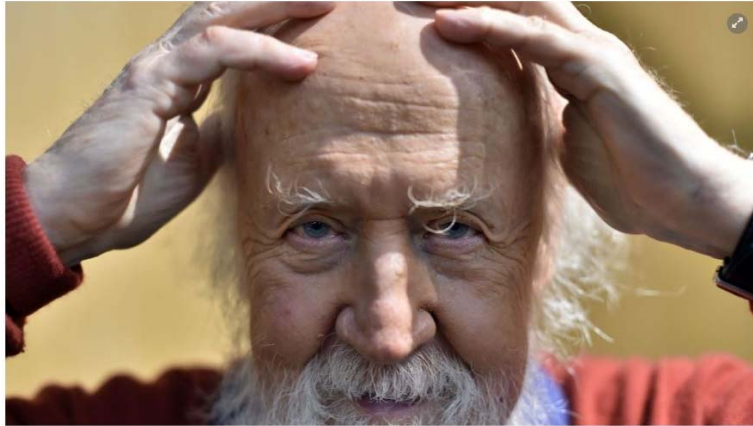


« The disappearance of earthworms,
as serious as climate change »



Soil health, setting for the future

What is a healthy soil ?
What are its enemies ?

Odette Ménard, ing. et agr.
Conseillère en conservation
des sols et de l'eau

Winnipeg, 20 octobre 2019



Summary

- 01 Social reflexion
- 02 High speed technology
- 03 What is a healthy soil ?
- 04 The partners
- 05 Cover and feed



Agriculture and society

Examine the impacts of pesticides
on public health and the environment



Soil health, setting for the future

Enemy # 5

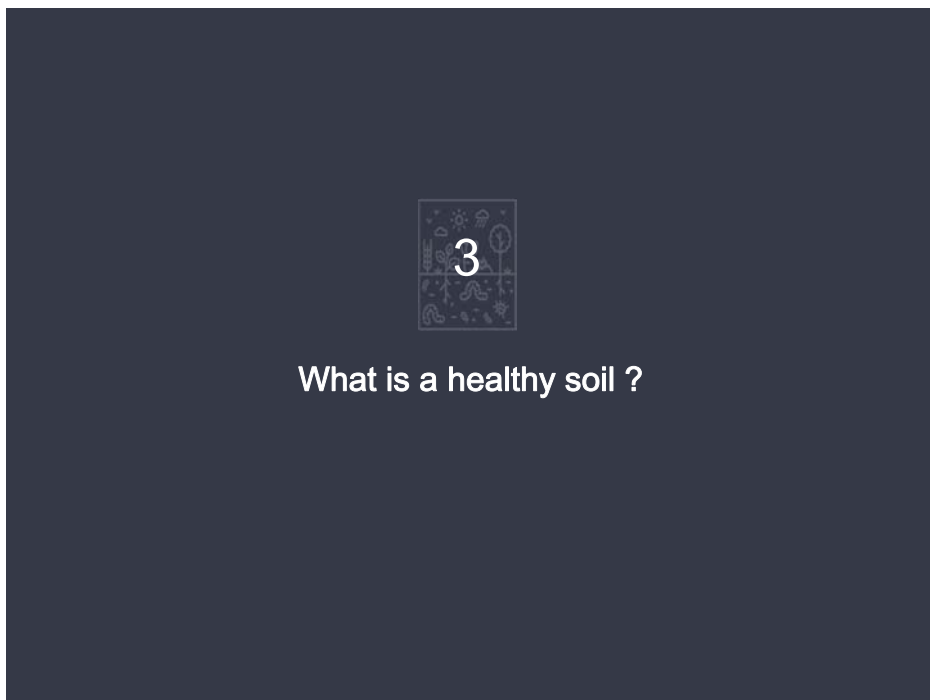
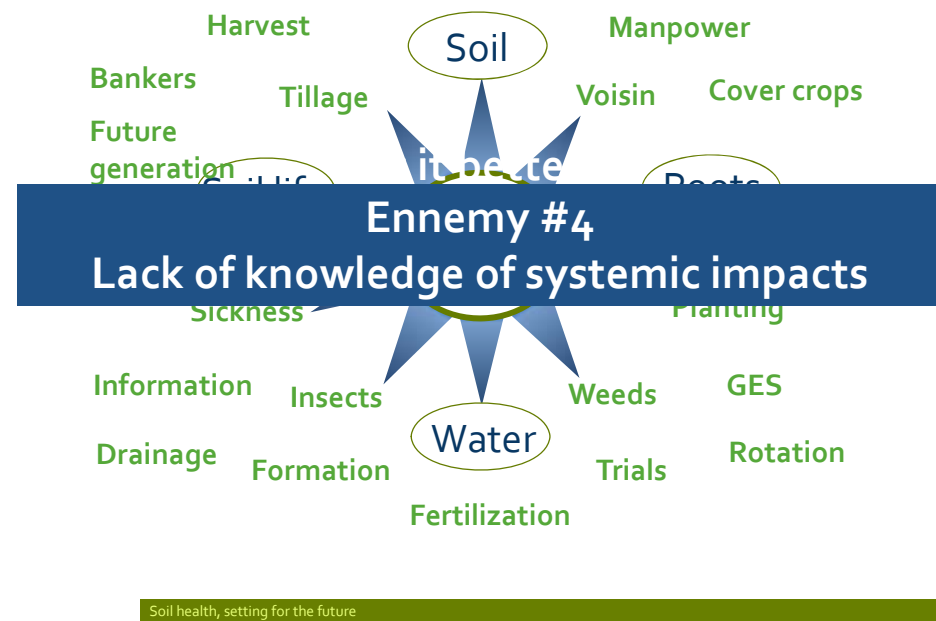


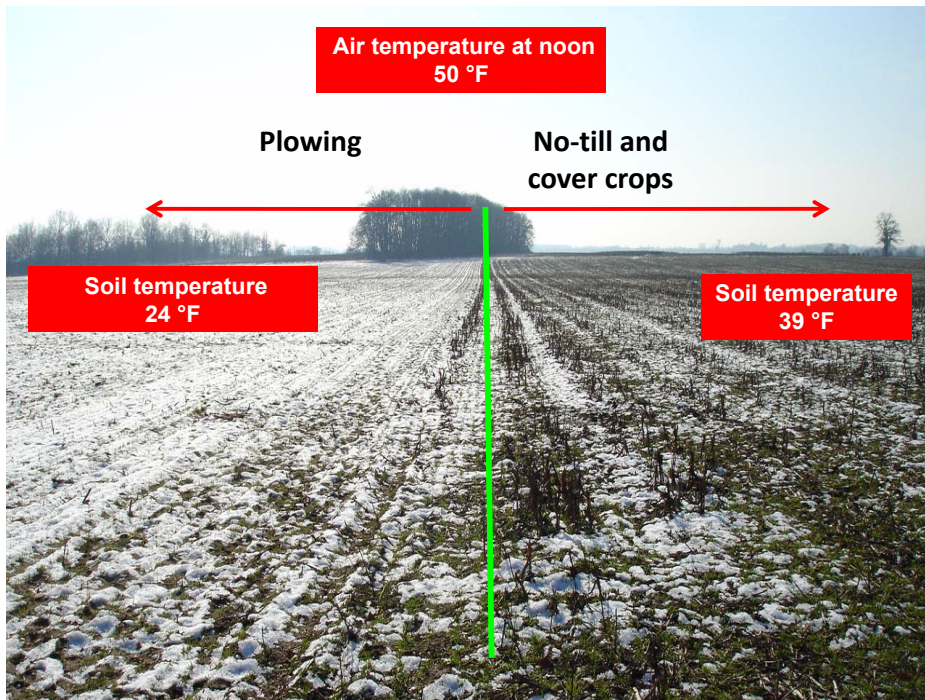
Soil health, setting for the future



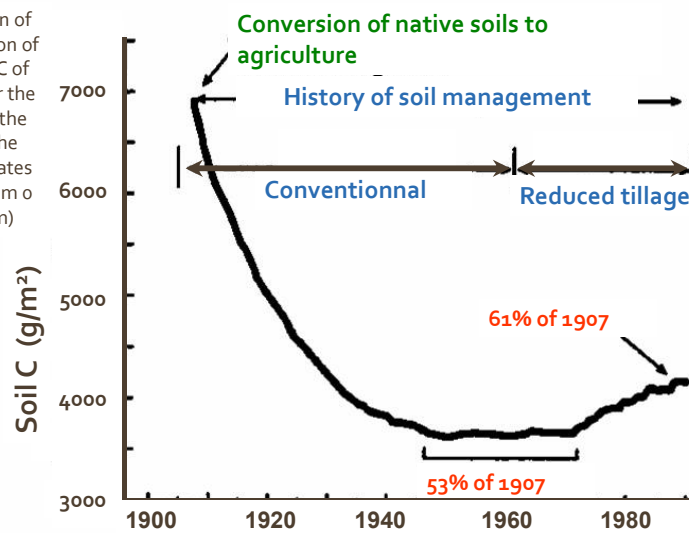
High speed technology







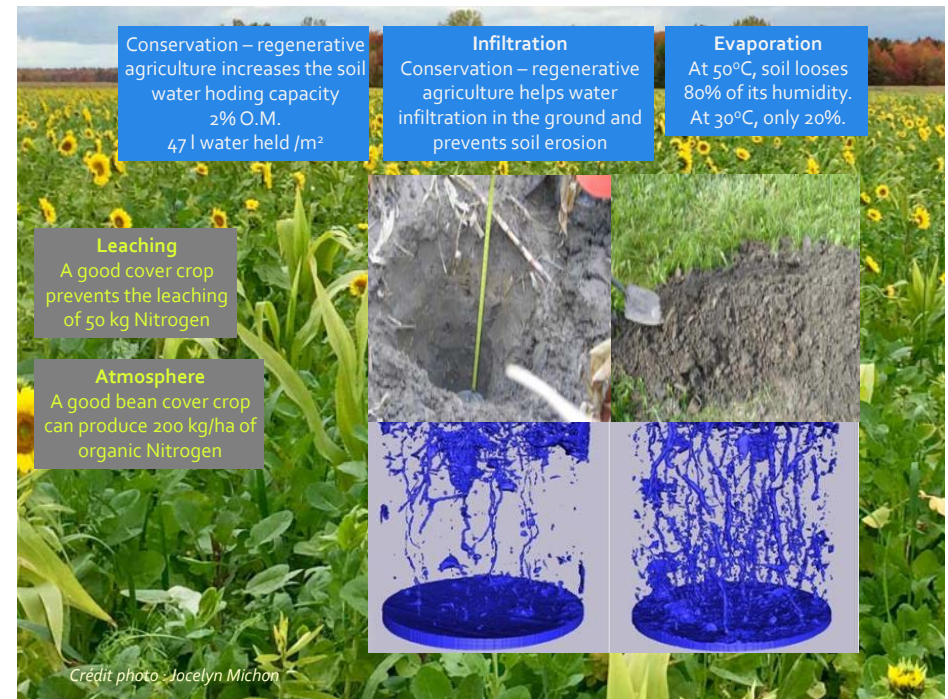
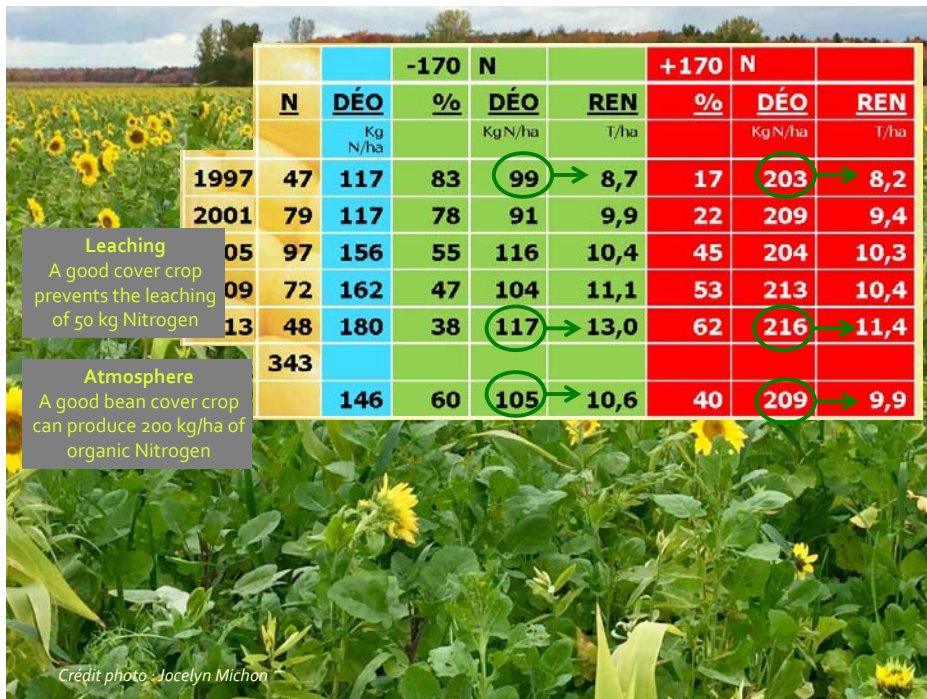
Simulation of the variation of the total C of the soil for the states of the center the United States (depth from 0 to 20 cm)



Same soils: 2 different managements



Loam argileux Kamouraska



Conservation – regenerative agriculture increases the soil water holding capacity 2% O.M. 47 l water held /m²

Infiltration
Conservation – regenerative agriculture helps water infiltration in the ground and prevents soil erosion

Evaporation
At 50°C, soil loses 80% of its humidity. At 30°C, only 20%.

Fuel
Conservation – regenerative agriculture reduces fossil fuel

Leaching

Ennemy #3
'Irrationnal' need to prove everything

A good bean cover crop can produce 200 kg/ha of organic Nitrogen

Carbon
6 tons/ha drymatter cover crop stores 2,4 tons of C /ha. 27% will be sequestered in the soil

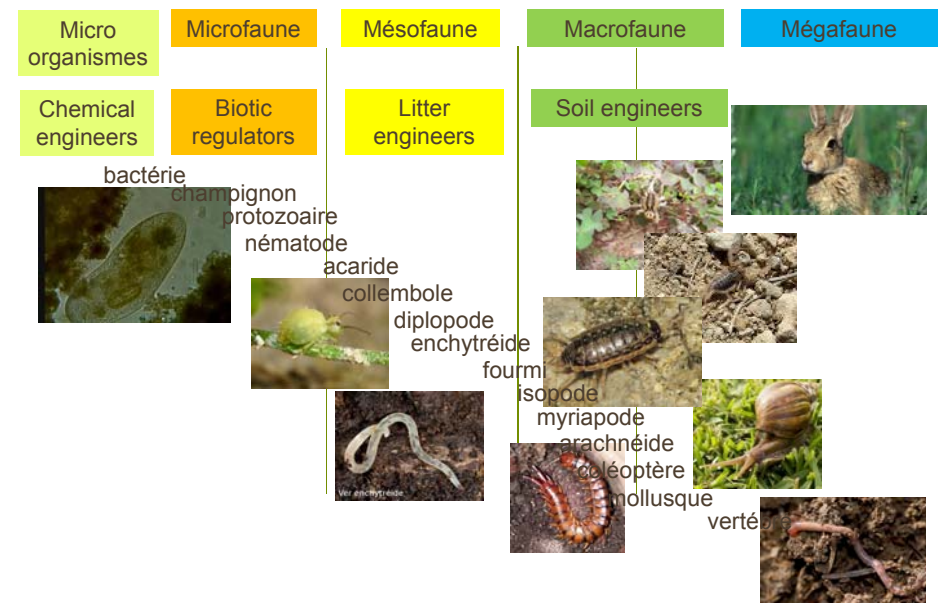
Collaboration
Fertility and commercial rotation allows to suppress of insecticides and herbicides

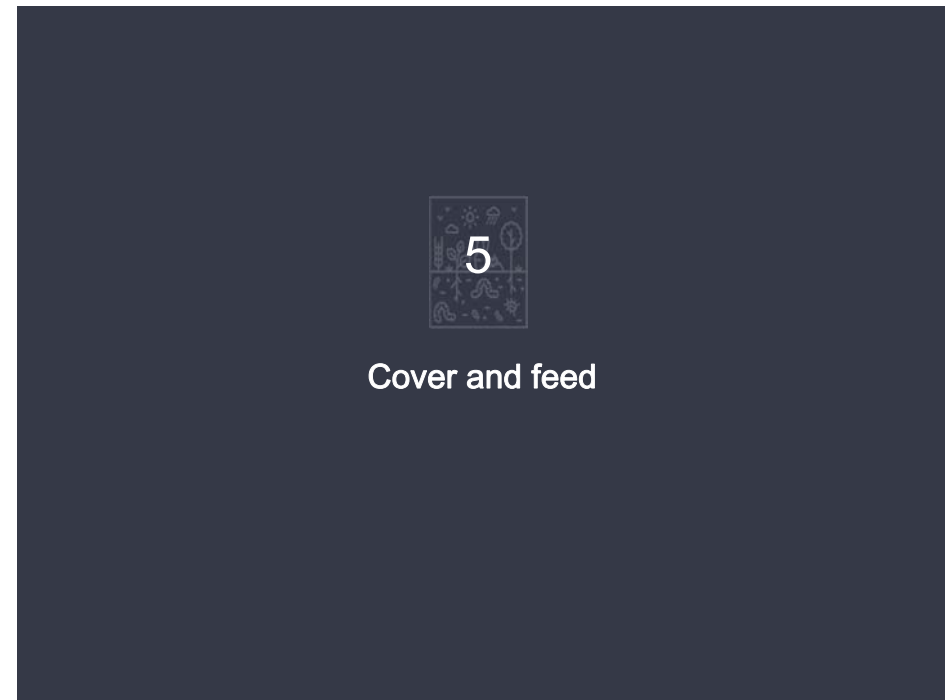
Pollinators
Cover crops flowers enhance pollinators

Crédit photo : Jocelyn Michon

4

The partners







Ennemy #1
Us

The objectives

	Extrêmement et très important
Profitability	92 %
Quality of life and work load	90 %
Yields	75 %
Innovation – Trials of new techniques or culture or rotations	59 %

Soil health, setting for the future

Impacts of soil health management vs objectives

	+	Same state	So	-
Profitability	49 %	36 %	85 %	8 %
Quality of life	42 %	50 %	92 %	3 %
Work load	30 %	48 %	78 %	18 %
Yields	53 %	35 %	88 %	5 %

Soil health, setting for the future

Why we do it

	Extrêmement et très important
Soil and water quality	34 %
Environment	21 %
Increase yields 3	18 %
Interest in the practice 4	11 %
Respect the law	6 %
Reduce health hazards	4 %
Reduce operating costs 1	3 %
Reduce work load 2	3 %

Soil health, setting for the future

