



Engaging stakeholders  
in the development of  
solutions

LEARN MORE



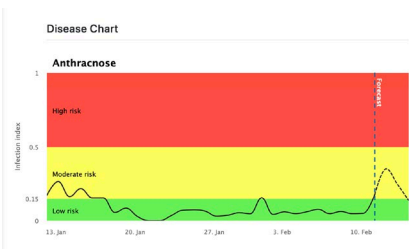
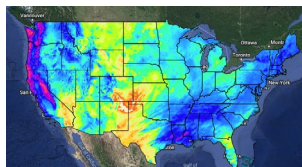
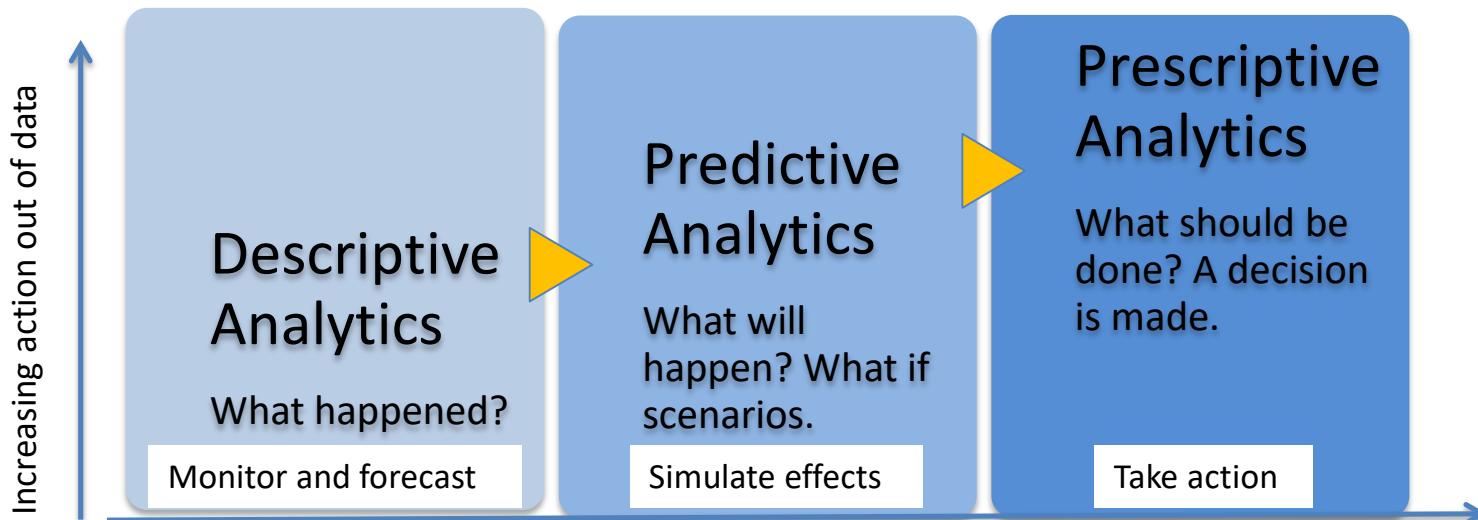
# Indicators for Decision Making in the Southeast USA

May 9, 2023  
CPASW 2023

Clyde Fraisee  
Agricultural and Biological Engineering  
University of Florida



# Increasing **action** and adding **value** to weather and climate data



**Increasing value of data Recommendation**

**Anthraxnose**  
**Spray fungicide!**  
**Recommended Products:**  
**Captan (Generic) or Thiram (Generic).**

# AgroClimate Education Workshops

LEARN MORE

Climate Indicators

Rainfall and Temperature

Pests and Diseases

Growing Degree Days Monitoring

Crop Yield & Development

Growing Degree Days Calculator

Footprint Calculators

Heat Stress Monitoring

Fruit & Veg Supply Chains

ARID (Spatial)

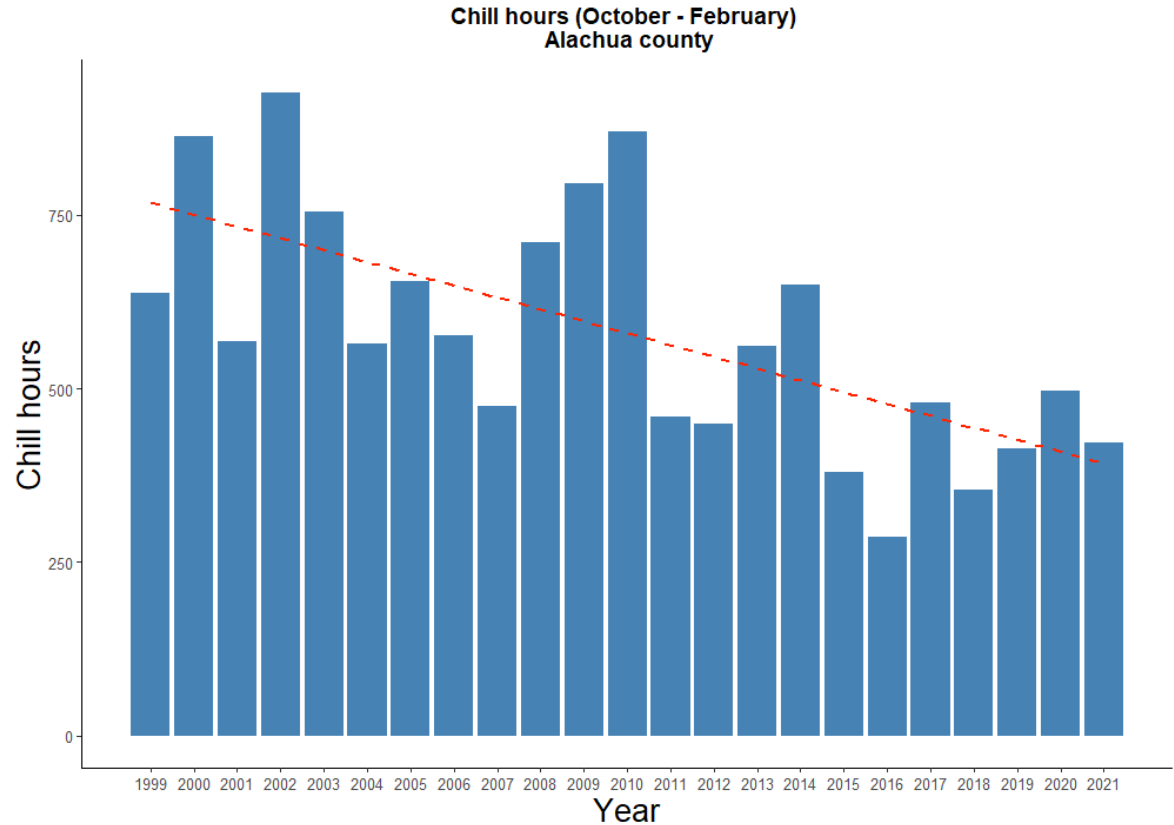
ARID (Stations)

Chill Hours Calculator

Freeze Probabilities

Cooling and Heating Degree Days  
Calculator

Warm winters  
are reducing chill  
accumulation in  
the southeast  
USA



Chilling accumulation is already considered a major limitation for temperate fruit production in the southeast. Warm winters also accelerate bloom, making flowers vulnerable to freezes. The southeast has seen several devastating late freezes in recent years.

## Temperature: 32-45 °F - Alachua County (FL)

Period [ Oct 1, 2022 - Feb 8, 2023 ]:

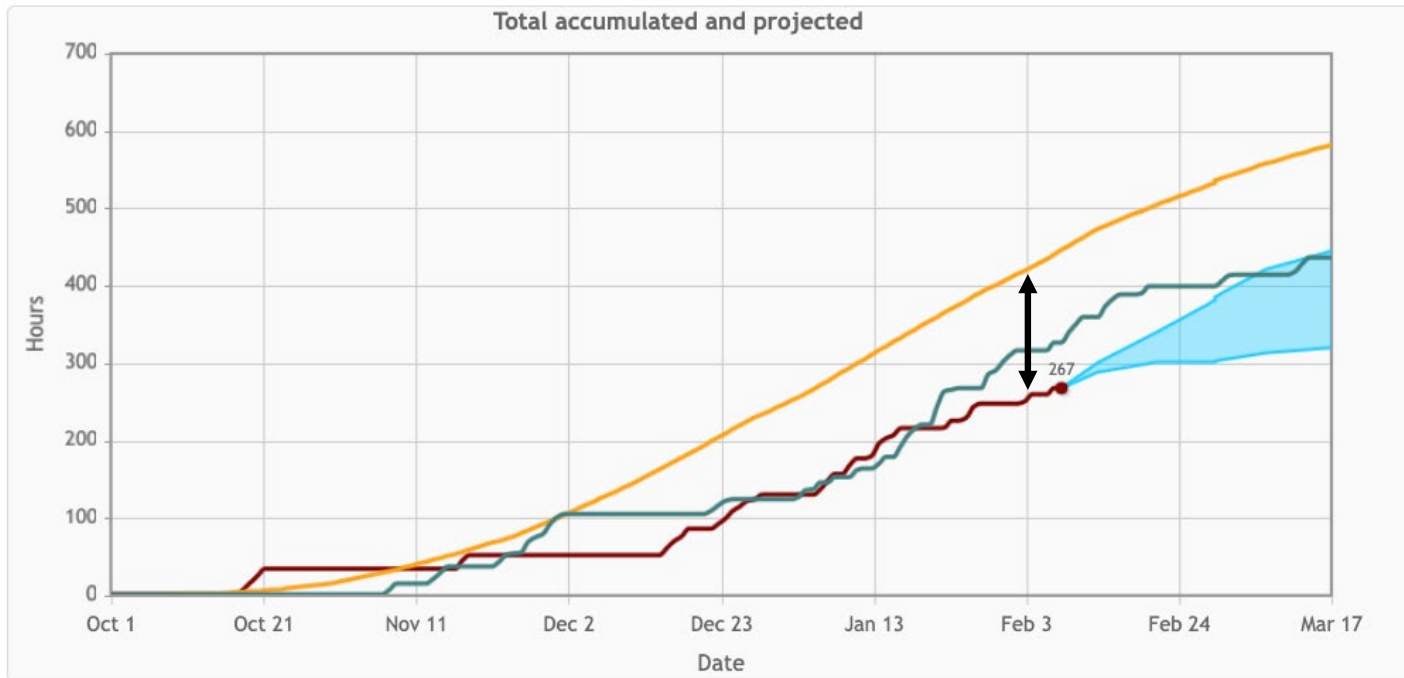
This season	267 Hours
Last season	326 Hours
Historic average	446 Hours

■ Current accumulation

■ Historic Average

■ Last season

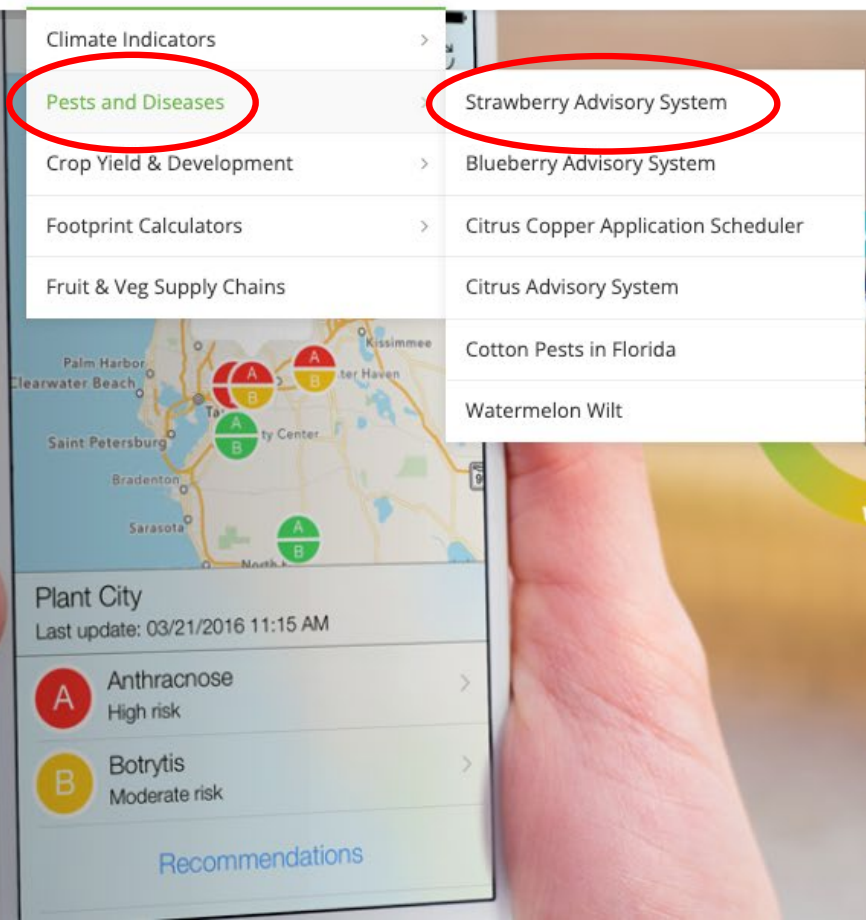
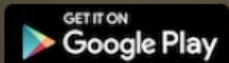
■ Projection based on long-term La Niña climatology





A smart way to manage  
diseases in strawberry

Download and start saving



Climate Indicators >

**Pests and Diseases** >

- Strawberry Advisory System
- Blueberry Advisory System
- Citrus Copper Application Scheduler
- Citrus Advisory System
- Cotton Pests in Florida
- Watermelon Wilt

Crop Yield & Development >

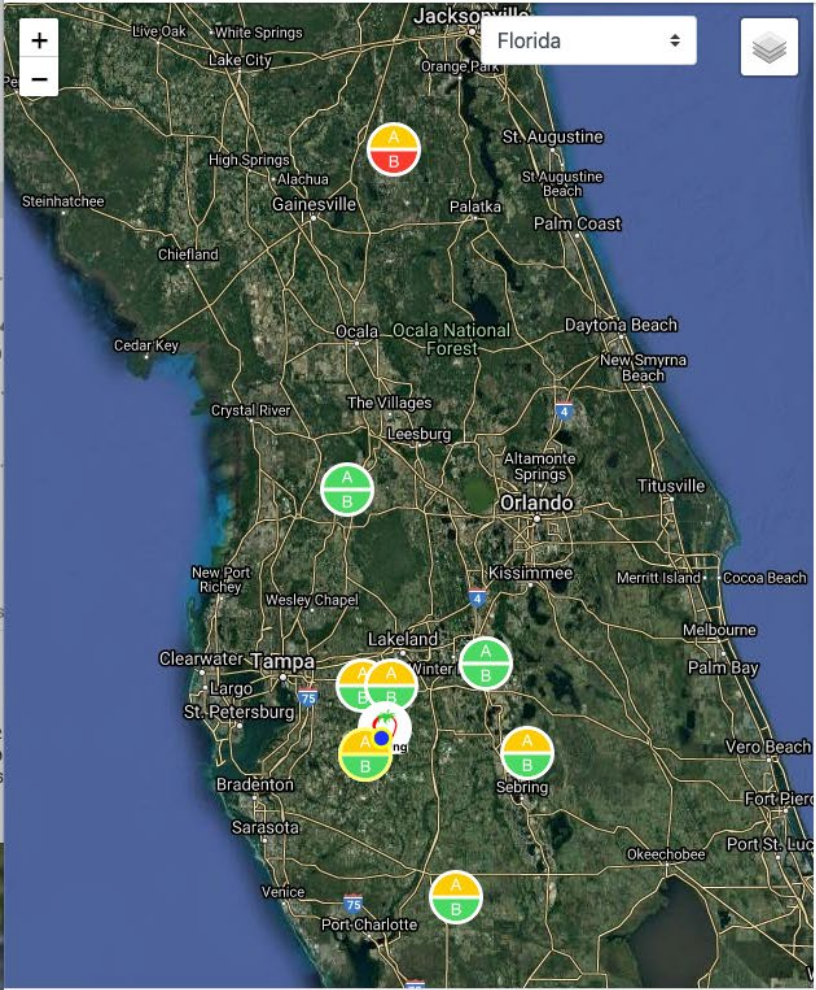
Footprint Calculators >

Fruit & Veg Supply Chains

Plant City  
Last update: 03/21/2016 11:15 AM

- A** Anthracnose  
High risk
- B** Botrytis  
Moderate risk

Recommendations



# Balm

**FAWN**  
27.760, -82.224  
Wimauma, FL  
Hillsborough county

## Highest risk recorded today

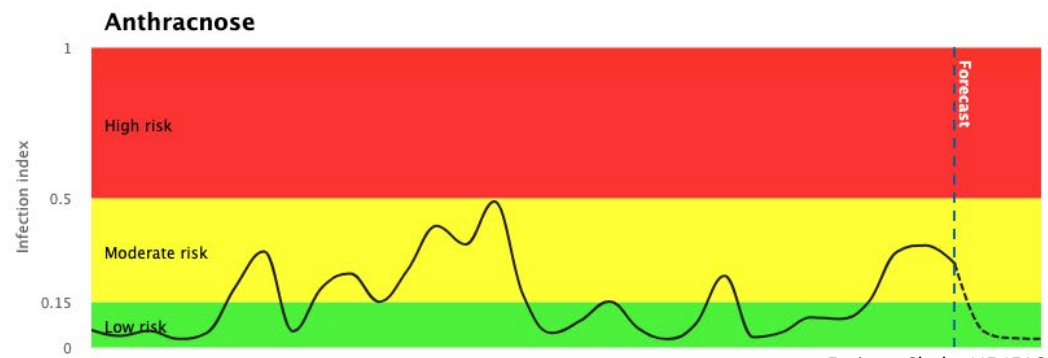
Simulated at: 03/03/2021 12:15

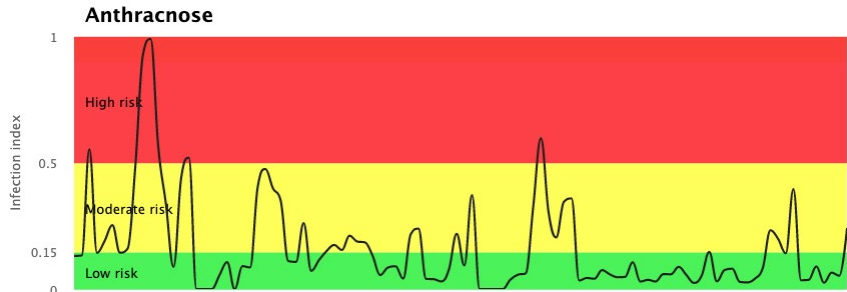


[DISEASE RISK](#) | 
 [WEATHER](#) | 
 [RECOMMENDATIONS](#)

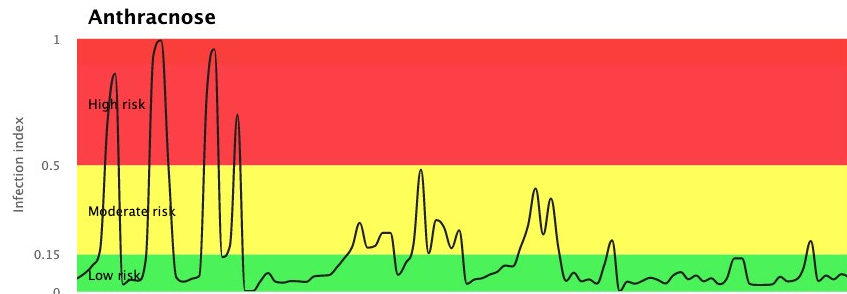
Date Interval: 
[Export Chart/Table](#)

### Disease Chart

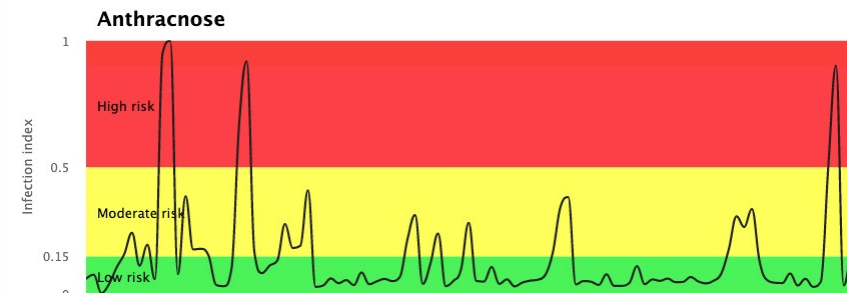




2022-23



2021-22



2020-21

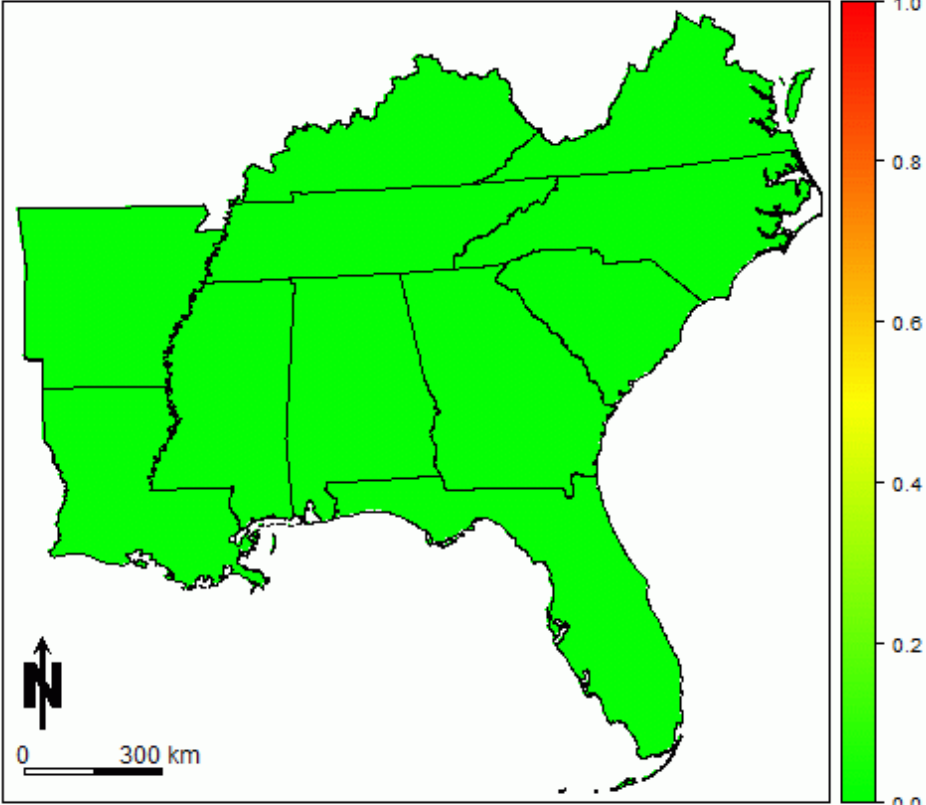
Plant City, Florida  
 Anthracnose risk  
 Nov 1 – Feb 10

We have  
 experienced  
 reduced disease  
 pressure during the  
 last 3 years due to  
 La Niña cycles

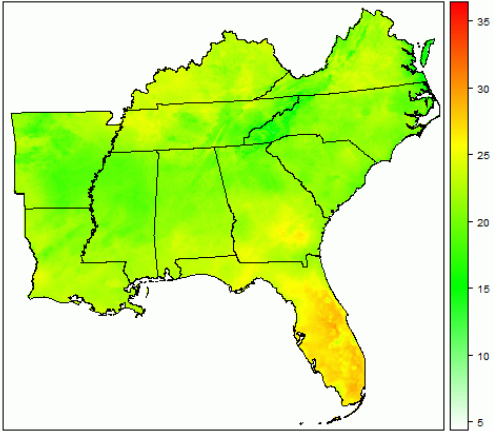


# Our plan for 2023 is to evaluate the use of gridded weather products to monitor and forecast disease risk.

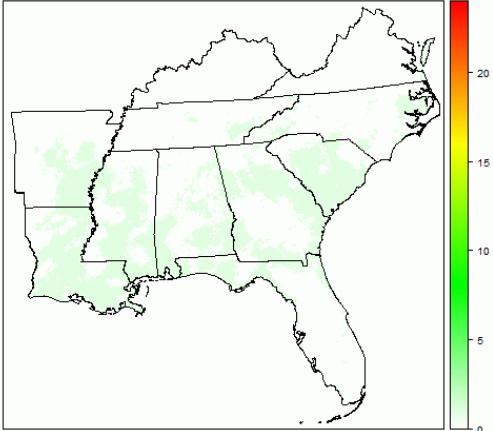
## Risk of Botrytis - 0:00



## Temperature - 0:00



## Leaf wetness duration - 0:00



# Climate Indicators available in the system



MAP

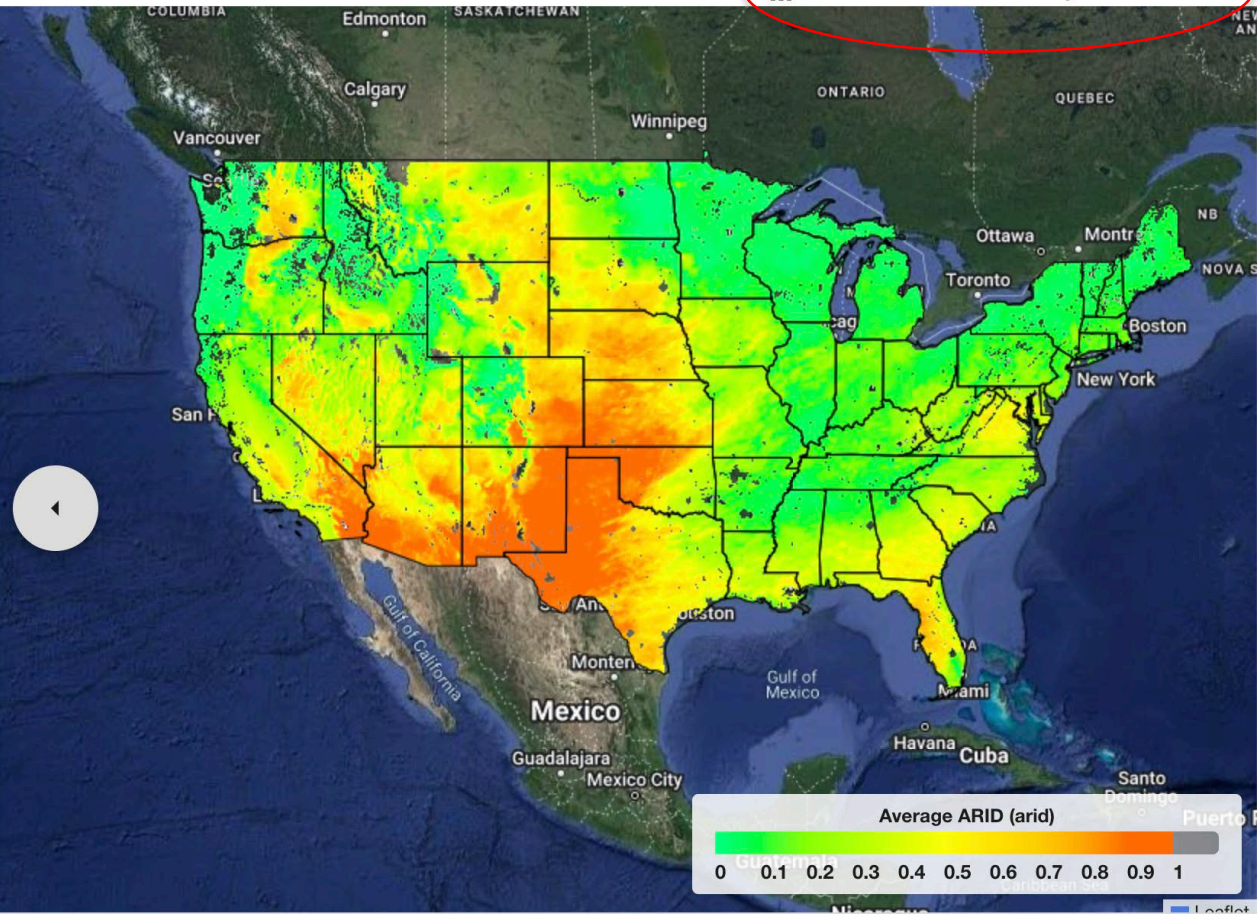
+  
-

Climate Indicators for Agriculture

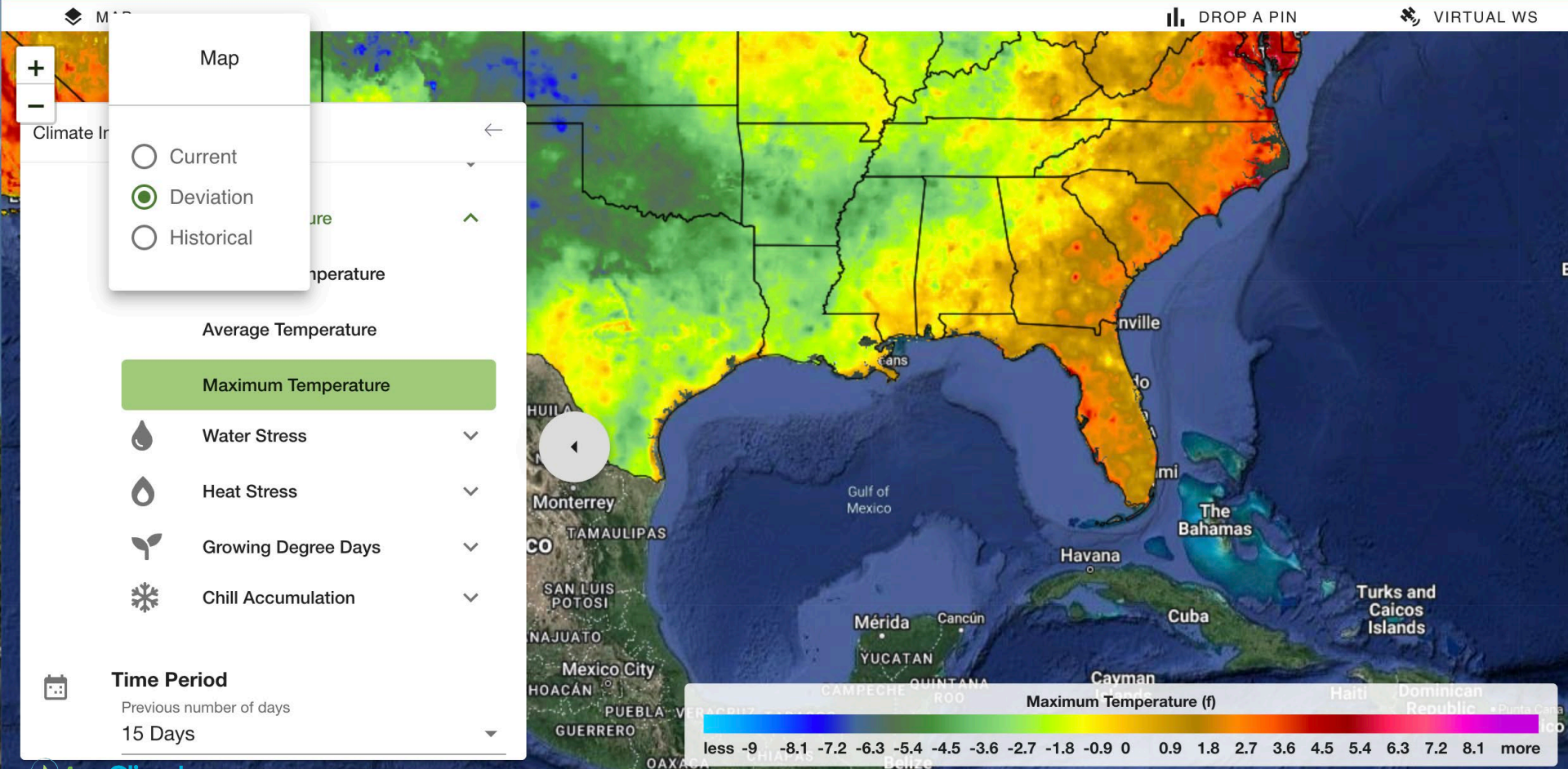
**Climate Indicator**

- Precipitation
- Air Temperature
- Water Stress
- Average ARID**
- Heat Stress
- Growing Degree Days
- Chill Accumulation

**Time Period**  
Previous number of days  
60 Days



# Climate Indicators available in the system









July 2022

## Florida - Districts Report

Time period of 07/01/2022 to 07/31/2022

## Precipitation

## Total Precipitation (inches)

District Code	District Name	Observed	Percentile of all long-term observations (%)	Deviation from long-term Avg	5-year Avg
10	Northwest	10.01	85.3	2.58	8.53
30	Northeast	8.42	85.3	1.44	8.58
50	Central	8.14	60.9	0.64	9.01
80	Southern	6.24	21.9	-1.13	7.76

## T amplitude

## Temperature Amplitude (°F)

Observed	Percentile of all long-term observations (%)	Deviation from long-term Avg	5-year Avg
16.6	4.8	-2.5	17.2
18.2	12.1	-1.5	17.9
18.2	43.9	-0.4	17.1
16.9	26.8	-1.0	16.4

## Heat Stress - Tmax &gt; 34°C

## Max Temp. &gt; 93°F

Observed	Percentile of all long-term observations (%)	Deviation from long-term Avg	5-year Avg
5.6	24.3	-13.8	9.5
11.6	39.0	-9.1	13.2
12.1	63.4	-0.2	8.4
8.4	58.5	-0.4	7.8

## Nighttime Temp &gt;26°C

## Accumulated Night Temperature Index &gt; 79°F

Observed	Days of occurrence	Percentile of all long-term observations (%)	Deviation from long-term Avg	5-year Avg	Percentage of the observations (%)
244.9	31	81.8	49.8	212.6	100
245.1	31	63.6	5.5	230.3	100
262.6	31	72.7	46.3	229.1	100
391.3	31	100.0	134.3	319.5	100



This tool can generate tabular reports of selected climate indicators during any period of time and aggregate at the state, district or county level.

The example above shows the results for 4 indicators aggregated for Florida districts during the month of July 2022. Above average precipitation in the NW and NE districts, low daily temperature amplitude, and above average nighttime temperature.

### Climate Indicator Analytics

Lat: 28.6842 - Lon: -81.8422

Start Date (MM/DD/YYYY)  
2023-01-20

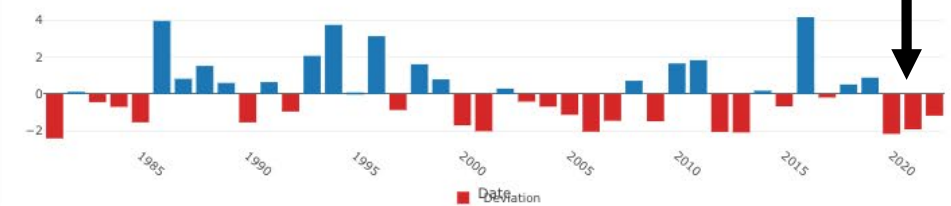
End Date (MM/DD/YYYY)  
2023-02-17

LOAD DATA

OVERVIEW **DEVIATION** INDICATORS

#### Historical data: Total Precipitation (in)

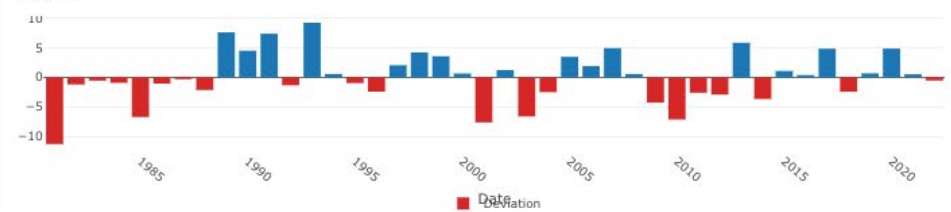
1981-2023



3 La Niña years!

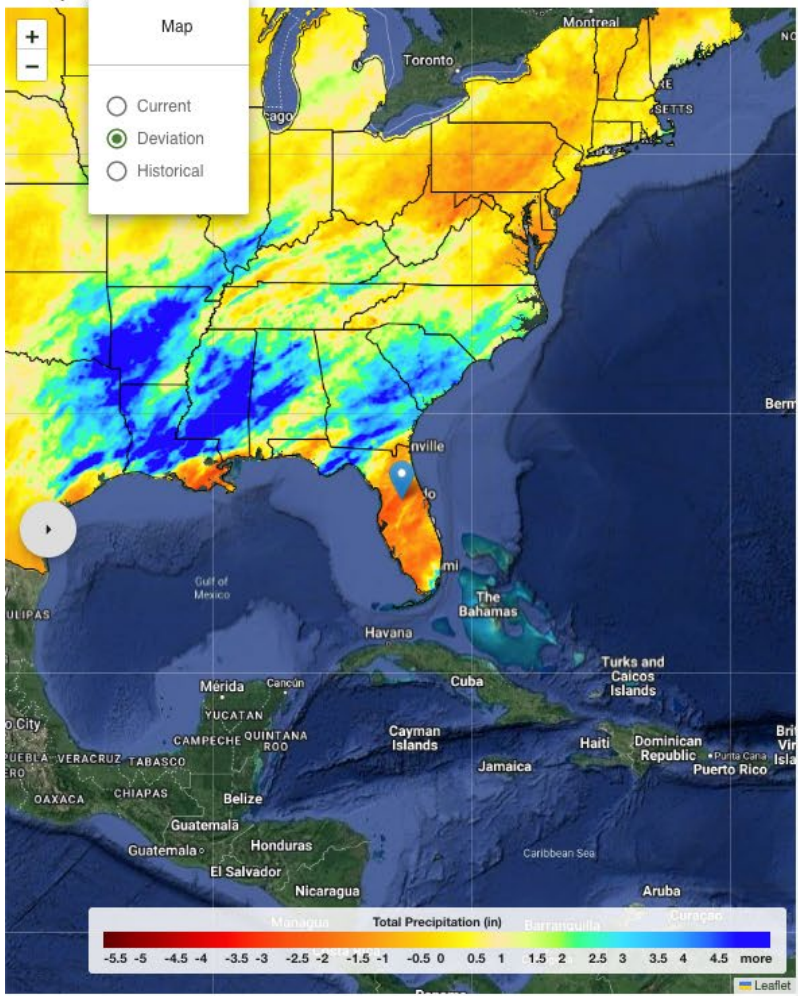
#### Historical data: Minimum Temperature (°F)

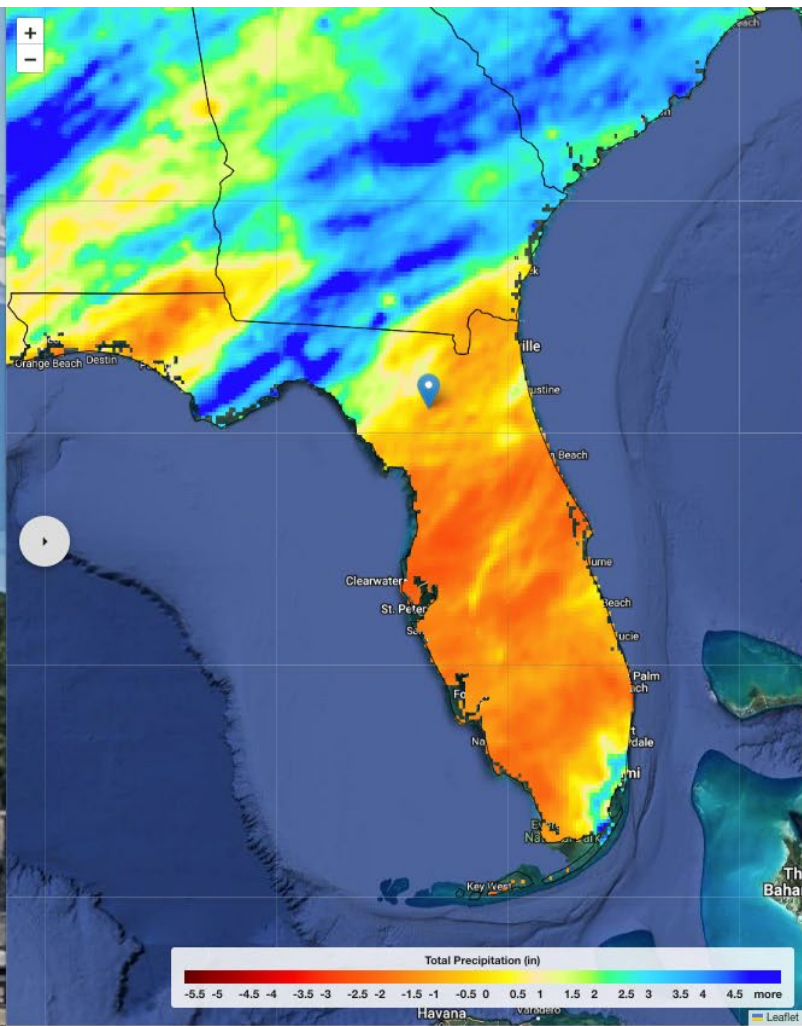
1981-2023



#### Historical data: Max Temperature (°F)

1981-2023





## Climate Indicator Analytics

Lat: 29.7837 - Lon: -82.5292

Start Date (MM/DD/YYYY)  
2022-10-01

End Date (MM/DD/YYYY)  
2023-02-18

LOAD DATA

OVERVIEW

DEVIATION

INDICATORS

Chill Hours

### Physical

- Total Precipitation (in)
- Minimum Temperature (°F)
- Max Temperature (°F)
- Average Temperature (°F)
- Dry Spell
- Wet Spell

### Phenological

- Chill Hours
 

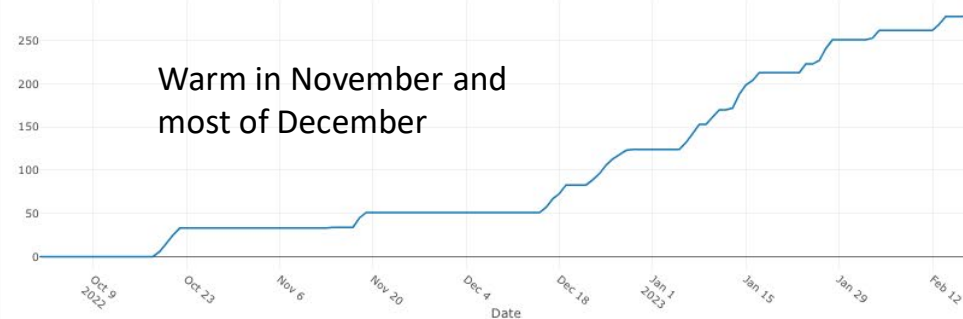
Temperature	Temperature °F
32	45
- Chill Portions
- Chill Units
- Growing Degree Days

### Stress

- Temperature-Humidity Index
- Heat Stress Degree Days

### Daily Observation

Selected Period  Long Term Average  Accumulated



# Thank You!

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