Climate Smart Farming Tools: Helping NE Producers Reduce Climate Risk on Farms

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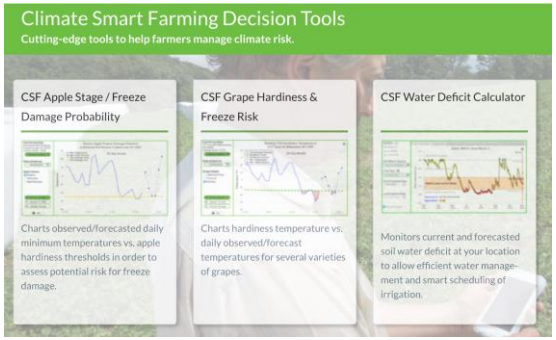
Cornell Institute for Climate Smart Solutions

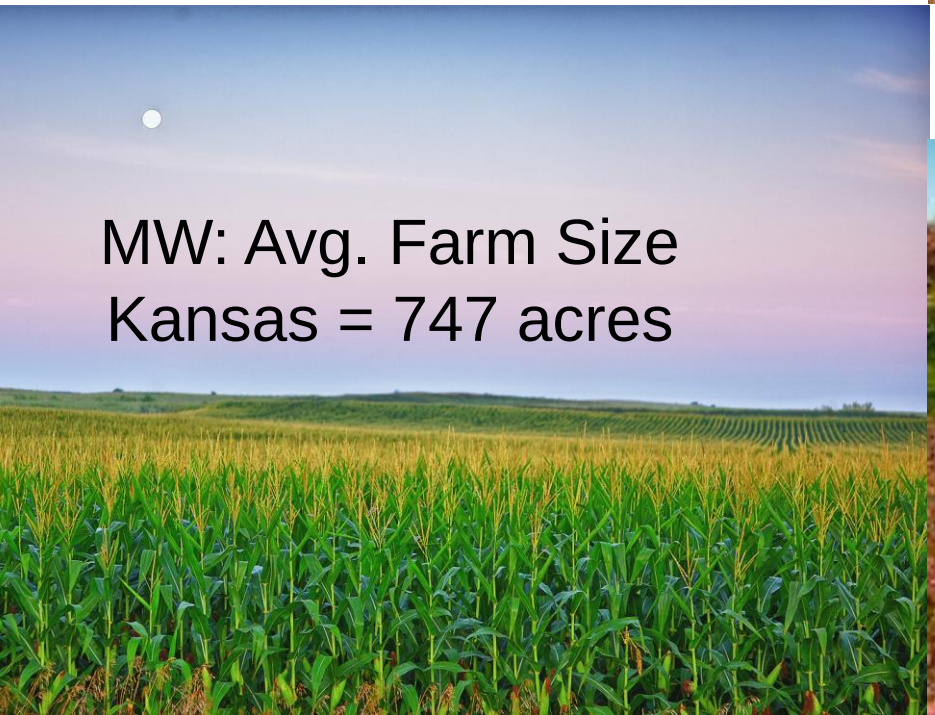
USDA NE Climate Hub Partners Meeting
Rutgers University – March 14, 2018



NE Context Matters:

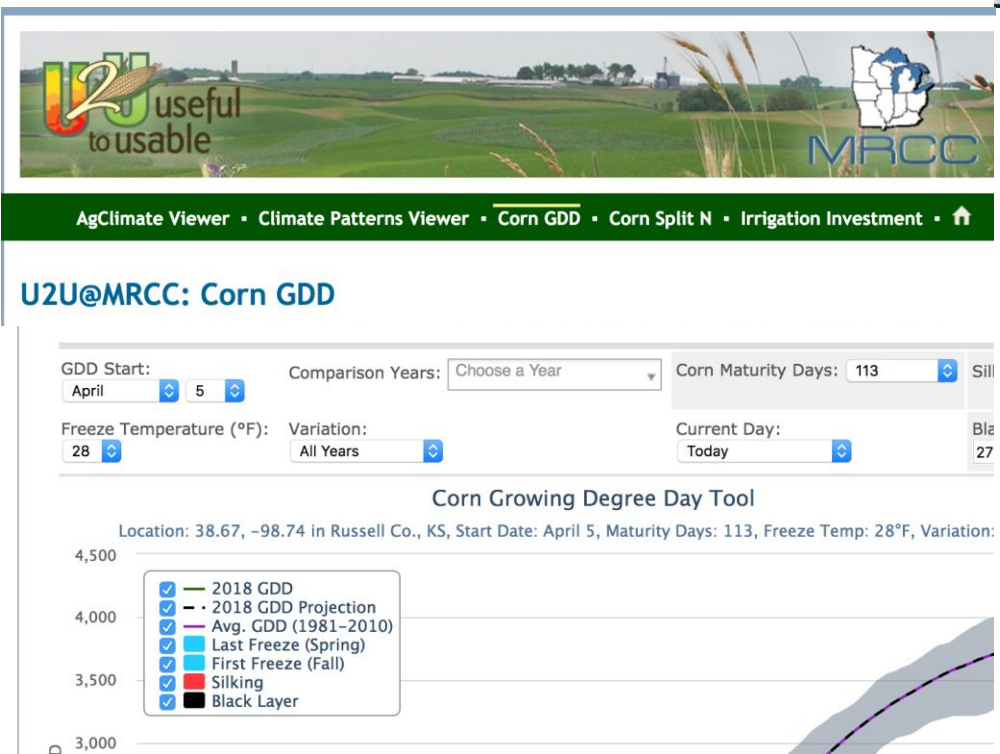
- Varying Landscapes
- Diversity of Farm Types, Sizes and Crops
- Different Climate Signals

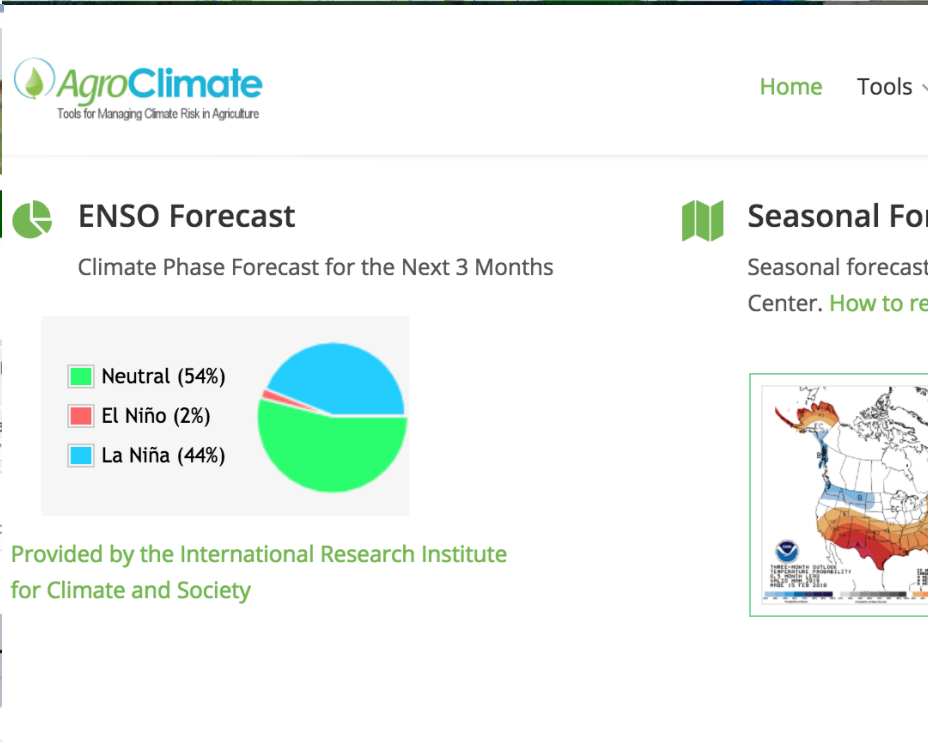
NE: Avg Farm Size MA = 68 acres



SE: Avg Farm Size GA: 228 acres

MW: U2U
SE: AgroClimate
NE: ClimateSmartFarming





Cornell Climate Smart Farming Program Goals

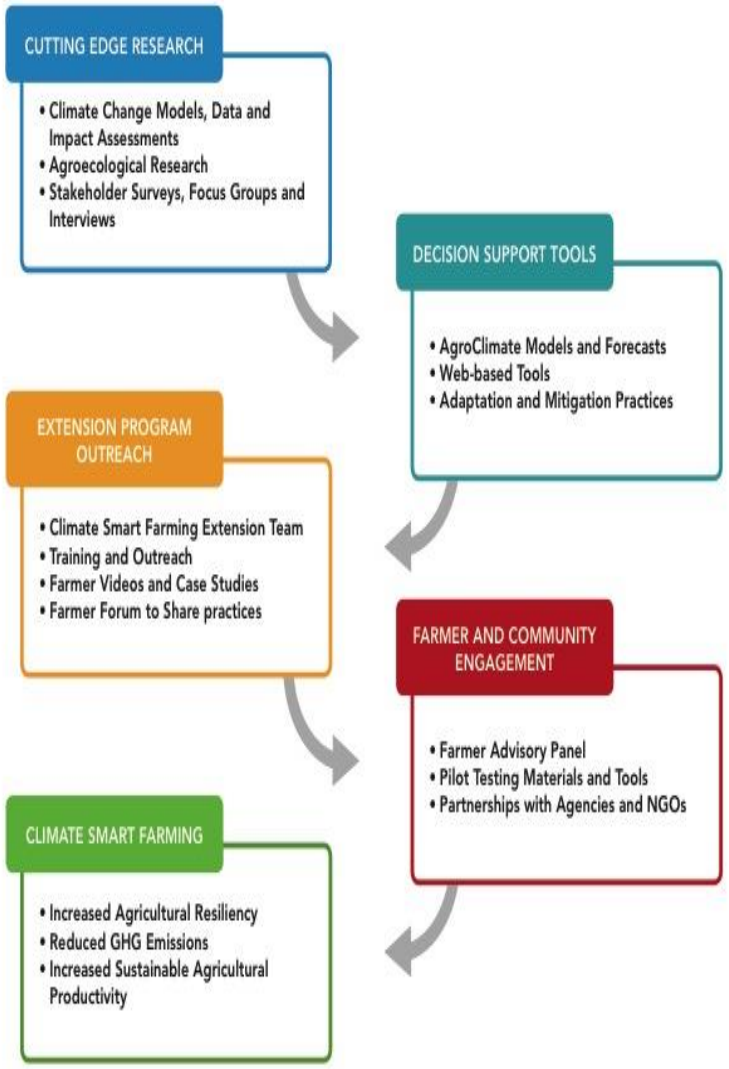
- Increase farm resiliency to extreme weather events, climate variability and change, through assessing risk & adopting BMPs (**adaptation)**
- Increase energy efficiency and renewable energy capacity to reduce GHG emissions and operating costs, and utilize BMPs (**mitigation**)
- Sustainably **increase agricultural productivity** and farming incomes, to contribute to regional & global **food security**

- Based on FAO definition of CSA

Stakeholder-Driven Research & Extension

Asking Farmers @ Impacts, Responses & Needs:

- Farmer Focus Groups in 2016 & 2017 with NY/PA producer groups & Consultants:
- Feedback from meetings and outreach events
- Farmer Surveys: Empire Farm Days 2017; NYS Farmer Survey: winter 2018
- 2,000 Farmers, Extension, Agency staff reached since 10/17



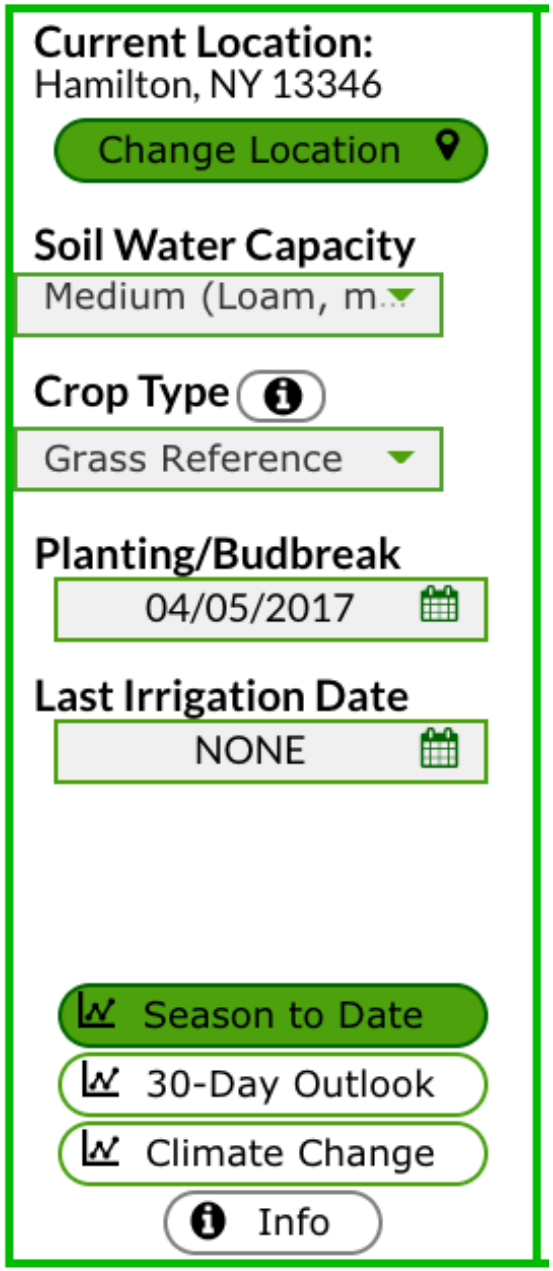
- Decision Tools
- Resources
- Videos
- Extension: Links to NYS CSF Team & Each NE State
- 900 website hits per month

www.climatesmartfarming.org

CSF Videos: Oechsner Farm

"A normal season does not seem like it happens any more. It's either really dry, or really wet. It seems like when we get rain, it's apocalyptic…We got 5 inches of rain in about 1.5 hours, and I had a lot of soil loss…I see the impact for generations."

http://climatesmartfarming.org/videos/oechsner-farm/



CSF Tools

- Data (NRCC):
  - 4X4 KM gridded climate data
  - NWS forecasts
  - Agricultural models
- Farmer Input:
  - Location: Any farm location in NE, WVA to ME, save multiple locations
  - Planting Date, Crop
  - Choose Season to Date, Last Season, Seasonal Outlook
  - Climate Change Context: Coming Soon
  - Info: Meta Data behind the tools

Growing Degree Day Tool

CSF Cornell Climate Smart Farming

CSF Growing Degree Day Calculator

Climate | Tools | Team | Resources | Videos

Current Location:
Waterville, ME

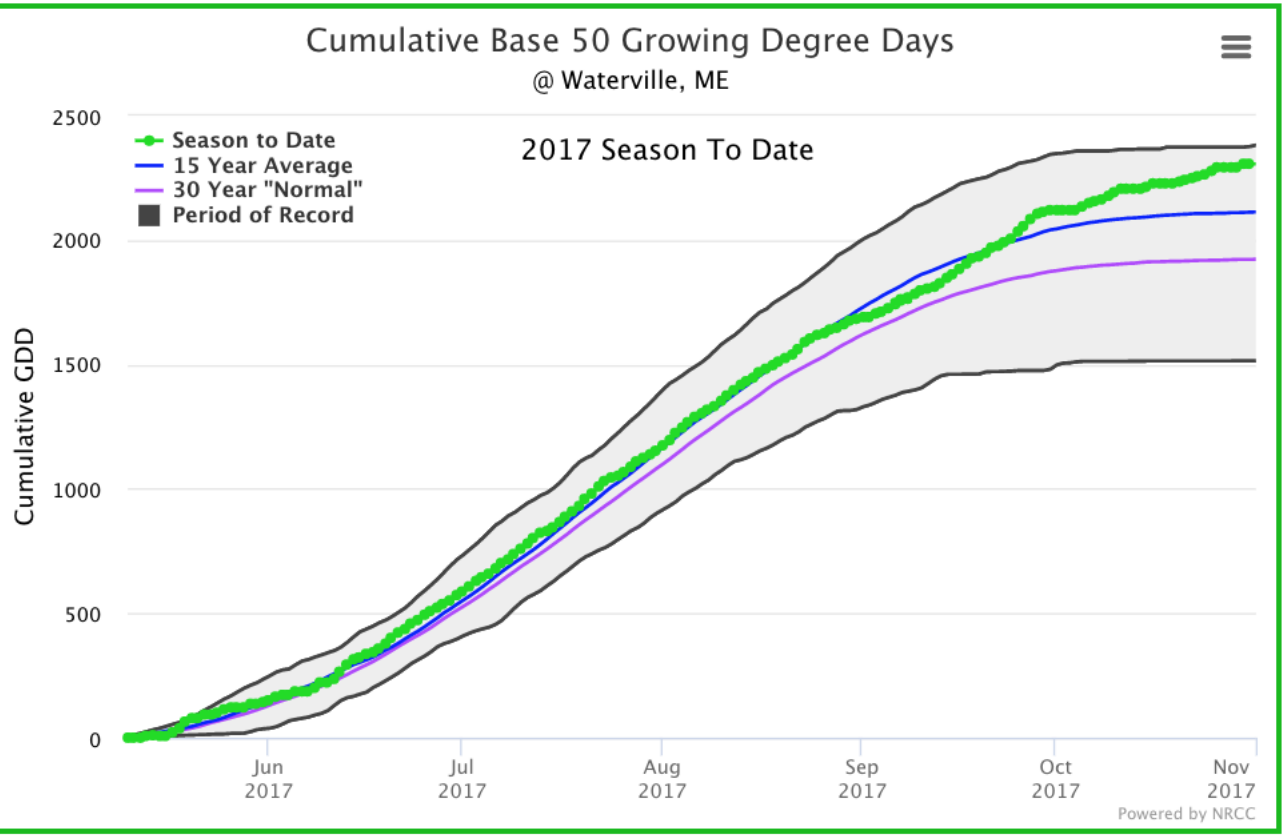
Change Location

Planting Date:
05/10/2017

GDD Threshold
- (•) Base 50
- ( ) Base 8650

Viewing results from 2017.

Season To Date
Season Outlook
Climate Change
Info



Water Deficit Calculator

Cornell Climate Smart Farming

CSF Water Deficit Calculator

Climate | Tools | Team | Resources | Videos

Current Location:
College Park, MD

Change Location

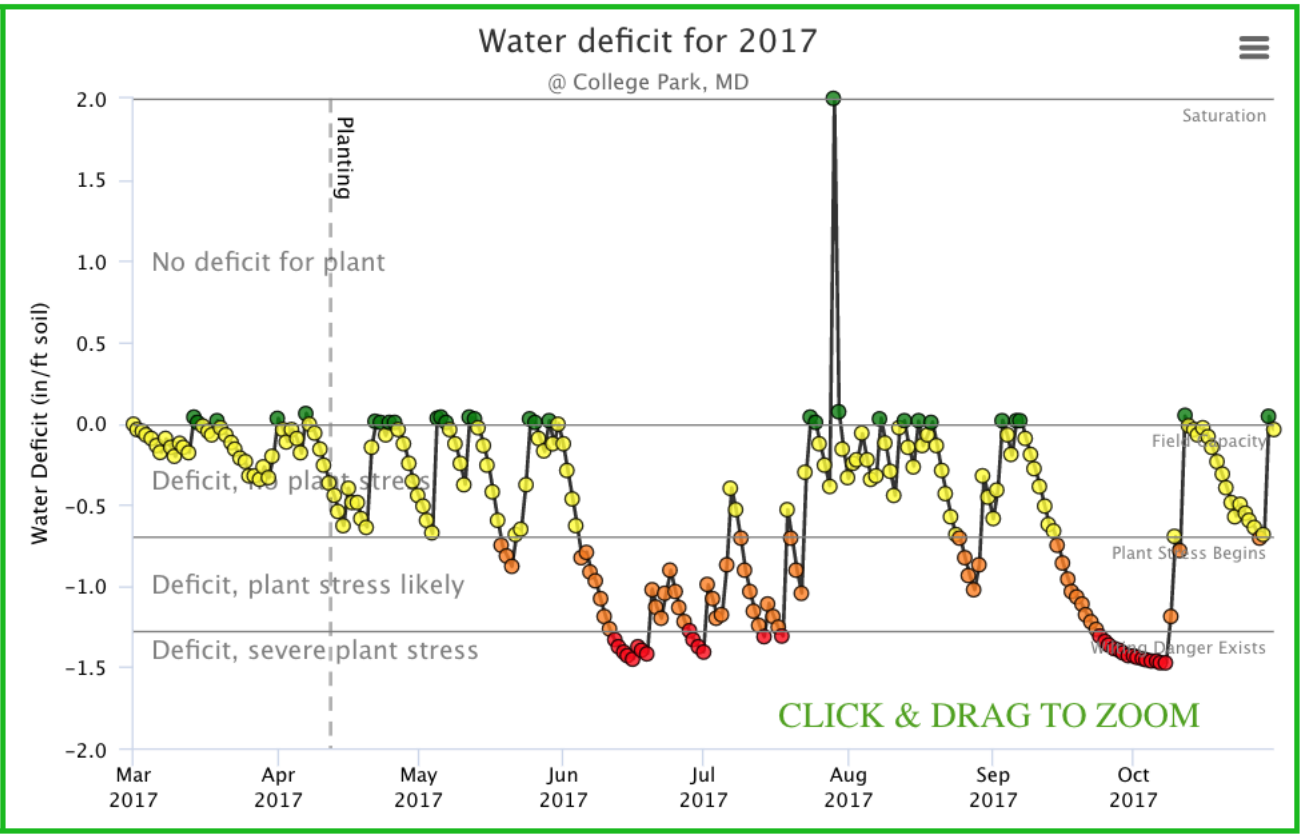
Soil Water Capacity
Medium (Loam, m...

Crop Type
Vegetables (Small...

Planting/Budbreak
04/12/2017

Last Irrigation Date
NONE

Season to Date
30-Day Outlook
Climate Change
Info



Apple & Grape Freeze Risk Tools

Current Location :
Johnny Appleseed's Orchard
DeMunn Rd, Beaver Dams, NY
Latitude : 42.282480
Longitude : -76.934862

Change Location

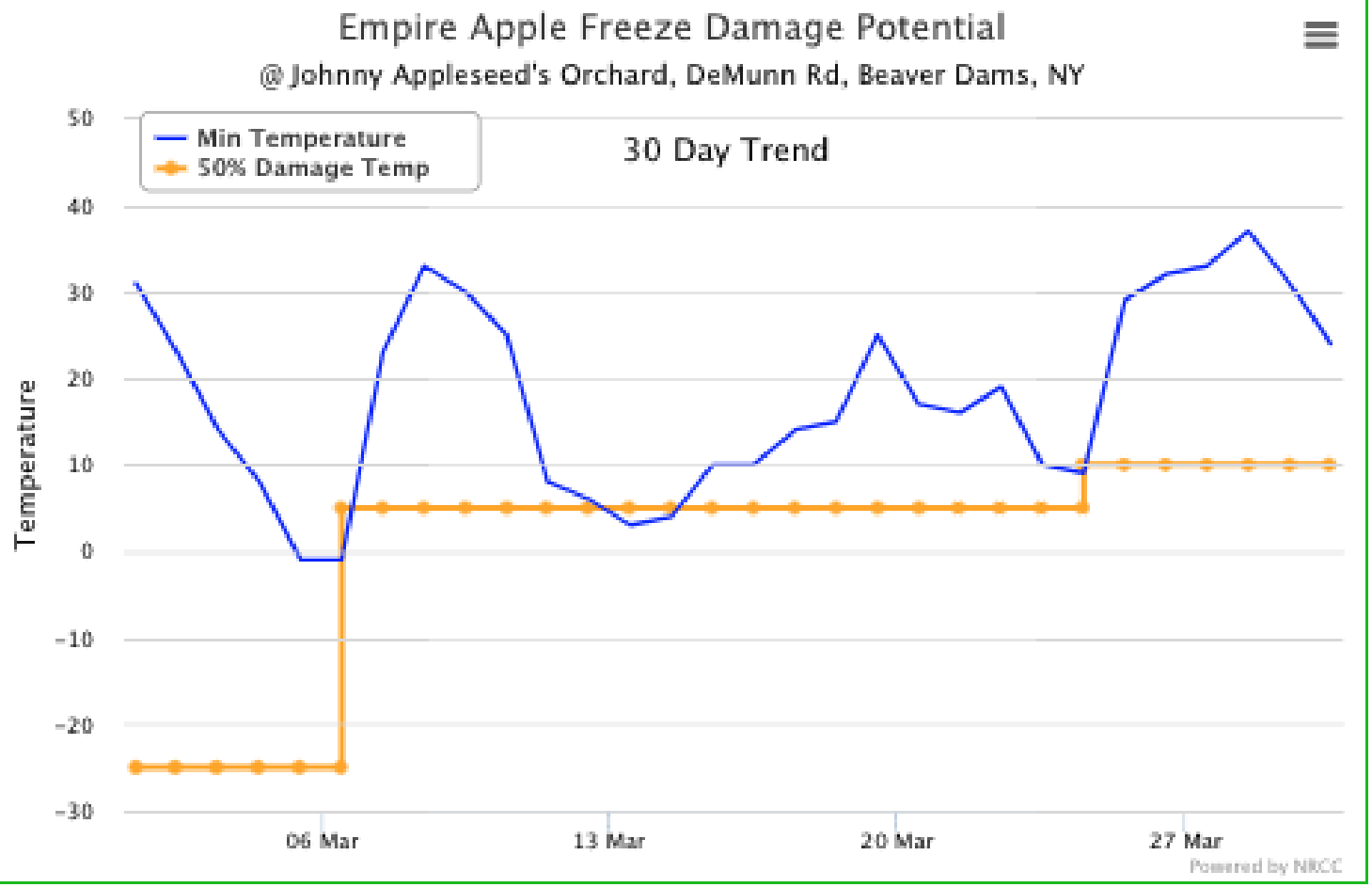
Date of Interest:

2017-03-15

Apple Variety

- (•) Empire
- ( ) McIntosh
- ( ) Red Delicious

Full Season



Cover Crop Scheduler

CSF Cornell Climate Smart Farming

CSF Winter Cover Crop Planting Scheduler

Climate | Tools | Team | Resources | Forum | Videos

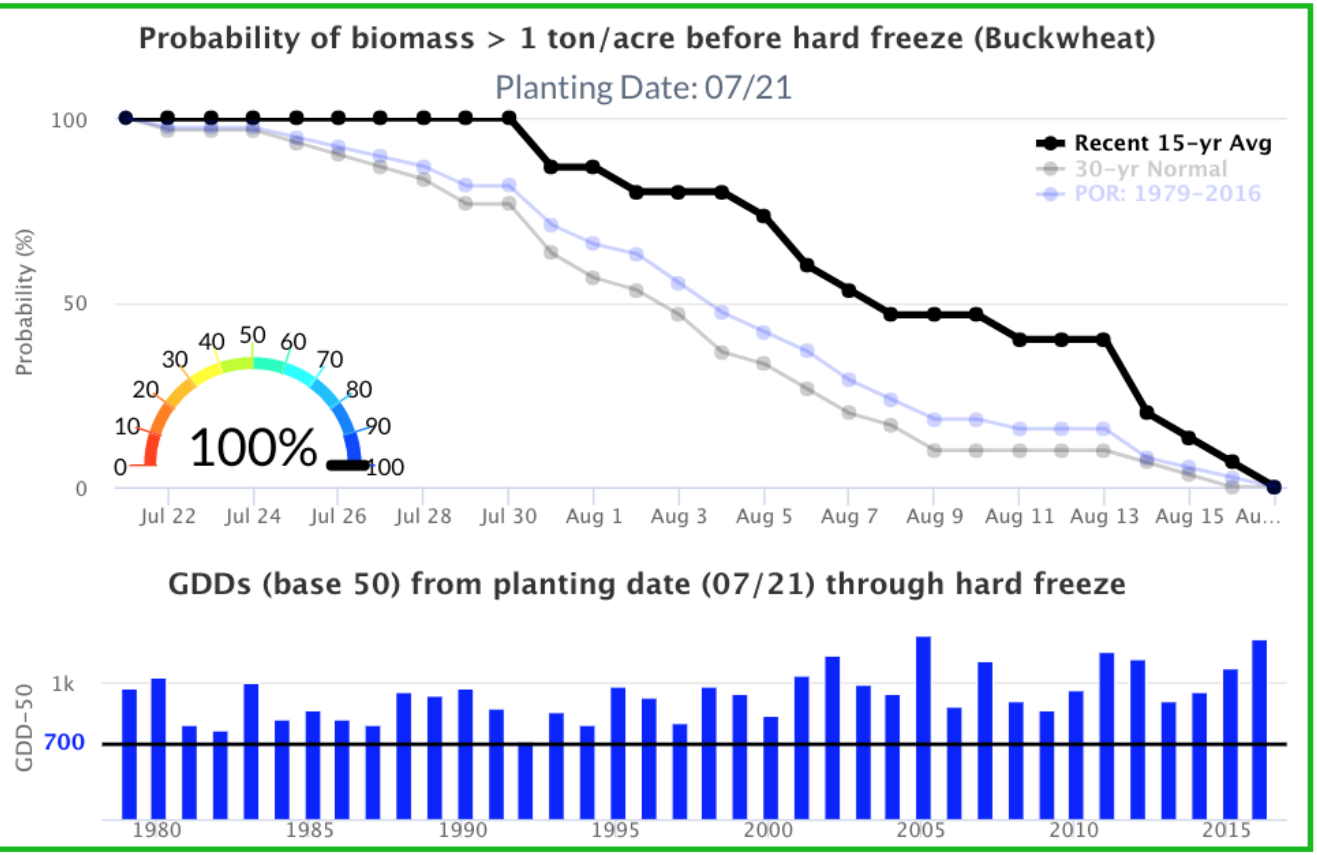
Location

Richfield Springs, NY 13439
Lat/Lon: 42.85, -74.99

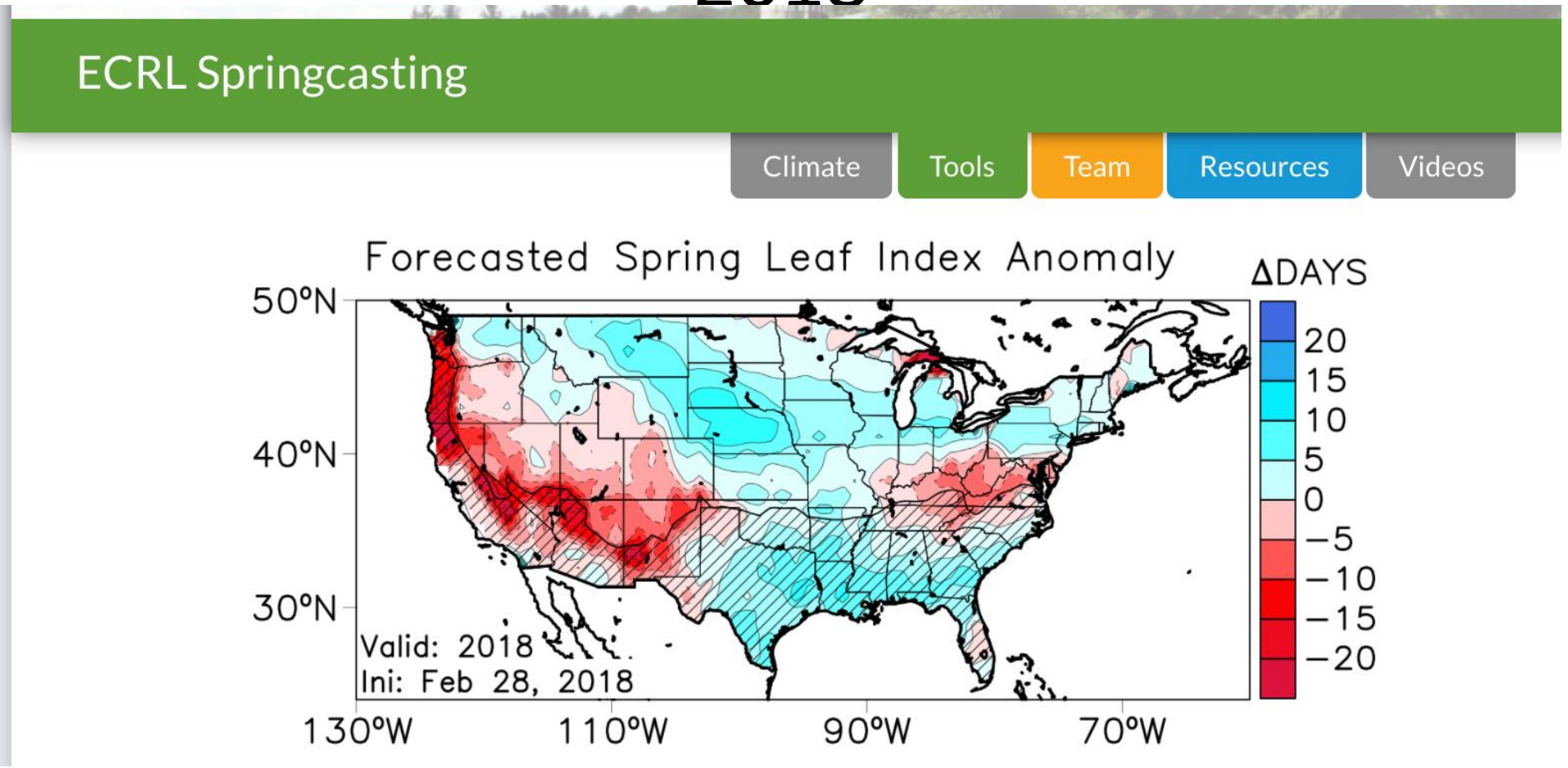
Cover Crop

Buckwheat

Data Info

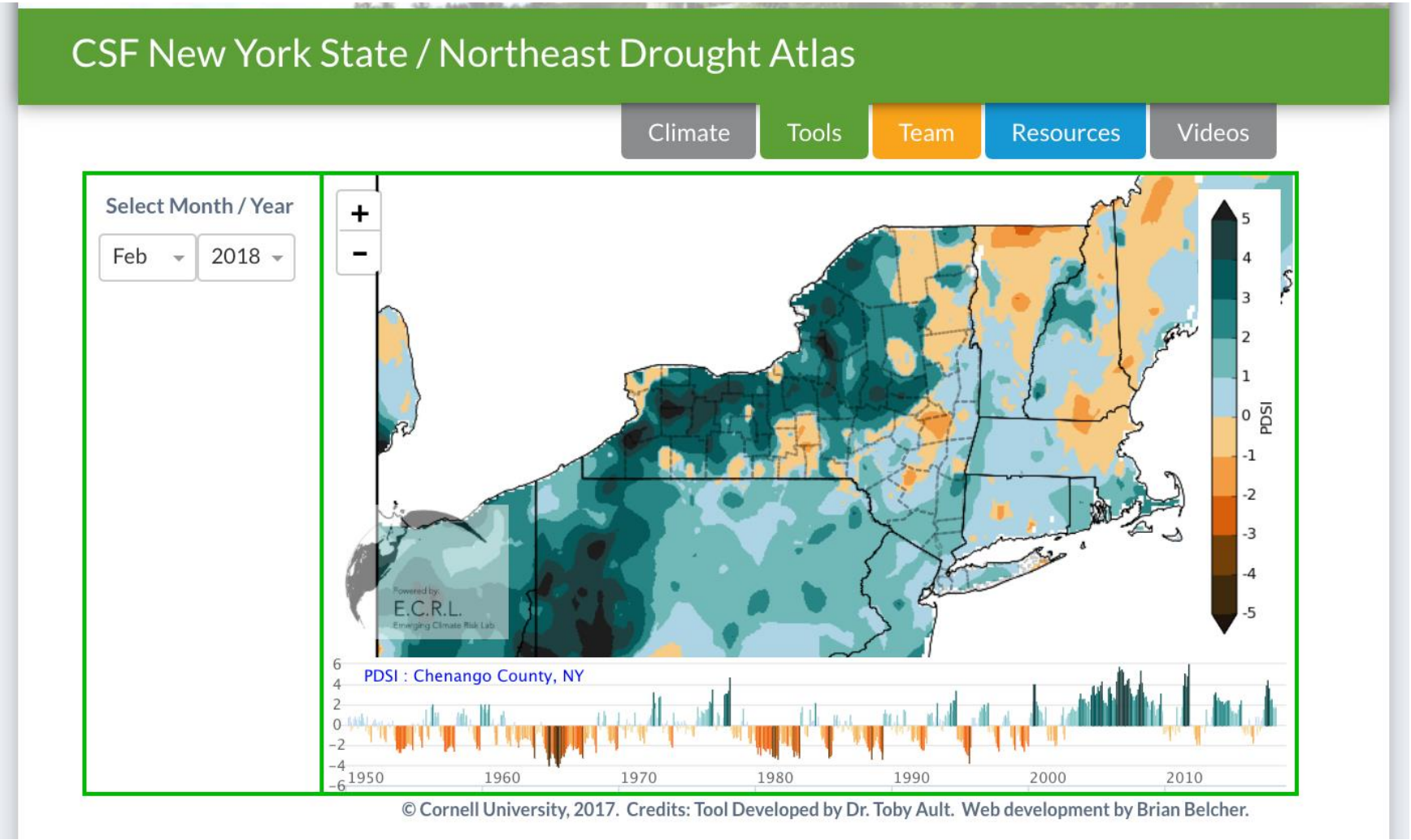


Seasonal Forecasts: Spring Forecasting 2018



- Predicts spring onset weeks to months in advance by focusing on the timing of spring indicators
- Spring onset dates; spring onset anomalies (days “early” or “late” compared to 1981-2010)

Seasonal Forecasts: NY/NE Drought Atlas



- Maps Palmer Drought Severity Index, updated every month
- Experimental forecasts in development

Key Takeaways

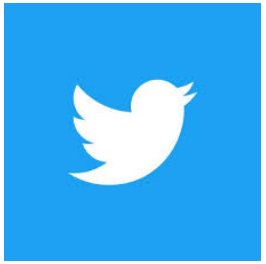
- Data/Hosting: Partnering with the NRCC
  - U2U now hosted by MRCC
- Farmer input: Trainings, Focus Groups, Surveys
- Extension: Key to getting tools out to farmers (*NOT "build it and they will come")*
- Funding: CSF small foundations & Hatch dollars, but need for core funding for development and maintenance of tools/sites
- Integration/Partnerships: across land grants and regions

Climate Smart Farming Program:

www.climatesmartfarming.org

Follow us on Social Media:

https://www.facebook.com/ClimateSmartCU/



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Thank You! Questions?

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