

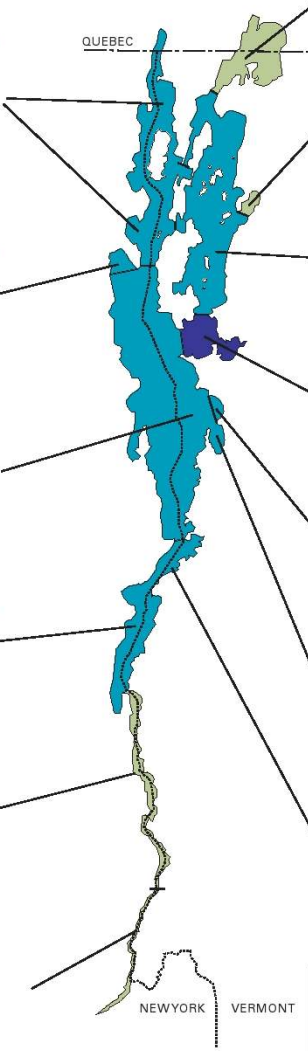
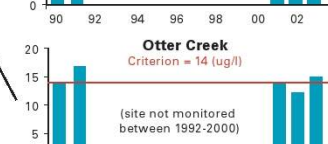
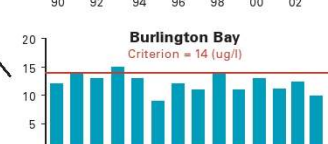
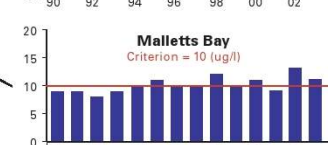
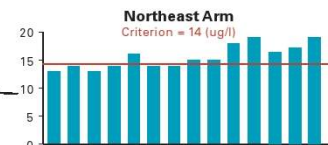
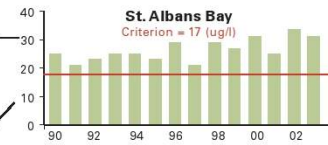
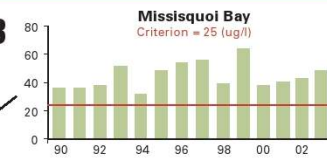
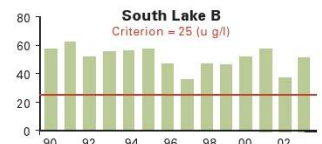
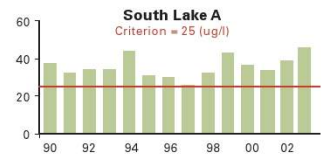
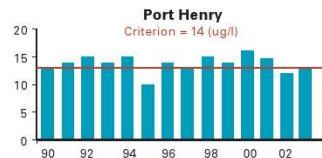
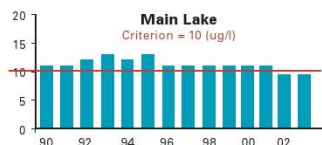
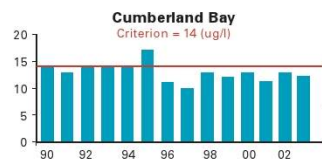
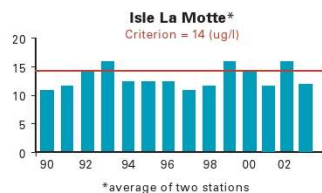
Reducing phosphorus use in lawn care: Getting information to the right place



Jurij Homziak and Laura Killian
Lake Champlain Sea Grant
University of Vermont

Phosphorus Levels in Lake Champlain 1990-2003 Compared with Water Quality Criteria (red lines)

Note: ug/l = micrograms/liter



Eutrophic State (mg/l)	
0-10	Oligotrophic low algae growth & high water clarity
11-20	Mesotrophic moderate algae growth & water clarity
21 +	Eutrophic excessive algae growth & low water clarity

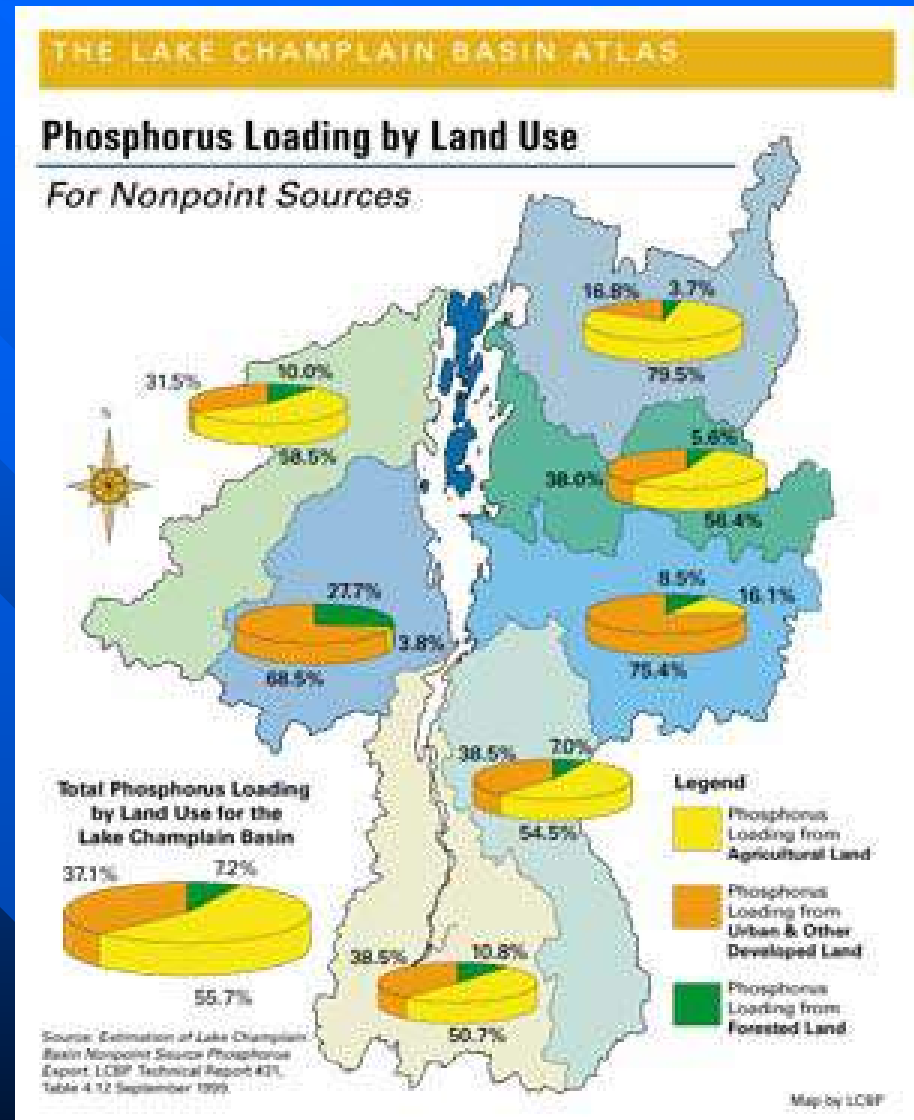
Map by LCBP

DATA SOURCE: VERMONT DEC



Phosphorous in Urban Storm Water

- Urban areas are 5.6% of lake watershed
- Contribute 37% of total annual P load
- Over 75% of P load is urban in some basins
- Lawn and garden fertilizer a principal source of P in urban stormwater



The Problem

- In 1996, Vermont was one of three states with greater than 30% non-farm fertilizer use
- 2003: 60% of lawns tested statewide and 76% of Chittenden County had an excess of phosphorous

Why the Coalition?

- Lots of activity – but not effective
- **Focus:** Dispersed, uneven
- **Educators:** lacked training, not fact based, redundant, unclear/unfocused messages
- **Methods:** output focus, no central information source;
- **Effectiveness:** inefficient (effort/cost per unit contact hour), ineffective (measurable behavior change)

Green Lawn Coalition

- Founded in 2002
- **Goal:** Science based information and education on sustainable lawn care practices
- **Long Term Objective:** Reduce inputs of fertilizer, pesticides and pathogens in developed areas to storm water runoff.

???Near-Mid Term Objectives

- Establish a coalition of existing groups
- Community-level water quality data
- Neighborhood-based outreach
- Facilitate towns - community group partnerships
- Monitor water quality

Strategies

- Focus on phosphorous
- Treat P fertilizer as a commercial product
- Social marketing to understand consumer behavior, effect change
- Regional scope and objectives
- ...but an “All outreach is local” focus
- Science based, non-advocacy approach
- Reach the decision makers

Who to Target = Who Decides

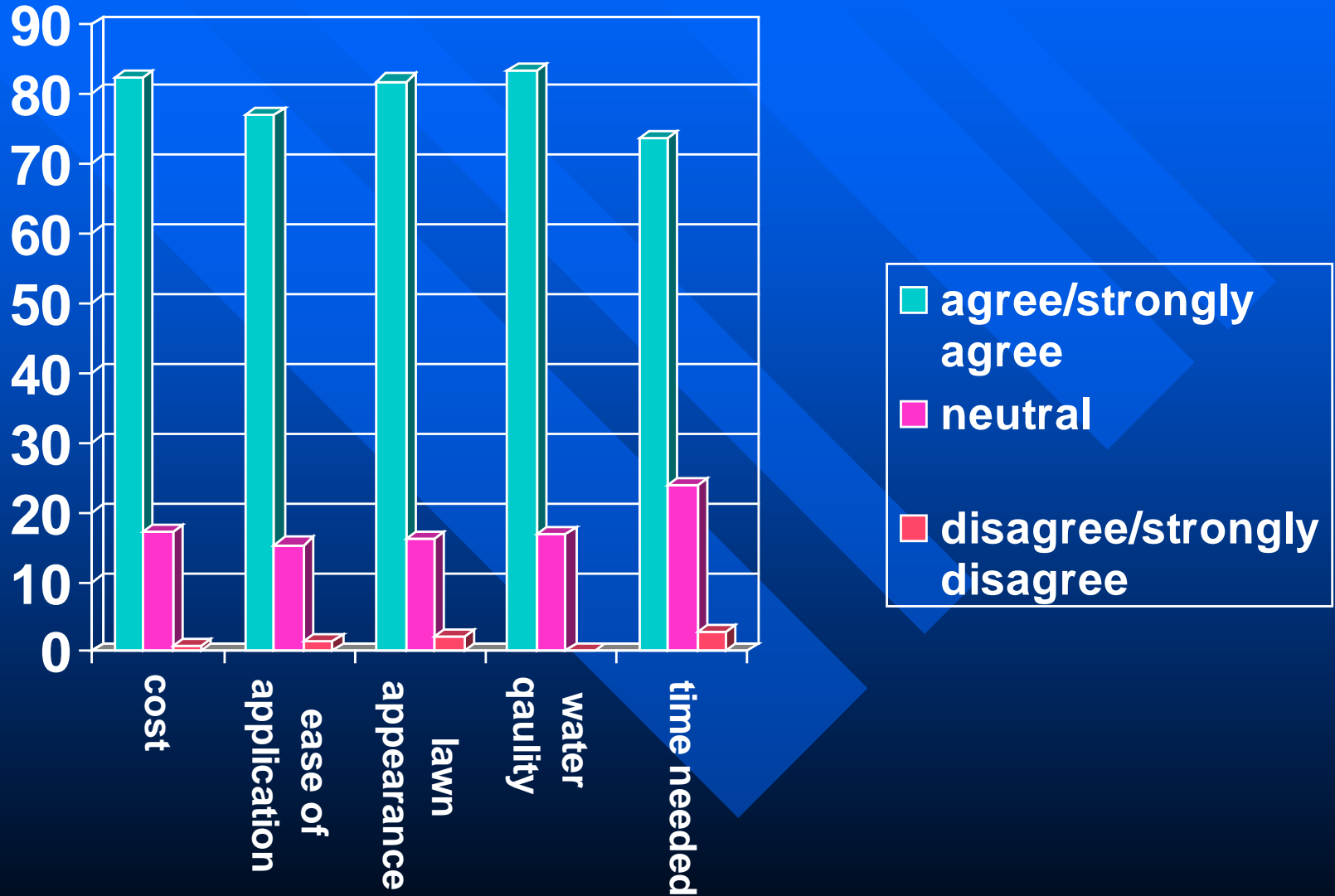
- Homeowners
- Resident associations (condos, apartments)
- Businesses and non-residential entities
- Service providers
- Municipalities
- State and local officials: elected and staff

Homeowners:

- Male, 29-45,
- DIY
- Drivers of behavior:
 - Cost
 - Ease of use
 - Outcome
 - Local water quality
 - “Fitting in”

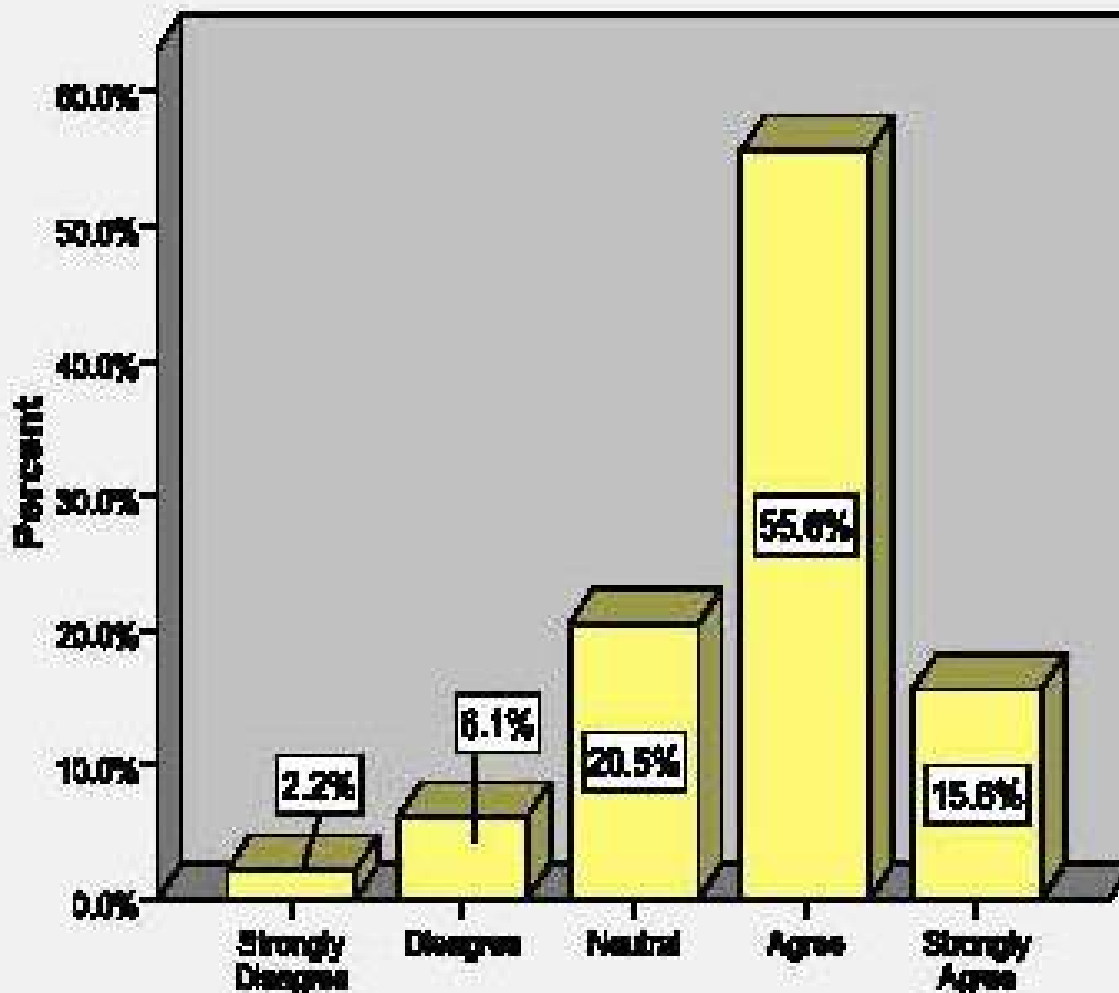


Factors Affecting Change of Practice



Respondent's Level of Agreement that they Want their Lawn to Look Good Enough to Fit in with the Community

“Fitting In”



BUT...

High effort, cost to reach audience.

Alternatives to direct education:

- Empower outreach by local organizations
- Design really effective Public Awareness
- Point of sale education: consumers and retailers

Support outreach by local groups

- We prepare them, they do the outreach
- Training, demonstrations, materials, information, evaluations, website



The screenshot shows the website for the Saint Albans Area Watershed Association (SAAWA). The header includes the SAAWA logo and the tagline "working to restore Saint Albans Bay". Below the header is a navigation menu with links for "home", "the watershed", "publications", "projects", "links", "get involved!", "about us", and "archive". The main content area features a large image of a lake with a boat and the word "projects" overlaid. Below this is a section titled "Lawn Signs Make the Connection Between Healthy Lawns and Healthy Waterways". The text in this section reads: "We are still spreading the word about using Phosphorus free fertilizer! Through a grant from the Vermont Watershed Management Fund, we distributed 25 lawn signs that emphasize using phosphorus free fertilizer. (as pictured at left) to place in the St. Albans Bay watershed." Below this text is a circular logo with the text "A Cleaner Bay" at the top and "Starts at Home" at the bottom, featuring a house with a red roof and a chimney. To the right of the logo, there is more text: "With these signs we are continuing our theme of Connecting Healthy Lawns to Healthy Waterways. Last Spring, with assistance from Northwest Vermont Community College, SAAWA..."



Public Awareness

- Market research based
- Professionally designed
 - PSAs
 - Posters and signs
 - Brochures
- Lawn to Lake web page
- Social media

**WHEN YOU'RE FERTILIZING
THE LAWN, REMEMBER
YOU'RE NOT JUST
FERTILIZING THE LAWN.**



Lake Champlain
Basin Program



You fertilize the lawn. Then it rains. The rain washes the fertilizer along the curb, into the storm drain, and directly into our streams, rivers and Lake Champlain. This causes algae to grow, which when it dies uses up oxygen that fish need to survive. So if you fertilize, please follow directions and use sparingly.

For more information about local watershed groups or the Lake Champlain Basin Program, call 1-800-468-5227 or visit our web site: www.lcbp.org. The Lake Champlain Basin Program thanks the Washington State Department of Ecology, King County and the cities of Bellevue, Seattle and Tacoma for this poster design.

LAWN TO LAKE

LAWN CARE TIPS FOR GREEN LAWNs *NOT* GREEN LAKES!

[healthy lawn tips](#) | [buy P-free](#) | [the P problem](#) | [posters etc.](#) | [about us](#)

News & Media

[Phosphorus fertilizer signs available to Vermont retailers, 1/17/12](#)

[Free point of sale materials for retailers](#)

["Don't 'P' on the lawn," Burlington Free Press 2/28/10](#)

[Water Quality Improves After Lawn Fertilizer Ban, Study Shows Science Daily 8/27/09](#)

["It's Easy Being Green," WCAX News, 5/14/08](#)

VT Agency of Agriculture PSAs (Windows Media Videos)
- [Responsible Fertilizer Use](#) (3 MB)
- [Don't P on Your Lawn!](#) (3 MB)

[NEWS: Switch to Phosphorus-Free Fertilizer for Fall Lawn Care \[8/28/07\]](#)

["Critical lawn-care season arrives now" by Amy Ivy - Press Republican, 8/20/07](#)

DON'T P ON YOUR LAWN!

"P" stands for **phosphorus**—the most problematic pollutant in Lake Champlain and in many other lakes in Vermont and northern New York. Phosphorus is a nutrient found in most lawn and garden fertilizers. When fertilizers run off from lawns and into lakes, they feed unsightly, smelly and potentially toxic blue-green algal blooms.



Make a Switch! It's easy for home owners and businesses to switch to **P-free** (phosphorus-free) lawn fertilizers to reduce urban sources of phosphorus. Doing so may help reduce algal growth in your favorite lake—and you can still have a beautiful lawn!

- [Lawn care tips for green lawns, not green lakes >>](#)
- [Where to buy P-free fertilizers >>](#)



**WEB PAGE
for fact-base
information**

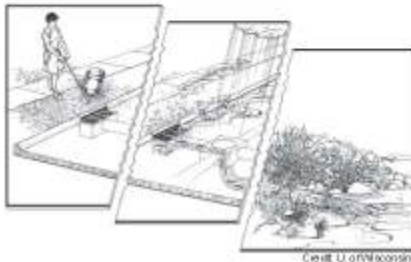
Fact Sheets and Brochures

What is Phosphorus?

Phosphorus (P) is one of the most troublesome pollutants in stormwater runoff. It is the primary cause of water quality problems in Lake Champlain and many other local lakes and rivers. About 37% of Lake Champlain's phosphorus problem comes from neighborhoods and cities.

Phosphorus is found in lawn and garden fertilizers, manure, as well as human and animal waste. Too much phosphorus in water feeds algal blooms and weed growth.

These plants and the water quality problems that occur when they decompose can harm fish and other animals and limit everyone's use and enjoyment of the water.



When it rains, fertilizer and other pollutants from lawns are washed into storm drains that empty into lakes and rivers.

Resources

Phosphorus-free fertilizer:

Ask your local store to carry P-free products or look up retailers at www.lcbp.org/lawn.htm.

Soil testing:

- University of Vermont Extension (802) 656-3030 or pss.uvm.edu/ag_testing/?Page=soils.html
- Cornell Nutrient Analysis Labs www.css.cornell.edu/soiltest/newindex.asp (607) 255-4540

Lawn care tips, organics and pest management:

- Vermont Master Gardener Helpline (800) 639-2230 or www.uvm.edu/mastergardener
- Cornell Home Gardening www.gardening.cornell.edu/lawn
- Cornell Cooperative Extension Growline Plattsburgh: (518) 561-7450, Westport: (518) 962-4910 or askMG@cornell.edu
- Safe Lawns www.safelawns.org

Stormwater runoff:

- Regional Stormwater Education Program www.smartwaterways.org
- Vermont Clean and Clear www.anr.state.vt.us/cleanandclear

Brought to you by:

Cornell Cooperative Extension
Lake Champlain Basin Program
Lake Champlain Committee
Lake Champlain Sea Grant / UVM Extension
VT Agency of Agriculture
VT Department of Environmental Conservation

Additional support from USDA C/SPRES under Agreement No. 2004-51130-09106.

Don't "P" on Your Lawn!

and other lawn care tips for green lawns, not green lakes



Phosphorus (P) is a plant nutrient found in lawn fertilizer that feeds algal blooms in waterways. Create a beautiful lawn and keep "P" from polluting water by using P-free fertilizers and following these tips...

Point of Sale Intervention

- Sell the manager:
 - Product available and visible
 - Promote alternative product



Consumer information

Signs

Train sales staff

Fact sheets

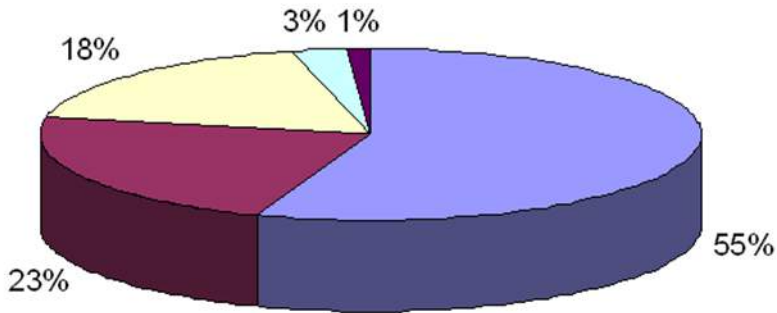
fact

Associations, Businesses and Institutions

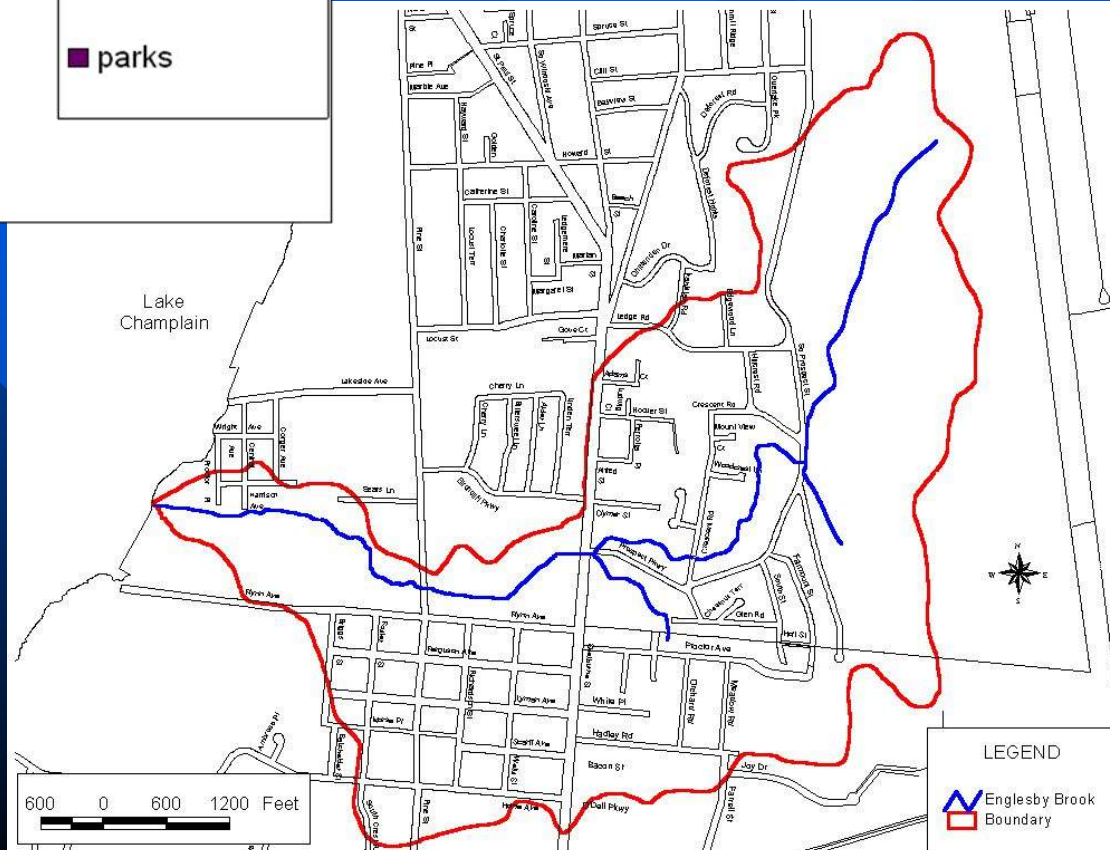
- One Decider
- Contracted lawn care
- Market No P to property managers



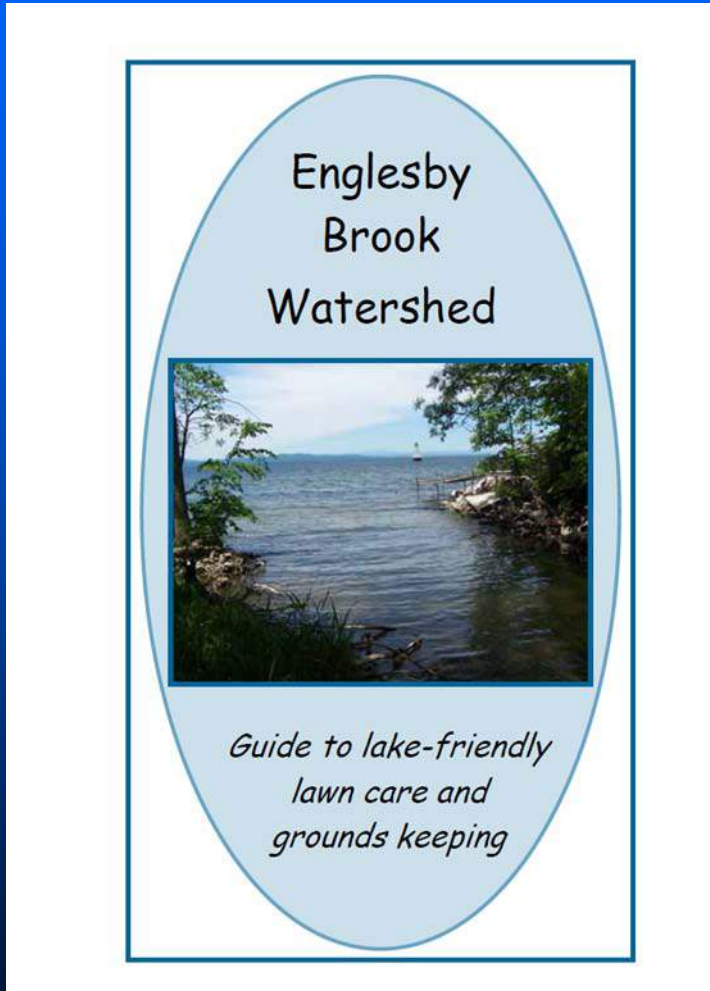
Englesby Watershed Land Use



- residential
- commercial and institutional
- golf course
- forest
- parks



Stewards and Friends



Market: One on one introduction

Educate: manager and/or owner

Train: service providers

Support: guidelines, web page, professional support

Englesby Brook

Figure 1.1 Englesby Brook Watershed Map



LEGEND
— Englesby Brook
— Watershed Boundary

1-5

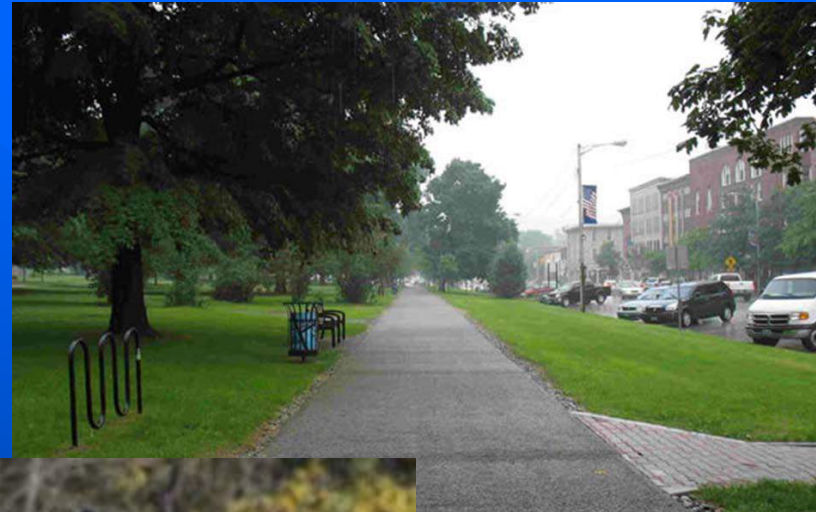
- Small (570 acres)
- ~ 750 properties
- 73 non-residential properties (~131 ac.)
- Non-residential lawn area ~80 ac.

No P Adoption

- **29% adoption rate (20 of 73 properties)**
- **59% (47 of 80 acres) of commercial lawn area in no P 3+ years after outreach**
- **2 grounds care companies** adopted no phosphorous/low input practices

Assisting Towns

- No phosphorous in parks, schools
- Satisfy public awareness requirement for stormwater permits



Rutland Good

Stewards Initiative

Healthy Lawns, Healthy Streams



Guide to Moon Brook-Friendly
Grounds Care

Service Providers

- Education: Focus on bottom line, consumer demand
- Training in low input, no phosphorous methods
- Support adopters

The Future of Lawn Care

- Increasing regulation to control nutrients in stormwater
- Rising costs of chemical fertilizer
- More profit with organic/low input lawn care practices
- New organic products and services to sell
- Growing demand by aware consumers—"if you won't someone else will."

What We Can Do For You

- We provide the information to convert the consumers, landscapers provide the service
- Small business management workshops to improve profits
- Organic/Low Input practices training
- IPM training
- Tailored promotional materials
- Applied research on the most appropriate successful practices

Figure 1 below shows that there is a general downward trend in the amount of non-farm phosphate brought into Vermont since 2003.

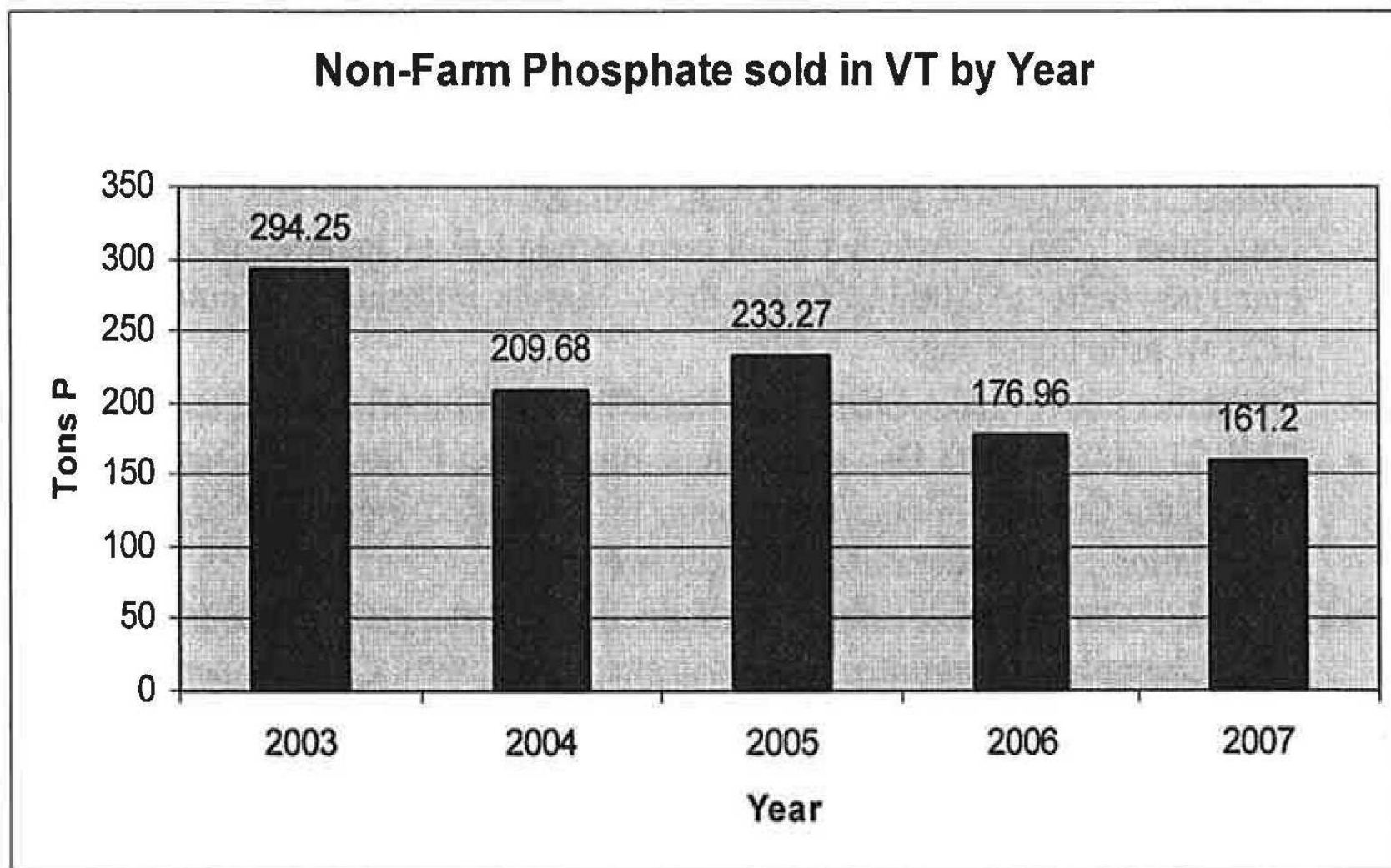


Figure 1.

Figure 2 below shows that there has been a dramatic increase in the number of lawn care fertilizer products registered for sale in Vermont that contain no phosphorous.

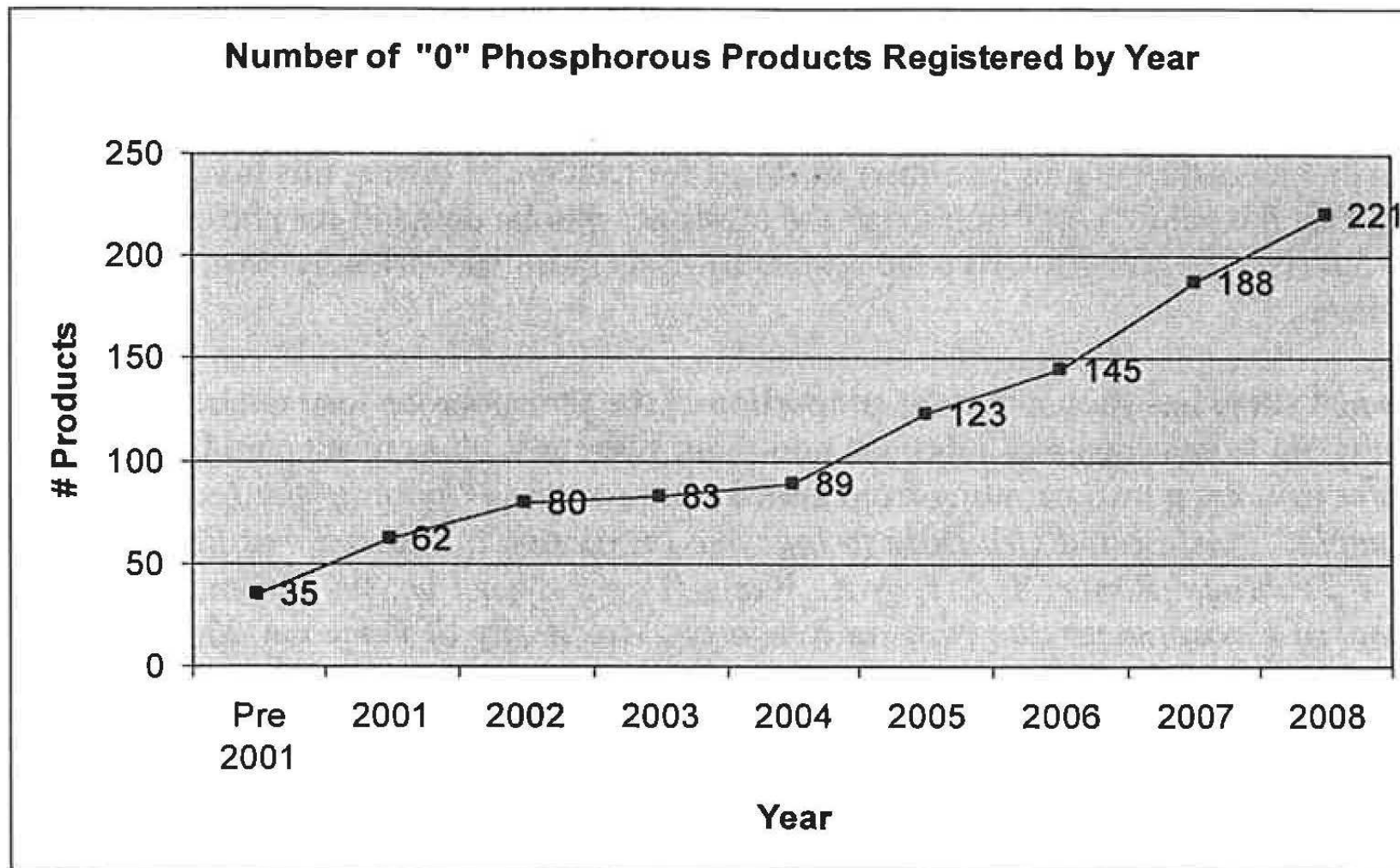


Figure 2.

Legislation

- VT and NY: As of January 1 2012 use of phosphorous fertilizer restricted in both states
- Exceptions: on new lawns or when a test shows a need
- Does not affect fertilizer for agriculture or gardens.

**Use Phosphorus-Free Lawn Fertilizer
It's the Law!**

Most lawn care products do not need additional phosphorus for healthy growth. When you use fertilizer containing phosphorus for your lawn, the law will mark it with a special "phosphorus-free" fertilizer to make sure you're using the right product for your lawn.

- Fertilizers will feature an "R" on the bag.
- Phosphorus-free fertilizers are available.
- Phosphorus-free fertilizers are available.

How do you know if you are using phosphorus-free fertilizer? Look for the zero.

Check the fertilizer bag for a set of three numbers. They represent the percentage of nitrogen, phosphorus, and potassium. The number in the middle should be a "0."

Phosphorus is a nutrient for water quality. Therefore, under the new law effective January 1, 2012, phosphorus-containing fertilizer may only be applied to lawns in non-saturated soil areas.

- A soil test indicates that additional phosphorus is needed for growth of a lawn in non-saturated soil.
- The fertilizer is used for newly established lawns or non-saturated soil during the first growing season.

Visit <http://www.dnr.ny.gov> for more information.
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

NEW LAW PROTECTS WATERWAYS!

Phosphorus runoff poses a threat to water quality. Most lawn care products do not contain phosphorus. Under the new law, fertilizer containing phosphorus should not be applied to lawns unless a soil test indicates that additional phosphorus is needed for growth of a lawn in non-saturated soil.

Look for the "R"

The three numbers on a fertilizer bag show the law's nutrient analysis. The middle number is the phosphorus percentage. Look for a "0" in the middle to indicate a phosphorus-free fertilizer.

“The law ...came in the wake of a campaign called “Don’t ‘P’ on your lawn”... ” Addison

County Independent April 23, 2012

May 5, 2012

“ The “Don’t P “ campaign was the inspiration for this legislation...” Chair of the VT House Fish Wildlife and Water Resources Committee

Law bans popular fertilizers: No more 'P' on Vermont lawns

Posted on April 23, 2012 | Vermont environment Featured fertilizers Lake Champlain legislature phosphorus

By Andrew Stein



BILL WALLICE, MANAGER of Middlebury Agway, stands next to fertilizers that are separated in the store by phosphorus content. A new state law seeks to protect Vermont's waterways by reducing the level of phosphorus runoff. Independent photo/Trent Campbell

Not everyone was happy, though....

- “It came in the wake of a REPULSIVE ENVIRO-LUNATIC CAMPAIGN called « Don’t “P” On Your Lawn » which was organized by Lake Champlain Environmental-Terrorist-Organizations to MIS-INFORM home-owners against the use of phosphorus fertilizers...”
- <http://pesticidetruths.com>, Motto “Fertilizer terror never ends”

**ATTENTION
FERTILIZER USERS**

NEW LAW PROTECTS WATERWAYS!

Phosphorus runoff poses a threat to water quality. Most Vermont lawns do not benefit from fertilizer containing phosphorus. Under Vermont law, fertilizer containing phosphorus shall not be applied to lawn unless applied to new lawn or lawn that is deficient for phosphorus as indicated by a soil test.

– Sec. 1 10 V.S.A. § 1266

Look for the “Zero”

The three numbers on fertilizer bags show the N-P-K nutrient analysis. The middle number is the phosphate (phosphorus) content. A “zero” in the middle means it is phosphorus-free.



**We can all work toward
healthier Vermont
waterways!**