CANADA'S SPHAGNUM PEAT MOSS INDUSTRY SOCIAL RESPONSIBILITY

RESEARCH TO PRACTICE

Paul Short
President
CSPMA

48th Tobacco Workers' Conference

Canadian Sphagnum Peat Moss

Overview

- **Responsible Management of Peatlands**
  - Canadian Peatland Resource
  - Canadian Horticultural Industry Impact
  - Canadian Research Program
- **Sustainability of Canadian Horticultural Peat Industry**
  - E-Life Cycle Analysis
  - S-Life Cycle Analysis
  - Certification
  - Industry Social Responsibility Report

Canadian Peatlands (Temperate)

Wetland Class*

Bogs

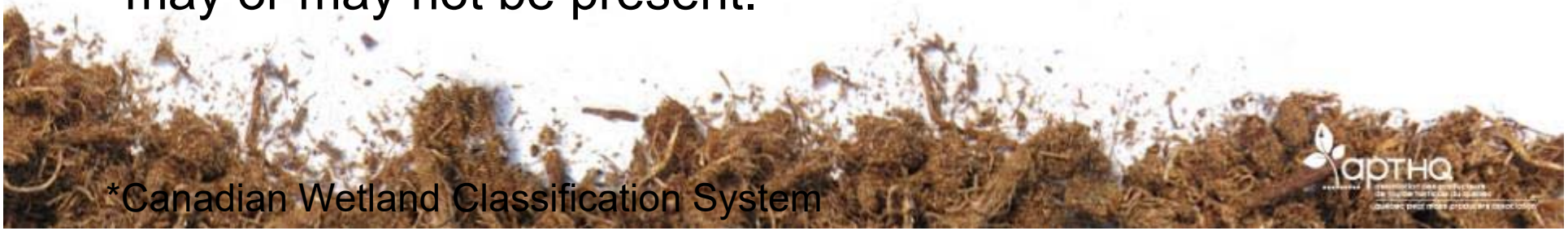
Characteristics:

- Dense layer of peat; acidic; low nutrient content; water table at or near the surface; usually covered with mosses, shrubs and sedges; trees possibly present.

Fens

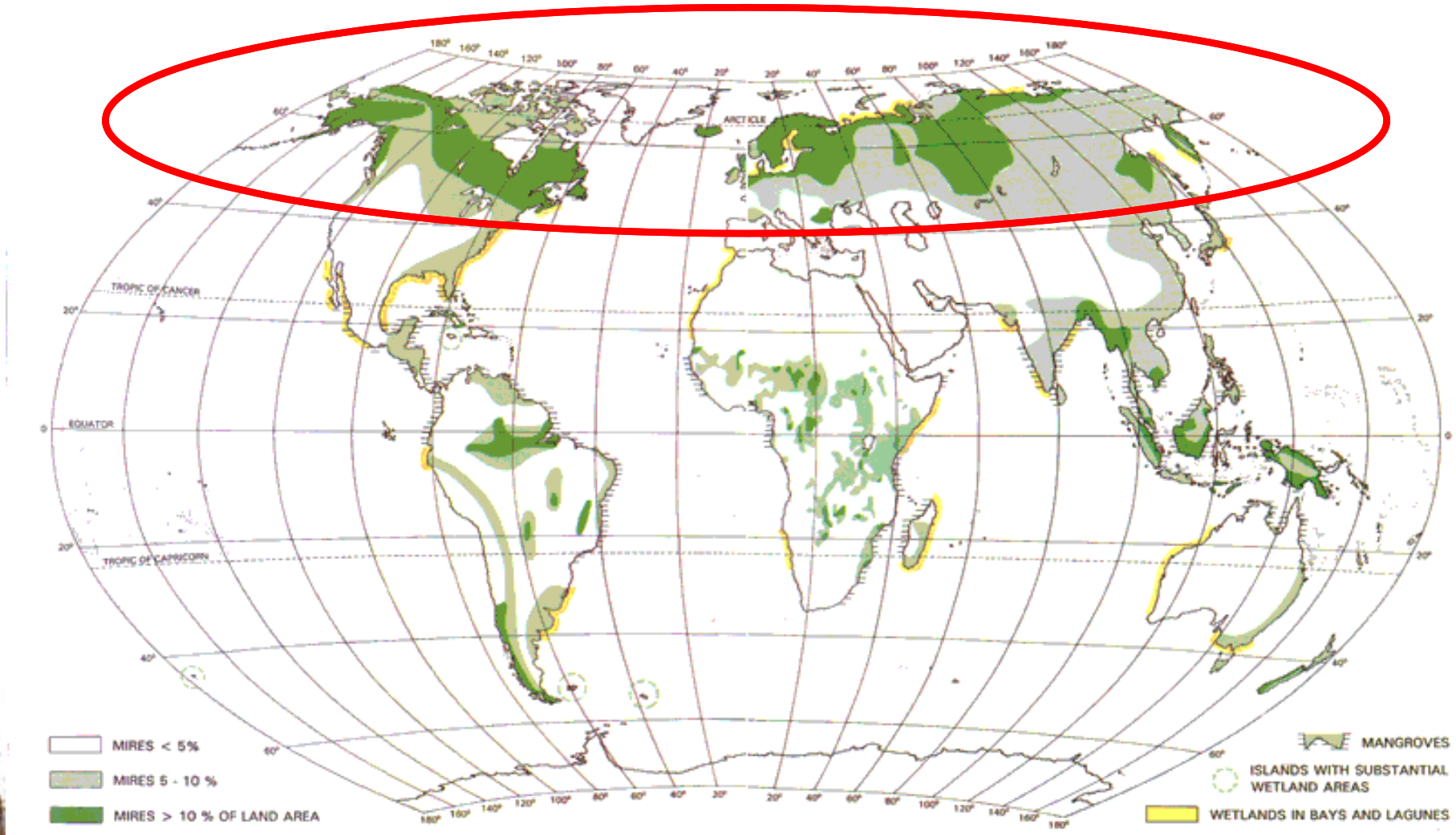
Characteristics:

- Covered with peat; water table at or near the surface; higher nutrient content than bogs; vegetation usually characterized by sedges and grasses; trees and shrubs may or may not be present.



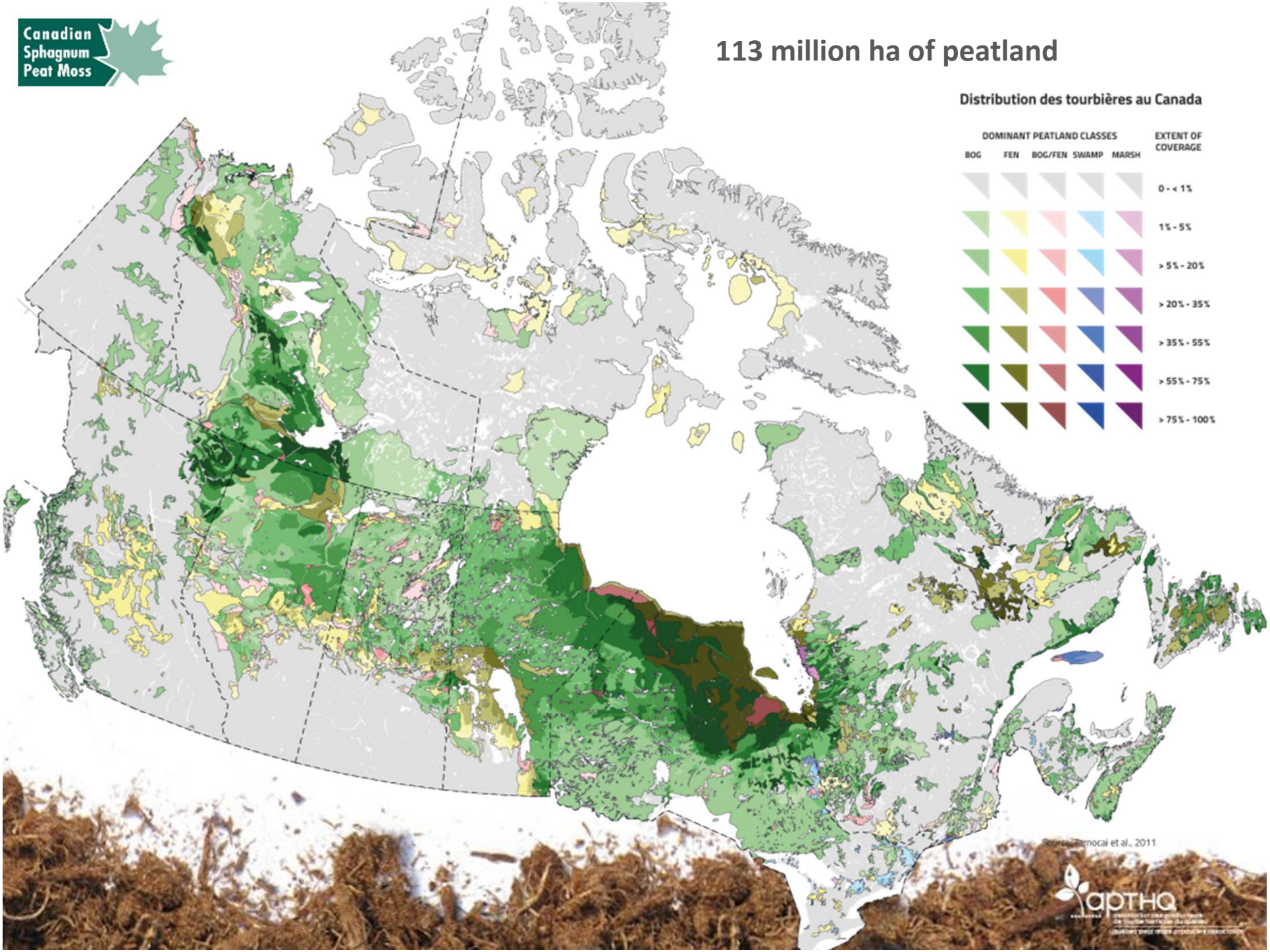
*Canadian Wetland Classification System

World Peatlands



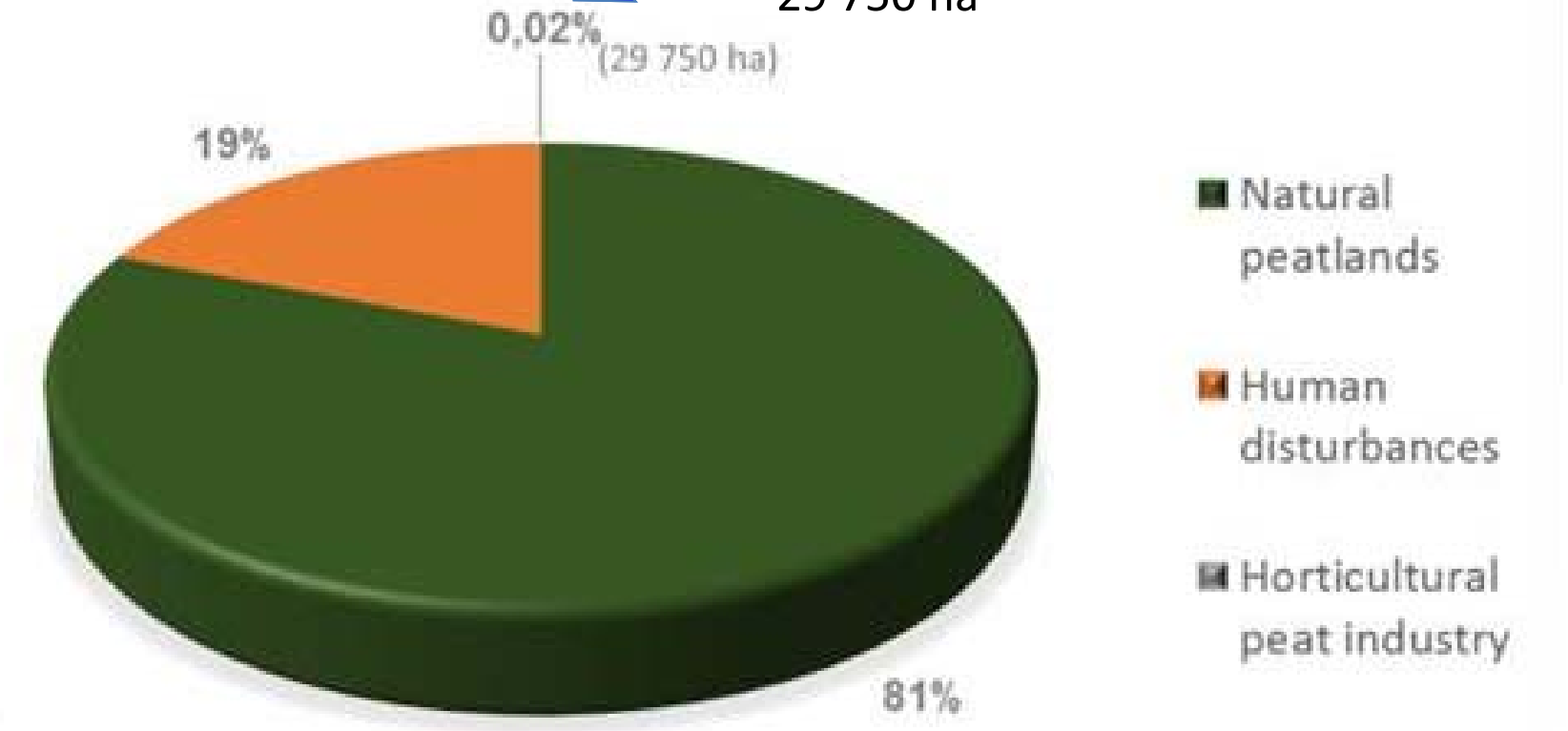
Canadian Sphagnum Peat Moss

113 million ha of peatland



National Peatland Use

29 750 ha



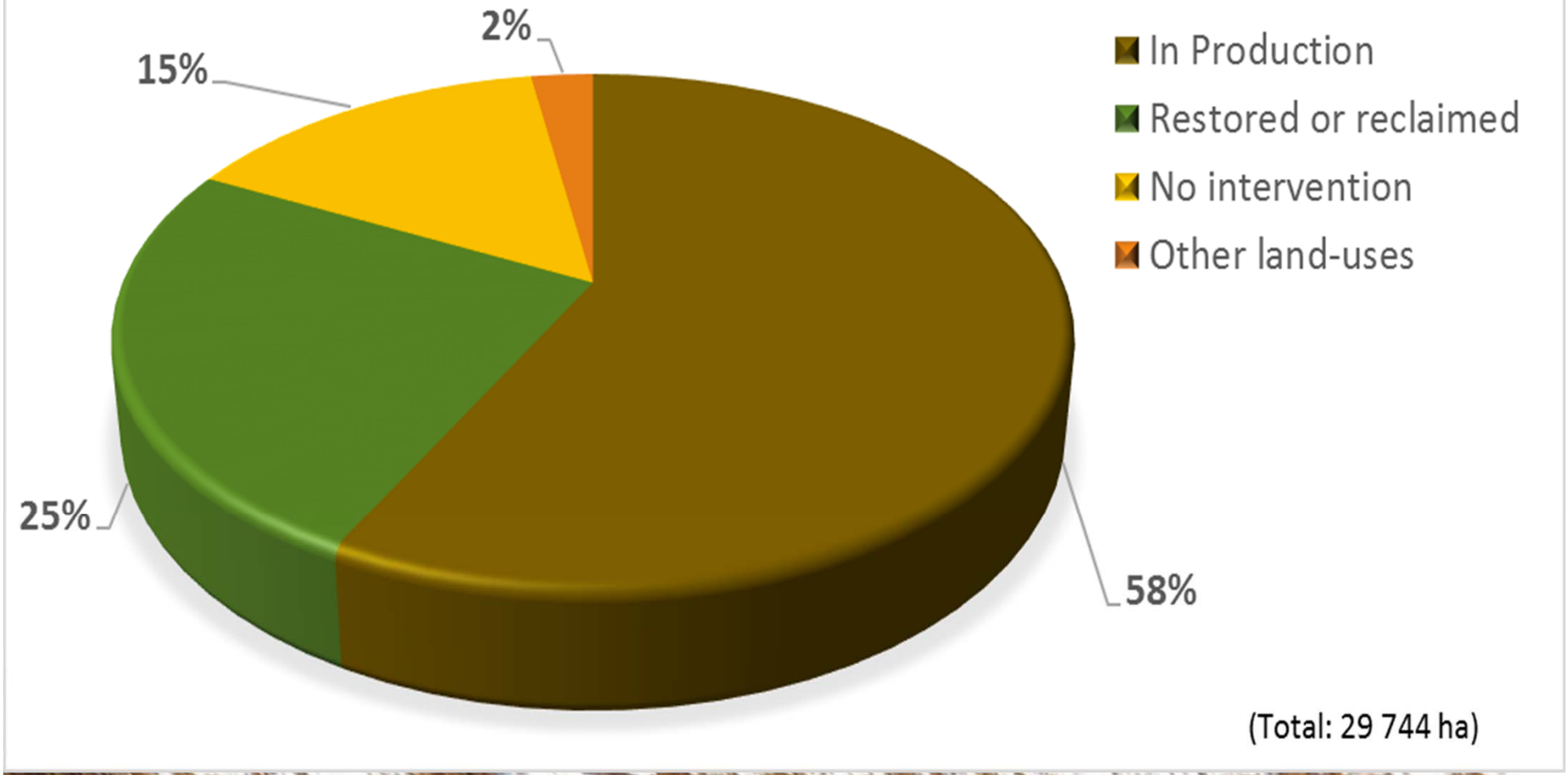
Peat Production Sites in Canada

- ≈ 17 500 ha actively used for peat moss production (0.015%)
- 29 750 ha are, or were at some point in the past, drained for peat harvesting (0.026%)

(2015 compiled data)

Canadian Sphagnum Peat Moss

2015 Statistics about Peatland Areas Managed for Horticultural Peat Harvesting in Canada



Canadian Sphagnum Peat Moss

2015 Statistics about Peatland Areas Managed for Horticultural Peat Harvesting in Canada

25%

National Restoration Policy (2016)

- Goal 1: Reduce by 30% the “no intervention” areas in the next 5 years.
- Goal 2: Target a 100% reduction of the “no intervention” areas after 15 years.
- Goal 3: Promote ecological restoration of at least 60% of these areas.

Canadian Research Program

Groupe de recherche en écologie des tourbières

Peatland Ecology Research Group

Peatland Management and Restoration Program

Dr. Line Rochefort (Université Laval)

Research

Current

- 3rd NSERC Industrial Research Chair/CRD PERG Program (PERG)
- Development of tools for assessing and mitigating potential impacts of peat harvesting.

Research

Current

- 3rd Industrial Research Chair/CRD PERG Program (PERG)
- Development of tools for assessing and mitigating potential impacts of peat harvesting on water quality (INRS and 5 APTHQ members)

In development

- Peatland Management and Restoration Program led by Dr. Line Rochefort (Université Laval)
- Peatland Production and End-use program led by Dr. Nigel Roulet (McGill University) for Carbon issues related to production, use and end-of-use phases

Chair in Peatland Management

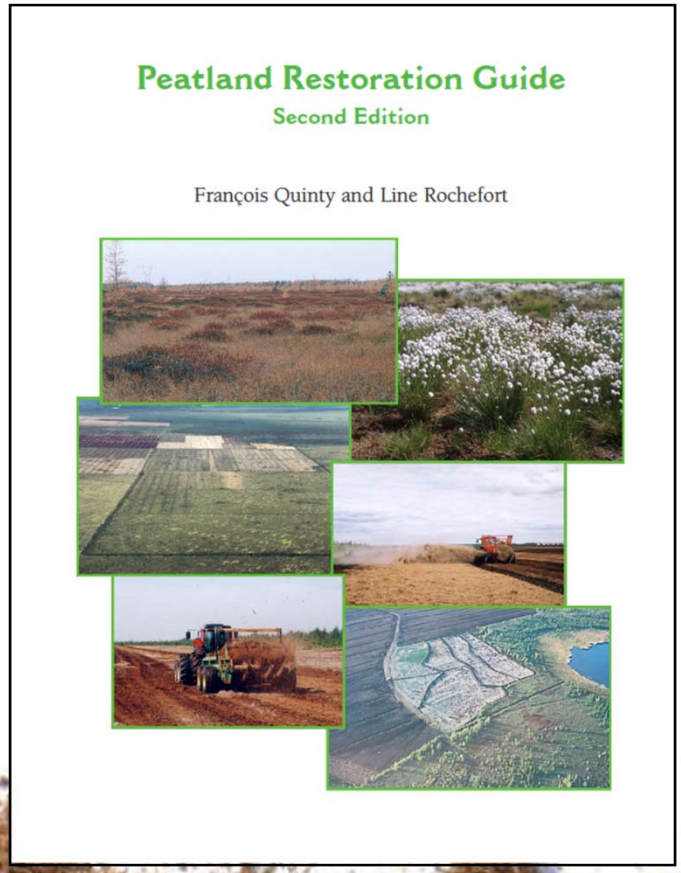
- In 2003, established first five-year term of the Industrial Research Chair in Peatland Management
- Line Rochefort (U. Laval) appointed chair
- In 2008 a second five-year term of the Industrial Research Chair began
- There are 17 Canadian peat producers that are partners

The Goal of Peatland Restoration in Canada

Restore the unique functions of peatlands:

Capacity to accumulate peat

Ecological Restoration: 8 steps



Moss layer transfer technique

1) Planning
2) Surface preparation
3) Plant collection
4) Plant spreading
5) Straw spreading
6) Fertilization
7) Blocking drainage
8) Monitoring

.pdf available on www.gret-perg.ulaval.ca

Results
Restoration 10 Years After

Current State of Knowledge: Biodiversity (Sphagnum Moss)

Peat moss abundance in restored peatland

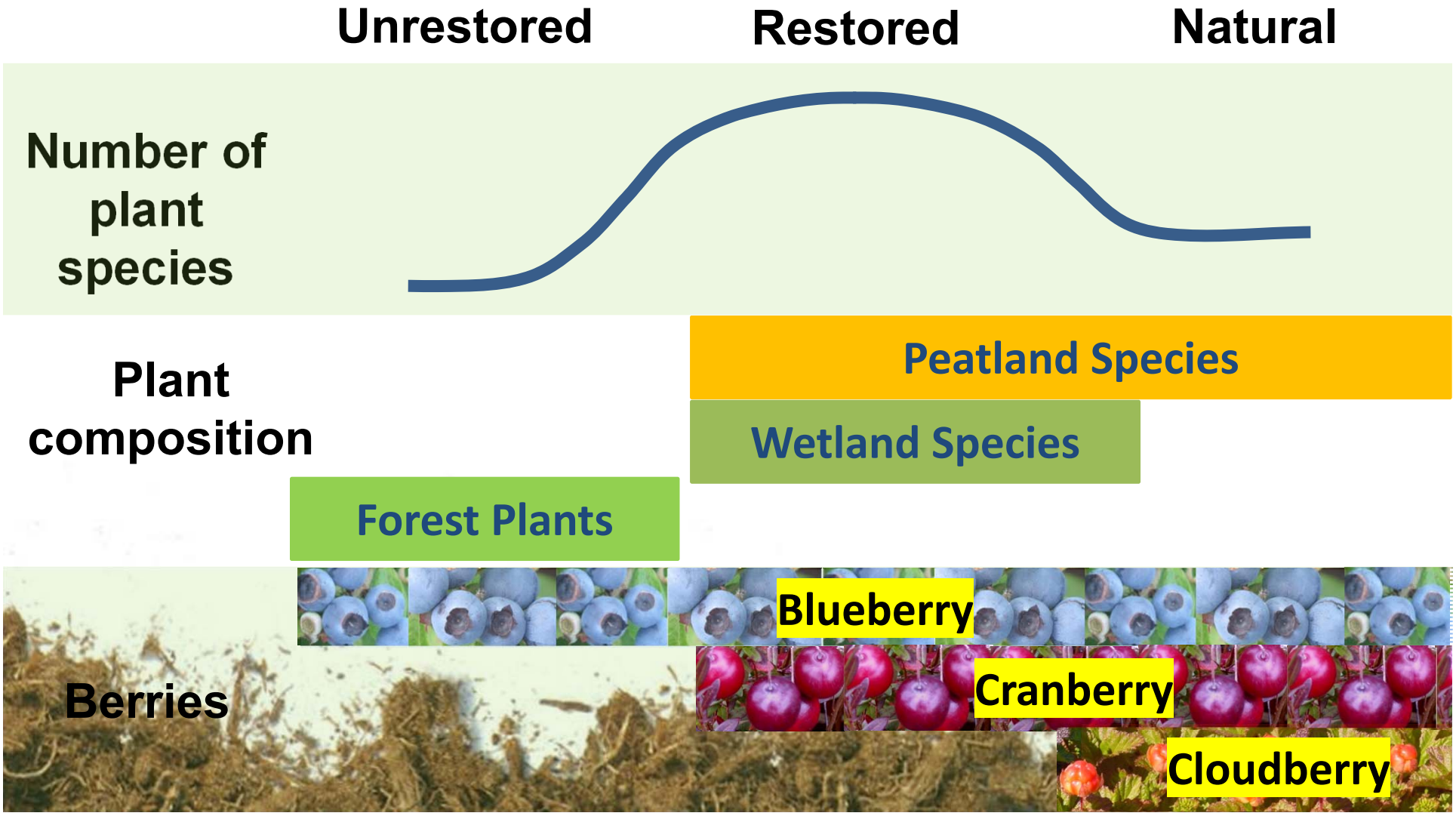
Experimental site

Bois-des-Bel

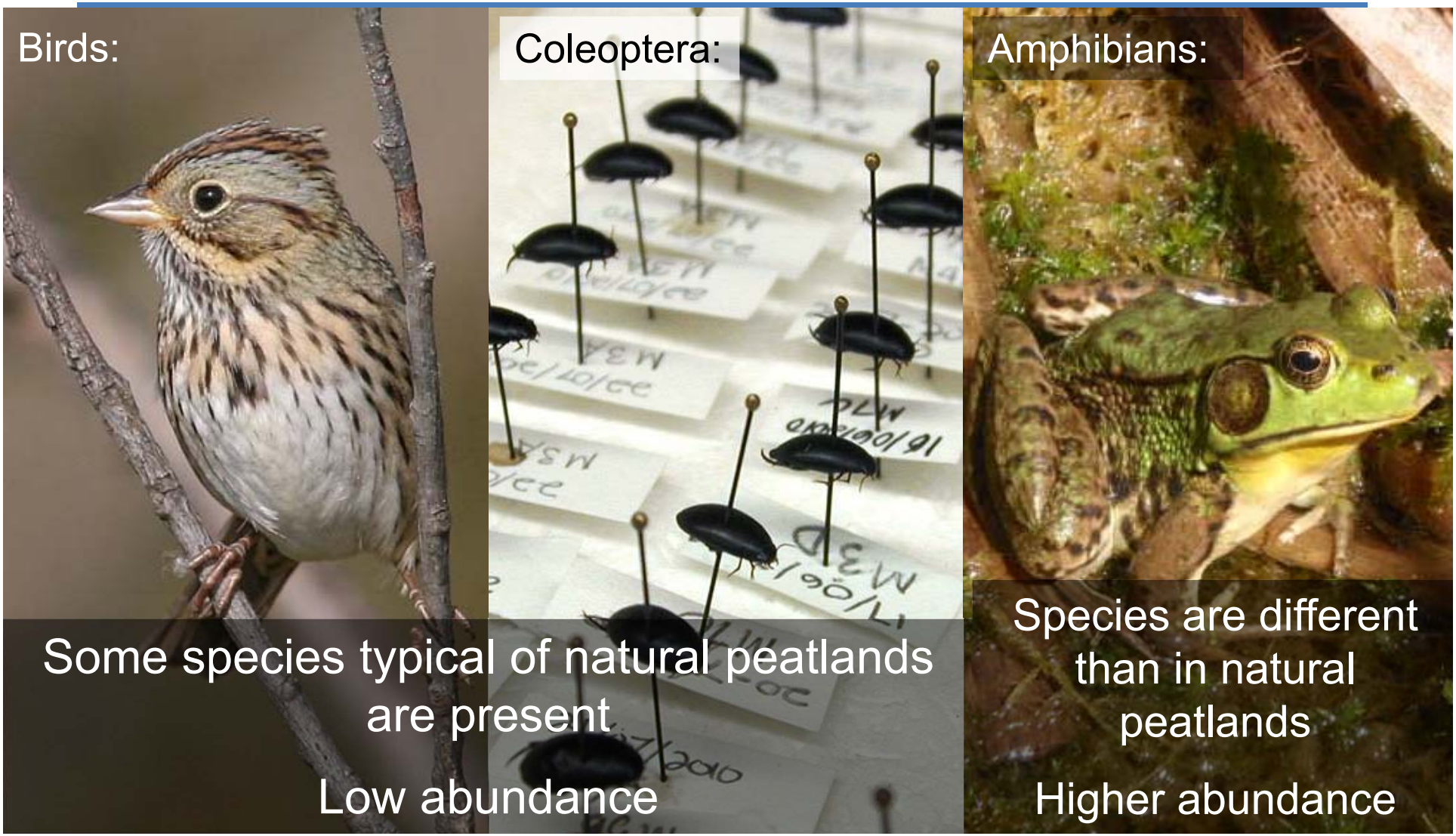
- Central Quebec
- Restored in 2000

***Sphagnum* cover increase = production and decomposition**

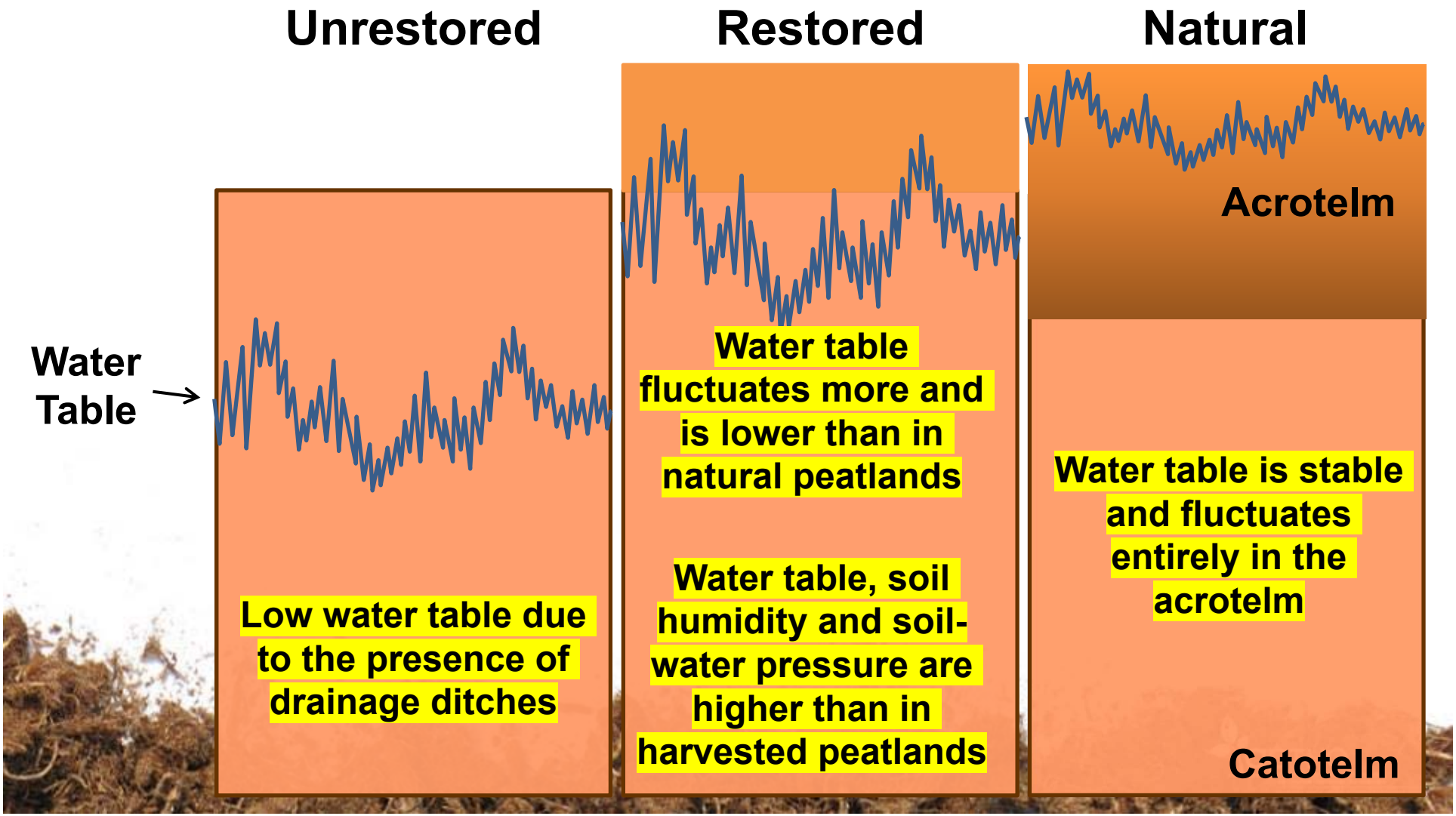
Current State of Knowledge: Biodiversity of Restored Sites



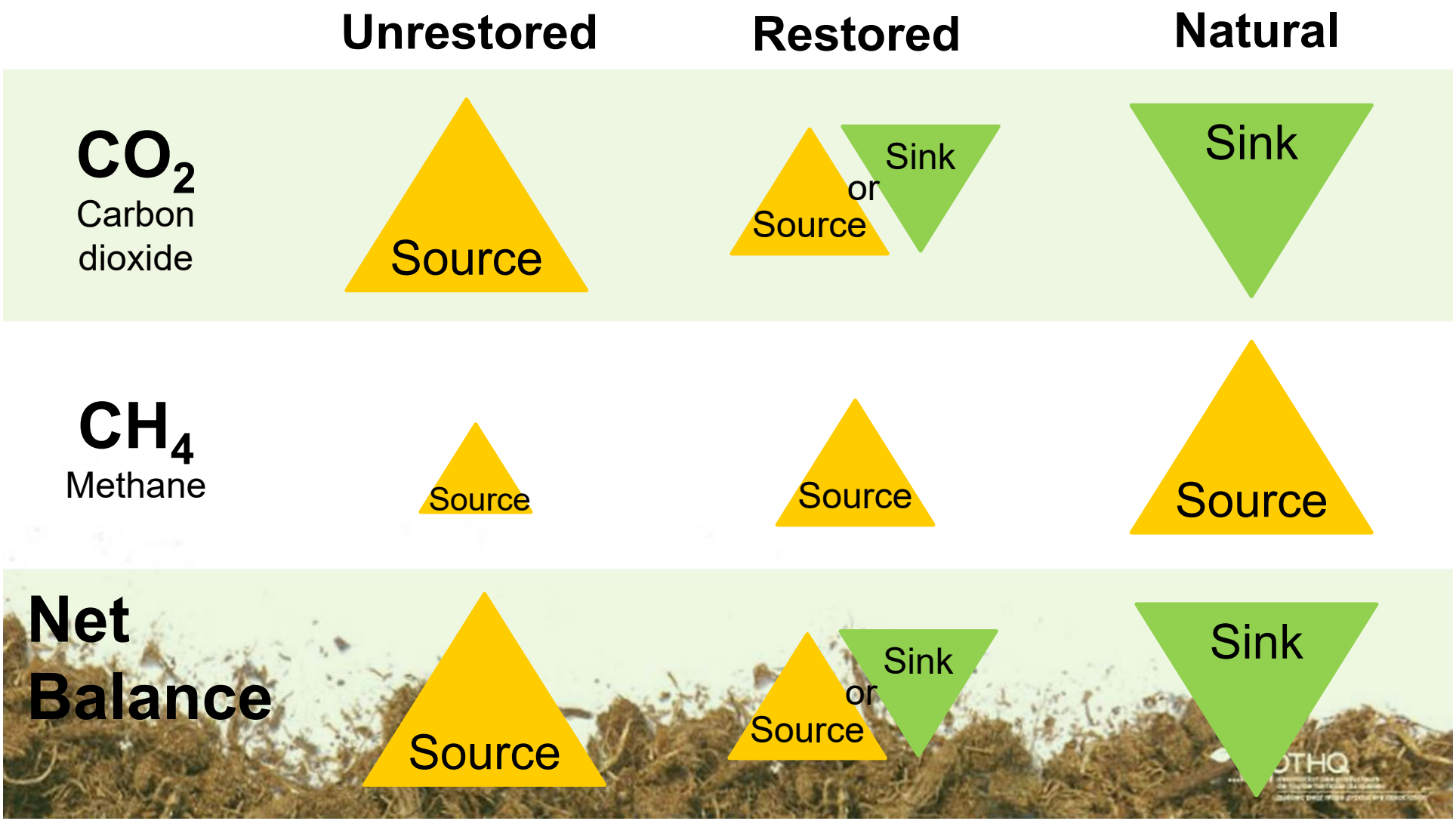
Current State of Knowledge: Biodiversity of Restored Sites



Current State of Knowledge: Hydrology



Current State of Knowledge: Carbon Cycling in Peatlands



Summary of Research Results

The research evidence indicates that at a 10 year period following the restoration of a peatland site:

- **Sphagnum moss coverage well established** after **5 years**
- Growth rate of the Sphagnum moss on the restored site is **comparable** to a pristine peatland or higher (which varies from 235 to 310 g/m2 depending on the sphagnum moss community)
- Biodiversity of birds, insects and amphibians in some cases higher that natural peatlands but generally on a trajectory to achieve biodiversity functionality.
- Hydrological response is close but not fully in line with natural peatland hydrology.
- Site's ability to **capture carbon** can return to a level the same as a pristine peatland site after a period **of 10 to 15 years.**

Sustainability of Canadian Horticultural Peat Industry

- **E-Life Cycle Analysis**
- **S-Life Cycle Analysis**
- **Certification**
- **Industry Social Responsibility Report**

CIRAIG™

International Reference Centre for the
Life Cycle of Products, Processes and Services

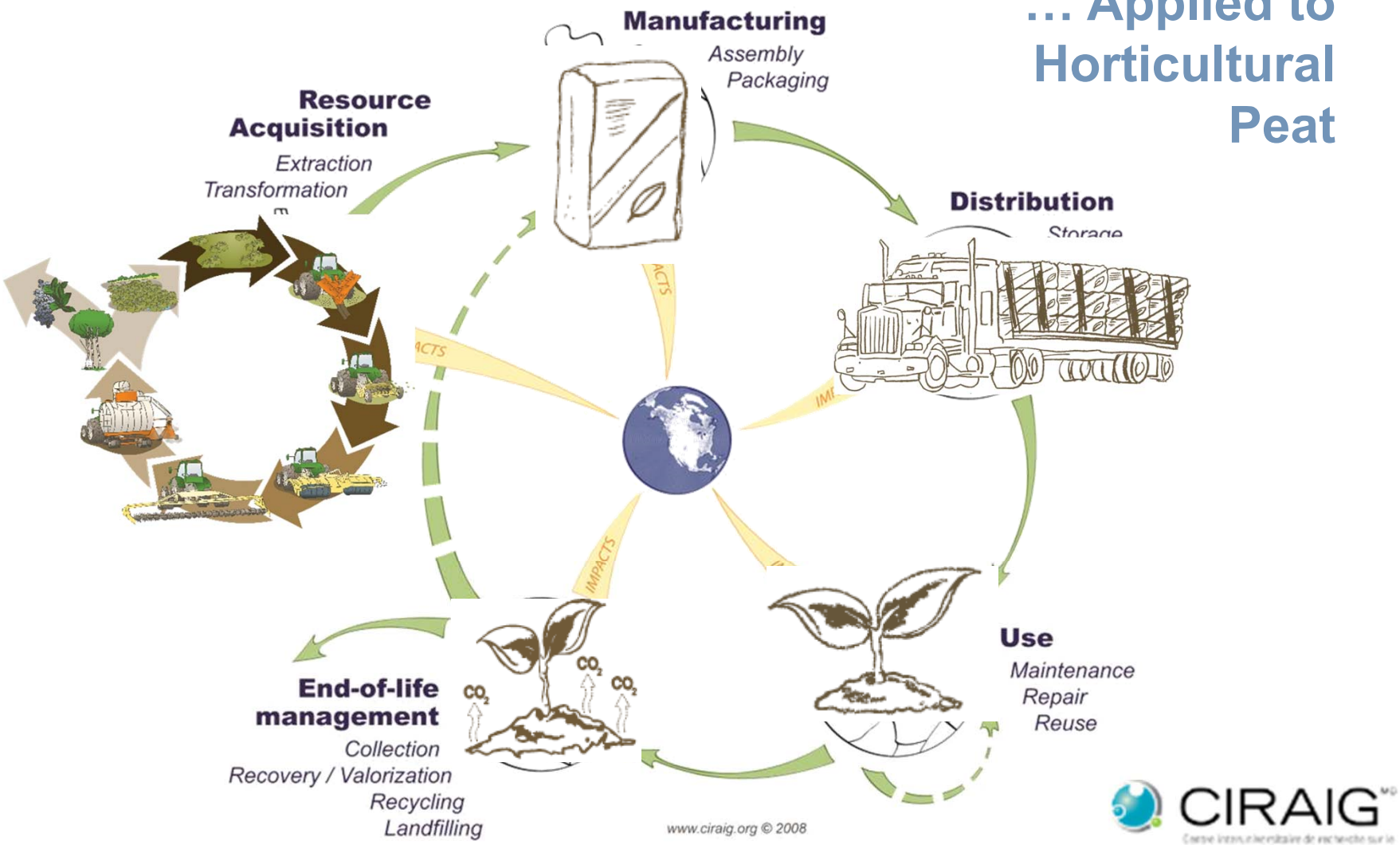
Life Cycle Analysis (eLCA) of Sphagnum Peat Moss

***CIRAIG** = International Reference Centre for the Life Cycle of Products, Processes and Services

ESG UQÀM POLYTECHNIQUE MONTRÉAL

Environmental Life-Cycle Analysis (eLCA)

… Applied to Horticultural Peat



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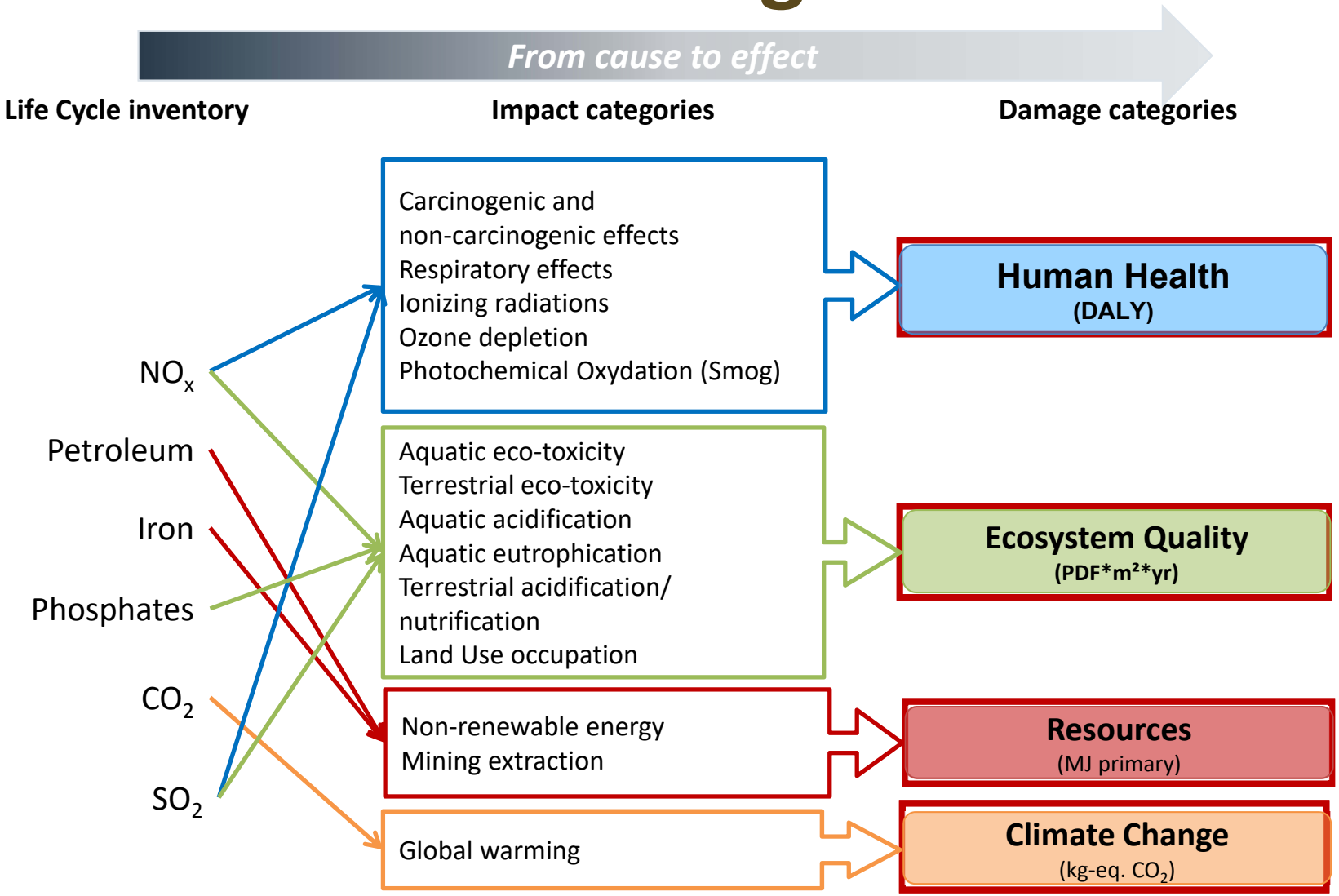
eLCA - Categories



Hundreds more. . .

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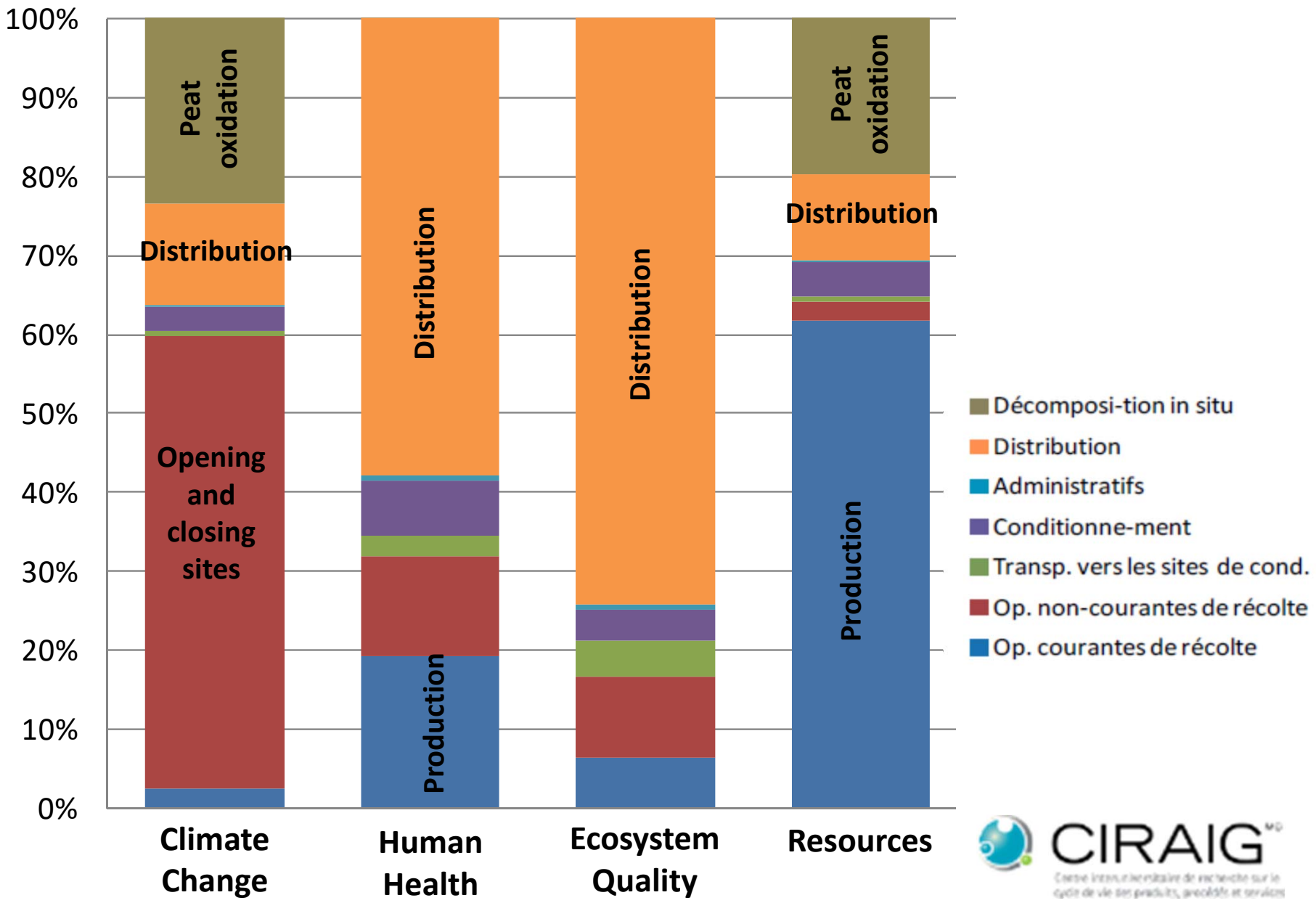
eLCA – Results



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eLCA – Outcomes

- **E-LCA conducted on coir, green compost, bark.**
- **Results indicate that all substrate materials have some negative impact, no one substrate is perfect.**
- **Results 2015 VS 2010: Same general contribution trends (i.e. hot spots) we are working to clarify (C studies) and decrease our impacts.**

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Socio-environmental Assessment

- Social Life Cycle Assessment focuses on the **behavior of the company and its relations with its stakeholders** (employees, local communities, clients, suppliers, government, etc.)
- **ISO 26 000 connection**
- Approach based on the Guidelines for **Social Life Cycle Assessment of Products**, published by UNEP and SETAC (UNEP / SETAC , 2009, UNEP United Nations Environment Program; SETAC : Society of Environmental Toxicology and Chemistry.)

Guidelines for Social Life Cycle Assessment of Products

Social and socio-economic LCA guidelines complementing environmental LCA and Life Cycle Costing, contributing to the full assessment of goods and services within the context of sustainable development

S-LCA: Update and Improvement

Balance sheet updated in 2015

From 5 to 8 areas of social responsibility under consideration

Governance

Economic performance

Peatland management

Workers

Suppliers & partners

Environmental integrity

Consumers

Local communities

From 28 to 71 indicators
Inspired by Veriflora assessment checklist

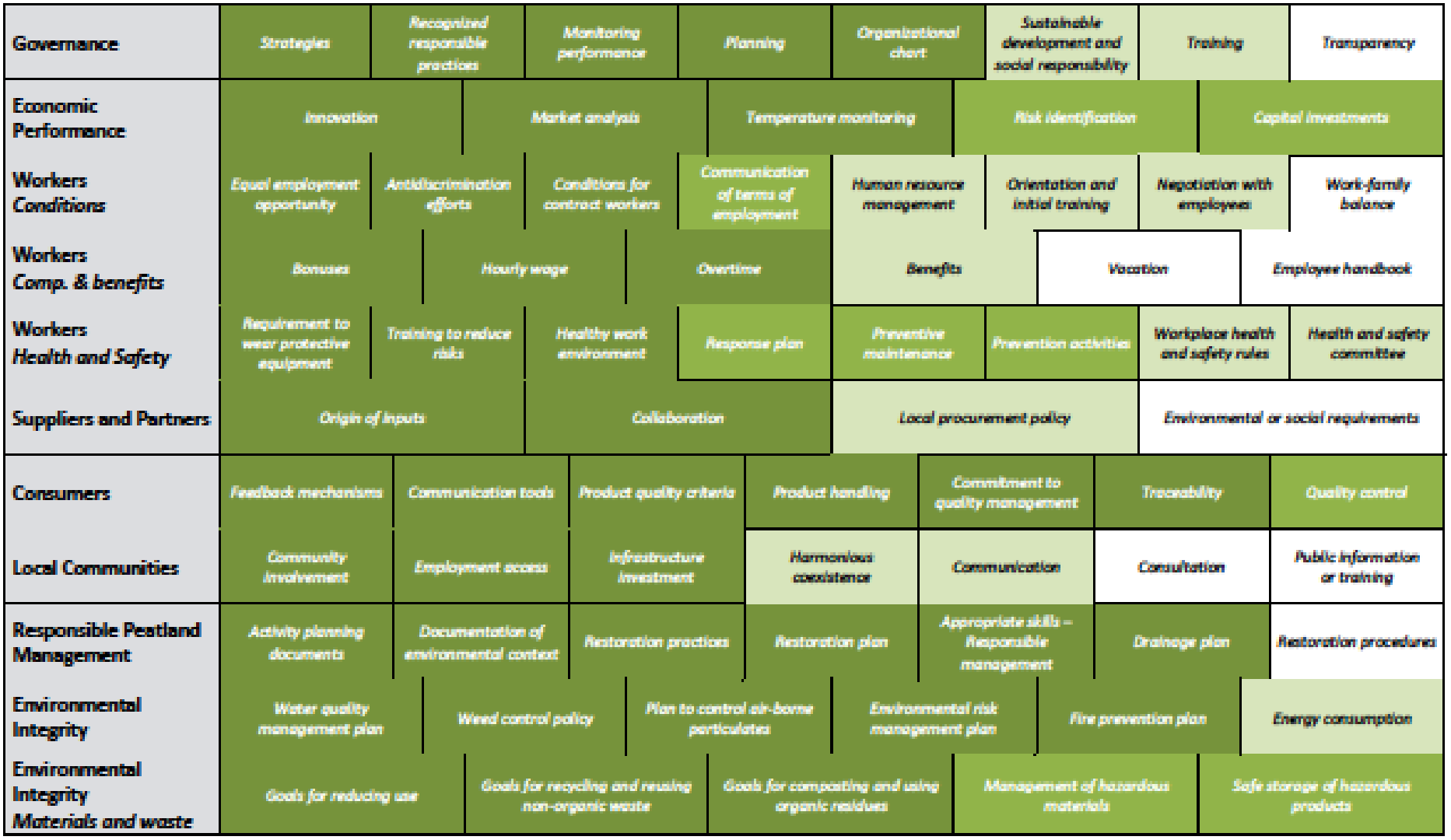
Semi-quantitative evaluation scale

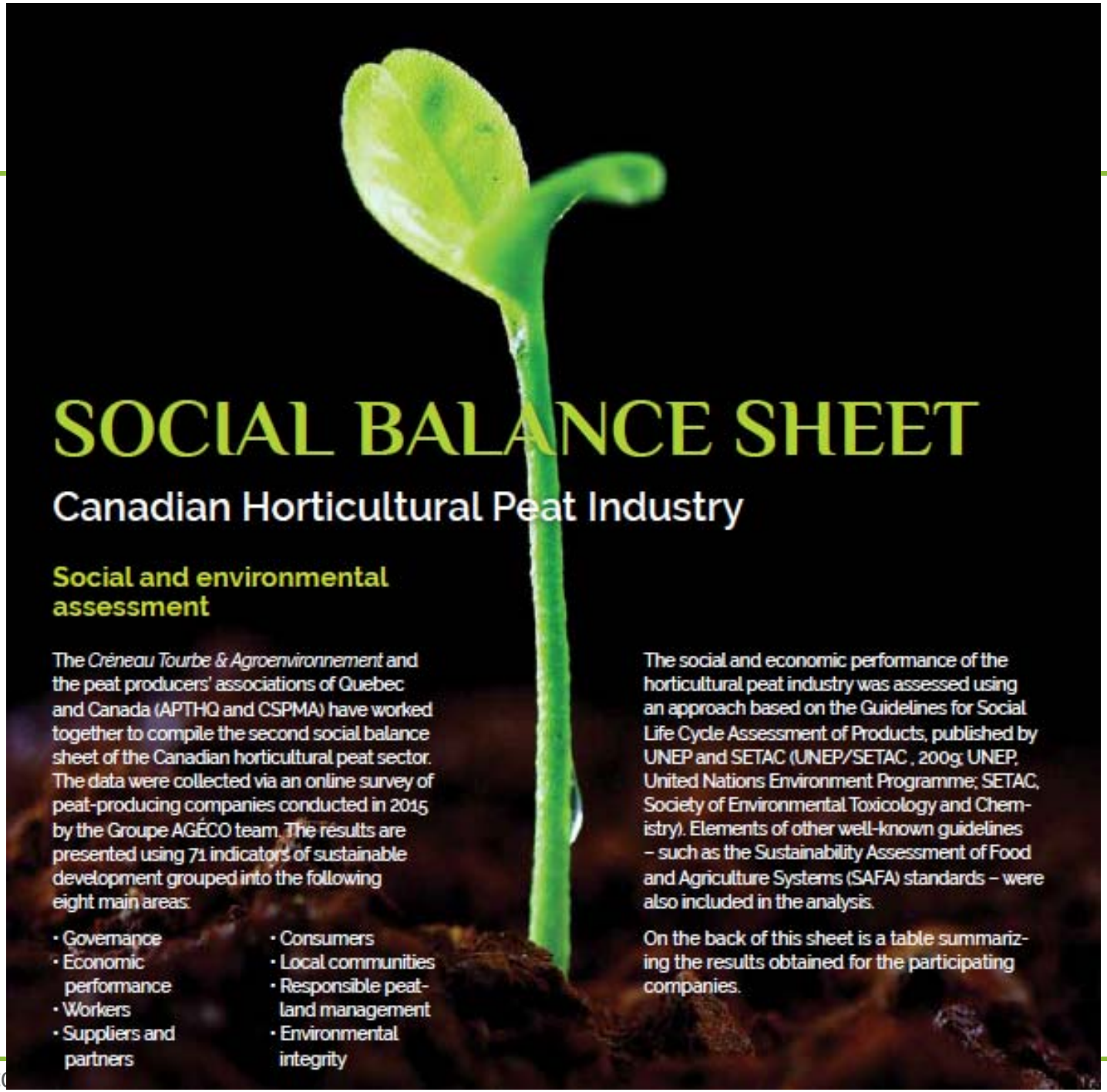
- Committed
- Proactive
- Compliant
- Risky

S-LCA: Highlights

Committed	Compliant (max)	Proactive	Compliant	At risk

- As a whole, the industry is at the "Committed" level for many indicators





SOCIAL BALANCE SHEET

Canadian Horticultural Peat Industry

Social and environmental assessment

The *Créneau Tourbe & Agroenvironnement* and the peat producers' associations of Quebec and Canada (APTHQ and CSPMA) have worked together to compile the second social balance sheet of the Canadian horticultural peat sector. The data were collected via an online survey of peat-producing companies conducted in 2015 by the Groupe AGÉCO team. The results are presented using 71 indicators of sustainable development grouped into the following eight main areas:

- Governance
- Economic performance
- Workers
- Suppliers and partners
- Consumers
- Local communities
- Responsible peat-land management
- Environmental integrity

The social and economic performance of the horticultural peat industry was assessed using an approach based on the Guidelines for Social Life Cycle Assessment of Products, published by UNEP and SETAC (UNEP/SETAC , 2009; UNEP, United Nations Environment Programme; SETAC, Society of Environmental Toxicology and Chemistry). Elements of other well-known guidelines – such as the Sustainability Assessment of Food and Agriculture Systems (SAFA) standards – were also included in the analysis.

On the back of this sheet is a table summarizing the results obtained for the participating companies.

Certification - Veriflora® Responsible Horticultural Peat Moss Program

CERTIFIÉ veriflora® GESTION RESPONSABLE DES TOURBIÈRES

Contient un minimum de 90% de tourbe certifiée | www.veriflora.com SCS-VER-000XXX

RESPONSIBLY MANAGED PEATLANDS CERTIFIED™ SCS GLOBAL SERVICES VERIFLORA® PROGRAM

SCSglobal SERVICES

Setting the Standard for Sustainability.™

SCS Global Services Standard

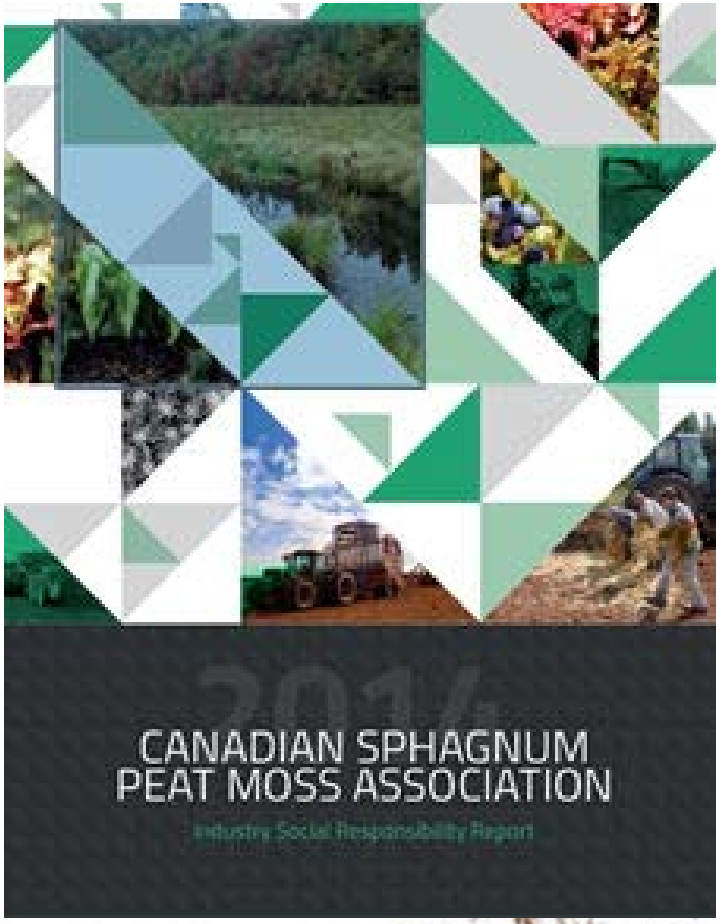
Responsibly Managed Peatlands

A Veriflora® Standard for Responsible Horticultural Peat Moss Production

Version 1-0
August 2017

https://www.scsglobalservices.com/responsibly-managed-peatlands

Industry Social Responsibility Report



What is Social Responsibility?

SOCIAL RESPONSIBILITY

How organizations behave, act in an ethical way to contribute to a sustainable future

The Journey

Diagnosis

In a life cycle perspective

… **Environmental LCA** (2009-2012)

… **Social LCA** (2011-2012)

… **Economic contribution** (2011-2012)

… **Veriflora® results**

A comprehensive **socio-environmental diagnosis** for hotspots identification

The Journey

Diagnosis

In a life cycle perspective

- … **Environmental LCA** (2009-2012)
- … **Social LCA** (2011-2012)
- … **Economic contribution** (2011-2012)
- … **Veriflora® results**

Stakeholder dialogue

Issues identification and prioritization

CSR reporting

Indicators

Commitments

Summary

- **Canadian peatlands are extensive, responsibly managed, and highly regulated.**
- **Committed to restoration of post harvest sites. Peatlands are renewable.**
- **Committed to peer reviewed independent research as the foundation for resource policies.**
- **Committed to ongoing improvement in our social responsibility accounts:**
  - ❑ Update and improvement of E-LCA and socio-environmental assessment
  - ❑ Veriflora® certification
  - ❑ Economic Impact Assessment