Friends of
Bosque del Apache

Bosque del Apache
Regenerative Agriculture Project

What is Regenerative Agriculture?

- A series of practices designed to restore soil health
- Key principles are:
  - Disturb the soil very minimally
  - Introduce biological agents to create a mycorrhizal, fungi-rich soil environment (BEAM inoculant/compost)
  - Plant multi-species cover crop (each plant plays a different role in soil health)
  - Never leave the ground uncovered

Regenerative Agriculture Project - Background

- Carroll Petrie Foundation grant helped fund $120K of the 5-yr pilot project starting Fall 2023 on 38 acres adjacent to far end of South Loop
- Refuge soils were depleted & unable to raise crops
- Diminishing water supplies & drought made growing crops very difficult
- Major challenges in refuge staff capacity and funding

- Took soil samples Fall 2023 (prior to planting) and again at premature ending in April 2026

Regenerative Agriculture Project - Goals

- Improve soil organic content (aka carbon)
- Minimize tillage and manpower required in long term
- Reduce expense and use of synthetic chemical inputs
- Conserve available irrigation water
- Begin regenerating soil biological diversity, soil health, and fertility to increase crop production
- Educate the public and other NWRs (invited local audience to film, workshops, and BEAM bioreactor build)

Regenerative Agriculture Project - Challenges

- No refuge capacity to help – Friends hired a farmer & Project Manager.
- Response of 4 fields was uneven – unlevel, pooling, foxtail invasion.
- Planting ended in Spring 2025. No Fall 2025 or Spring 2026 planting due to complete lack of water.
- As a result, project concluded early.

Regenerative Agriculture Project - Results

Despite stopping at the 2-year mark, the results were surprisingly impressive:

- **Increased soil organic carbon** – Percentage of soil organic carbon nearly doubled in two years, resulting in capacity for 20,000 gallons more water per acre to be held by the soil.
- **Significant increase in Total Soil Nitrogen (TSN)** – top 45 cm of soil promoted a TSN mass increase from 4.4 – 22 times greater than typical nitrogen fertilizer application rates (Nitrogen addition is a critical driver of soil organic carbon sequestration and nutrient cycling in cropland).

Regenerative Agriculture Project – Next Steps

- Report from Johnson-Sus (researchers) – sent separately
- Peer Review report currently under development by Johnson-Sus
- Report from Friends to Carroll Petrie Foundation by September 1
- Investigate/Discuss new applications of this research
- Perhaps repurpose one of the Regen Ag fields as a Pollinator Area
- Communicate to the public – Oasis call? BosqueWatch article?
- Explore communication opportunities with advocacy partner(s)