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# SEWAGE SLUDGE 'FERTILIZER' CONTAMINATES FARMS WITH TOXIC PFAS

'Forever Chemicals' Endanger Human Health, the  
Environment and the Future of Our Food

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**SIERRA CLUB**  
ATLANTIC CHAPTER

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## Executive Summary:

### Recommendations from the Atlantic Chapter of the Sierra Club

The health of New Yorkers, our food supply, and our environment is threatened by the continued use of sewage sludge (also known as biosolids), the byproduct of wastewater treatment plants, as a fertilizer or soil amendment on agricultural and other lands. Sewage sludge contains dangerous per- and polyuoroalkyl substances (PFAS), a class of chemicals that is associated with a variety of cancers,<sup>1</sup> ulcerative colitis, thyroid disease, and liver damage, plus damage to the health of pregnant women and babies.<sup>2</sup> PFAS pass through the food chain and bioaccumulate in our food sources and bodies. PFAS pass through the umbilical cord to the fetus and through breast milk to nursing infants.<sup>3</sup> Despite their danger, PFAS don't naturally degrade – hence their nickname of “forever chemicals.” And they were found in all recent New York State tests of wastewater treatment plant biosolids and effluent secured by the Atlantic chapter of the Sierra Club in a Freedom of Information Law request in 2022. The dangers of PFAS are multiplied when the sewage sludge is not safely disposed of but used as a fertilizer or soil amendment on agricultural and other lands, in New York and beyond.

Maine has taken action to protect farmers and farmlands from toxic sewage sludge and the PFAS it contains while New York State is proposing to go in the opposite direction. The state DEC is projecting a staggering increase in land application of sewage sludge, almost tripling the current amount, in its draft state solid waste management plan released in the spring of 2023.<sup>4</sup> It has proposed a dangerously weak interim standard for PFAS in biosolids that is significantly higher than Maine's was before its ban.<sup>5</sup> Nor has New York state acted on the dangers of the PFAS it has uncovered. A Freedom of Information Law (FOIL) request from the Sierra Club discovered that the state's Department of Environmental Conservation (DEC) found alarming levels of PFAS in sewage sludge when it tested eight sewage treatment plants in 2017. Yet the department has not tested the land where this sludge was spread nor did it inform the landowners or farmers of the risk. Despite finding levels of PFOS and PFOA, the two types of PFAS singled out in 2022 by the US Environmental Protection Agency (EPA) as having no acceptable level, the state DEC did not inform the treatment plants of the findings or recommend restrictions.

Our FOIL request also discovered that in 2019, the state had compiled a list of 46 sites where sewage sludge or sludge-derived compost was spread. However this appears to be just the tip of the iceberg. We learned directly from the DEC staffer in charge of the state's biosolids program that the agency did not follow up by testing the soil or water at these sites.<sup>6</sup> And it only recently contracted to expand testing of sewage sludge for PFAS.

Despite the dangers, farmers can freely purchase sewage sludge-based compost and fertilizer products from private corporations in New York State, notably the publicly traded, integrated waste services company Casella.<sup>7</sup> The threat is not only to farmers. Gardeners, landscapers, and public agencies, such as school districts, can also buy compost made of sewage sludge by Casella and other companies,<sup>8</sup> sewage districts, and municipalities.

Figure 1. PFAS contamination from wastewater to farm and garden. Adapted from Sierra Club and Ecology Center's "Sludge in the Garden" report.

## PFAS Contamination from Wastewater to Farm & Garden



Source: *Sludge in the Garden: Toxic PFAS in Home Fertilizers Made From Sewage Sludge* (Ann Arbor, MI: Ecology Center and Sierra Club), May 25, 2021, <https://www.sierraclub.org/toxics/pfas/pfas-sludge>.

Continued use of dangerous sewage sludge as a “soil amendment” in New York State threatens the future of our farmland and compromises the safety of crops, the safety of our water resources drawn on for drinking water, and the health of farmers, gardeners, the environment and consumers who eat fruits, vegetables and grains, and the eggs, meat, milk and other dairy products from livestock fed crops grown on contaminated land.

Of particular concern to farmers, the practice of using sewage sludge as a fertilizer or soil amendment threatens the health and resiliency of our state’s soils. In 2021, New York joined the growing national trend of prioritizing soil health. The state’s Soil Health and Climate Resiliency Act “declared the policy of the legislature to promote the health and resiliency of New York’s agricultural soils, including the biological, physical, and chemical components of such soils, to sustain agricultural plants and animals, produce a health, affordable food supply, promote climate resilient farming and the reduction of agricultural greenhouse gas emissions, and further protect and promote natural resources and the health, safety and welfare of the people of this state.”<sup>9</sup>

Against the inaction of the state, local residents are taking action. In upstate Franklin County, local residents are concerned that Casella trucks in sewage sludge, including from other states and Canada, to its Grasslands processing plant, and that tens of thousands of tons of its product are spread on county farmland and elsewhere in the state to this day. With widespread support of local residents, the town board of Thurston in Steuben County enacted a moratorium in April 2023 on new solid waste facilities to block Casella from accepting sewage sludge for land application.<sup>10</sup>

While comprehensive federal action is obviously required, the state DEC can immediately take action to curb the spreading of sewage sludge under its existing powers both under state law and the federal Clean Water Act.<sup>11</sup> States including Michigan, Colorado, and North Carolina draw on the Clean Water Act in permitting to require key industries to pre-treat effluent to reduce PFAS from industrial hotspots, or limit the land disposal of highly contaminated sludges. But the state legislature should further direct and clarify the actions needed to keep New Yorkers safe and farmers’ livelihoods protected.

**The Atlantic Chapter of the Sierra Club urges that New York State take the following actions to keep PFAS and other persistent chemicals out of sewage sludge, away from our water, and off our farmland:**

1. The NYS Legislature should direct the NYS DEC to stop the spreading of sewage sludge in any form on fields and farms, and end the production, sale, and distribution of soil amendment products including “compost” from sewage sludge, due to strong evidence of their widespread contamination with PFAS.

2. The NYS Legislature should pass the PFAS Surface Water Discharge Disclosure Act requiring testing of wastewater treatment plant effluent for PFAS contamination.<sup>12</sup>

3. The NYS Legislature should direct the NYS DEC to ban wastewater treatment plants from accepting landfill leachate, unless PFAS contaminants are destroyed or removed beforehand.<sup>13</sup> If filtered, contaminated filters should be treated as hazardous substances and dealt with in such a way that they do not end up in our water, air, soil, or otherwise contaminate the environment or enter the food chain.

4. New York State's Climate Scoping Plan, approved by the State's Climate Action Council in December 2022, dangerously encourages the mixing of food waste with sewage sludge/wastewater biosolids in anaerobic digesters in order to generate methane under controlled conditions.<sup>14</sup> We ask the state to withdraw this policy recommendation so that it does not appear in the final regulations. Mixing food waste - a relatively clean organic feedstock - with sewage sludge/biosolids - which are highly contaminated with PFAS and numerous other unregulated pollutants - will dramatically increase the quantity of organic waste contaminated with PFAS. This dangerous practice that contaminates otherwise clean organic waste is actually being considered by municipalities.

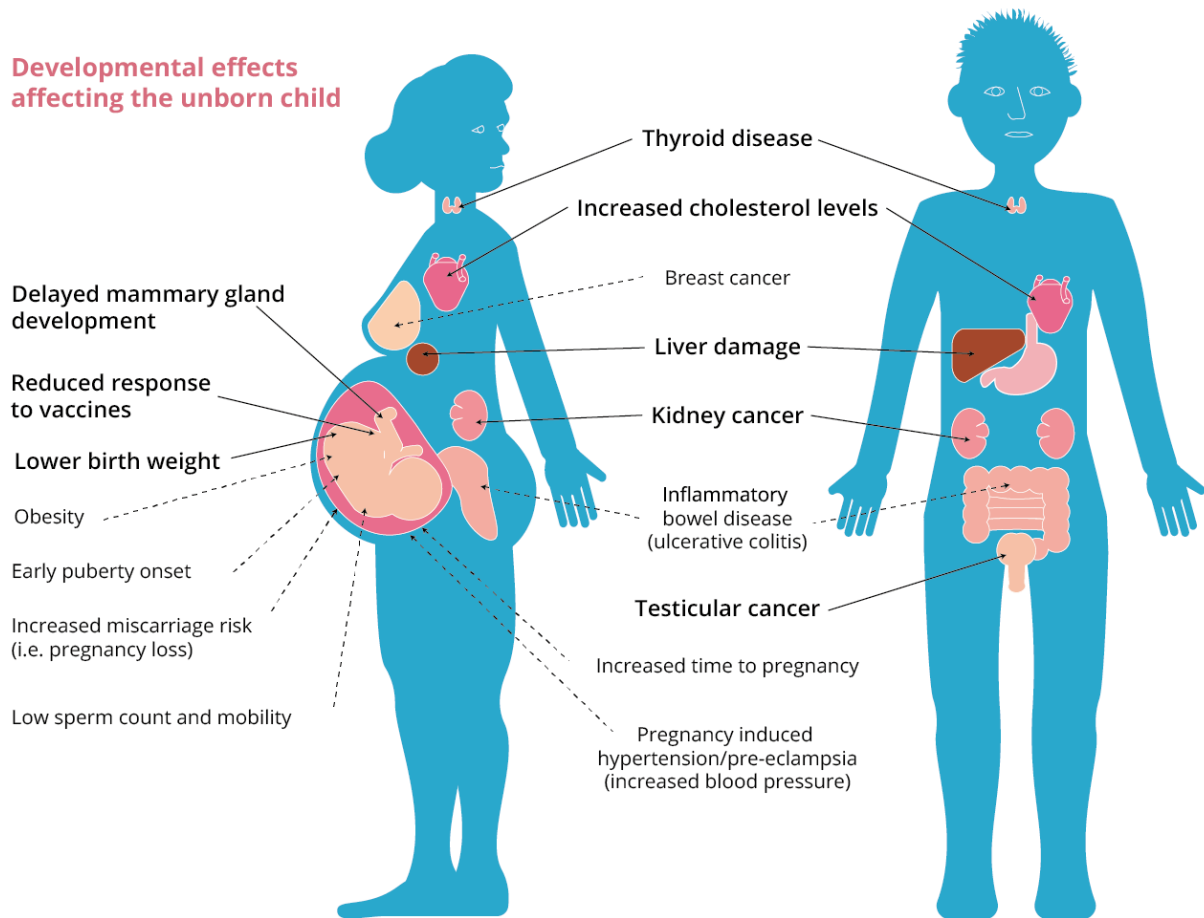
5. NYS Department of Health (DOH) should strengthen its drinking water standards for PFAS, issued in October 2021, to conform with the US Environmental Protection Agency's proposed federal maximum contaminant levels issued in March 2023. As maximum contaminant levels only cover public drinking water supplies and rural wells are also vulnerable to contamination, the state should develop a testing program for private drinking water wells. The state DEC should similarly strengthen its weak surface water standards to reflect the dangers PFAS pose to aquatic life, groundwater, and humans.<sup>15</sup>

6. The NYS Legislature should direct the NYS DEC to test for PFAS in soil, water, and agricultural products grown where sewage sludge-based soil amendments are known to have been spread. The state should also conduct free tests for PFAS at the request of farmers, landowners, or tenants, whether of their land or of PFAS in the blood of their family members or workers. It should promptly inform the land owner(s) and farmers and tenants of the test results. It should also provide them and other affected parties with information about PFAS toxicity, potential health effects, persistence, and other relevant characteristics. It should also create a mechanism for private individuals to determine the contamination of land related to a purchase or lease agreement.

**Figure 2. Examples of demonstrated health effects of PFAS on the human body**

— High certainty  
- - - Lower certainty

**Developmental effects affecting the unborn child**



Source: "Effects of PFAS on Human Health," European Environmental Agency infographic on PFAS, September 19, 2022, <https://www.eea.europa.eu/signals/signals-2020/infographics/effects-of-pfas-on-human-health/view>.

7. The NYS Legislature should direct the NYS DEC to require regular PFAS testing of all sewage sludge and industrial biosolids, such as paper factory sludge. It should inform wastewater treatment plants, farmers using sludge and others of the potential dangers of PFAS in sewage sludge.

8. The NYS Legislature should direct the NYS DEC to mandate that all reportable PFAS and water data collected by the State be posted online in a readily searchable format and submitted to the US EPA for inclusion in the agency's ECHO (Enforcement and Compliance History Online) database.<sup>16</sup>

9. NY State should apply for the maximum amount of support possible from the US EPA's \$4 billion fund to address PFAS and other emerging contaminants in drinking water, along with the EPA's Small and Disadvantaged Communities Fund.<sup>17</sup>

10. The NYS Legislature should take bold action to eliminate products and materials containing PFAS from the waste stream as much as possible, starting with an across-the-board ban on the intentional addition of all PFAS compounds in consumer and commercial products. Until that is accomplished, the state should require that content labels for every product sold in NYS disclose if any PFAS were used in the manufacturing process, or intentionally added to the products or their packaging sold in NYS.<sup>18</sup>

11. The NYS Legislature should establish a compensation fund to support farmers who may lose their livelihood and their ability to farm their agricultural lands when PFAS contamination is found. Further, the state should develop a program to support farms impacted by contamination with expenses related to testing, compensating losses in revenue due to contamination, and assistance in navigating future business plans.

12. The NYS Legislature should devise a system where the polluting company is held financially responsible for the harms created by the spreading of sewage sludge.

13. Cornell Cooperative Extension and each county's Soil & Water Conservation District should educate farmers on the dangers of sewage sludge/biosolids being spread on farmland and link them to public programs that can help them if their land was exposed.

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1. <https://dceg.cancer.gov/research/what-we-study/pfas>

2. <https://www.atsdr.cdc.gov/pfas/health-effects/index.html>

3. <https://www.ecowatch.com/umbilical-cord-blood-pfas.html>

4. NYS Draft Solid Waste Management Plan, Page 78 Table 6: NY Waste Projections from 2023 - 2050. Biosolids Recycling Rate 2018: 22%; 2023: 31%; 2030: 37%; 2040: 45%; 2050: 57%. <http://www.dec.ny.gov/chemical/41831.html>

5. The draft regulation sets a limit of 20 parts per billion for PFOA and for PFOS, two PFAS chemicals whose production was phased out. This is very high, analogous to setting the speed limit at 300 mph, and ignores the many other PFAS compounds detected in sewage sludge/biosolids. Maine's thresholds for use of sewage sludge/biosolids as a soil amendment before banning land application entirely in 2022 were 2.5 ppb for PFOA and 5.2 ppb for PFOS, and 1900 ppb for PFBS. "DMM-Draft 7: Biosolids Recycling in New York State - Interims Strategy for the Control of PFAS Compounds," n.d., [https://www.dec.ny.gov/docs/materials\\_minerals\\_pdf/dmmdraftpolicy7.pdf](https://www.dec.ny.gov/docs/materials_minerals_pdf/dmmdraftpolicy7.pdf).

6. Phone call with Sally Rowland, NYS Department of Environmental Conservation, June 14, 2022.

7. Casella deceptively markets these materials as "organic." See its website's "Casella Organics" page <https://casella.com/casella-organics>.

8. *Sludge in the Garden: Toxic PFAS in Home Fertilizers Made from Sewage Sludge*, Michigan Sierra Club and Ecology Center, May 25, 2021; <https://www.ecocenter.org/our-work/healthy-stuff-lab/reports/sludge-garden>.

9. NYS Soil Health and Climate Resiliency Act, S.4722A/A.5386A, 2021-2022 Legislative Session, signed by Governor, <https://www.nysenate.gov/legislation/bills/2021/s4722/amendment/a>.

10. <https://waterfrontonline.files.wordpress.com/2023/04/moratoriumthurstoncam.pdf>

11. 40 CFR § 503.24(a) prohibits land application of sludge that "is likely to adversely affect a threatened or endangered species listed under section 4 of the Endangered Species Act or its designated critical habitat." The Maine delegation to Congress is promoting the federal Relief for Farmers Hit with PFAS Act authorizing "grants for states to provide financial assistance to affected farmers, expand monitoring and testing, remediate PFAS, or even help farmers relocate." <https://pingree.house.gov/news/documentsingle.aspx?DocumentID=4508>.

12. PFAS Surface Water Discharge Disclosure Act: S.227-A (May)/A.3296 (Kelles); Sierra Club Atlantic Chapter Memorandum of Support, <https://atlantic2.sierraclub.org/sites/newyork.sierraclub.org/files/documents/2023/04/S227A%20A3296%20PFAS%20in%20surface%20water%20disclosure%20MOS.pdf>.

13. Matt Jawowski, "America's First High-Volume 'PFAS Annihilator' is Up and Running in Western Michigan," WoodTV.com, May 4, 2023, <https://www.woodtv.com/news/kent-county/americas-first-high-volume-pfas-annihilator-is-up-and-running-in-westmichigan/>.

14. NYS Climate Action Council. Scoping Plan. Full Report. December 2022. pp. 330-331. <https://climate.ny.gov/-/media/project/climate/files/NYS-Climate-Action-Council-Final-ScopingPlan-2022.pdf>.

15. The DEC surface water standards for aquatic organisms are currently 16,000 times higher than current drinking water standard for chronic exposure, 71,000 times higher than current drinking water standard for acute exposure. <https://www.dec.ny.gov/chemical/122803.html>.

16. Maine's Department of Environmental Protection has been publishing drinking water well sample results alongside the location of fields licensed for sludge spreading on its PFAS Investigation ArcGIS map. Also see <https://echo.epa.gov/>.

17. NYS Department of Health email May 17, 2023 clarified which funds have been applied to or budgeted already: "The latest Drinking Water State Revolving Fund Intended Use Plan allocated \$30 million to Emerging Contaminants funding and can be found here as Amendment #2: <https://health.ny.gov/environmental/water/drinking/water.htm> Note that funding requirements outlined in the IUP allocate funds to disadvantaged communities... NYS also has funding for emerging contaminants (EC) projects through the WIIA program, which has recently been announced. This applies to municipalities that have violated the NYS MCL of PFOS/PFOA in drinking water." Also see <https://www.epa.gov/dwcapacity/emerging-contaminants-ec-small-or-disadvantaged-communities-grant-sdc#fundAI>, and [https://www.epa.gov/system/files/documents/2023-03/EC%20SDC%20Factsheet\\_03142023.pdf](https://www.epa.gov/system/files/documents/2023-03/EC%20SDC%20Factsheet_03142023.pdf); "EPA Announces New Drinking Water Health Advisories for PFAS Chemicals, \$1 Billion in Bipartisan Infrastructure Law Funding to Strengthen Health Protections," Press Advisory, U.S. Environmental Protection Agency, June 15, 2022, <https://www.epa.gov/newsreleases/epa-announces-new-drinking-water-health-advisories-pfas-chemicals-1-billion-bipartisan>.

18. Bills on the 2023 legislative calendar include PFAS in Products Ban: S.5648 (Hoylman-Sigal) / A.3556 (Zebrowski); Safe Personal Care & Cosmetics: S.4265 (Webb); PFAS in Menstrual Products: S.3529 (Fernandez) / A.5990 (Rosenthal, L); PFAS in Antifogging Sprays and Wipes: S.992A (Hoylman-Sigal) / A.5363A (Gallagher). Sierra Club Atlantic Chapter support memos here: <https://atlantic2.sierraclub.org/content/legislation>.