

The Value of Municipal Composting

Climate change poses serious economic, health, and environmental challenges for Northern Ontario. Composting can be a tool to both mitigate and adapt to climate change impacts. It can also bring significant economic benefits to communities.

1. Climate Change Mitigation

1.1 Reduced Greenhouse Gas Emissions - Methane

Waste emissions can be a large source of greenhouse gas (GHG) for municipalities. When breaking down in a landfill, organic waste decomposes without oxygen (anaerobically) and releases methane – a GHG that is up to 34 times more potent than CO₂. Around one third (33%) of all our waste is organic. Putting the food waste that four people generate in a year in a landfill is worse for the environment than putting an extra car on the road. This large problem can be made less severe by composting. When organic waste is composted, it decomposes with oxygen (aerobically) and releases almost no methane.

1.2 Fertilizers

Additionally, composting can reduce the GHG emissions associated with the use of fertilizers. In 2017, agricultural use of nitrogen fertilizers released the same emissions as 2.7 million cars. There are also a lot of emissions released when fertilizers are being extracted, manufactured and transported. Compost provides soil with valuable nutrients and improves its physical properties, reducing the need for fertilizers.

2. Climate Change Adaptation

2.1 Soil Health and Water Quality

Ontario's soils have been losing organic matter and are at risk of erosion. Climate change is expected to cause even more erosion. The global population is growing which means these soils will need to make more food. This will probably mean more fertilizers. More fertilizers and more erosion will mean there is more fertilizer runoff into our freshwater. Once in our water, this fertilizer, and a warmer climate, will cause toxic blue-green algae blooms to occur more often and be much more severe.

The blooms make it tougher for aquatic animals to survive. They also can make drinking water toxic. Composting can help fight algae blooms because it improves our soil's health. Composting provides nutrients so we don't need to use as much fertilizer. Compost also fights erosion so there is less runoff. This means much less fertilizer in our water and so, fewer toxic algae blooms. Composting can lead to healthier freshwater ecosystems and less blue-green algae.

3. Cost Savings

3.1 Freshwater Ecosystems, Recreation and Tourism

Taking measures to protect freshwater ecosystems by reducing the prevalence of blue-green algae makes economic sense. The Lake Erie region has seen many more of these blooms in recent years and the costs are getting high. Toxic blooms harm property values, commercial fishing, recreational water use, mental health, and the tourism industry. If no changes are made in the Lake Erie region, these blooms will cost over \$5 billion in the next 30 years.

3.2 Extended Lifespan of Landfills

The benefits go far beyond emissions. Landfills are expensive so we can save a lot of money by making them last longer. The District of Muskoka estimates that, by keeping organic waste from entering their landfill, they would save almost \$15 million over 20 years. These kind of savings are not uncommon. Throughout history, almost every effort to reduce waste and food loss has shown a positive return on investment. One study showed that the middle (median) benefit to cost ratio was 14:1.

4. Across the Province:

Curbside collection of organic waste already occurs in urban locations like Bracebridge, Huntsville, Gravenhurst, Georgian Bay, & Muskoka Lakes. By 2022, organics may be banned from entering landfills in Ontario.

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