Can We Optimize Placement of Best Management Practices to Accelerate Water Quality Improvement Under Nutrient Legacy?

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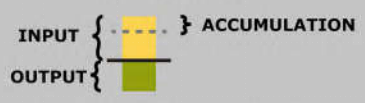
"Nutrient legacy"

A build-up of nutrients in the soil and groundwater over time

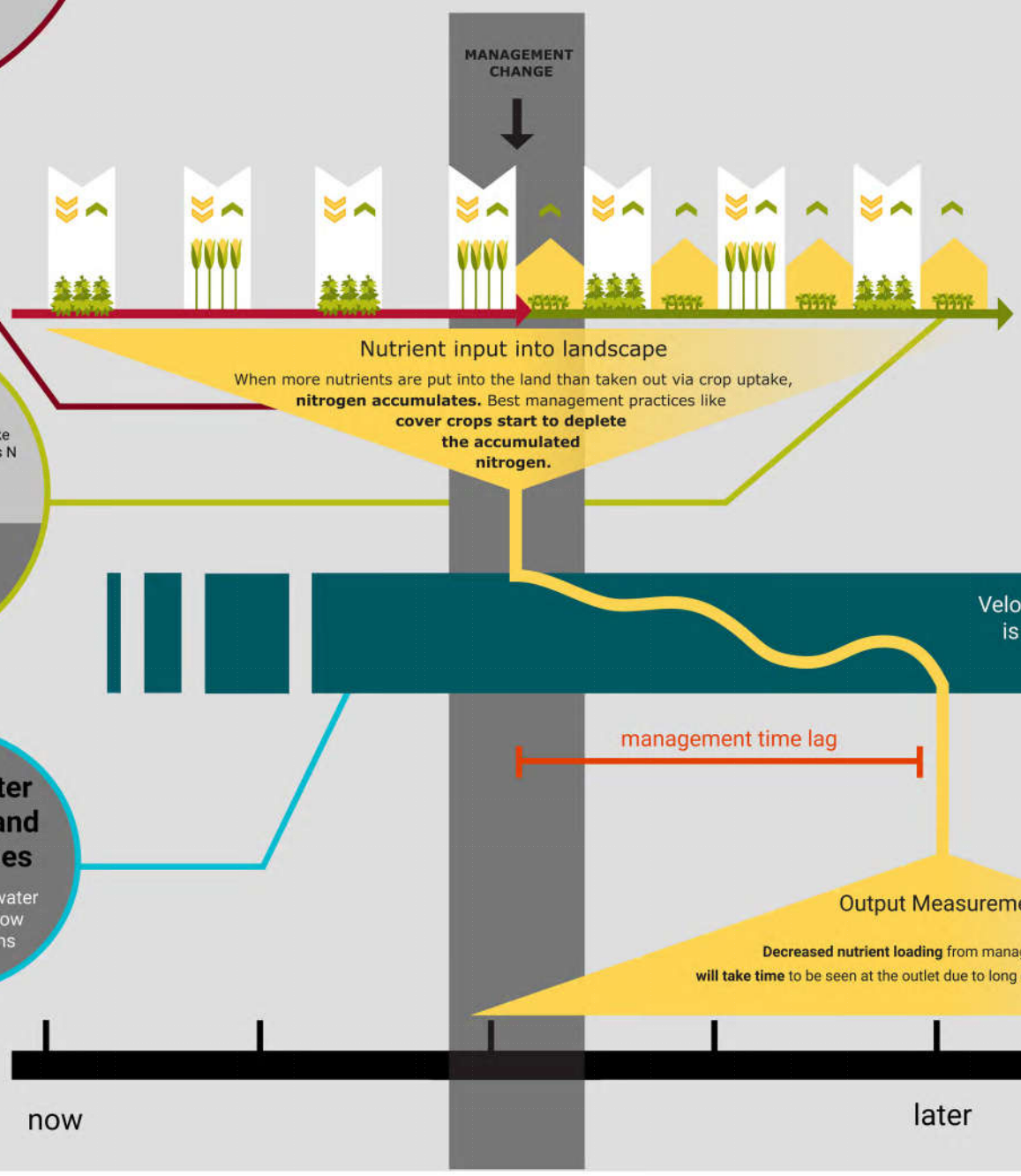


INPUTS - OUTPUTS = ACCUMULATION

Anthropogenic landscapes are in excess of nitrogen through agricultural, industrial, and urban activities

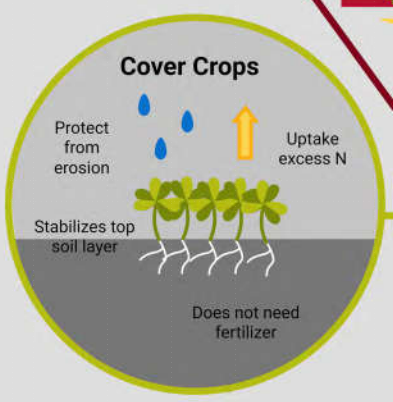
Current focus: Nitrogen

This work can be extended for phosphorus



Cover Crops: An Example BMP at the Farm-Scale

- Cover crops can be effective for preventing nitrate leaching at the farm scale
- Cover crop implementation is currently opportunistic rather than strategic about placement in the watershed



Groundwater Pathways and Travel Times

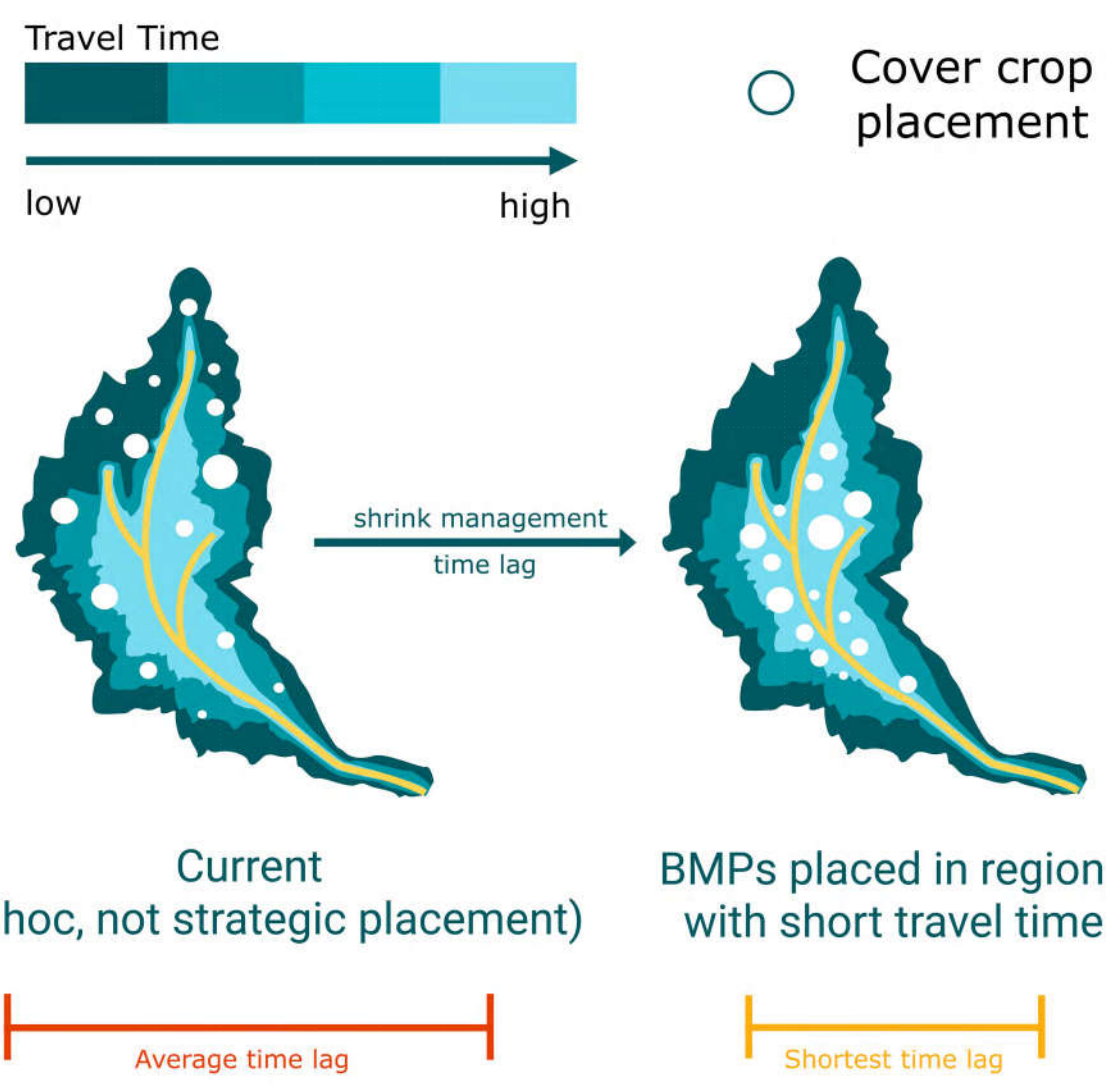
Nitrate in groundwater travel with the flow towards streams

Potential Application

Can we **place cover crops** in locations that would lead to the **fastest and greatest water quality improvement**?

For example, cover crops could be placed in areas with the shortest travel times and largest legacy accumulations.

What is the **increased water quality improvement** for strategic vs ad hoc placement of BMPs?



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