

Support the Healthy Soils Bill

S.2404 - An Act promoting healthy soils for reducing greenhouse gases and the effects of climate change in the commonwealth Senator Jo Comerford, Rep. Paul Schmid and 75 cosponsors

How we treat our soils in our farms, forests, yards, parks and urban green spaces provides a critical opportunity to increase the health and productivity of our farms and forests and a key approach to reduce carbon dioxide emissions while we adapt to the impacts of climate destabilization.

Healthy Soils Practices present truly *shovel-ready strategies* for reduction of atmospheric carbon. Numerous farming, forestry and land management practices have been demonstrated to increase soil health and soil carbon, yet these are still not widely implemented. With state incentives and support, practitioners can adopt these practices, helping to slow climate change, improve water quality and quantity, become more resilient to extreme weather – and in the case of farms and managed forests, become more profitable.

The Healthy Soils Action Plan Working Group, initiated by The Executive Office of Energy and Environmental Affairs (EOEEA) is set to produce by the end of 2020 a blueprint for improving soil and land management practices for all land uses across the state.¹ A Healthy Soils Program, as established by this bill, would allow for the most rapid implementation of this plan, as necessitated by the time-sensitivity of the climate crisis.



Healthy Soil Practices include:

- Cover crops and diversified crop rotations
- Increased green/living soil cover
- Reduced tillage and soil compaction
- Integrated crop-livestock systems, grazing ruminants
- Reducing need for fertilizers/herbicides
- Applying compost and manure
- Using more perennial crops and silvopasture systems, agroforestry
- Soil remineralization, microbial inoculation and biochar

Healthy soil is soil that hosts a robust soil ecosystem.

Healthy soils have more organic (carbon-based) matter and therefore more carbon.

Healthy soil retains many times its weight in water, reducing severity of stormwater run-off and soil erosion while also making it more resilient to droughts and floods.

Healthy Soils Practices describe land management practices which, among other benefits, mitigate climate change by rebuilding soil organic matter and restoring degraded soil biodiversity.

Benefits of Healthy Soils Practices include:

- ✓ Enhanced drought, flood and heat resilience²
- ✓ Carbon-Negative agriculture: real-world increase in soil carbon from 1% to as much as 8% over several years³
- ✓ Planned grazing of ruminants has resulted in annual soil carbon gains of up to 3 tC/acre/year⁴
- ✓ Increased water retention: 20-30% more water retention capacity⁵
- ✓ Improved water quality and reduced nutrient pollution: 10-30% less nutrient pollution of surface and ground waters since soils better retain applied fertilizers⁶
- ✓ Reduced soil erosion: Greater than 33% less soil erosion⁷
- ✓ Reduced need for applications of chemically-based, inorganic fertilizers
- ✓ Reduced leaching and increased decomposition of pesticides⁸
- ✓ Increased farm⁹ and managed forest¹⁰ productivity
- ✓ Mitigation of the urban heat island effect and improved stormwater management¹¹

Spotlight: Agricultural Soil Health in Massachusetts

- ✗ Agricultural soils (globally) have likely lost one-half to two-thirds of their Carbon stocks.¹²
- ✗ As of 2007 we were losing 34-39 million tons of soil per year from water erosion of agricultural land in the Northeast.¹³
- ✗ Because of the 2016 drought, 80% of Massachusetts farmers surveyed experienced significant crop losses on 29,077 acres¹⁴, costing more than \$14 Million in crop damage.¹⁵

Agriculture has the ability to transform from a net emitter of CO₂ to a net reducer.¹⁶

What does the Healthy Soils Bill do?



This bill creates a Healthy Soils Program within the Commission for Conservation of Soil, Water and Related Resources, which will bolster the use of healthy soils practices by private and public land owners and land managers on lands utilized for commercial farming, suburban and urban lawns, yards and gardens, public and private forests, parks and other open or green spaces, and non-paved outdoor areas.

The Healthy Soils Program would provide assistance such as grants, technical assistance or education on the benefits and implementation of healthy soils best practices. The bill also adds an expert on healthy soils practices to the Mass. Food Policy Council.

At a time when the federal action on climate change is faltering, states must lead and Massachusetts should build on its long history of climate leadership and join with the nine other states which have passed Healthy Soils and Soil Carbon Sequestration legislation. By promoting Healthy Soils Practices, the Commonwealth will help Massachusetts farmers and communities better adapt to the shocks of worsening climate change as well as help mitigate further impacts.

Bill History: Introduced as S.438/H.873, Redrafted as H.2404 and reported favorably by ENRA on 11/18/19. Now before Senate Ways and Means Committee. Fact sheet last updated on 2/20/20.

Suggested Resources and References Cited

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