



Ecosystem and climate restoration through soil care, regenerative farming, land care and positive changes in the food system.

Is it all Bad News?

It often feels like all of the food and climate news we hear and see is terrible:

- Soil carbon and fertility is falling, diseases are spreading, pesticide use is increasing, biodiversity is crashing, flooding and drought are becoming increasingly common.
- Food security, nutrition density and farm income are all threatened. All of these things will be worse in a heating climate and agriculture is part of what is currently driving climate breakdown.

Climate, Land, Ecosystems & Diet

- Globally, land use, especially related to food production, is one of the primary drivers of climate and ecosystem breakdown on a global system.
- A lot of people are working on how to reverse this so that land use, especially related to the food system, regenerates and sustains ecosystems and sequesters the atmospheric carbon that is driving planetary heating.
- The advances in thinking and approach to soil and land care that are coming from agriculture can be applied in urban settings and relate to our everyday choices and activities.

Time for some Good News

- There are some really interesting, inspiring, grass roots things happening in food and agriculture and they don't get much attention in media so we rarely get to hear about them.
- Which is a bit strange, because they present real, viable solutions to some of the most daunting challenges we are dealing with at the moment. Including food security, ecosystem failure, biodiversity loss, urban flooding, and global heating.

Solving Several Problems

The same practices that restore soil carbon:

- Reduce or reverse other ecological harms
- Increase farm profits
- Decrease sensitivity to extreme weather events, like droughts and floods.
- Increase biodiversity and support non-agricultural species (birds, pollinators, invertebrates, etc.)

How it Works:

60 Seconds on the Soil Carbon Cycle:

- As plants grow, they capture atmospheric carbondioxide, break the oxygen molecules off of the carbon, releasing them, and hold onto the carbon, either as a sugar (carbohydrate) or as part of their structural tissue. They also release a large percentage as root exudate into the soil to feed the biology there. Plants rely on soil biology for everything from nutrient and water transportation, through nitrogen fixation to defence against pests and diseases.
- A portion of the sugars is metabolized, eventually making its way back into the atmosphere, and the remainder is sequestered in the soil in a stable form.

When carbon is in the soil it:

- Improves soil resistance to erosion
- Helps soil to hold water, without becoming waterlogged. (1% carbon increase = 1" water that can be held in the soil)
- Helps soil hold onto soluble nutrients
- Provides habitat for biology that supports healthy plant growth

All of which lead to increased ecosystem resilience and improved crop reliability and productivity.

Soil Carbon = Climate Solution

- Global soils contain 2 to 3 times more carbon than the atmosphere and a huge amount of the atmospheric carbon cycles through plants and soils each year. If agricultural soil carbon level increased by 0.4%, or 4 ‰ per year, in the first 30-40 cm of soil, annual sequestration would match global carbon emissions, as of 2015.
- **The excess carbon that we've dumped into the atmosphere can be sequestered in agricultural soils by plants and soil biology.**

How are farmers working with plants to build soil carbon?

- Minimizing soil disturbance, especially inverting the soil profile. (No Till)
- Keeping soil covered with plant material throughout the year. (Cover Crops)
- Mimicking the grazing cycles that plants evolved with by rotational or mob grazing. (This is what makes some beef carbon negative)
- Minimizing or eliminating applications of concentrated materials that disturb soil biological function or accelerate the oxidization of humus

How are farmers working with plants to build soil carbon?

- Planting perennial species, including trees, within agricultural systems. (Sylvaculture/Sylvapasture)
- Growing a diverse blend of plant species
- Cycling all organic waste back into the soil
- Supporting / reintroducing soil biology through compost applications
- Trying, monitoring, adapting, adjusting, repeating

Not singular. Not new.

- No one solution can be applied to all systems, regions, ecosystems or food systems. Regenerative agriculture is less a set of activities than a set of outcomes.
- This isn't entirely, or even mostly, new, although technology is helping us understand, and hopefully better support, soil life.
- Indigenous knowledge, leadership and practices, with their millennia of ecosystem experience and understanding, will be critical to long term solutions.
- Some of the change that has to happen is in how we think about ecosystems, moving from an extractive relationship to a reciprocal one.

Regeneration Canada

- Regeneration Canada is a nonprofit organization that promotes land management practices that regenerate soil health, in order to mitigate climate change, restore biodiversity, improve water cycles, and support a more productive and just food system.
- We strive towards this goal by empowering farmers, landowners, scientists, agronomists, businesses, community organizations, governments, and consumers to play a role in soil regeneration.
- **PETITION: REGENERATIVE AGRICULTURE** is our best chance to reverse climate change while fostering healthy food systems.



Canadian Organic Growers



Mission:

To lead local and national communities towards sustainable organic stewardship of land, food and fibre while respecting nature, upholding social justice and protecting natural resources.

- Stand Up for Organics
- Become a Member and/or a Donor
- Spread the word about organics

Just Food



Just
Food

Just food is working toward building vibrant, just and sustainable food and farming systems in the Ottawa region

- Applying agroecology as a framework and critical part of food systems
- Edible Landscapes
- Hold the line on urban sprawl
[https://www.ecologyottawa.org/hold the line on sprawl](https://www.ecologyottawa.org/hold_the_line_on_sprawl)
- Savour Ottawa.ca for where to find local food
- Community garden network

Hidden Harvest Ottawa

Picking and sharing fruit that would otherwise go to waste.



- Ottawa-area folks are always welcomed and encouraged to register their fruit trees, as well as sign up as volunteer harvesters and volunteer neighbourhood leaders
- Volunteers are still very much needed for the rapidly approaching Beau's Oktoberfest next weekend to help run the Midway games; please talk to Maya, or email info@hiddenharvest.ca .

Ecology Ottawa

**ECOLOGY
OTTAWA**



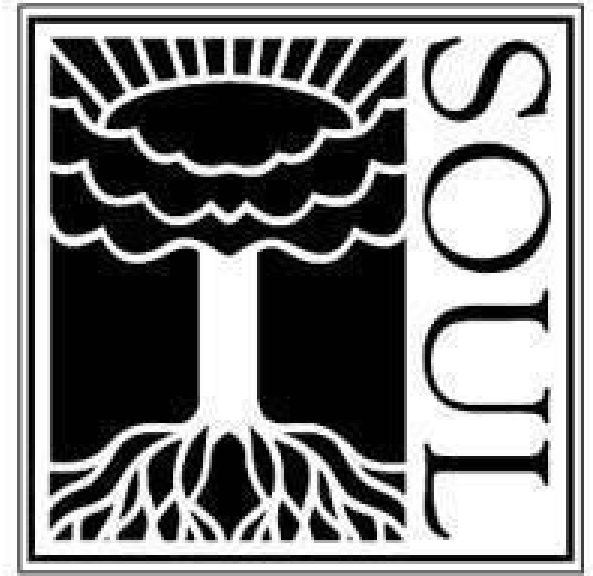
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- Ecology Ottawa is tackling climate and ecosystem issues from ecological and social standpoints.
- The importance of urban greenspaces
- Green Infrastructure
- Tree giveaways through Tree Ottawa
- Governmental accountability on climate environment and related social issues
- Volunteer opportunities (election activities), become a member, plant a tree, sign the 'hold the line on urban sprawl' petition etc.

Society for Organic Urban Land Care

Cultivating knowledge of organic land care through professional certification programs, education, the organic land care standard and the promotion of land care practices

- Join SOUL as a public member
- Become an Organic Land Care Advocate
- Learn more about land care through the resources in the SOUL resource library at www.organiclandcare.ca



So, what can you do?

- Look for local foods produced by farmers using regenerative practices.
- Purchase local, in-season foods.
 - Reduces transportation
 - Increases local food security
 - Grown to national safety and human rights standards
 - Reduces waste at the production and storage stages
- If you have a garden, or any land that you work with, you can implement the same practices that are regenerating agricultural soils since most of them are scalable. (Maybe not the grazing...)
- You can volunteer. (Hidden Harvest, Just Food, Ecology Ottawa etc.)

So, what can you do?

- Try to use what you buy (30-50% Food waste in Canada)
- Compost any organic matter that comes out of your garden or kitchen (vermicompost, bokashi, bins etc.).
- Spread the word – most people don't know about living soils
- Sign a petition
- Contact your elected representative. (Why are wasting our organic matter? Why aren't we investing in living green infrastructure? Why aren't we valuing ecosystem services?)
- Take part in the global climate actions starting on the 21st. (Global Climate Strike, Extinction Rebellion)
- Vote
- Become a member of an organization working to change government policies around food and land management.