



Getting it RIGHT: CFI's 4R Nutrient  
Stewardship  
October 2010  
Clyde Graham



CANADIAN FERTILIZER INSTITUTE  
INSTITUT CANADIEN DES ENGRAIS

# A Simpler Time... March 26, 1961

...day

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...times more yield than the  
...of 1000 lbs. per acre  
...of 1000 lbs. per acre  
...of 1000 lbs. per acre

...GET A BIGGER PROFIT FROM YOUR LAND WITH ELEPHANT BRAND

## ELEPHANT BRAND FERTILIZER PAID FOR THIS TRUCK



This is an example of what can be brought with profits from the use of fertilizer. With Elephant Brand you grow more so you lower the production cost of each crop and (such as wheat, corn, etc.).

Whether you grow small grains, sorgho, grain, row crops or fruit — you can feed cattle or dairy herds — if you can lower the cost per unit of your main crop or your forage you will make more money. Lower cost is the key to more profitable farming. There is no other way to lower cost than by using Elephant Brand.

When you fertilize with Elephant Brand you can make more in three ways:

**ELEPHANT BRAND FERT VALUE**

- \* A wide range of great feed value
- \* Uniform feed — less feeding — reduced cost
- \* All nutrients highly water soluble
- \* Strong, weather-resistant, easy-to-use bags
- \* Economic packaging system for best value per ton

**IT PAYS TO CHOOSE FROM THE ELEPHANT BRAND LINE**

NITROPHOSPHATE 15-0-15		18-25-0		15-15-5		AMMONIUM SULFATE 21-0-0	
10-0-10	15-0-15	18-0-0	20-0-0	15-0-5	15-0-5	21-0-0	21-0-0
10-0-10	15-0-15	18-0-0	20-0-0	15-0-5	15-0-5	21-0-0	21-0-0

## Elephant Brand

water soluble FERTILIZERS

**GET MORE PRODUCTION FROM YOUR LAND WITH ELEPHANT BRAND**

...Copyrighted material



...to more complex issues



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# The Second Green Revolution

*“The challenge for your industry is to be at the head of this green revolution as you were at the head of the last one. Just as you have helped turn farming from a subsistence business into a flourishing industry that feeds the world, I now call on you to work with farmers, environmentalists and governments to help fine-tune agriculture into a business that feeds the world without harming the natural world.”*

– Hon. George Webster, P.E.I. Minister of Environment, Energy and Forestry



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# Voluntary BMP Framework

## The Right Product at the...

### BEST MANAGEMENT PRACTICES (BMPs)

#### BMP Category

#### BMP Examples



#### Right Rate

*Match amount of fertilizer to crop needs*

- Soil Testing
- Yield Goal Analysis
- Crop Removal Balance
- Nutrient Management Planning
- Plant Tissue Analysis
- Applicator Calibration
- Crop Scouting
- Record Keeping
- Variable Rate Technology



#### Right Time

*Make nutrients available when crops need them*

- Application Timing
- Controlled Release Technologies
- Inhibitors
- Fertilizer Product Choice



#### Right Place

*Keep nutrients where crops can use them*

- Application Method
- Incorporation of Fertilizer
- Buffer Strips
- Conservation Tillage
- Cover Cropping
- On-Farm Fertilizer Storage



# What is “Best” for nutrient management?

- A flexible, site-specific approach
- Based on science and industry expertise

**Voluntary initiatives** accommodate both these objectives



# The issues are changing

## 20<sup>th</sup> Century—Save the World

- Silent Spring
- Pollution
- Smog
- Extinction
- Rain forests
- Baby Seals

## 21<sup>st</sup> Century—My World

- What's in my body
- Cottage property values
- Slow-food and lifestyle
- Organic
- Climate Change



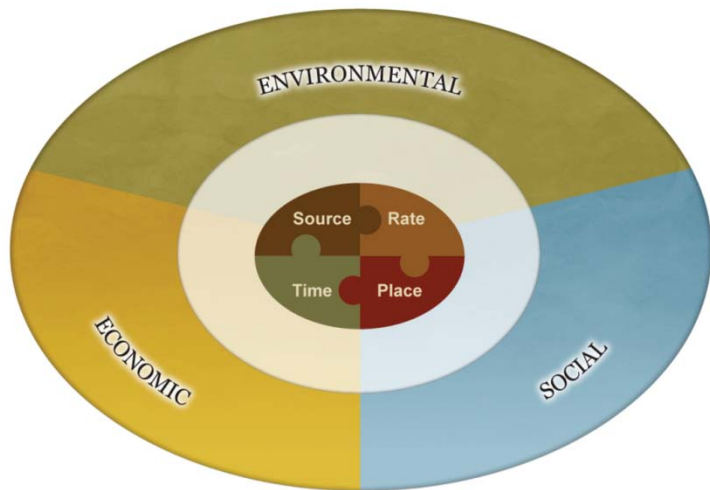
# Canadian Nutrient Issues

- Quebec
  - Cottage country bans
- PEI
  - Nitrates in groundwater
- Ontario MOE major concern
  - Urban Fertilizer disposal fees
  - Ammonia, Phosphorus toxic reduction



# 4R Nutrient Stewardship

- Support from Alberta, Saskatchewan, Manitoba, Ontario and PEI governments
- Stewardship of products at the farm level
- Recommends BMPs that focus on efficient use of fertilizers
- Supports increased fertilizer use in emerging markets (Africa)
- Fosters precise fertilization in mature markets (canola in Saskatchewan)



# Science-based



- Better Crops, Better Environment...through Science
- BMP definition, improvement and impact measurement



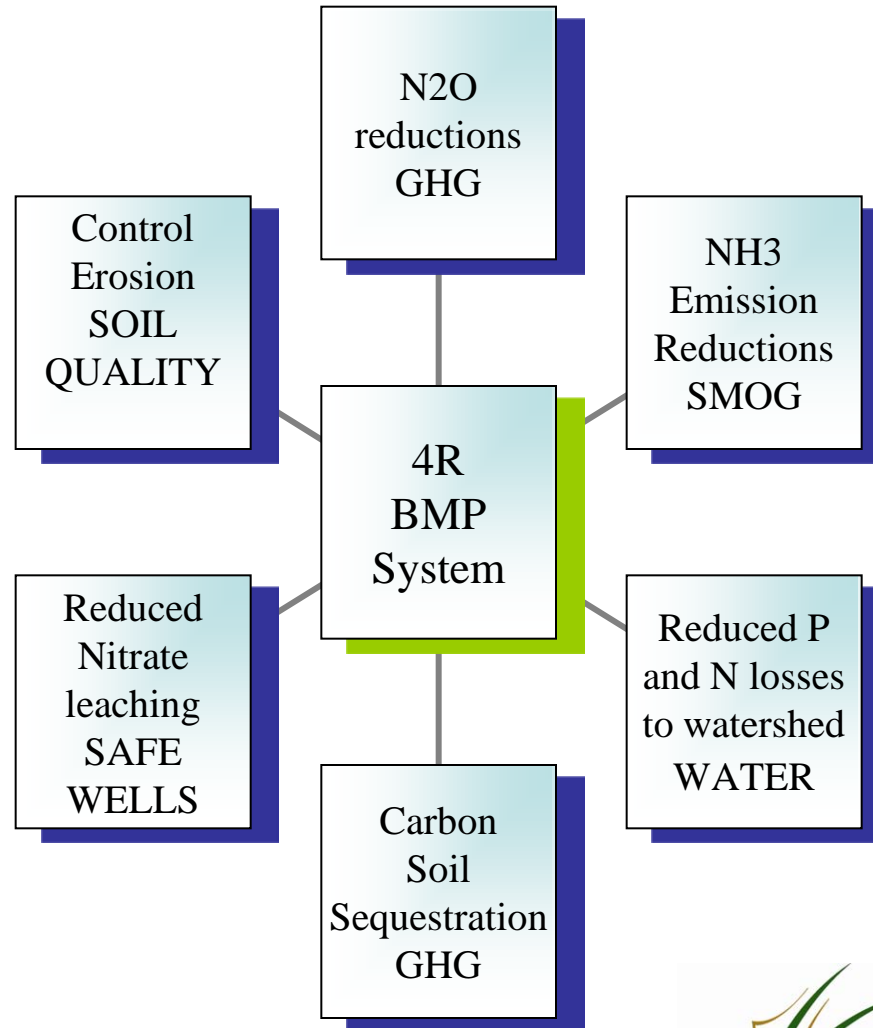
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# Certified Crop Advisers

- American Society of Agronomy's Certified Crop Adviser Program (CCA)
- The largest certification program in agriculture
- Over 14,000 certified throughout the USA and Canada



# Multiple Applications



# 4Rs Implementation in Canada

<b>Pillars</b>	<b>Strategy</b>	<b>Tactics</b>
<b>Science</b>	Developing BMPs and supportive research	<ul style="list-style-type: none"> <li>▪ IPNI—Cliff Snyder</li> <li>▪ CFI Science Cluster (\$10 million)</li> <li>▪ N<sub>2</sub>O Emission Reduction Protocol</li> </ul>
<b>Recognition</b>	Promoting partnerships with Ottawa, Provinces, Municipalities, Farmers, Environmentalists, Cottagers	<ul style="list-style-type: none"> <li>▪ Communities in Bloom</li> <li>▪ Focus on hotspots: P.E.I, Lake Champlain, Lake Winnipeg, Lake Simcoe</li> <li>▪ Provincial Workshops</li> <li>▪ Federal-Provincial framework</li> <li>▪ Credits for farmers based on 4Rs</li> </ul>
<b>Public Education</b>	Building Nutrients for Life, Urban Fertilizer Council, Crop Nutrients Council	<ul style="list-style-type: none"> <li>▪ Curriculum for schools, teacher conferences and workshops</li> <li>▪ Phosphorus articles</li> <li>▪ Greener Lawns publication</li> </ul>
<b>Extension</b>	Publishing Tips and Training for farmers, parks officials, gardeners	<ul style="list-style-type: none"> <li>▪ CCA training program</li> <li>▪ Lawn applications training</li> <li>▪ Communications in stores for the “Do It Yourself”</li> </ul>
<b>Measurement</b>	Evaluating success in nutrient management based on 4Rs principles	<ul style="list-style-type: none"> <li>▪ Sustainability Reporting system under development</li> </ul>

# 4R Partnership Status

Partner category	Established	Emerging	Target	Tactics
Farm Groups	Grain Growers of Canada, Canadian Federation of Agriculture, Keystone Agriculture Producers, Pork Council, Canadian Cattlemen's Association	PEI Potato Board Canadian Canola Growers Association, Pulse Canada	Canola Council of Canada, Union des producteurs agricole	
Environmental Conservation	Duck Unlimited		Pembina Institute, World Wildlife Fund,	
Federal	Environment Canada, AAFC Environment Bureau	AAFC Research Branch		
Provincial	Alberta, Manitoba, Saskatchewan, Ontario	Prince Edward Island	Quebec, Nova Scotia, New Brunswick.	
Municipal	Communities in Bloom		Federation of Canadian Municipalities	
Conservation Authorities			Lake Simcoe	
Science	IPNI, Climate Check, University of Manitoba			



# 4R Extension

- CFI developing adaptable on-line training platform (fertilizer college) with module, testing and certificate capacity
- Platform will be complete no later than Dec. 2010
- Priorities: NH<sub>3</sub> safety, AN security, 4Rs
- 4R conservative target date Feb. 2010



# Science Cluster

- The Science Cluster has total funding of up to \$240,000 over the next two years to provide matching support for scientific research projects in Ontario, Manitoba, Saskatchewan and Alberta.
- The focus of the Science Cluster research program will be to measure the impact that best management practices under the Right Source @ Right Rate, Right Time, Right Place™ (4R) Nutrient Stewardship system can have on reducing Nitrous Oxide (N<sub>2</sub>O) emissions in crop production. N<sub>2</sub>O is a potent greenhouse gas.
- The aim of the Science Cluster program is to increase those payments per acre by refining the scientific understanding of N<sub>2</sub>O emissions when farmers adopt best management practices.
- Soil testing, sub-surface application, timing and the use of new technologies such as GPS and timed release products under 4R Nutrient Stewardship can improve plant uptake of nitrogen fertilizer and reduce losses of nitrogen to the air.



# Stage Two

- **Stage 2—Global Research Alliance 2011–12 (federal government)**
- Access portion of \$27–million in federal funding (\$3–5 million)
- CFI engaging consultant (Teri Kirk) to develop project Prospectus and promote friendly grant criteria



# Partnership with AAFC Research Branch

- Full day Nutrient Management workshop on May 6. Identification of research gaps and action plan to follow
  - share and discuss information about on-going research and research results;
  - identify on-going and emerging research issues and priorities; and
  - seek opportunities for research collaboration and partnerships.



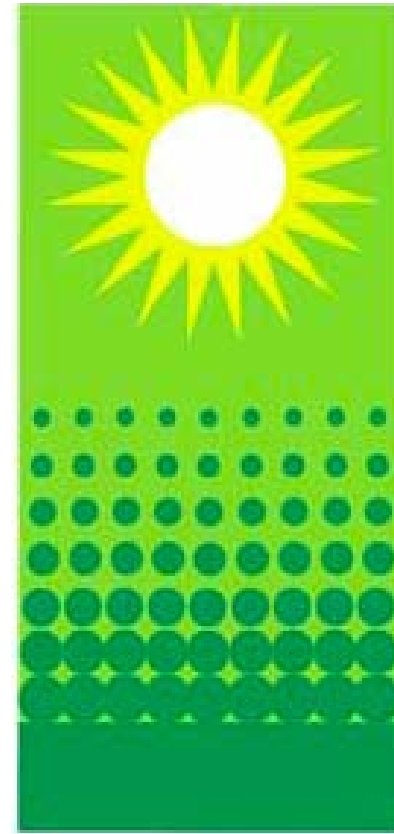
# AAFC Partnership Continued

- Deliverables: AAFC–CFI report
  - Presentations
  - Record of Discussion
  - 4R Nutrient Stewardship key priority
  - Published in Oct. 2010



# Urban Fertilizer Council

- Members:
  - Scotts
  - Sure-Gro
  - Agrium Advanced Technologies
- Stewardship focus
- Educate homeowners, public
- Provide tools to municipal officials
- Low P standard



# 4R Urban Stewardship

- 4R type stewardship messages will be mandatory on all lawn fertilizer in Canada by Dec. 31, 2013 with garden products to follow
- Companies will implement with package redesign >> Branding window limited



# Objectives of a Campaign

- A greener Ontario through proper stewardship
- A better educated homeowner
  - Follows best practices: right product, right rate, right time, right place
  - Proper use and storage
- Reduced pressure on landfill – a better MHSW model
- Partnership with municipalities, retailers to drive measurable change





# Urban Fertilizer Council: Why We Are Here

- Getting it Right: Fertilizer is simply plant food. It need not be treated as hazardous waste
- Saving money: Industry will finance public education, reduce the cost of waste management
- Minimizing waste, reducing impact on the environment



# Lawn Care Practices in Ontario

- More than 50% fertilized their lawn last year
- Only 14% use a service – unchanged since 1995
- Most people make two applications per year
- 75% changed their lawn care practices in the past year: most common change was to
- **easier to buy = retail flyers & front of**  
 **placement**

EDUCATION CAN DRIVE BEST PRACTICES



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# Draft Campaign Messages

- Read the bag
- Know the size of your lawn
- Buy what you need
- Use it up following label directions
  - *Right product. Right rate. Right place. Right time.*
- Choose the right product
- Share or store leftover fertilizer for next year



*The bag is the number one source of information for fertilizer users: 43%*

Source: Ipsos Reid November 2009



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# Product Types

- INSERT BAG IMAGES/LABEL MESSAGES FROM SCOTTS, PREMIER TECH (OTHER?) OF:
  - NO PHOSPHOROUS
  - STARTER FERTILIZER
  - REGULAR FERTILIZER
  - FALL FERTILIZER



# Sustainability



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# The new environmentalists are food industry CEOs



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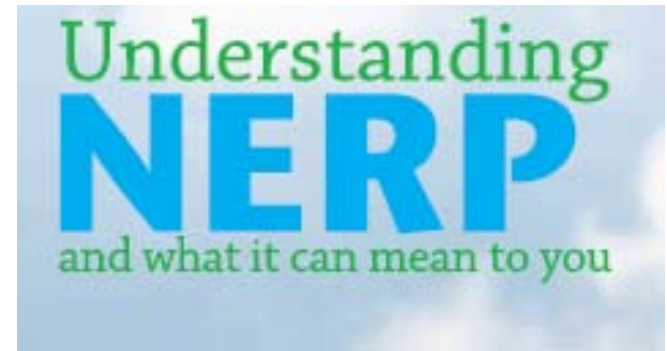
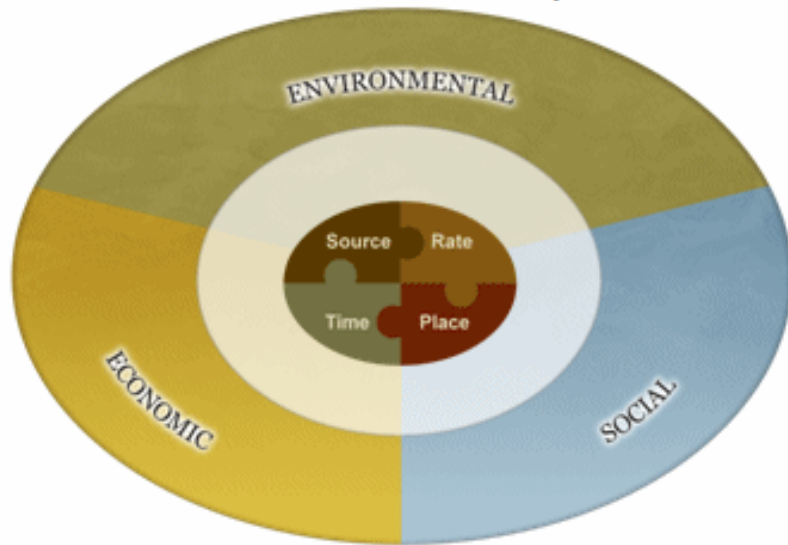
# Who has the consumer's ear?



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# Fertilizer Industry Must Embrace Sustainability

## 4R Nutrient Stewardship



## New Videos from IPNI Feature 4R Nutrient Stewardship

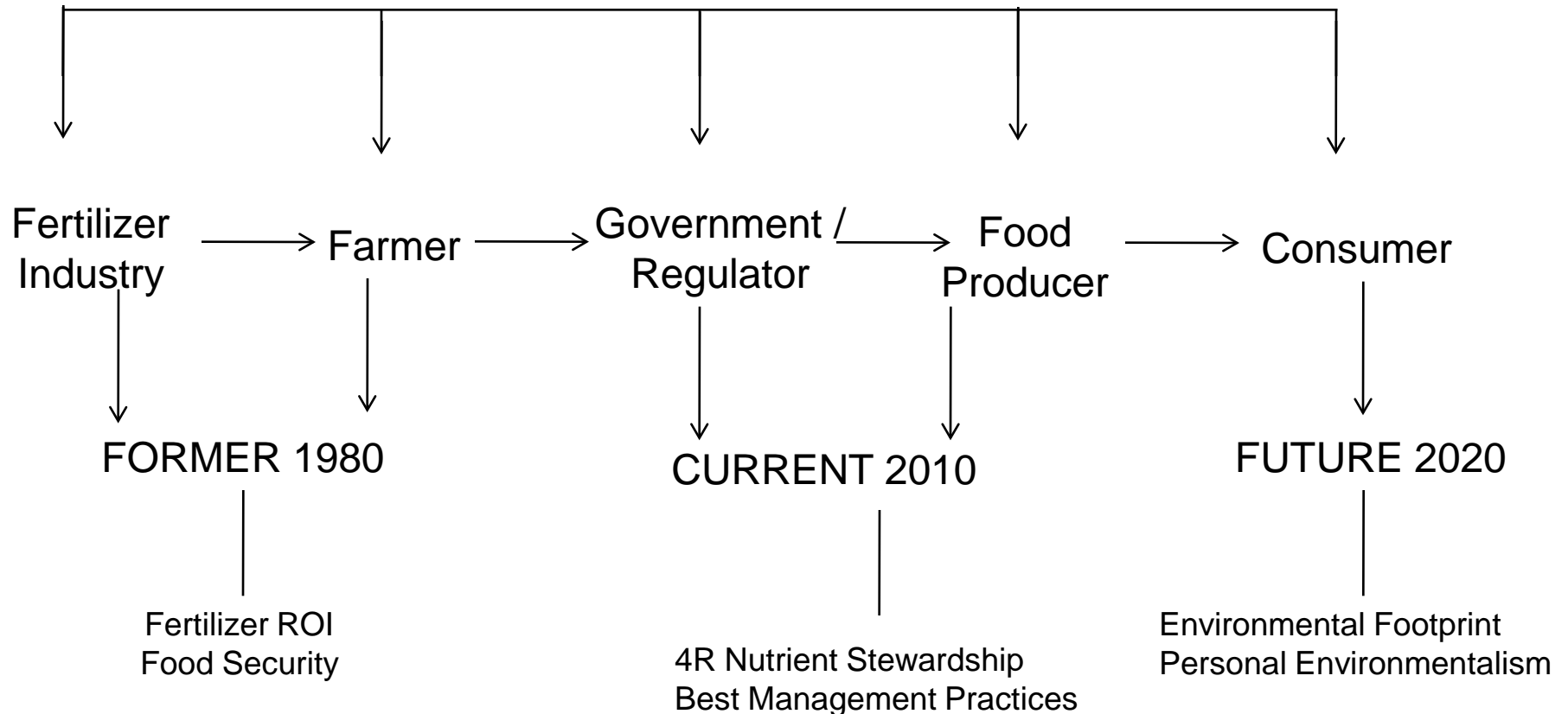


During production of the 4R videos, Dr. Phillips is shown during a field shooting session.



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# Industry Sustainability must be Built on Partnerships



# Much Activity Already Underway

Sustainability Program Elements	Climate change	Other air emissions	Ground & surface water	Soil quality	Biodiversity	Tailings & contam. land	Health & safety	Trans. safety	Security	Human resour.	Product safety & efficacy	Taxes & eco. develop	Food security & quality	ROI to farmers
Vision and principles														
Policies / policy commitments				●			●			●		◐	●	●
Member support: <i>research</i>	◐	●	●										◐	
Member support: <i>technical</i>	●					●	●			●				
Member support: <i>customer service</i>							●		●			◐		◐
Best practices / BMPs / 4Rs	●		●		●						●		●	●
Voluntary standards	●						●	●	●		●			
Performance measurement							◐	◐						
Reporting														
Verification											◐*			
Partnerships / external capacity building	●	●			●			●	●				●	●
Stakeholder engagement														

\* Ammonia Code of Practice

## Legend



Some actions/activities in place



Few actions/activities in place

BLANK

Not addressed





# Thank You

[www.cfi.ca](http://www.cfi.ca)



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