



Discovery Acres Team

Heather Darby, Joshua Faulkner, Ivy Krezinski, Jeff Sanders, Lindsey Ruhl, and the Bessette Family



THE UNIVERSITY OF VERMONT
EXTENSION

Partnerships (local and national)



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

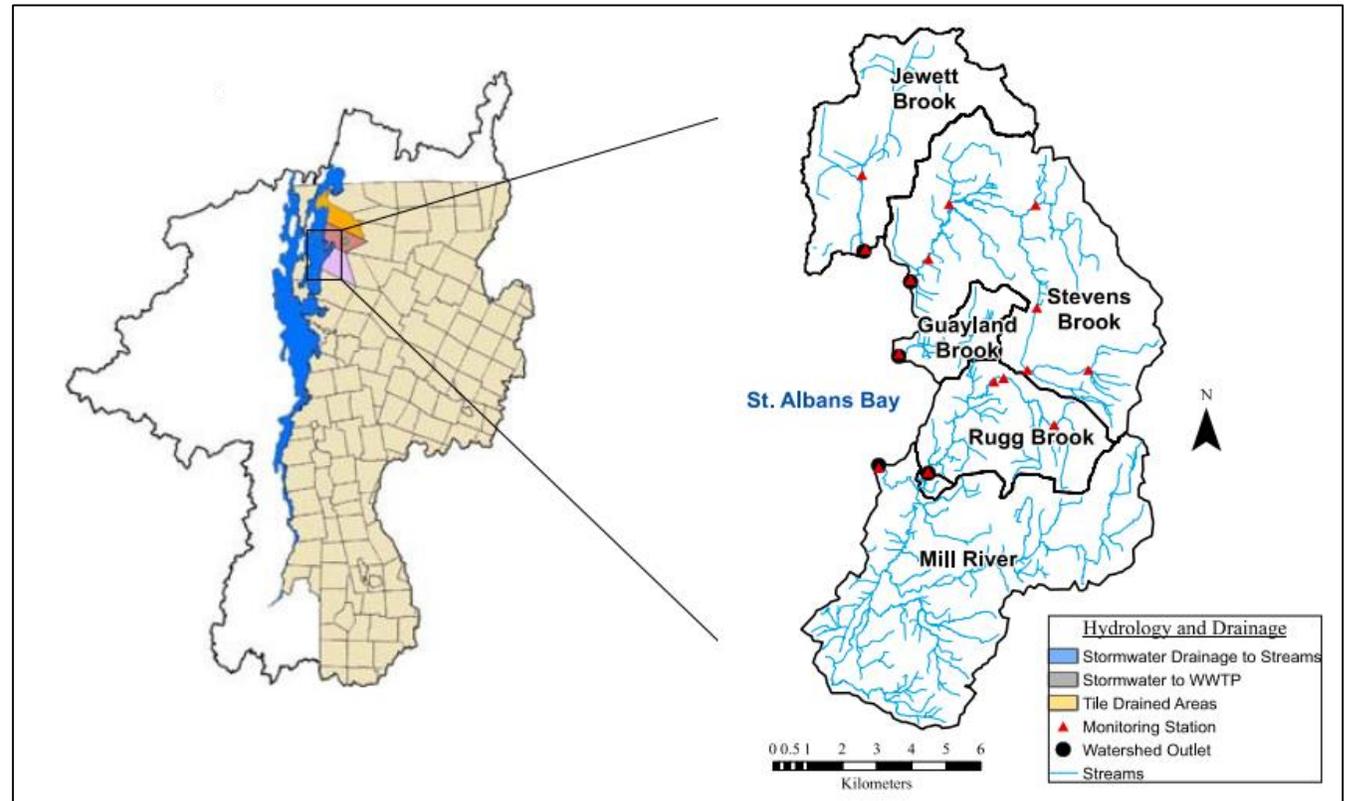
Franklin Co. has the most acres of farmland (15.9%) in the state (USDA NASS, 2017 Census of Agriculture).

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)



The University of Vermont

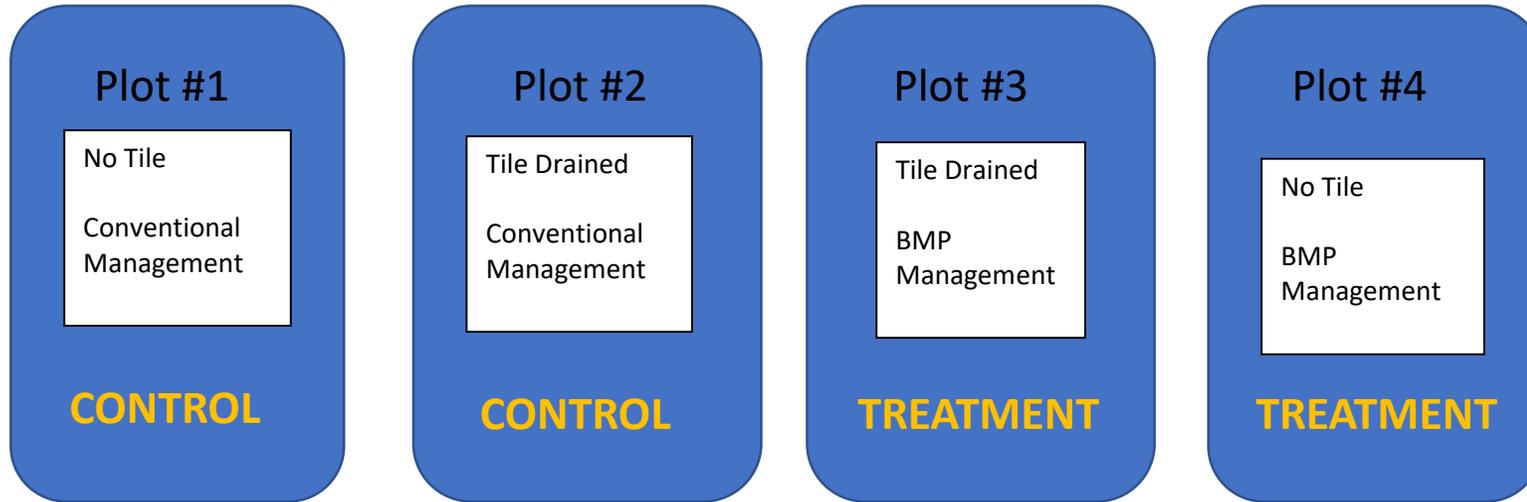
Source: Gaddis & Voinov, 2010.

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

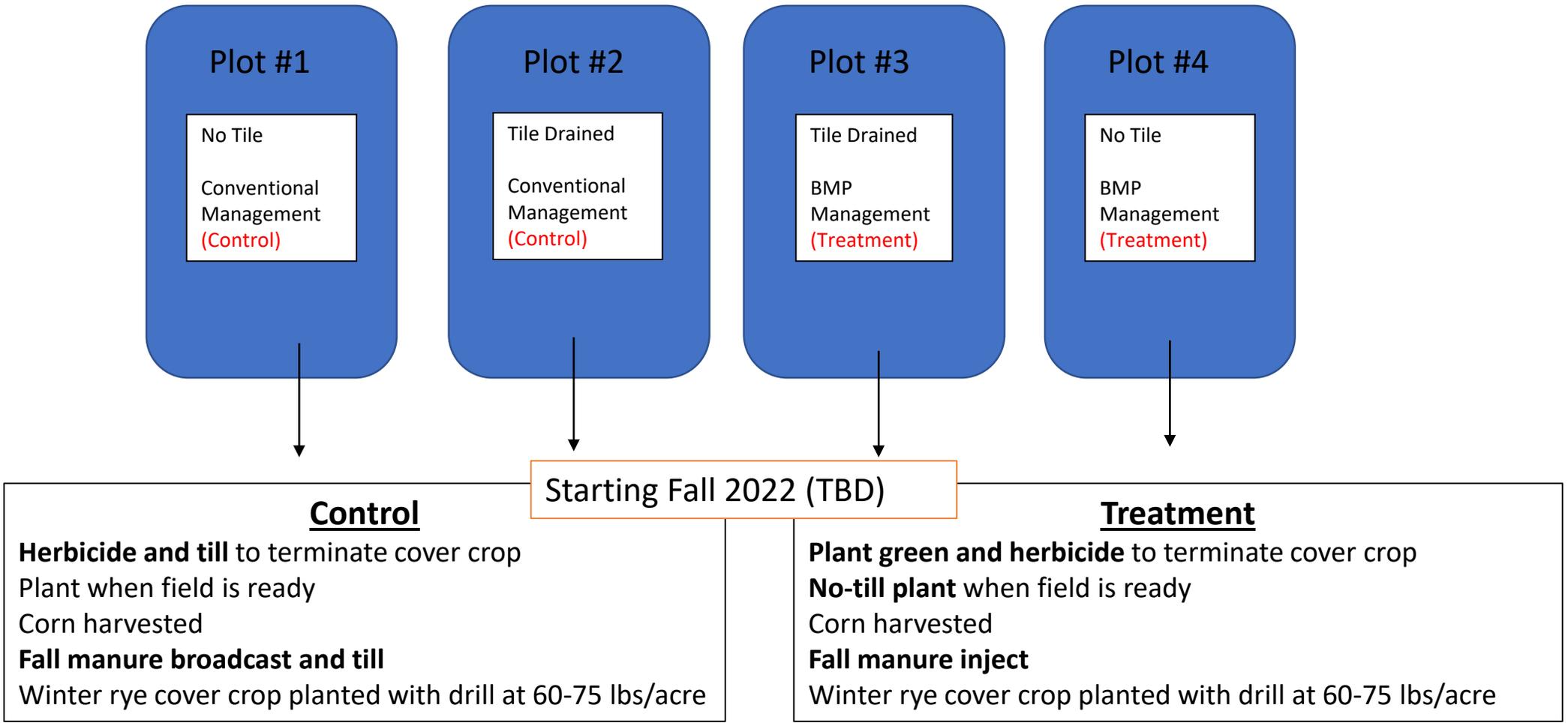


2021-2022 Calibration year

2022 (Fall) & Beyond-
Treatment implementation
years



2022-2023 Study Treatments





Platform for
Additional
Research and
Demonstration

