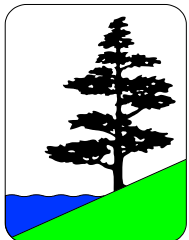




Workshop on Evaluation of  
Agri-Environmental Policies  
Braunschweig, Germany  
20-22 June, 2011

# *Socio-Political Conditions for Successful Water Quality Trading in the South Nation River Watershed*



SOUTH NATION  
**CONSERVATION**  
DE LA NATION SUD

Dennis O'Grady, MPA  
General Manager  
South Nation Conservation

# Look Beyond Traditional Approaches

What is our goal?

- reduce kg P or concentrations?

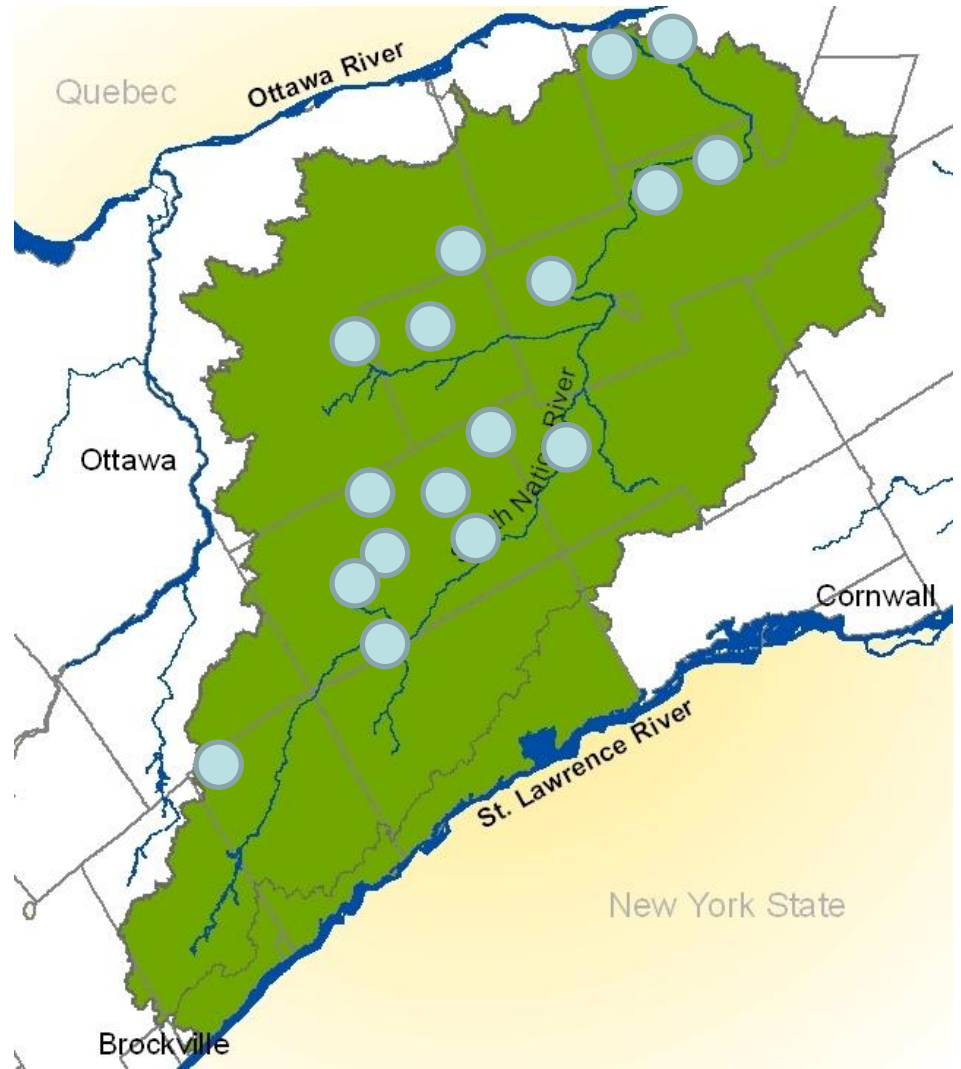
Does P only come from point sources?

What if a town can remove P for \$400/kg instead of \$5,000+ /kg?

Which approach should we take?

Water Quality trading looks at the watershed as a whole and attacks the P loading, **regardless of watershed location**

*Location of Point Sources of P*



# Watershed Phosphorus

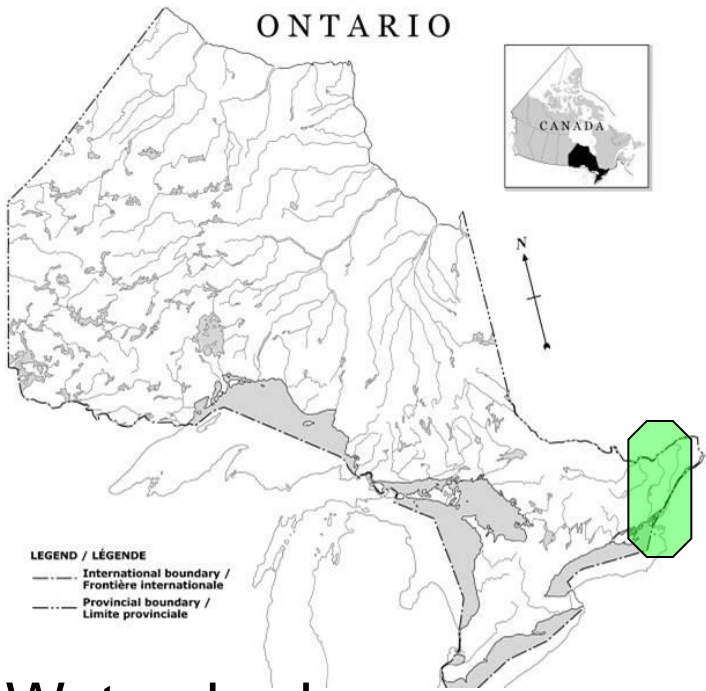
5 times >  
Provincial policy

90% from non-point:

- Wastewater lagoons
- Industry
- Landfills



# South Nation Conservation



## Watershed:

- 4,200 sq. km.
- Cash crop, dairy
- Small towns
- 22% forest cover



# Requirements For Trading Success

---

- Community agreement
- Legislation
- Credit certainty (science based measurement)
- Cost certainty for buyers/sellers
- Long-term Broker
- Simple Delivery/verification
- Instruments
- Legal liability protection



# 1997 Newspaper Headlines

*Valley Farmers Forum / March 97*

## Plan to pay farmers to clean up could start a dangerous trend

The South Nation River wants to pay farmers and 1992 on the nearby Payne River, showed for implementing water quality improvements on herbicide levels well below federal guidelines. In their farms. The reason simply put is that munic- other words, farmers are not excessive polluters.

The Chieftain, Wednesday, June 18, 1997 Page Seven

## Municipalities could possibly be getting away with murder

by Sean McKibben Lawrence and Ottawa branches of phosphate pollution through their

Page 22 The AgriNews June 1997

## Phosphorous program not "sinister scheme"

By Tom Van Dusen  
AgriNews Staff Writer

**T**he Total Phosphorous Management Program is being forward as leaders, to show that agriculture is proactive," Coukell said. "We live and work in this environment so obviously lagoons. The essential difference which allows flexibility with phosphorous is that it's a nuisance rather than a at five times the recommended provincial guideline. It's not known what percentage is from natural sources such as authority is well positioned to administer the Total Phosphorous Management Program as an extension of what

# Community Agreement

---

- Cancelled all trading projects until farm issues fixed
- Had Agriculture Ministry take lead
- Farmers helped create policies, procedures, grants
- Agreement between Government, Farmers, SNC:
  - roles and responsibilities for each
  - 4:1 offset
  - higher cost per kg. of P
  - evaluation and monitoring strategy
  - open reporting to dischargers, public
  - confidentiality agreements



# Legislation For Trading

---

- Provincial Policy:
  - “water quality not meeting standards shall not be degraded further”
- Province issued approvals against their own policy if discharger gave sufficient reasons
  - e.g. too expensive to build, technology not reliable, etc.
- Since 1998:
  - new/expanded wastewater dischargers have a regulatory discharge limit of 0 kg of P





# Method of Capping Decided by Discharger, not Province

---

- 3,000 people ~ 620 kg P
- Environmental Assessments must show options to control P:
  - New tertiary plant: \$15 million +
  - Enhanced lagoon treatment: \$5 million ±
  - P trading: \$1 million
- To date: trading is the preferred method to achieve regulatory limits



# Trading Needs P Credit Certainty

---

- SNC projects, 2000 - 2009:
  - 269 BMP projects completed
  - \$708,403 in grants
  - 11,843 kg P reduction (P “credits”)
  - Always more projects than money
- Market Manipulation
  - grant size/rates will increase/decrease # of projects
    - Grants capped at 50%, with maximum payout of, for e.g., \$10,000 for manure storage



# Trading Needs Agreement On Science

---

- 2002 review of 80 primary research papers
- Example: Milk house wash water formula:
  - 0.69 kg P/cow/yr (excluding manure)
  - 2.76 kg P/cow/yr (with manure)
- Regulators approved P reduction formulae
- 4:1 offset: needs more science



# Trading Needs Cost Certainty

---

- Landowners, wastewater plant operators prefer to know costs/revenues before agreeing to trading
- Costs of P reduction based on SNC experience with BMP delivery
  - Staff time, water quality monitoring, reporting, construction costs, etc
- 2010: \$400/kg P



# Trading Needs Broker Certainty

## SNC:

- 25 years delivering BMP's
- Professional staff:
  - Foresters
  - Engineers
  - Fisheries Biologists
  - Communications
- Decisions made by 15 watershed municipalities
- Landowners want one agency, not several



# Simple Program Delivery: Clean Water Committee

---

- Composition:
  - Farm organizations, farmers, government, industry, env'l groups
- Focus on BMP grant delivery, not trading:
  - *Kept it simple!*
- Broker for all aspects of trading program:
  - Research
  - Who gets the money, who doesn't
  - Reporting
  - Evaluation
  - Lobbying
- Flexible





# Delivery Credibility: Farmers Deliver Program

---

- Committee pays farmers to conduct all site visits
  - Farmers are leaders in community
  - Peer to peer: farmers speak the same language
- Farmers make recommendations to Committee on which projects to accept/reject
- Cost effective: \$4,500 for 110 project site visits
- Increased credibility/uptake in program



# Instruments Needed To Implement Trading

---

- Legal contracts with waste water dischargers
- Certificate of Approvals: regulatory wording
- Legal reporting of P credits to MOE, dischargers
- Annual public reports
- Project management/tracking
- Confidentiality agreements
- Farmer contracts
- 50+ instruments to make program work



# Legal Liability Protection

---

- SNC under legal obligation to deliver a certain amount of P credits
  - Not just another government BMP
- Able to defend organization, staff in court
- Huge potential risks to SNC and insurance critical



# Measuring Success Of P Reduction

---

- Can't always use chemical analysis:
  - Watersheds too complex
  - Must use other indicators: visual, biological, etc.
- If we agree that the P reduction formulae come from scientific literature, and are based on primary research, then we must accept that they accurately measure the amount of P removed
  - If we don't accept this premise, then which science do we accept or reject, and why?



# Final Points

---

- Trading produces multiple water quality benefits
  - controls bacteria, sediment, pathogens, etc
  - Multiple ecological goods
- Lower costs for infrastructure
  - Frees up funds for other projects
- Taxpayer, industry, businesses: lower taxes
- Agriculture: financial support
  - green payments: No WTO penalties
- Watershed managers need more tools



# Ontario: Only jurisdiction with trading legislation in Canada

---

- Legislation outlines:
  - where water quality trading applies
  - water quality targets for trading
  - creation, retirement and trading of water quality credits
  - requirements for discharge, monitoring and reporting
  - designating who can administer water quality trading





# Landowner Acceptance, Satisfaction

---

Would you recommend that other watersheds undertake a similar program?

recommended the program to a friend or neighbor: 85.7%

intended to: 3.9%

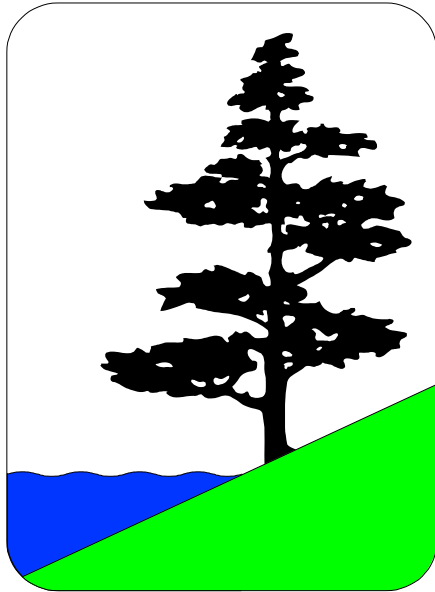




**JAWRA**

JOURNAL OF  
THE AMERICAN WATER  
RESOURCES ASSOCIATION

O'Grady, Dennis, 2011. Sociopolitical Conditions for Successful Water Quality Trading in the South Nation River Watershed, Ontario, Canada. *Journal of the American Water Resources Association* (JAWRA) 1-13. DOI:10.1111/j.1752-1688.2010.00511.x



SOUTH NATION  
**CONSERVATION**  
DE LA NATION SUD

Dennis O'Grady  
[dogrady@nation.on.ca](mailto:dogrady@nation.on.ca)