



FARM & RANCH
FREEDOM ALLIANCE

Provide Grant Funding to Enable Farmers to Transition to “Healthy Soils” Management

In the 2021 Regular Session, the Legislature passed SB 1118, creating an “on-the-ground conservation” program at the Texas State Soil & Water Conservation Board. The Board was tasked with conducting education, outreach, and grant support in multiple areas, including support for farmers and ranchers to implement “healthy soils” management techniques. This would include rotational managed grazing, reduced or no till, and cover cropping.

SB 1118 did not include state funding. The TSSWCB has identified multiple federal grants that it can apply for to provide funding for the new program. However, doing so will take time and there is no assurance as to how many grants will be obtained.

The Farm and Ranch Freedom Alliance (FARFA) thus urges the Texas Legislature to dedicate \$10 million of the ARPA funding for grants for farmers and ranchers, to be administered by the TSSWCB under the on-the-ground conservation program. The grants would help farmers and ranchers to pay for the initial up-front costs of implementing healthy soils management: cross fencing and water supplies for managed rotational grazing, cover crop seed, no-till equipment, etc. Covering these one-time initial costs could make a significant difference to the number of farmers and ranchers who adopt these methods and would provide benefits not only to the grantees but to the entire community, due to reductions in flooding, improved aquifer recharge, and more.

It’s well accepted that maintaining natural spaces like open land and wetlands can decrease flood losses.¹ And there’s growing evidence that how the land is managed can make a major difference. During a rainfall event, healthy soil management is the difference between infiltration of 1 inch of rain taking over 31 minutes (regularly tilled cropland) versus 7 minutes (regular “open space” pastureland) versus **10.1 seconds** in rotationally grazed (healthy soil) land. (*video demonstration*)²

Healthy soils not only absorb water quickly, they can absorb a lot more of it. Every one percent increase in organic matter results in as much as 25,000 gallons of available soil water per acre. With 126.5 million acres in agricultural production in Texas,³ healthy soil management practices could result in as much as **3.1 trillion** gallons of additional stored water for every one percent increase in organic matter. Some of this stored water will gradually recharge aquifers, and the rest will be held in healthy soil and available to keep plants growing and providing cover to protect the soil.

Several studies help demonstrate the high value of healthy soils to our society and economy:

- One 2015 Texas A&M study on ranches in North-Central Texas, showed that managed rotational grazing led to a 49% reduction in surface runoff, a 27% reduction in streamflow, and a 29% increase in infiltration.⁴

¹ <https://today.tamu.edu/wp-content/uploads/sites/4/2018/11/Urban-flooding-report-online.pdf>

² <https://www.youtube.com/watch?v=IqB4z7IGzsg&feature=youtu.be>

³ https://www.nass.usda.gov/Quick_Stats/Ag_Overview/stateOverview.php?state=TEXAS

⁴ Park, Jong-Yoon, et al. *Evaluating the ranch and watershed scale impacts of using traditional and adaptive multi-paddock grazing on runoff, sediment and nutrient losses in North Texas*. USA. *Agriculture, Ecosystems & Environment* 240 (2017): 32-44.

- A 2015 report by the Harris County Flood Control District found that 2 acres of upstream native prairie would entirely offset the increased runoff from 1 acre of a new subdivision and reduce runoff from a 100-year flood event by 35%.⁵
- A 2019 study estimated that healthy soils on the Katy Prairie provided hydrological ecosystems services to the Houston area valued at \$331-\$647 million dollars for reduction in impact of 10- to 50-year flood events – mostly due to reduced costs for downstream engineered reservoirs and corridors.⁶

Consider one farmer’s experience during Hurricane Harvey. In August 2018, Laughing Frog Farm got over 50 inches of rain over the course of three days. For the previous 16 years, the farm had used intensive healthy soils practices to increase the organic matter in their soil. Below, on the left, is a picture taken at the farm on August 28, 2018, the day after Hurricane Harvey’s rains stopped. And on the right is a picture of a nearby university farm, taken the same day:



Had Houston been ringed with farms that used healthy soils management like Laughing Frog Farm, the flooding experienced would undoubtedly have been far less severe.

The same methods that help capture floodwaters and reduce the impact of flooding also serve to increase drought resilience and support aquifer recharge. For example, in the Texas Panhandle, Dr. Chris Grottegut saw remarkable results when he began transitioning his 11,000 acres of row crops to native grass pastures. Over the course of six years, the 14 wells on his property **rose** an average of more than a foot per year. During this same period, the other wells being monitored on neighboring farms **dropped** in excess of 1 foot, some up to 3 feet each year. He calculated that his acreage is capturing close to 1.5 million gallons of water a day, enough to provide water for a small city.⁷

Compared to many other tactics for addressing flooding and drought, healthy soils management techniques are low cost and thus provide a cost-effective solution for some of Texas’ most pressing problems. Dedicating a small amount of ARPA funds would jump-start this program, enabling the TSSWCB to begin helping farmers and ranchers immediately, and creating a stronger basis for the agency to seek federal funding as planned.

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⁵ “Final Study Report: Cypress Creek Overflow Report.” Harris County Flood Control District (Aug 2015).

⁶ Apfelbaum, S., et. al. *Ecosystem Services Valuation for the Katy Prairie Conservancy and Adjacent Lands: Waller & Harris Counties, Texas* Special Report by Applied Ecological Services, Brodhead, WI (April 2019).

⁷ Panhandle farmer recharges the Ogallala: <https://civileats.com/2019/11/18/high-plains-farmers-race-to-save-the-ogallala-aquifer/>.