Discovery Acres Team
Heather Darby, Joshua Faulkner, Ivy Krezinski, Jeff Sanders, Lindsey Ruhl, and the Bessette Family
Discovery Acres has an advisory board comprised of four farmers as well as representatives from:

- VT Agency of Agriculture, Food & Markets
- VT Agency of Natural Resources
- USDA Natural Resource Conservation Service
- Lake Champlain Basin Program
- Miner Institute

Other partnering organizations include:

- VT Agricultural Water Quality Partnership
- Franklin & Grand Isle Farmer’s Watershed Alliance
- VT Association of Conservation Districts
**Site location:** Jewett Brook watershed of the St. Albans Bay, Franklin County
Franklin Co. has the most acres of farmland (15.9%) in the state (USDA NASS, 2017 Census of Agriculture).
Heavy clay, poorly drained soils (Covington Clay)

**Water quality issues:**
- Impaired watershed & high priority for P reductions
- Shallow bay with substantial accumulated P in sediment and releasing into water column over time
- Frequent eutrophic conditions
  - Reported 0.024-0.058 mg P/L
  - Total P Criterion = **0.017 mg P/L** (annual mean)
  - Overall reduction of **24.5%** needed to meet TMDL
    (US EPA, 2016)
Research:
- Multiple watersheds with edge-of-field monitoring
  - 2 surface EoF on non-tile drained land
  - 2 surface & 2 sub-surface EoF on tile drained land
- Compare conventional management to BMPs on land with & without tile drainage
- Monitor
  - Water quality (*TN*, *DIN*, *TP*, *SRP*, & *TSS*)
  - Soil health
  - Crop production
Site Design with Four Plots

- **Plot #1**
  - No Tile
  - Conventional Management
  - CONTROL

- **Plot #2**
  - Tile Drained
  - Conventional Management
  - CONTROL

- **Plot #3**
  - Tile Drained
  - BMP Management
  - TREATMENT

- **Plot #4**
  - No Tile
  - BMP Management
  - TREATMENT

2021-2022 Calibration year
2022 (Fall) & Beyond - Treatment implementation years
Starting Fall 2022 (TBD)

**Control**
- Herbicide and till to terminate cover crop
- Plant when field is ready
- Corn harvested
- Fall manure broadcast and till
- Winter rye cover crop planted with drill at 60-75 lbs/acre

**Treatment**
- Plant green and herbicide to terminate cover crop
- No-till plant when field is ready
- Corn harvested
- Fall manure inject
- Winter rye cover crop planted with drill at 60-75 lbs/acre
Platform for Additional Research and Demonstration