

# Land Swap: A Living Lab

## BMP

Led by the NSFA, Living Lab – Nova Scotia focuses on identifying technologies and on-farm beneficial management practices (BMPs) that can be adopted by farmers to address climate change issues. The land swap BMP pairs horticulture farmers with livestock farmers to incorporate grazing into high disturbance systems that typically have a lot of exposed soil and little crop residue returned to the field, which can lead to lower carbon levels and aggregate stability in the soil. This can decrease the long-term productivity of that field. We are testing if soil health can be restored and stabilized by integrating undisturbed perennial crops and grazing periods into these highly disturbed rotations.



*Horticultural fields typically have more exposed soil and higher disturbance.*

## Why Try a Land Swap?

If a horticulture or other highly disturbed field (such as annual grain cropping) is showing decreased organic matter or decreased soil health, one of the options to reverse that trend is to turn that field into a temporary pasture.

### Benefits of Pasture

Having undisturbed perennial crops can have many benefits including:

- Increased soil organic matter through continuous living roots.
- Improved water quality as roots slow down water and help absorb pollutants before they reach water bodies.
- Increased biodiversity through more complex habitat and food sources.
- Reduced soil erosion by keeping the soil covered.
- Improved soil structure creating better water infiltration.

### Benefits of Rotational Grazing

Incorporating livestock can have many benefits and rotational grazing has been shown to increase those benefits, which include:

- Improved pasture health through allowing pastures to rest between grazing periods promotes healthier plant growth, increases root growth, and reduces overgrazing.
- Increased biodiversity by allowing different pasture areas to recover and support various plants and animal species.
- Good distribution of nutrients as livestock graze and roam and disperse their manure, and its nutrients, across the pasture.
- Increased carbon sequestration as manure and plant matter are trampled into the field, and insects such as dung beetles help incorporate it into the soil, protecting the carbon from future losses.



Producers can use tumble wheels or stepping posts for their paddocks, based on preference.

## Factors to consider when planning a land swap

In a land swap the horticulture producer stands to gain soil health, and the livestock producer can get access to more land for herd expansion. If you are interested in this, there are a few things to consider to increase your chances of success:

- **Previous crops and management:** Understanding crop history is essential as it impacts soil health, pests, and diseases. Management practices, like tillage and chemical use, also influence soil conditions and productivity.
- **Seed mix:** For a short-term pasture that is easy to terminate consider a seed mix with fast-growing species. They provide quick ground cover and forage while being relatively easy to terminate.
- **Water availability:** An adequate clean water supply is crucial for sustaining livestock and providing necessary moisture for forage growth and quality.

- **Fencing plan:** A fencing plan should prioritize ease of establishment and removal by choosing durable yet simple materials to install and dismantle.
- **Define roles:** Clarify who is responsible for each task and ensure clear communication. Tasks can include:
  - Who is responsible for fence installation.
  - Who will buy and own the fence and other equipment.
  - Who is moving the cattle through the rotation.
  - Who seeds and terminates the pasture.
  - How long will the swap be.



Livestock grazing on a crop field turned pasture.

## Other resources

Visit [Rotational Grazing – OFCAF \(perennia.ca\)](https://perennia.ca) for more resources on rotational grazing.

**For more information on the Living Lab project:**

Email [critz@nsfa-fane.ca](mailto:critz@nsfa-fane.ca)

Visit: [nsfa-fane.ca/livinglabs/](https://nsfa-fane.ca/livinglabs/)

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