 | 24 | 5,560 | Feet |
| | Structure for Water Control | 2 | 2 | 7 | Count |
| Living cover to crops in fall/spring | Conservation Cover | 33 | 33 | 487 | Acres |
| | Filter Strip | 40 | 40 | 296 | Acres |
| | Cover Crop | 75 | 75 | 13,002 | Acres |
| Converting land to perennials | Conservation Cover | 33 | 33 | 487 | Acres |
| | Critical Area Planting | 24 | 24 | 60 | Acres |

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Five-year Progress Evaluation – Spring 2020

1. Are NRS strategies/programs in place?
2. How much progress with BMP adoption?
3. Can we see improvements in water?
4. Next steps for 2020-25?



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<https://www.pca.state.mn.us/water/nutrient-reduction-strategy>



Thank You!

