

# MANURE STORAGE @ FREUND'S FARM

In 2023, Freund's Farm and NWCD partnered on a grant proposal for the National Fish and Wildlife's Long Island Sound Futures Fund (LISFF). With funding from LISFF and the US Department of Agriculture - Natural Resources Conservation Service (USDA-NRCS), the goal of this million-dollar project was to expand the farm's manure storage capacity, allowing them to store six months of manure through the winter. This increased storage capacity enhances the farm's current innovative manure management practices, allowing them to spread manure onto their fields only when it is environmentally best to do so. Because the farm is on the floodplain of the Blackberry River, the impact this will have on watershed health cannot be understated. NWCD hosted our 2024 Annual Meeting at Freund's Farm to highlight the farm's incredible efforts to increase their sustainability and conservation of the land.

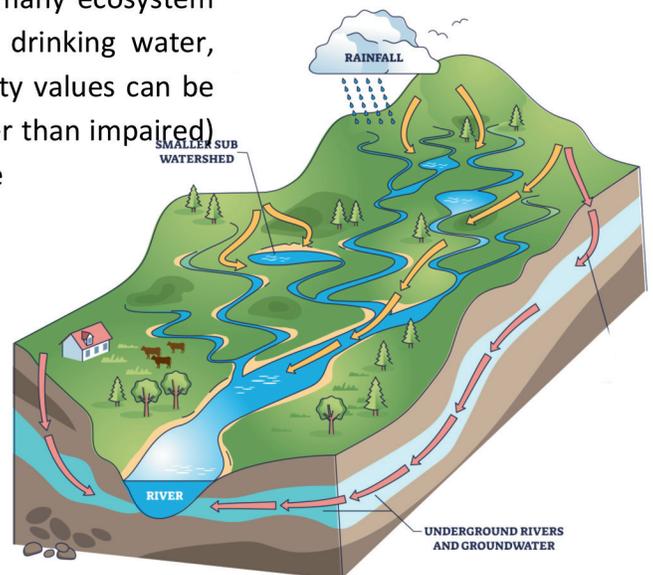
**Watersheds** are areas of land that drain all the watercourses and rainfall to a common outlet such as the outflow of a reservoir, mouth of a bay, or any point along a stream channel. Healthy watersheds provide many ecosystem services. For example, they provide wildlife habitat, clean drinking water, recreation (e.g. fishing and boating), and more. Even property values can be higher if you are fortunate enough to live near healthy (rather than impaired) waters! All water in Connecticut eventually flows south to the Long Island Sound. To protect the water quality in the Sound, the National Fish and Wildlife Foundation provides funding for projects that promote clean waters and healthy watersheds. Even projects hundreds of miles from the Sound can have a large impact on its water quality.

**Cow poop**, called manure, is high in nutrients and fecal coliform bacteria that can pollute our waterways.

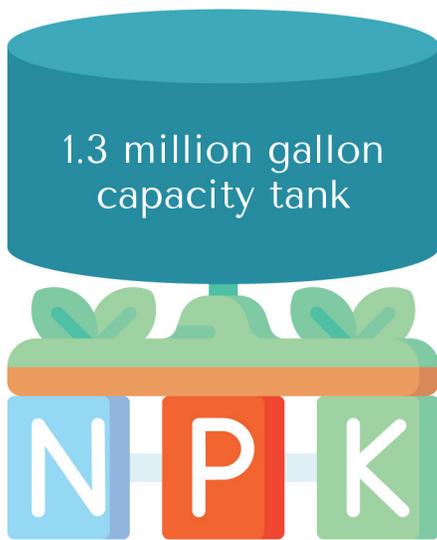
One cow produces around 100 lbs of manure and urine daily.

Typically, this manure is spread onto fields throughout the year, where plants then use the waste as a fertilizer. Crops harvested from these fields then feed the cows, and the cycle continues. However, the potential for runoff from the fields into our waterbodies increases in the winter when the ground is frozen and the plants are not growing. Freeze-thaw cycles and precipitation in the fall and spring further exacerbate this risk.

Source: USDA-NRCS



**Nutrient pollution** such as high levels of nitrogen, phosphorous, and potassium, can cause an increased risk of cyanobacteria blooms (pictured to the left) and harmful algae and in our waterbodies. Certain algal blooms (caused by excess nitrogen) can even create hypoxic conditions where normal aquatic life is starved of the oxygen it needs to live. This is true for Long Island Sound as well, where these elevated nutrients degrade the water quality.



**Increasing manure storage capacity** decreases the need to spread manure during risky seasonal time frames. In the Northeast, because of climate change, winter is becoming more varied with increasing freeze-thaw events that create more intense stormwater run-off. Winter and fall are the two seasons with the largest increases in temperature and precipitation.

NRCS calculates that storing the manure (rather than spreading) during winter months will reduce contamination risk by 19,000 pounds of Nitrogen, 11,000 pounds of Phosphorus, and 15,400 pounds of Potassium. This project enhances the farm's current innovative manure management practices, such as using manure solids in biodegradable pots called Cow-Pots.



Manure Maker



Leveling the Ground



Laying Foundation



Finishing the Storage Tank (man for scale)



The First Fill 9/27/2024

### **Funding for large projects like this is essential.**

The funding for this project came from a unique leveraging of funds between USDA-NRCS, NFWF LISFF, and the farm. In fact, the NRCS contract associated with this project was the largest ever signed in the state of CT! (And NRCS projects give *partial* financial assistance.) Not all solutions, however, have to cost over a million dollars. Lots of small changes can add up. Please join us in reducing nutrient loads in our watersheds. If you have gutters, consider downspout disconnect kits that allow stormwater to infiltrate into the ground. Look into opportunities for low-impact development on your property or in your town, such as permeable pavements and rain gardens. If you are a farmer, USDA-NRCS and other organizations have funding for climate-smart practices that will also reduce your impacts on the land. Please feel encouraged to reach out with any questions or ideas for public projects at: [info@nwcd.org](mailto:info@nwcd.org) or (860) 626-7222.

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