



Reducing the Health Impacts of the Nitrogen Problem

A Virtual Workshop from the
Environmental Health Matters Initiative

New sessions every Thursday
from 2:30–5:30 PM (ET)
from January 28 – February 25, 2021



Water Quality Trading

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February 18, 2021



Summary Points

1

WQT is a compliance system for parties facing regulatory requirements

2

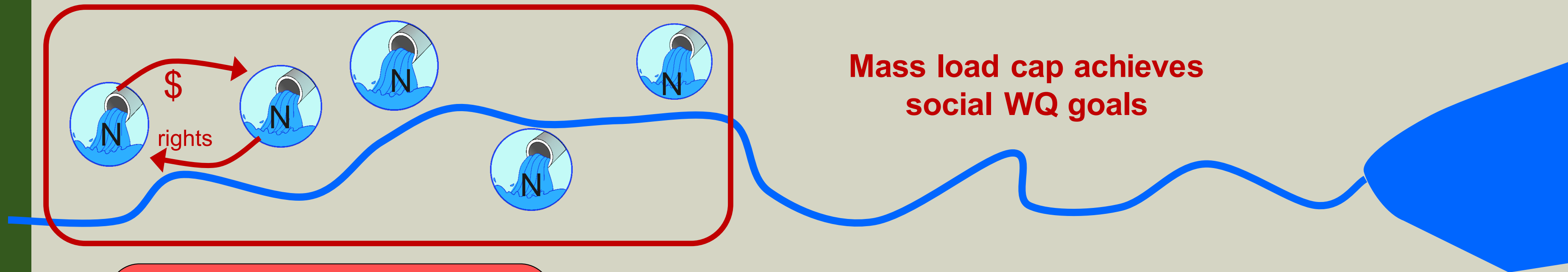
WQT is not a financing mechanism for voluntary ag nonpoint N reduction programs

3

As currently designed, WQT will make a trivial contribution to reducing ag -based N

Water Quality Trading in Concept

Regulatory N Limitations



**Mass load cap achieves
social WQ goals**

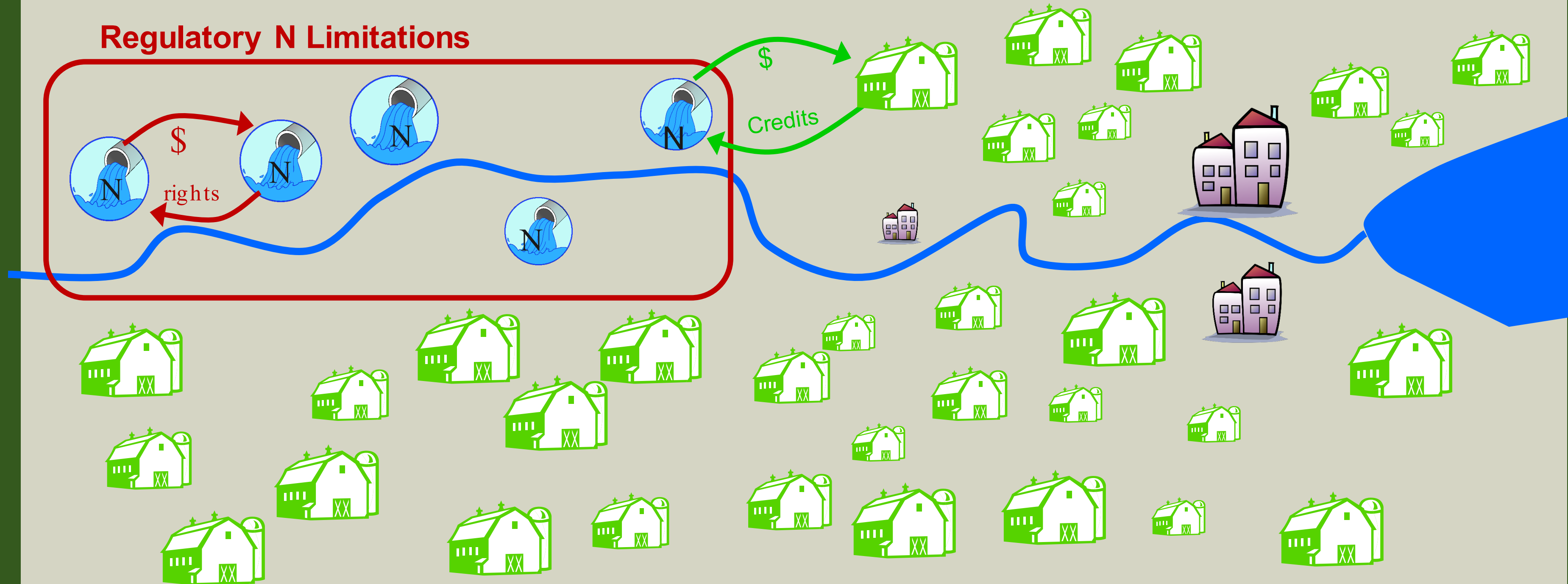
Market-based WQT

- Establish total permissible discharge
- Allocate rights/permissions to dischargers
- Allow transfers
- Monitor/Enforce

**Trade grants
dischargers flexibility to
reduce cost**

Water Quality Trading w NPS credits

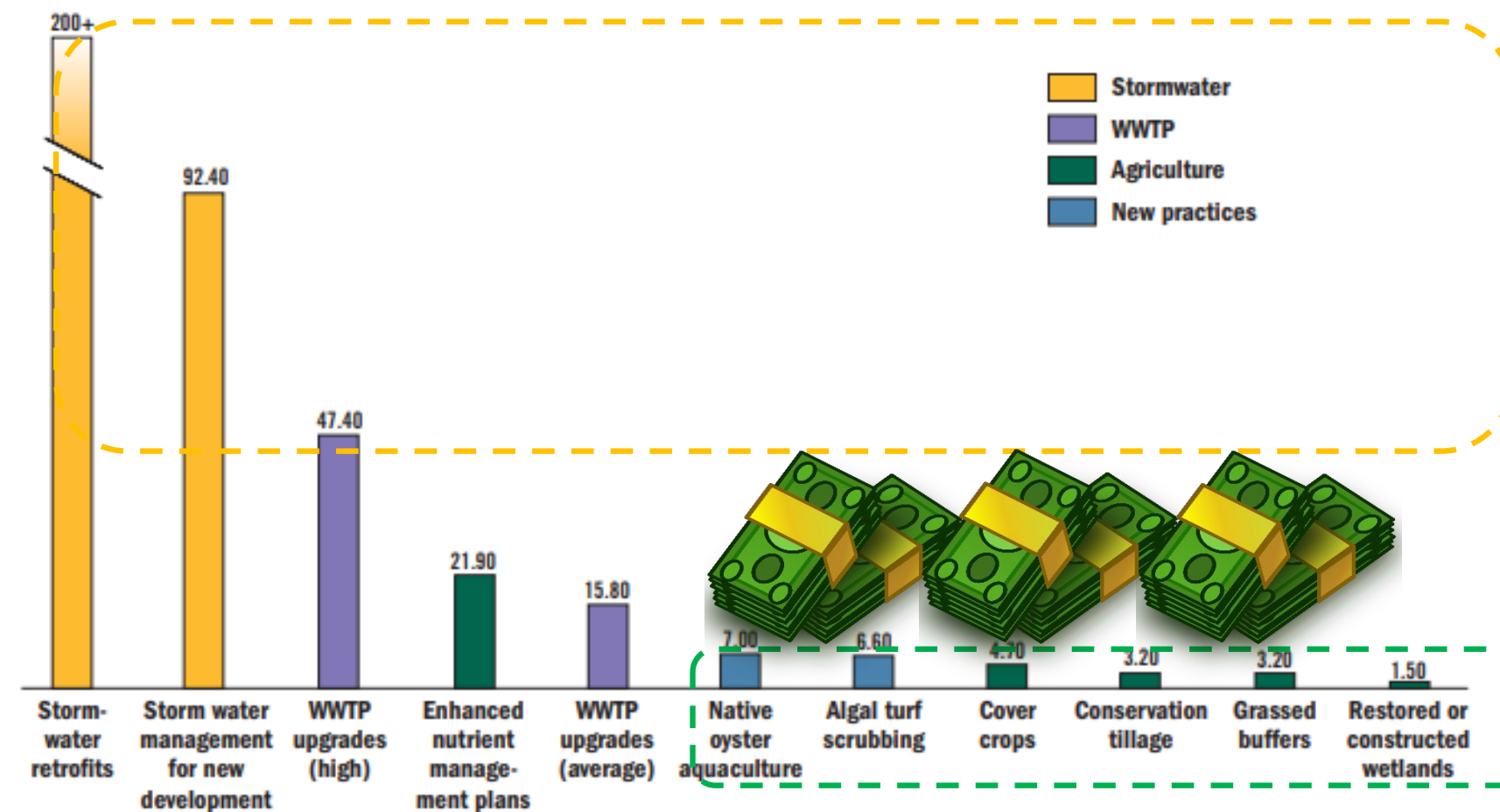
Regulatory N Limitations



The economic rationale for “PS-NPS” Trading

Figure 2 | Nitrogen Reduction Costs Differ Among Sectors and Practices, Creating Economic Opportunities for Credit Trading

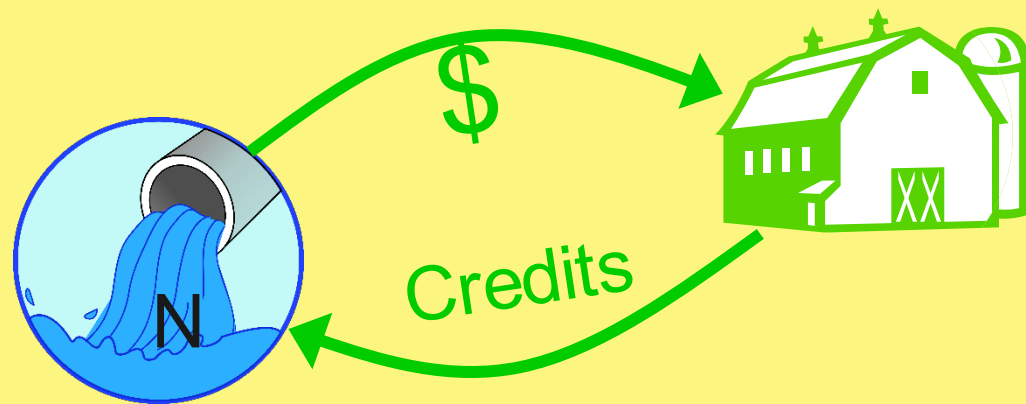
Dollars per pound of annual nitrogen reduction



Source: U.S. EPA and Abt Associates, 2009; Wieland, et al., 2009; MDNR, 2008; Stewart, E. A., 2006; WRI analysis using WWTP upgrade costs from MDE and VDEQ.

Source: Jones et al, “How Nutrient Trading Can Help Restore the Chesapeake Bay” WRI 2010

WQT: Solution to Ag NPS N?



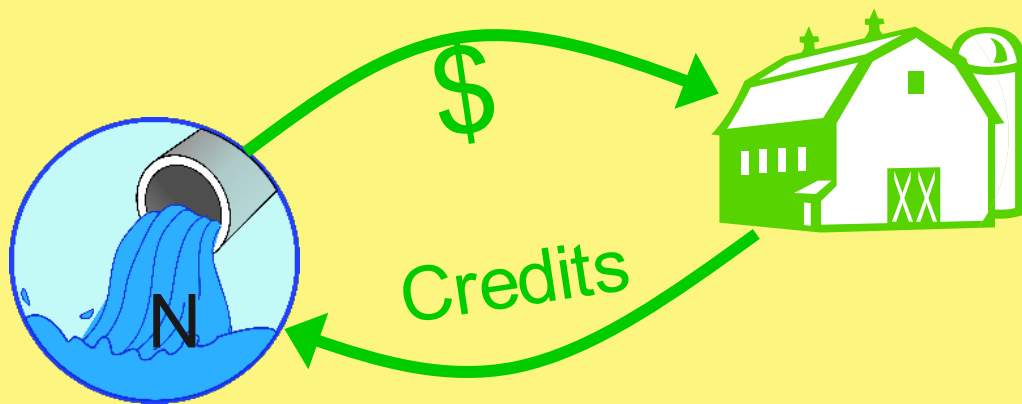
→ Conceptual Issues

→ Practical Experience

Stephenson, K. and L. Shabman. 2017. "Can Water Quality Trading Fix the Agricultural Nonpoint Source Problem?" *Annual Review of Resource Economics*.

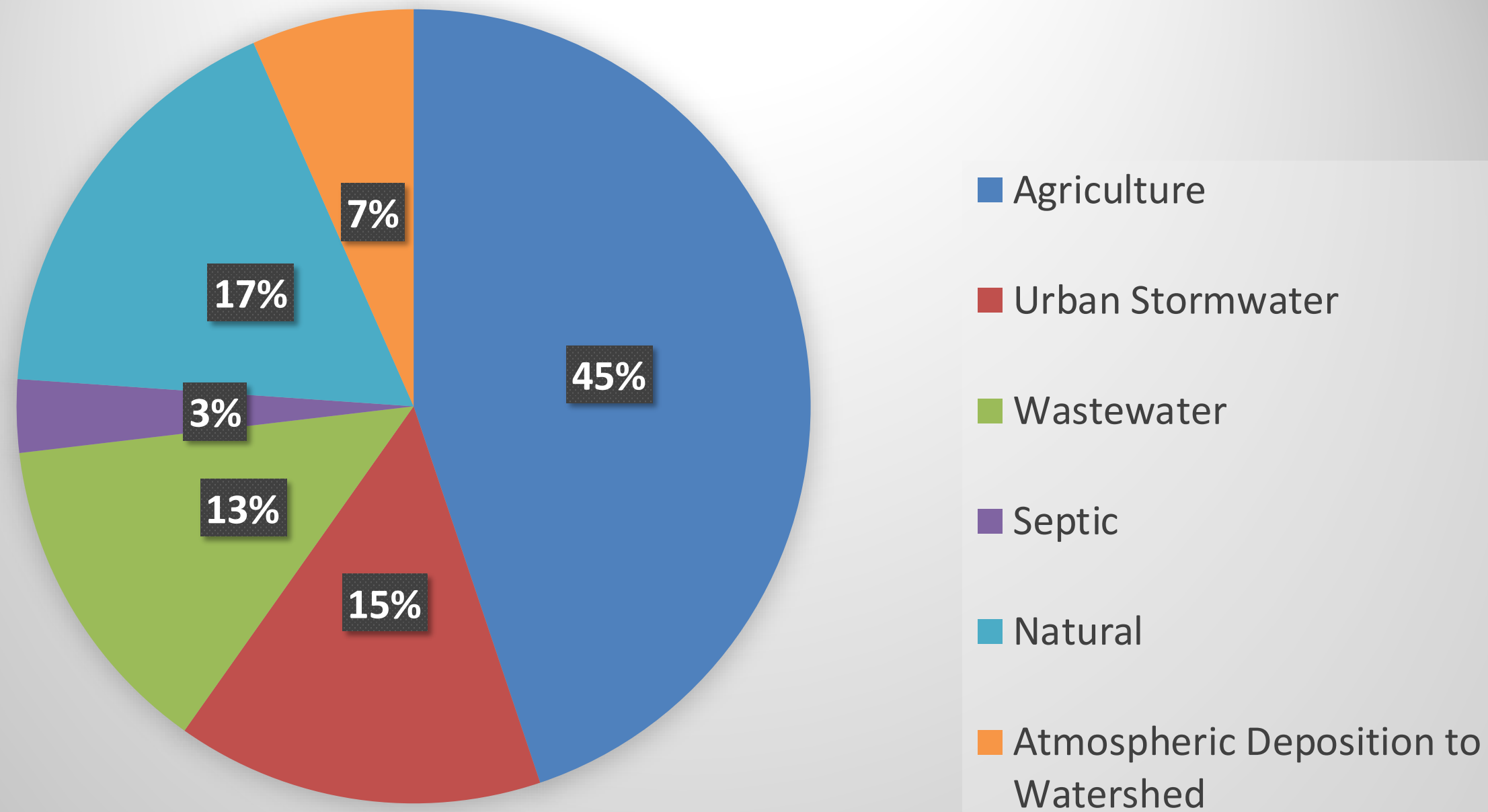
WQT: Solution to Ag NPS N?

Conceptual Issues



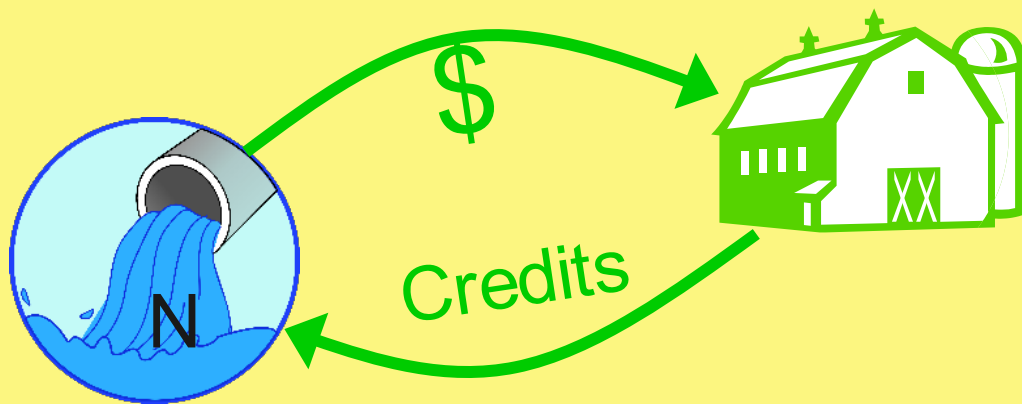
- PS-NPS trades are an offset in loads
- Regulated loads small relative to NPS

Simulated N Loads the Chesapeake Bay, 2019



WQT: Solution to Ag NPS N?

Conceptual Issues



→ PS-NPS trades is an offset in loads

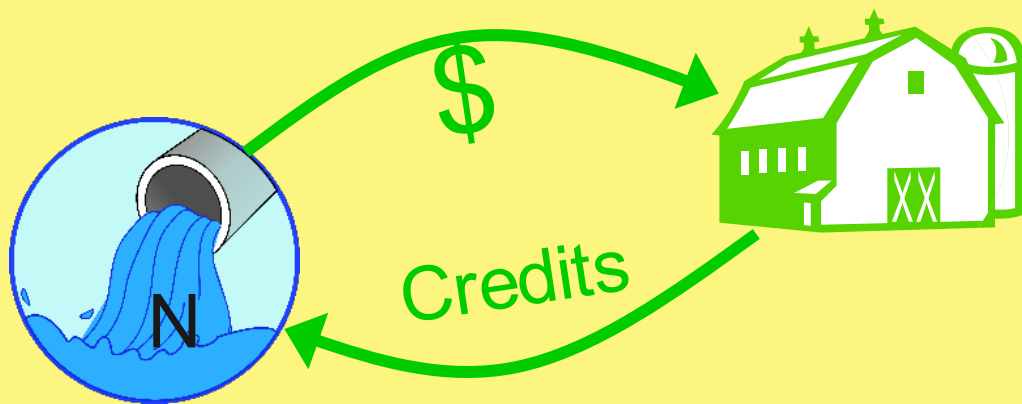
What about trading ratios, retirement ratios, etc.?

→ Regulated loads small relative to NPS

What about lower caps or bring in more sources ("regulatory drivers")?

WQT: Solution to Ag NPS N?

Practical Reality

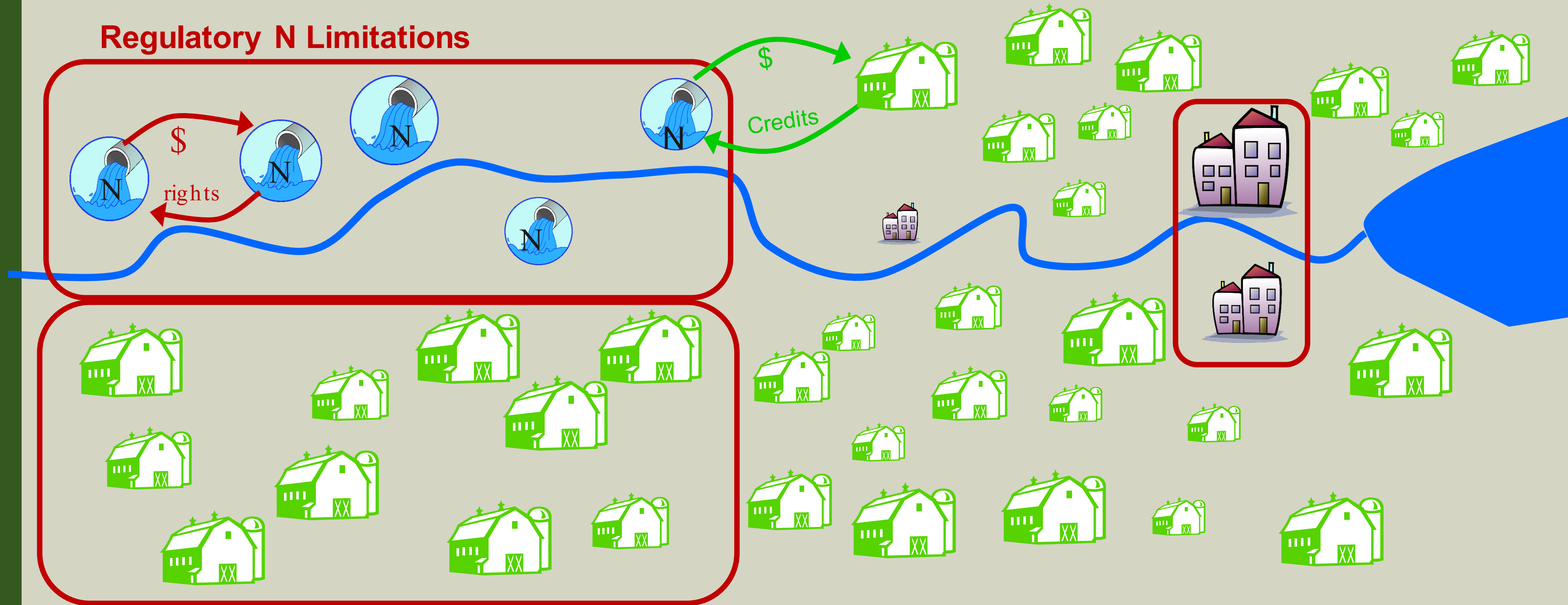


→ Very little PS demand for ag N credits

→ Ag N credit supply problems

Over 25 years experience has produced limited instances of sustained trading involving agriculture & even less on ag working lands

More Effective Water Quality Trading





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