

Environmental Monitoring on the Delmarva Peninsula

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University of Delaware*



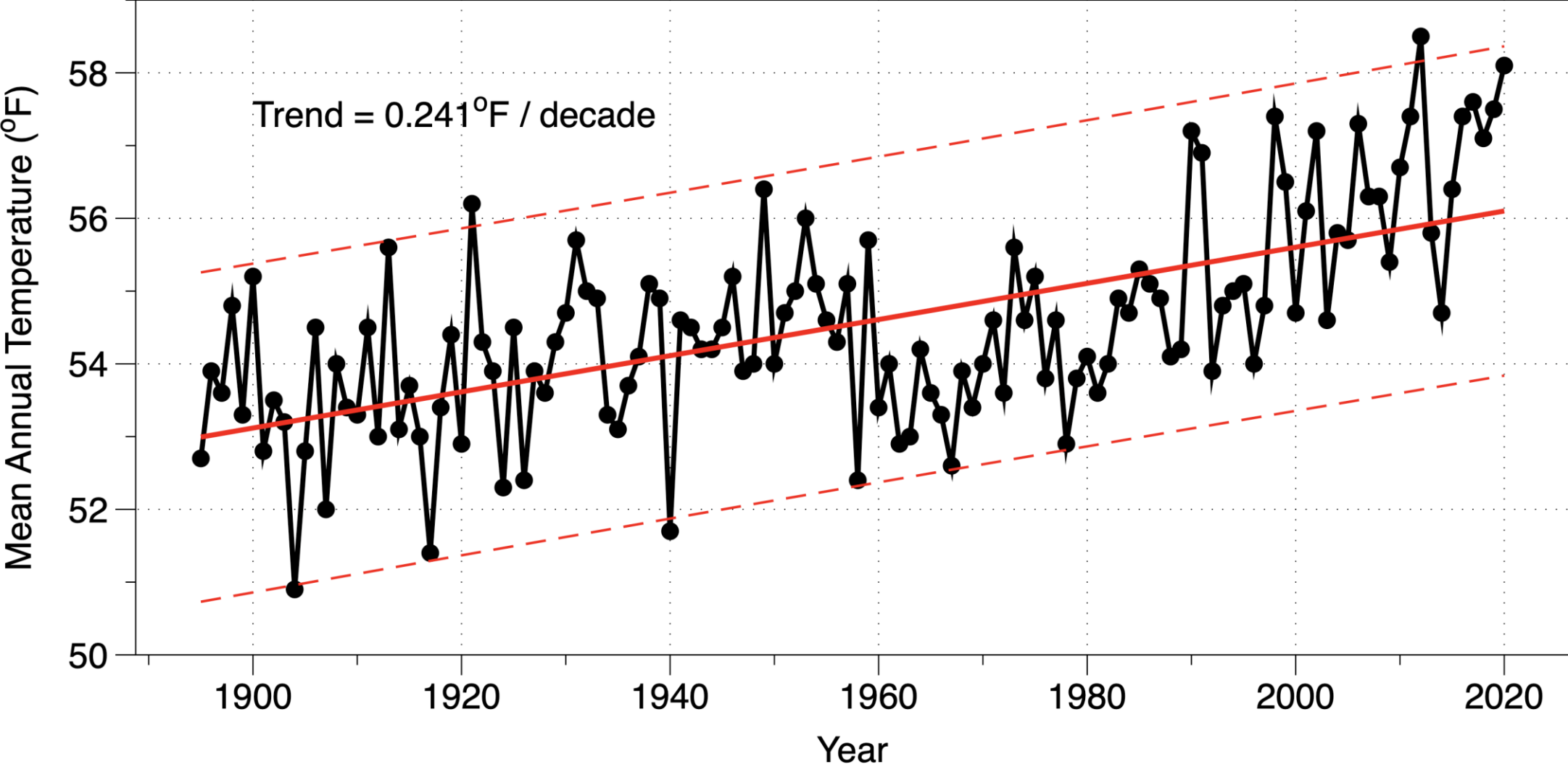
Projected Field Status



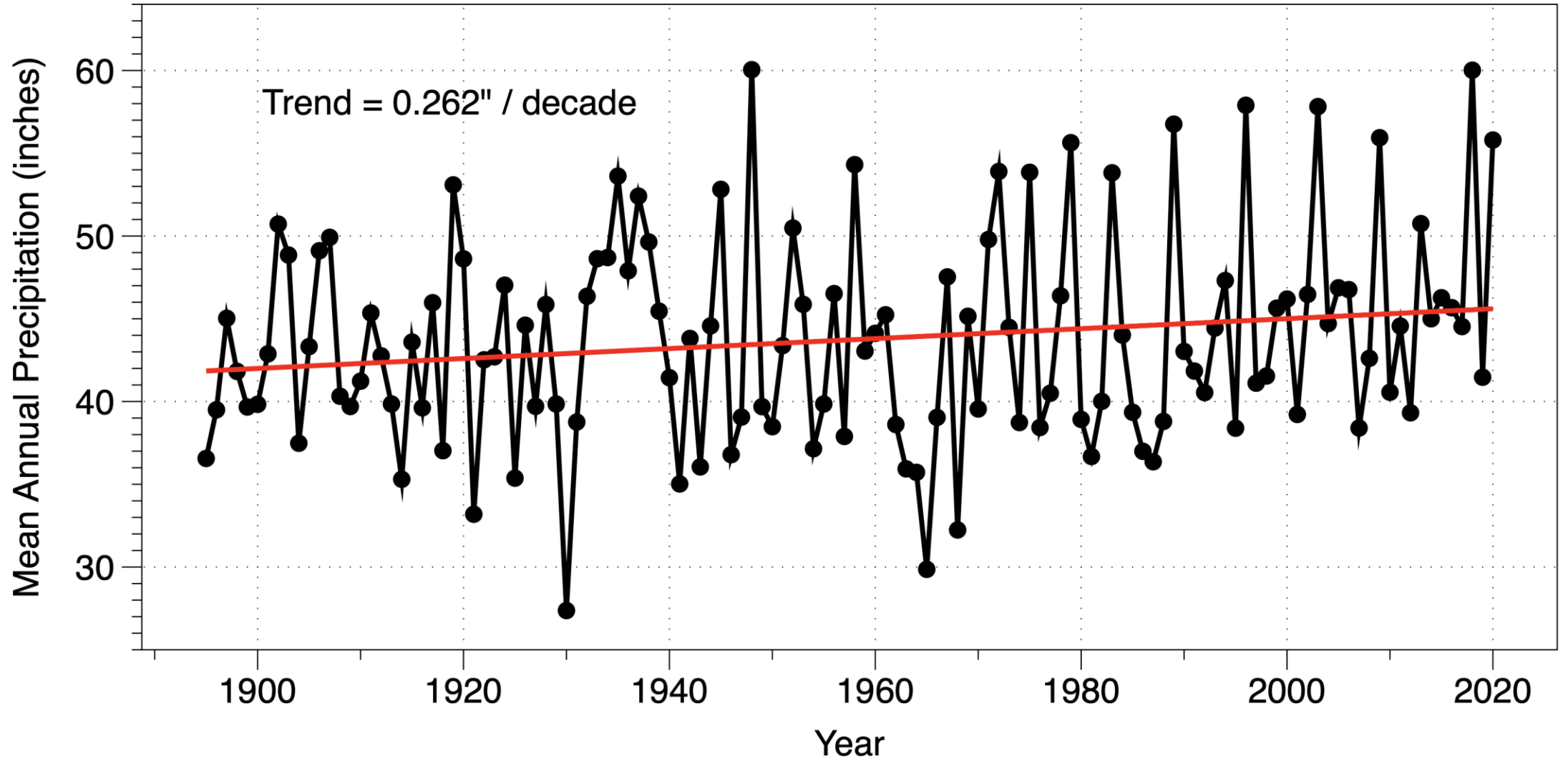
● Projected minimum soil water content (%) over the next 5 days.



Delaware Statewide Mean Annual Temperature

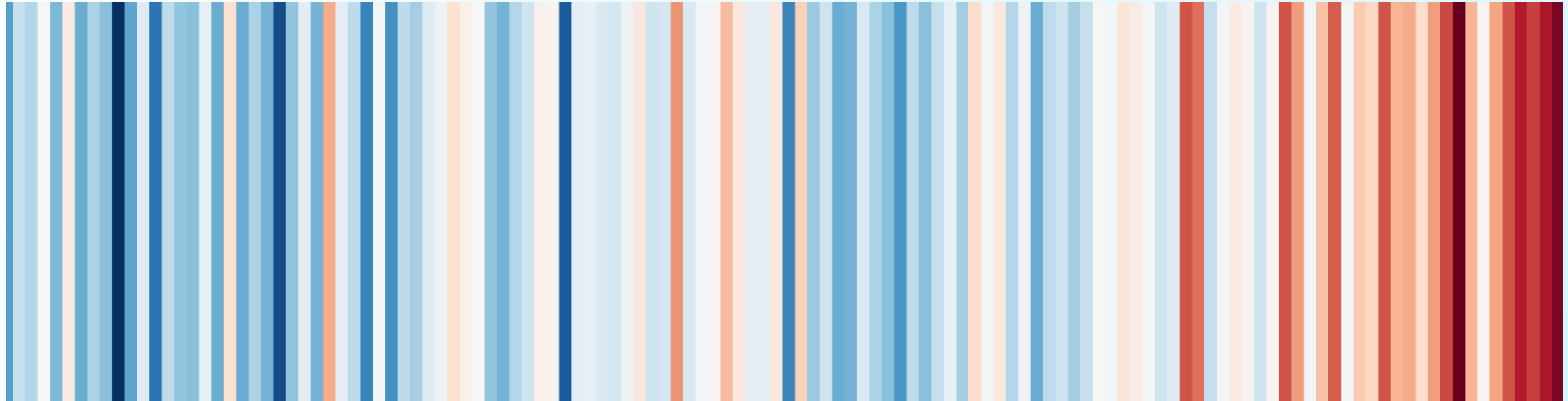


Delaware Statewide Mean Annual Precipitation

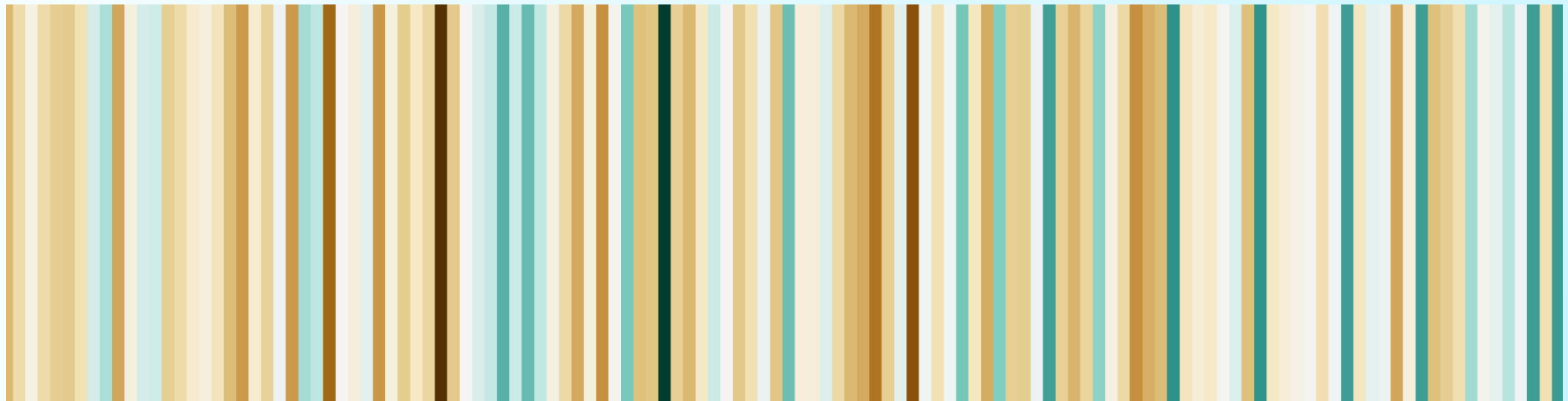


Climate Change Stripes – Sussex County Delaware

Temp.



Precip.



1895

2020

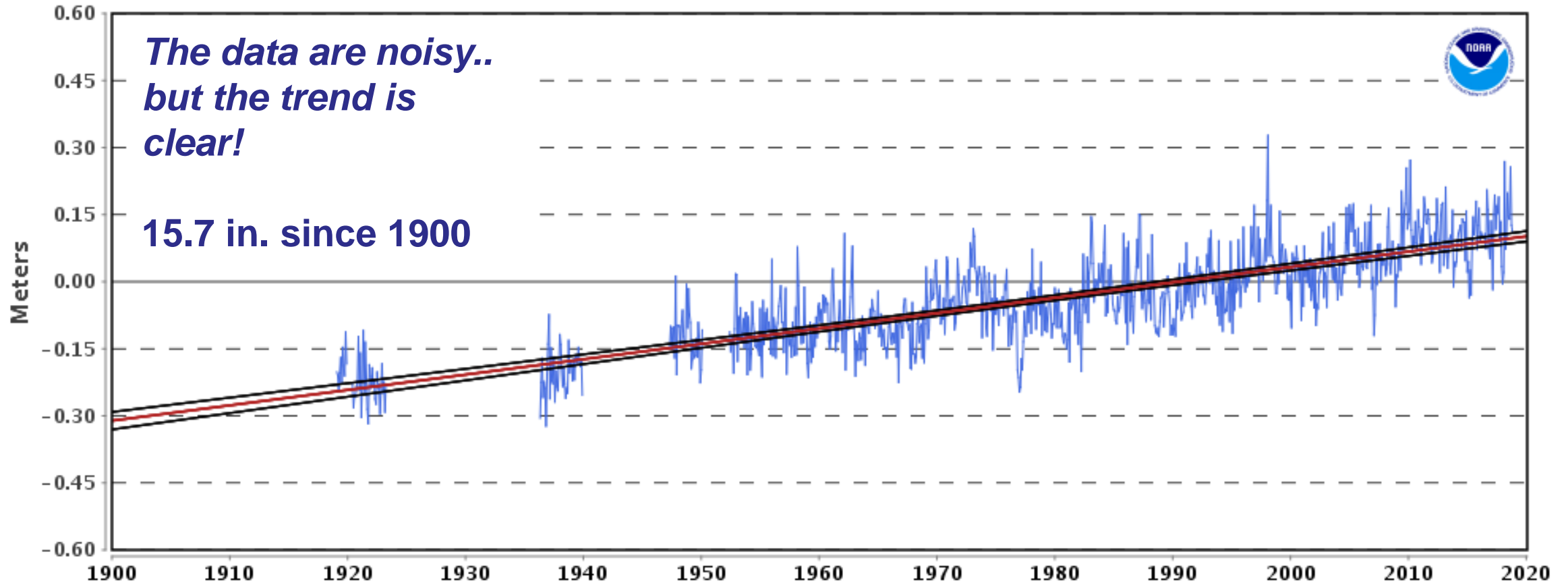
8557380 Lewes, Delaware

3.44 +/- 0.24 mm/yr



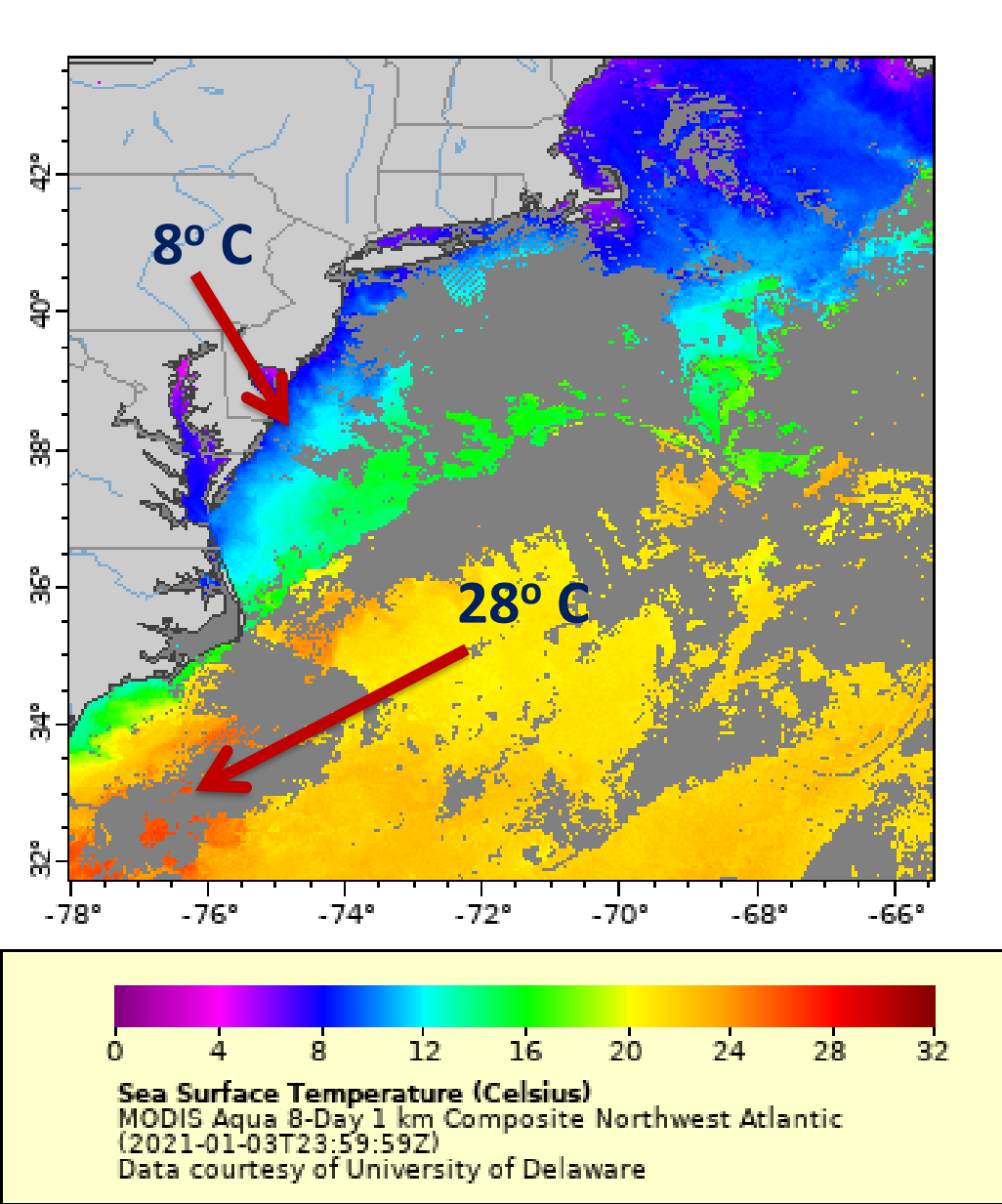
*The data are noisy..
but the trend is
clear!*

15.7 in. since 1900



The nearby Atlantic Ocean sea-surface temperatures are very important to our weather and climate...

8-Day Average Mid-Atlantic Sea Surface Temperature, January 3, 2021



Global Economic Risks



What Tools are Available for Monitoring Delaware's Environment?

Center for Environmental Monitoring and Analysis

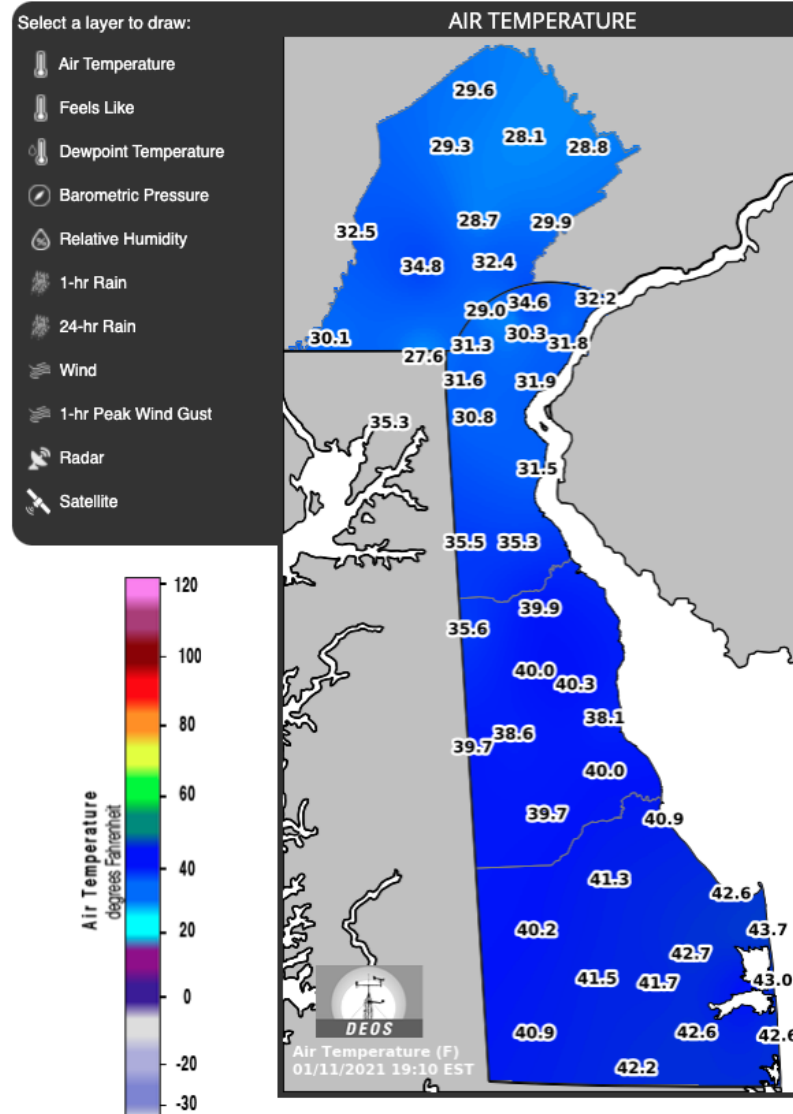




The Delaware Environmental Observing System Station Network



Current Conditions



Forecasted Weather Hazard

Station Conditions

Newark, DE-Ag Farm

Elevation: 106 feet
Location: 39.6695°N, -75.7503°W

CURRENT

TEMPERATURE: **31.2 °F**

FEELS LIKE: 31.2 °F

DEWPOINT: 27.0 °F

RELATIVE HUMIDITY: 84 %

PRESSURE: 1022 mb

1-HR RAIN: 0.00 in

24-HR RAIN: 0.00 in

WIND: 0.6 mph WNW

1-HR PEAK GUST: 2.2 mph

[VIEW MORE DATA](#)

YESTERDAY

Temperature

High: 44.6 °F	Low: 25.3 °F
---------------	--------------

Peak Gust

15.0 mph

Total Rain

0.00 in

[VIEW MORE DATA](#)





Lewes, DE-University

Select View Type

Current

Metadata

DEOS

11-JAN-2021 07:20 PM

42°F

1HR DIF
-1°F

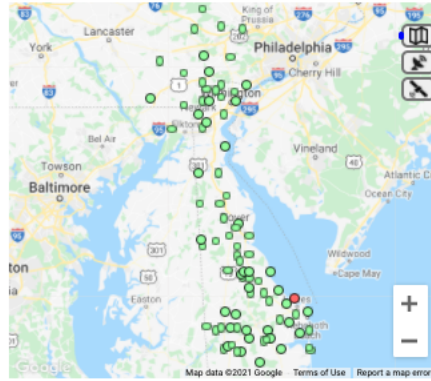
3 mph SW

Dew point 32°F
Relative Humidity 66%

Rainfall:
1 Hour 0.00in
24 Hour 0.00in

FORECAST

Mon	Tue	Wed	Thu	Fri	Sat	Sun
45°F 32°F	46°F 32°F	48°F 32°F	52°F 36°F	50°F 37°F	46°F 37°F	43°F 32°F



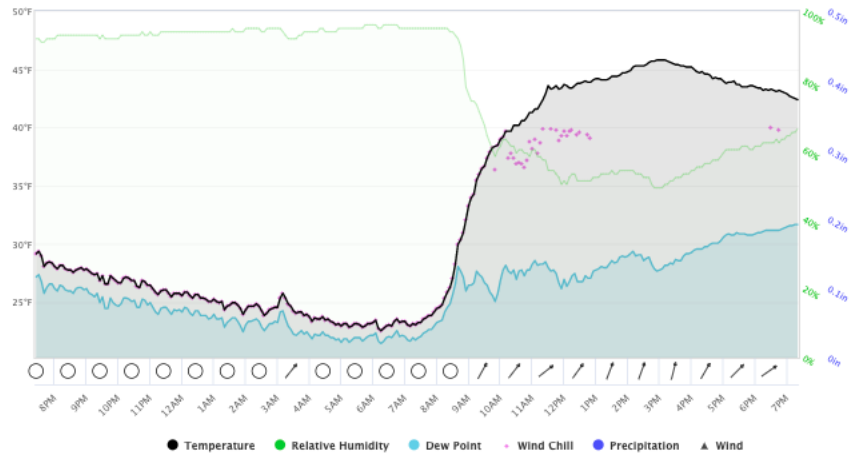
Recent Conditions

Select Chart



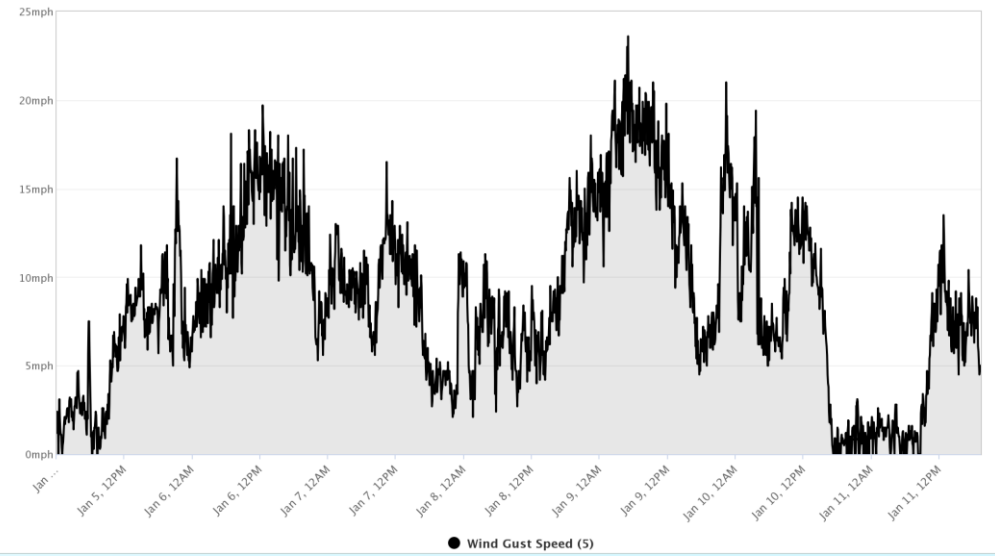
Meteorgram for Lewes, DE-University

Monday, 01/11/2021, 07:20PM



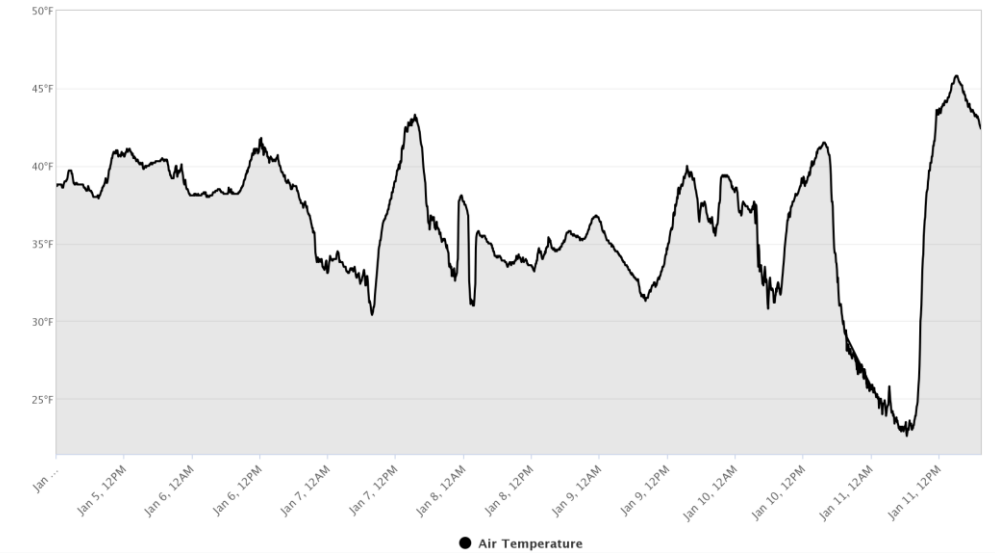
Wind Gust Speed (5) at Lewes, DE-University

Monday, 01/11/2021, 07:20PM

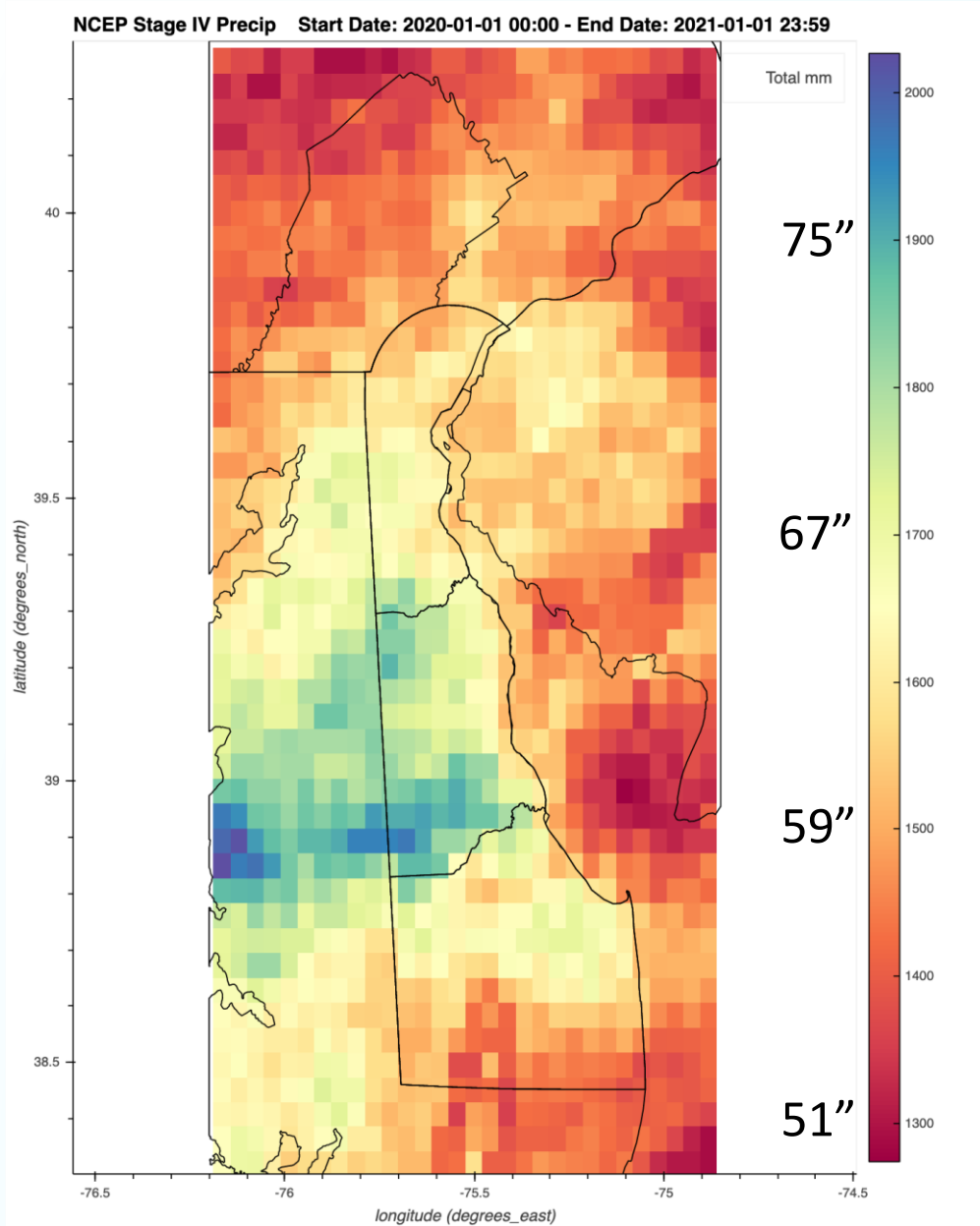


Air Temperature at Lewes, DE-University

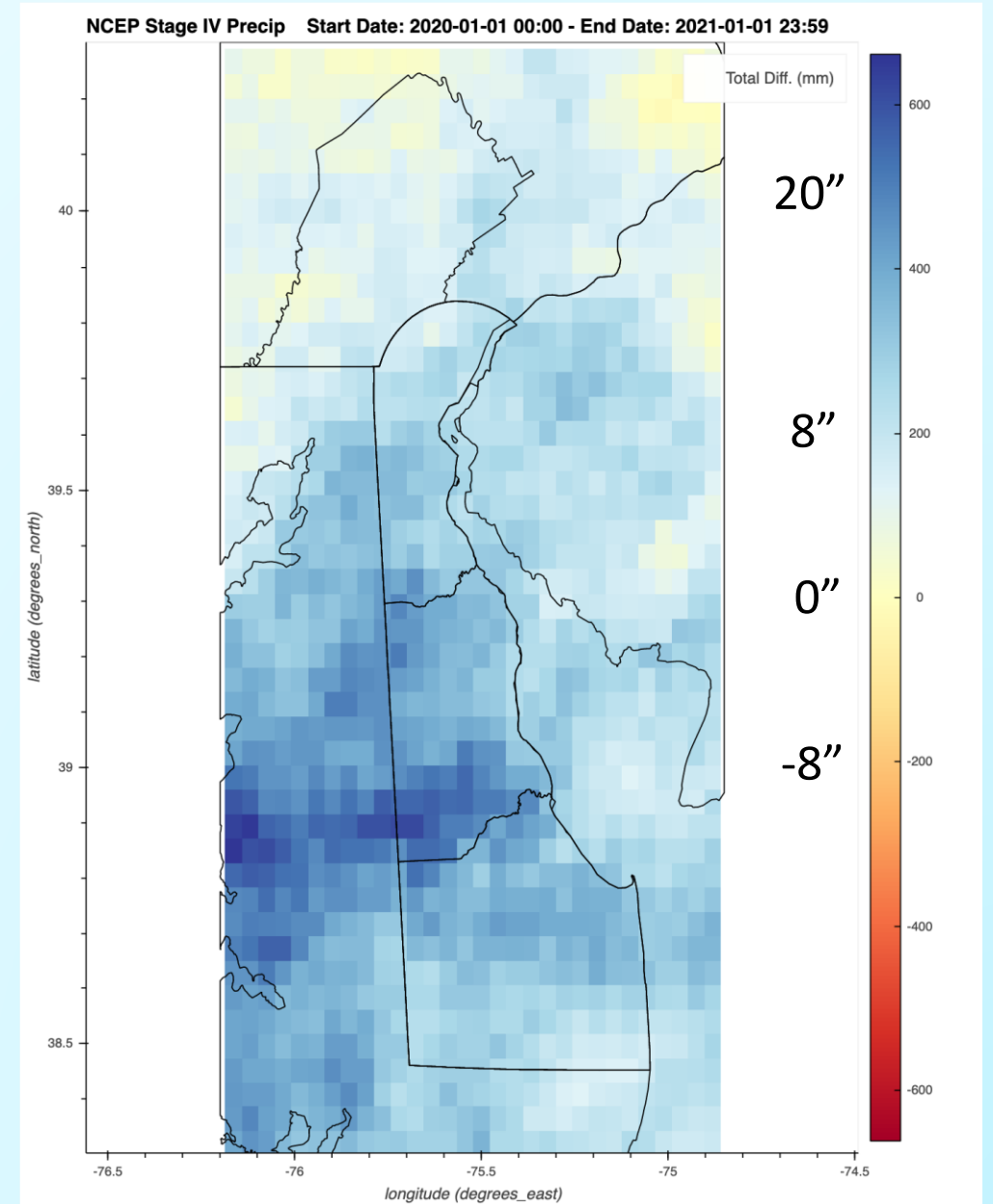
Monday, 01/11/2021, 07:20PM



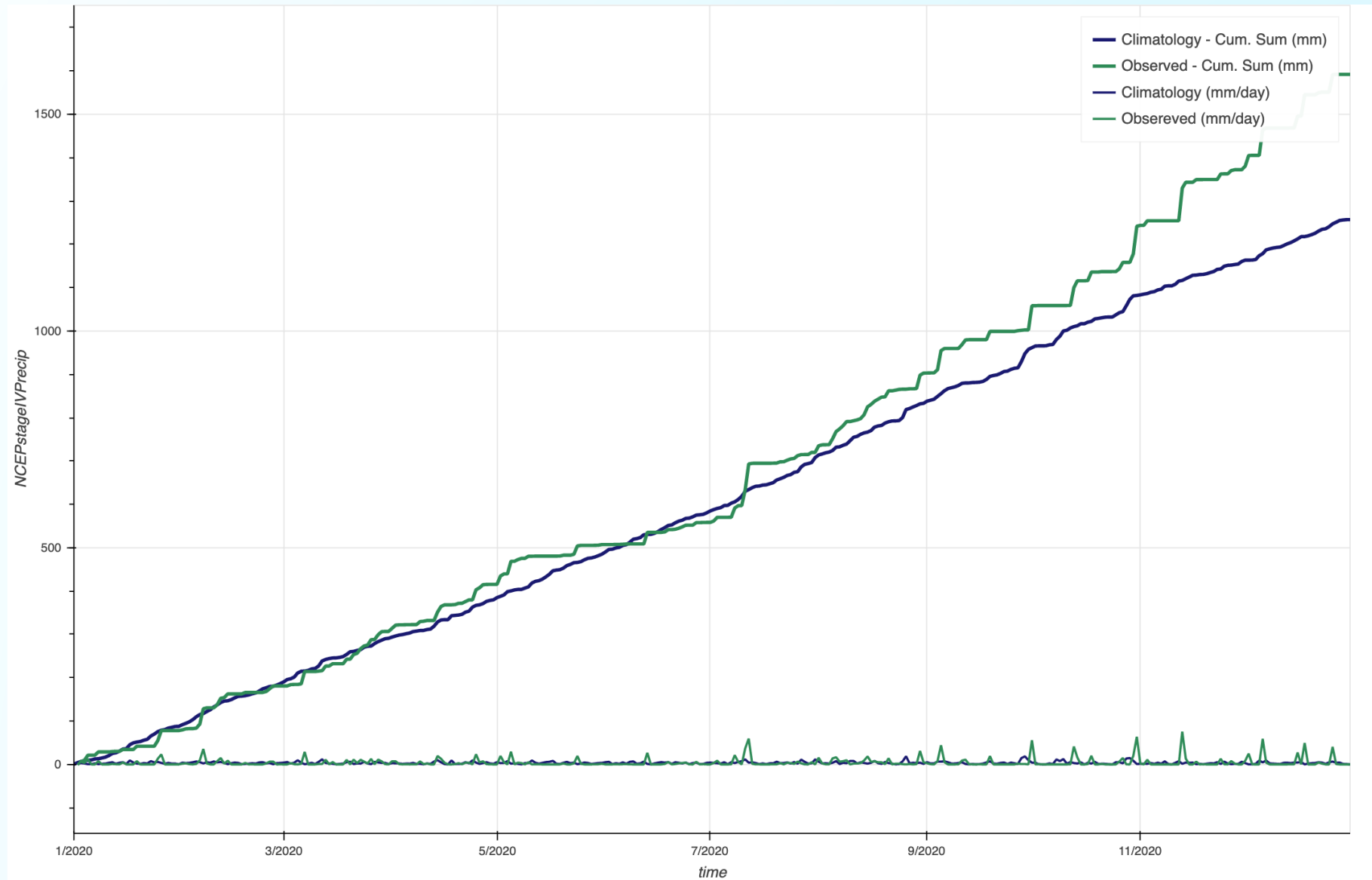
Delaware Precipitation 2020



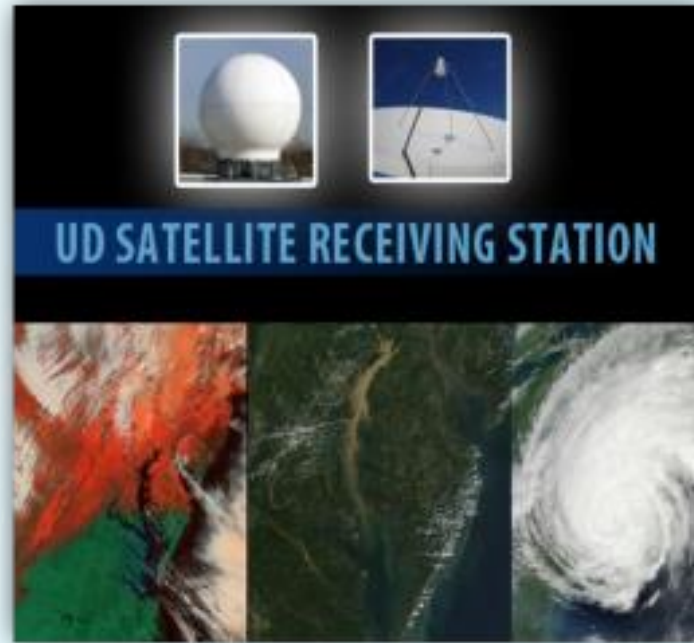
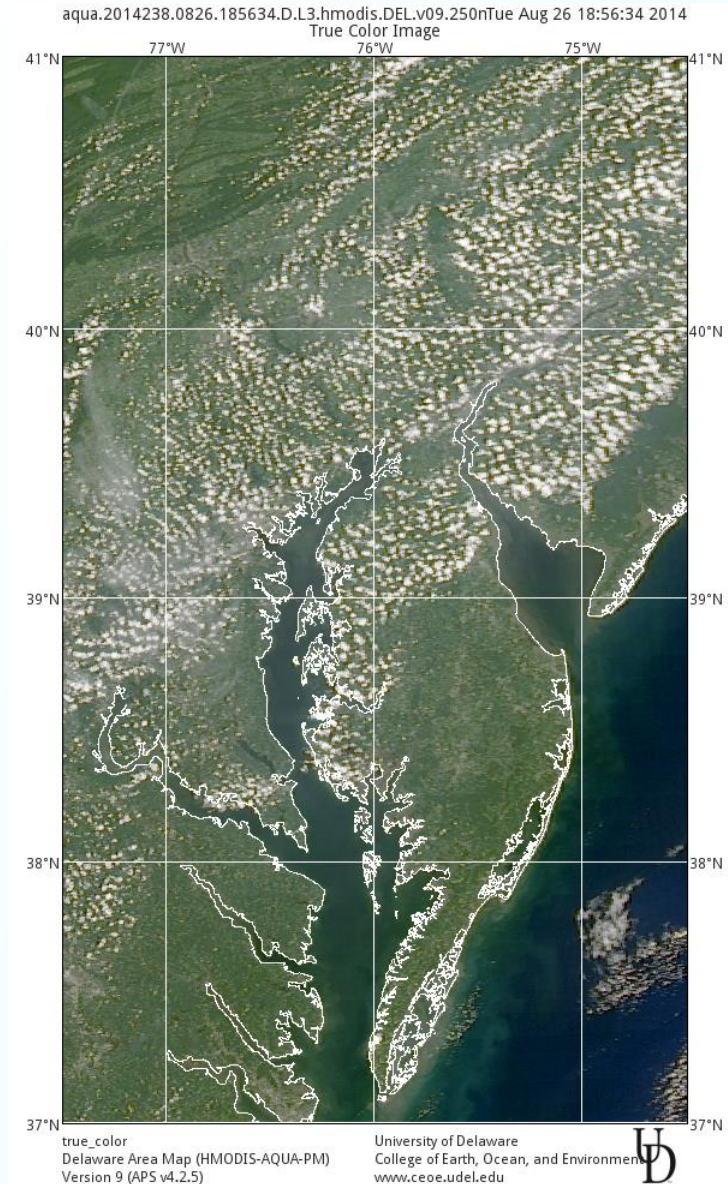
Delaware Precipitation Departure 2020



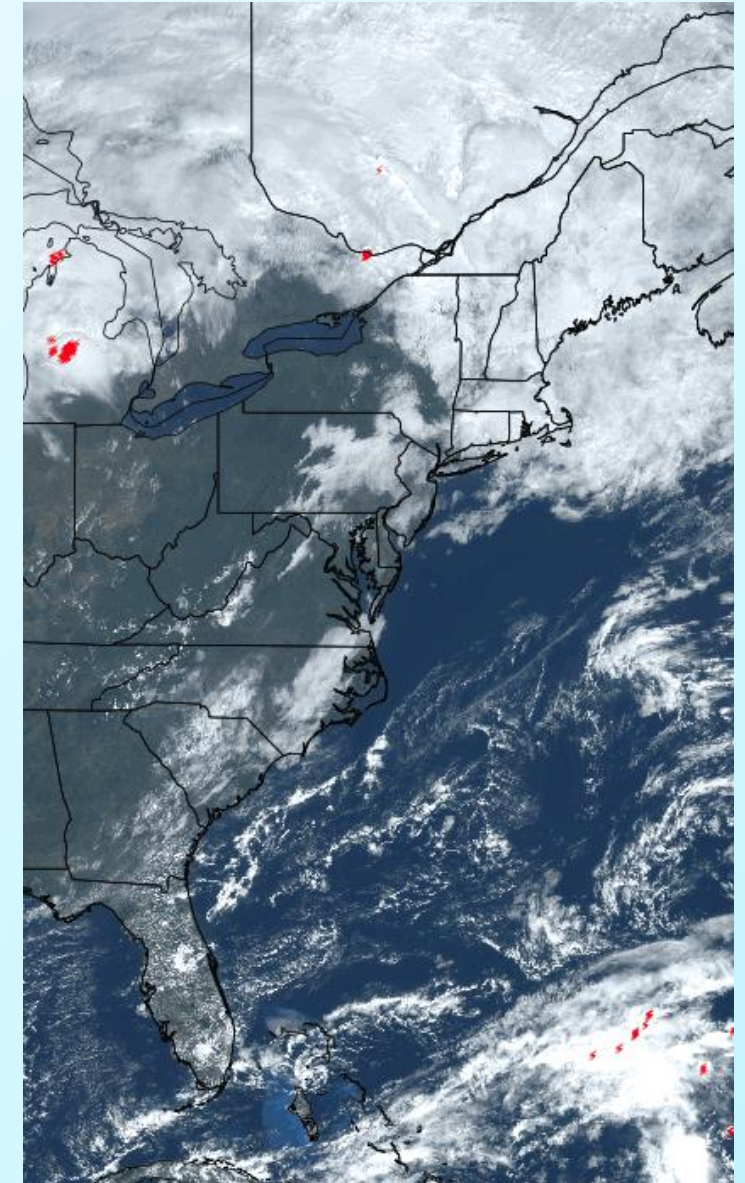
Accumulated Sussex County Radar Precipitation Vs. "Normal"

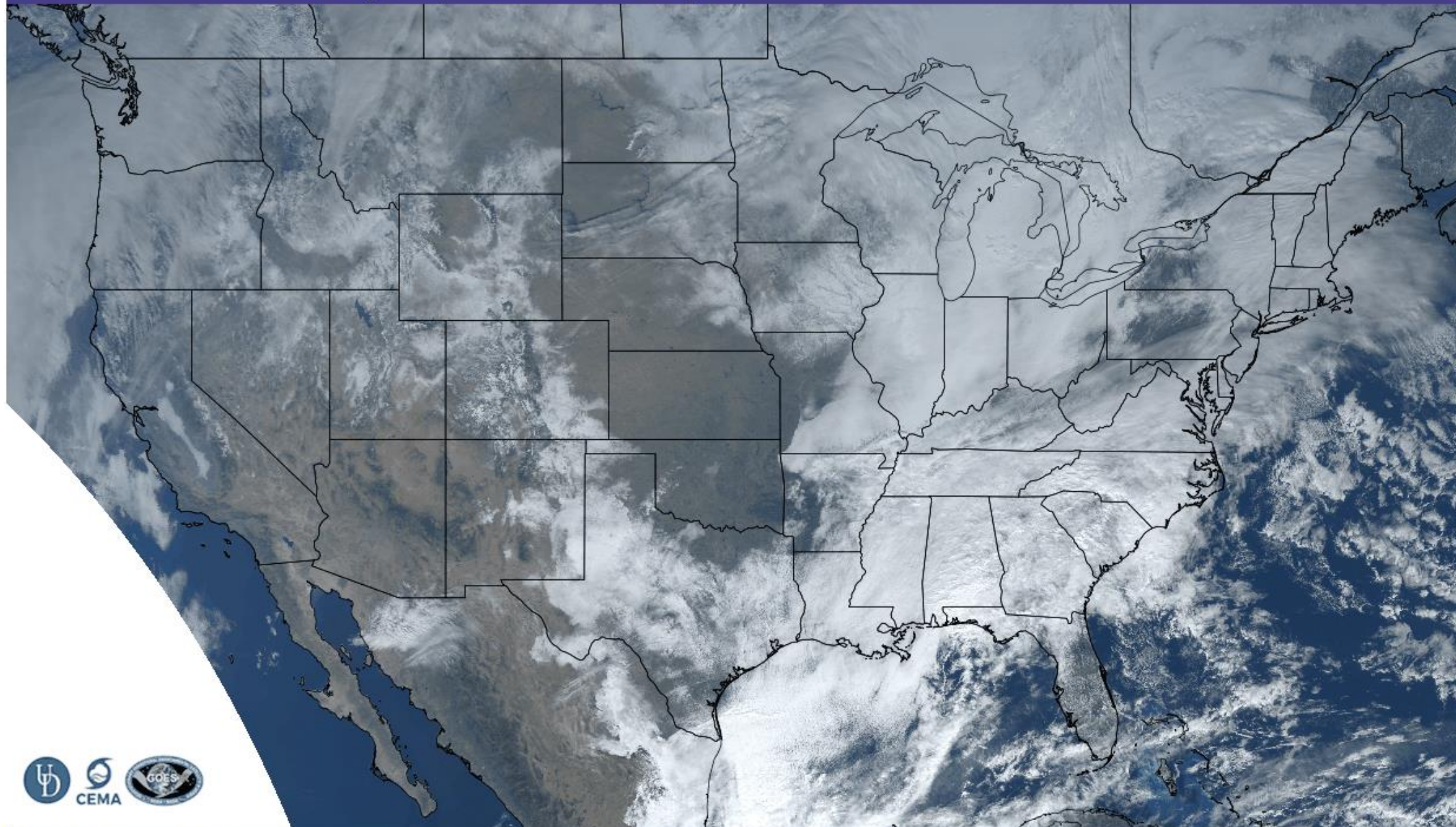


UD Satellite Receiving Station (part of CEMA)

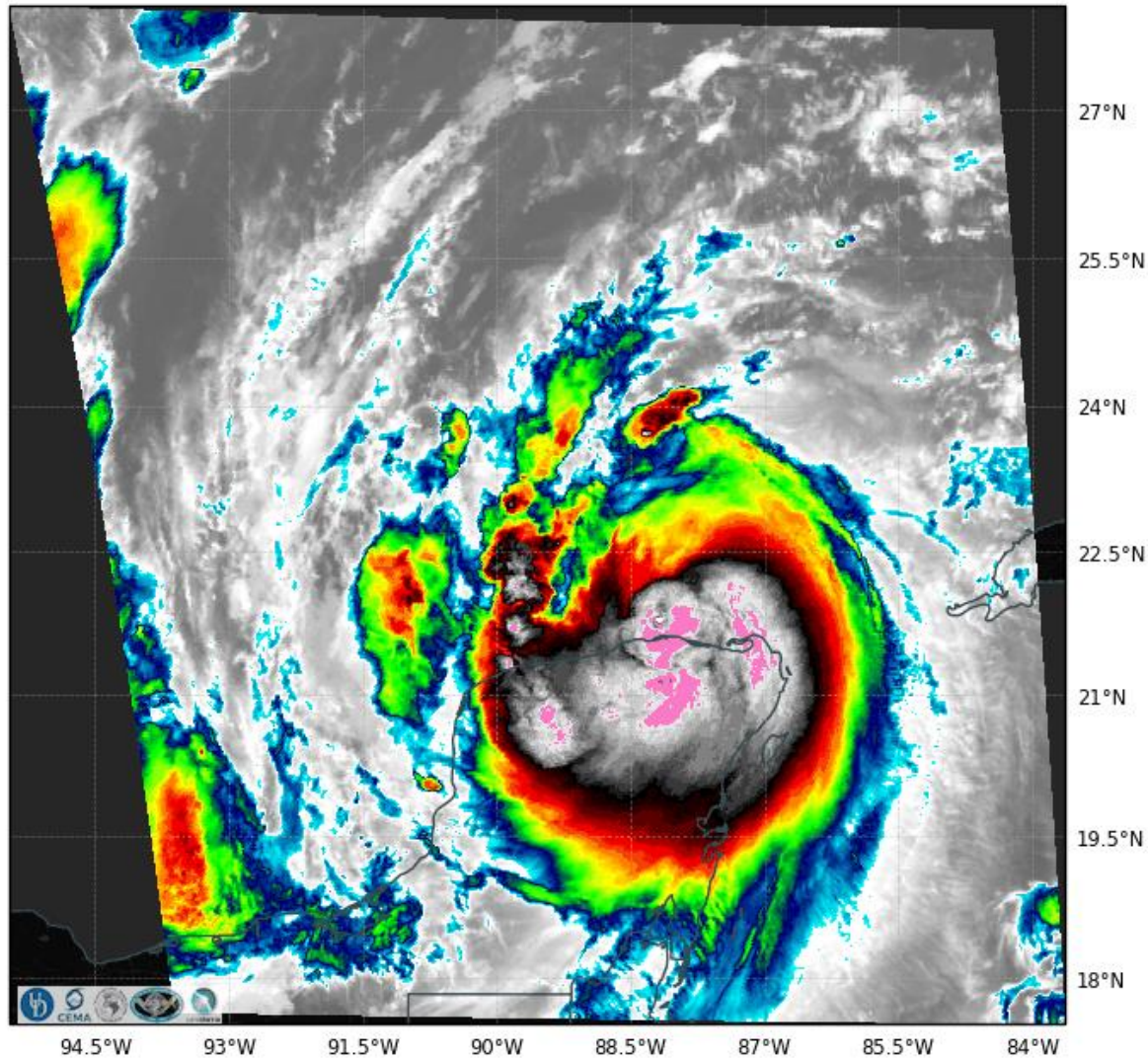


Real-Time
Polar Orbiting &
Geosynchronous

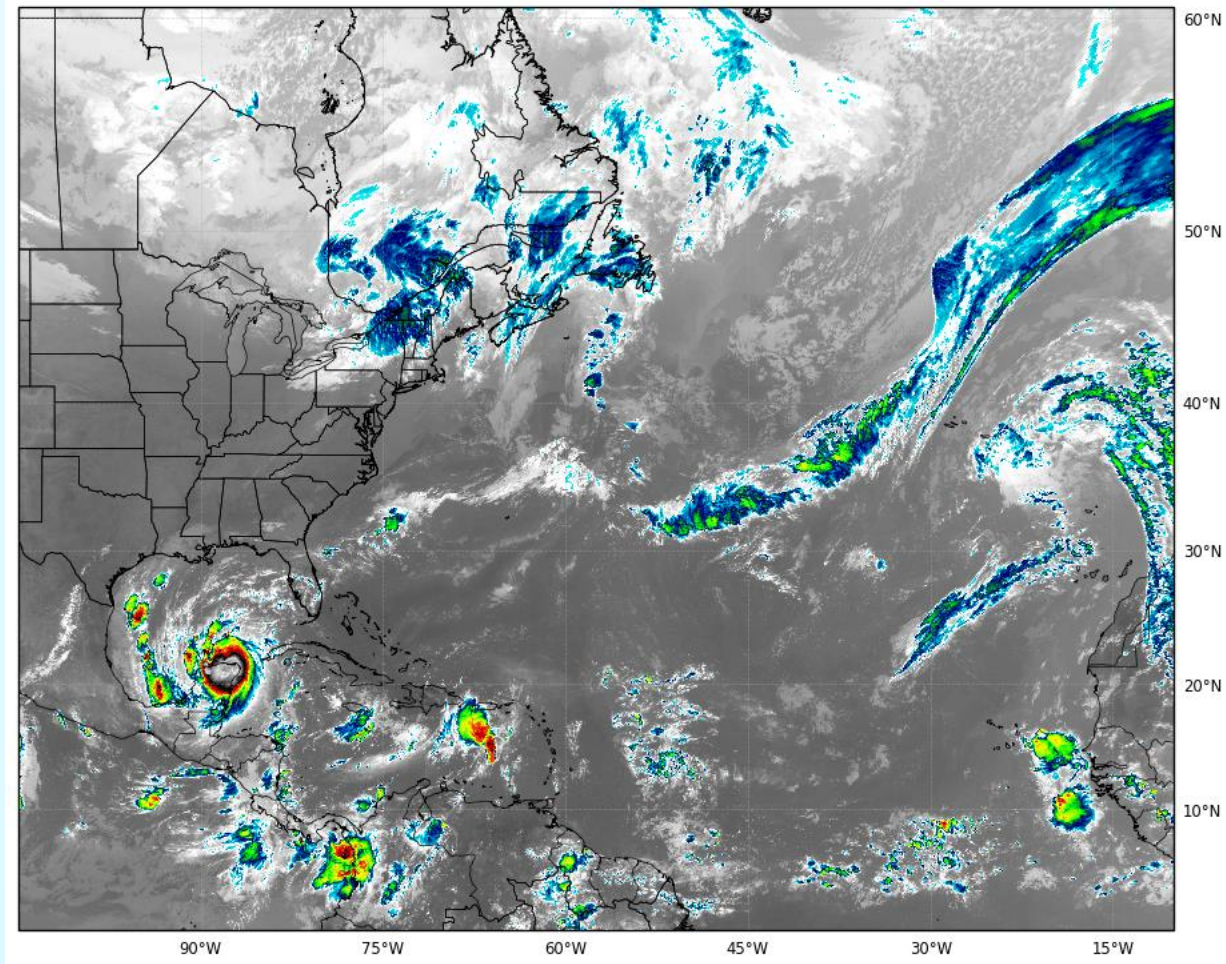




GOES16 Mesoscale 1 - Powered By CEMA
2020-10-07 11:25 EST

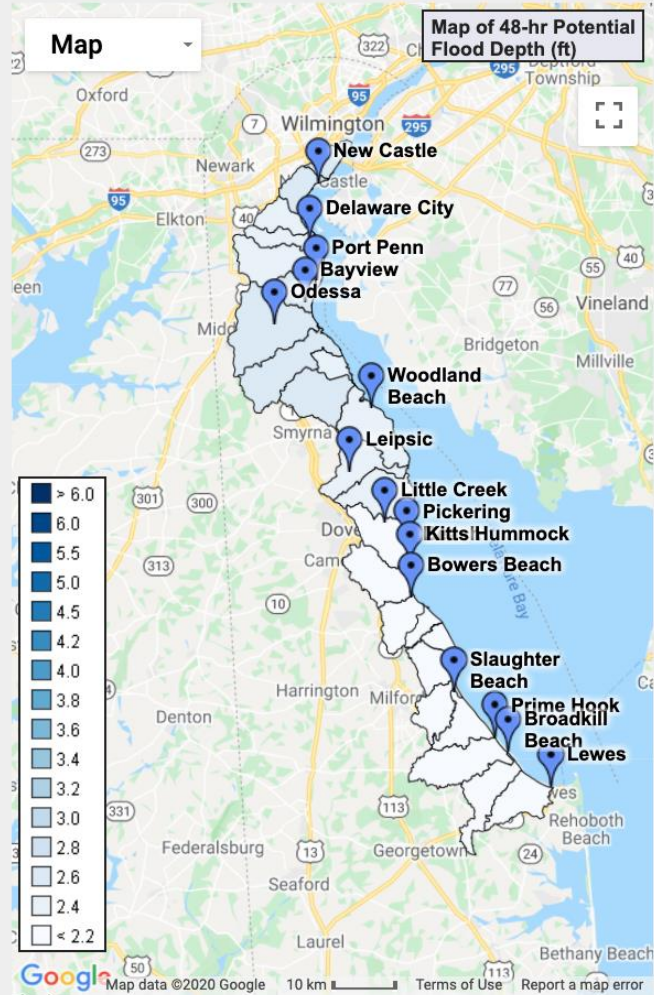


GOES16 Atlantic Basin
2020-10-07 10:49 EST



Delaware Coastal Flood Monitoring System

Home Current Flood Maps Tide Gages Tide Forecast Weather Forecast Resources FAQ



Show inundation map and more details for:
 Select A Community

Delaware Coastal Conditions 48hr Forecast

Updated: October 8, 2020 12:00 pm

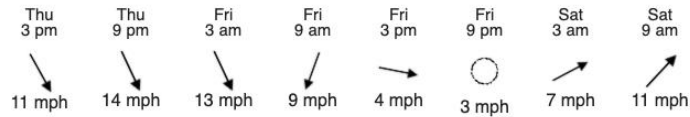


Regional
NWS Alert
Map

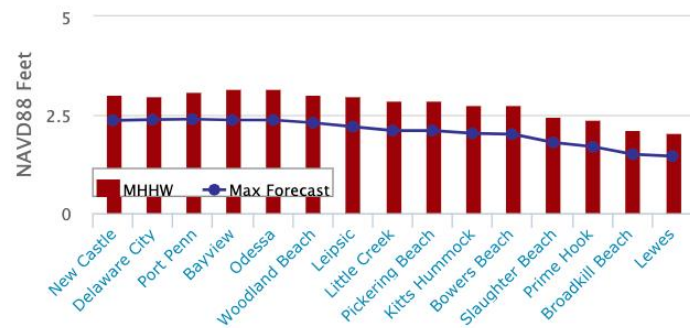


0 active
NWS warnings

Average Wind Direction and Speed



Maximum Water Level Height



Moon Phase



67%
Waning Gibbous

Upcoming High Tides

Reedy Point

Fri 10/09 04:39 AM
 Fri 10/09 04:44 PM
 Sat 10/10 05:41 AM
 Sat 10/10 05:51 PM

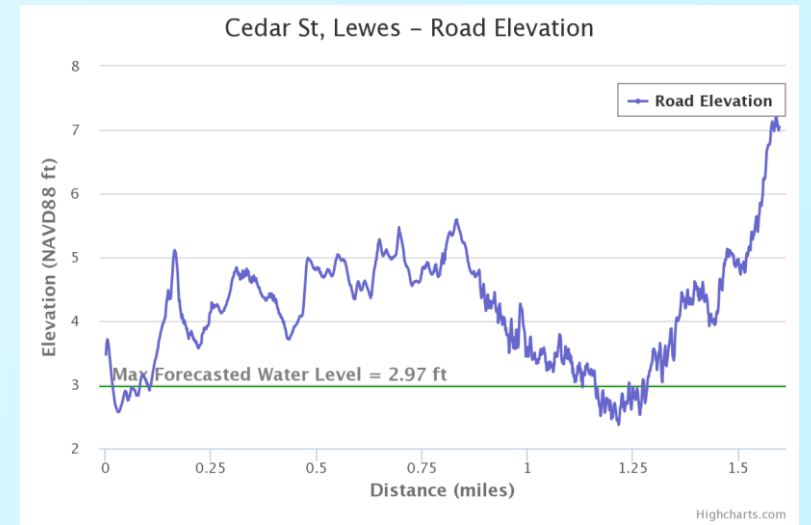
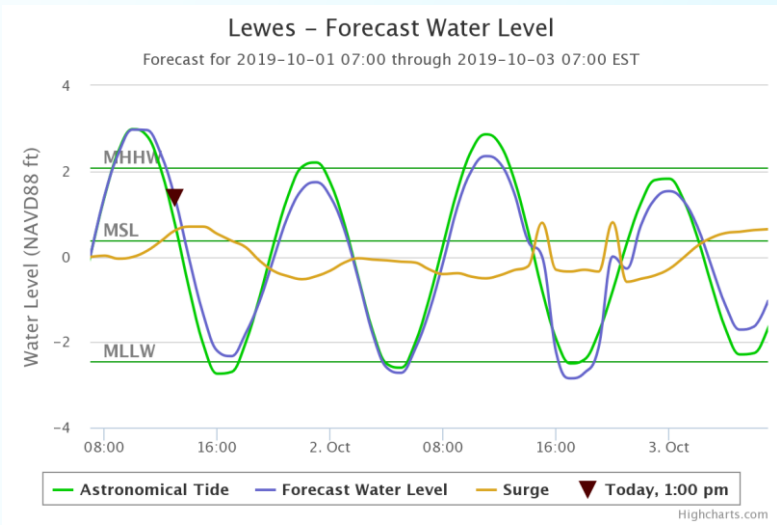
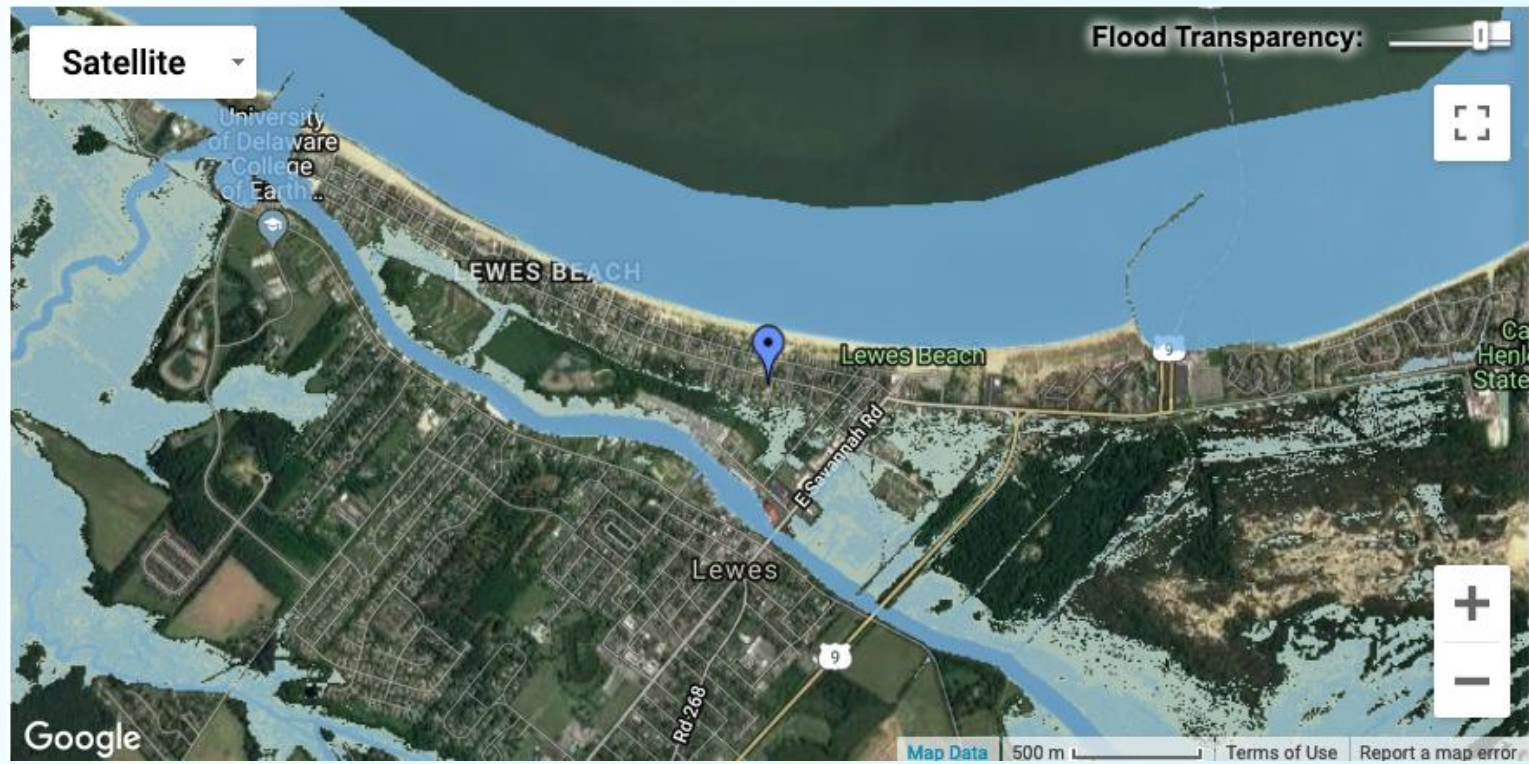
Lewes

Fri 10/09 02:03 AM
 Fri 10/09 02:29 PM
 Sat 10/10 03:03 AM
 Sat 10/10 03:30 PM

Delaware Coastal Flood Monitoring System

Providing flood predictions at the community level from New Castle to Lewes out to 48 hours.

- Early warning ALERTS System
- Serves 15 coastal communities
- Storm inundation mapping for communities and important roadways



Water Quality Monitoring

Home
About
Contact

Delaware Water Quality Portal

242 Items

Map
Satellite

Draw Watersheds
 Full State Zoom
 Search Data
 Bookmark
 Reset

Station Type

- 27 Beach
- 22 Boat Run
- 53 CMP
- 140 General

Select a Basin

- 30 Chesapeake Bay
- 107 Delaware Bay and Estuary Basin
- 83 Inland Bays
- 22 Piedmont

Select a Watershed

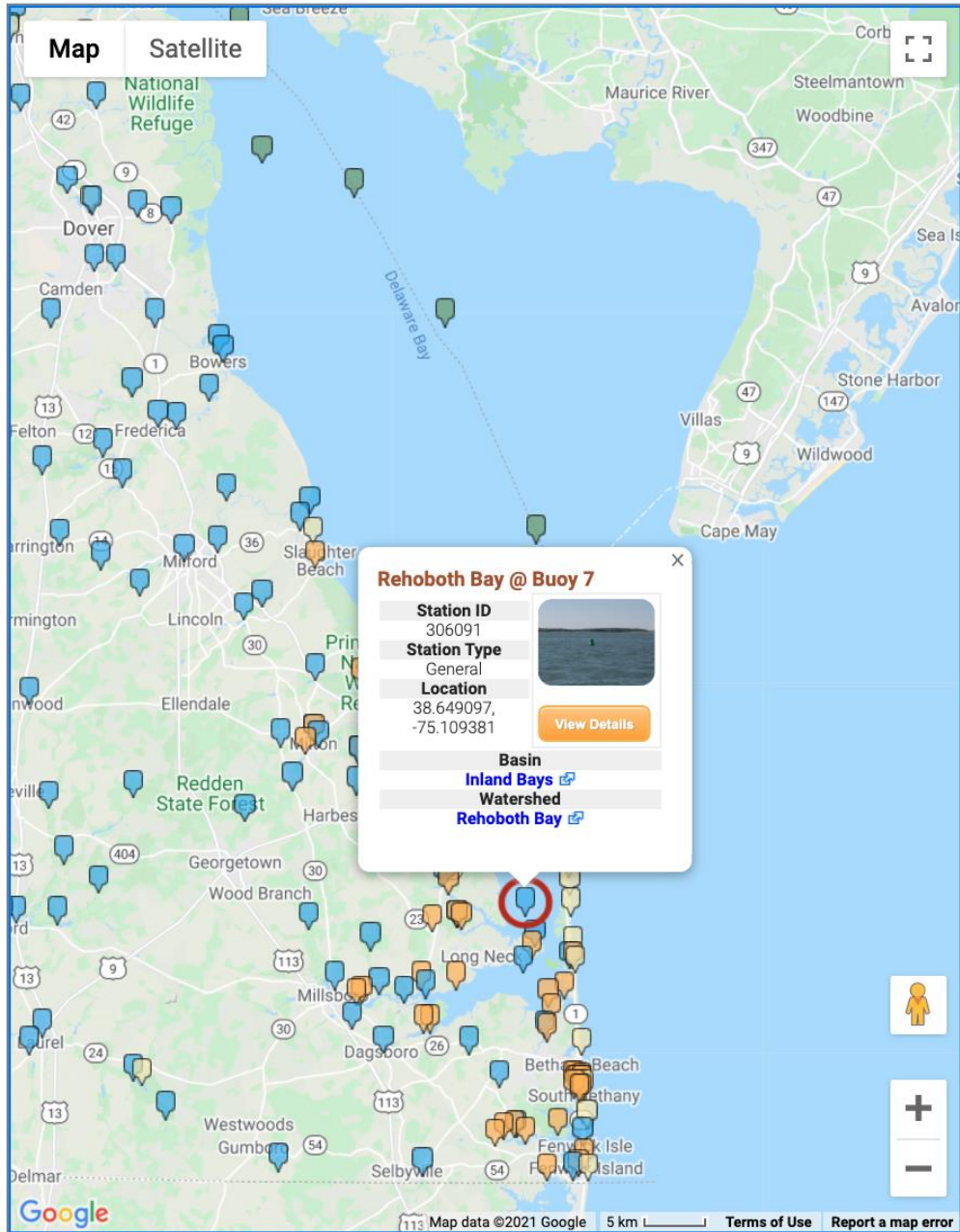
- 8 Appoquinimink River
- 4 Army Creek
- 1 Assawoman Bay
- 3 Blackbird Creek
- 3 Brandywine Creek
- 6 Broad Creek

Data Table

242 Items

Zoom	Station ID	Name
	AB01	Bayside Point Pier
	842777	Town of Fenwick
	310011	Little Assawoman Bay @ Rt. 54 (The Ditch)
	LA46	Fenwick Island Tide Gauge
	311041	Buntings Branch @ Fenwick Rd. (Rt. 54)
	313011	Pocomoke River @ Bethel Rd. (Rd. 419)
	LA48	W. Georgetown St. Canal - Fenwick
	LA29	Upper Dirickson Creek @ Rt20
	310071	Little Assawoman Bay Mid-Bay (Ocean Park Lane)
	LA06	Swan Cove-pier
	LA38	The Hamlet at Dirickson Pond
	LA09	Dirickson Creek at Road 381 bridge.
	310031	Dirickson Creek @ Old Mill Bridge Rd. (Rd. 381)
	LA03	Mulberry Landing
	481609	Fenwick Island State Park Beach
	304671	Raccoon Prong @ Pepperbox Rd. (Rd. 66)

Beach
 Boat Run
 CMP
 General



Station Type

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Select a Basin

- 30 Chesapeake Bay
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Select a Watershed

- 8 Appoquinimink River
- 4 Army Creek
- 1 Assawoman Bay
- 3 Blackbird Creek
- 3 Brandywine Creek
- 6 Broad Creek

Data Table 306091 x

Station Information

Station ID: 306091
Station Name: Rehoboth Bay @ Buoy 7
Period of Record: Mar 09, 2000 - Jan 15, 2020
Basin: [Inland Bays](#)
Watershed: [Rehoboth Bay](#)
[View Historical Station Data](#)
[Download Historical Station Data \(.csv\)](#)



- [Zoom to this station](#)
- [Highlight Location](#)

Latest Water Quality Samples

Parameter	Value	ResultType	Date
Water Temp	9.1 °C	Actual	Jan 14, 2020
pH	8.0	Actual	Jan 14, 2020
Salinity	29.20 ppt	Actual	Jan 14, 2020
Enterococcus	5.0 cfu/100 ml	Actual	Jan 14, 2020
Dissolved Oxygen	9.47 mg/l	Actual	Jan 14, 2020
Total Nitrogen	0.31 mg/l	Actual	Jan 14, 2020
Total Phosphorus	0.03 mg/l	Actual	Jan 14, 2020
Chlorophyll A	8.82 µg/l	Actual	Jan 14, 2020
Total Suspended Solids	11.8 mg/l	Actual	Jan 14, 2020

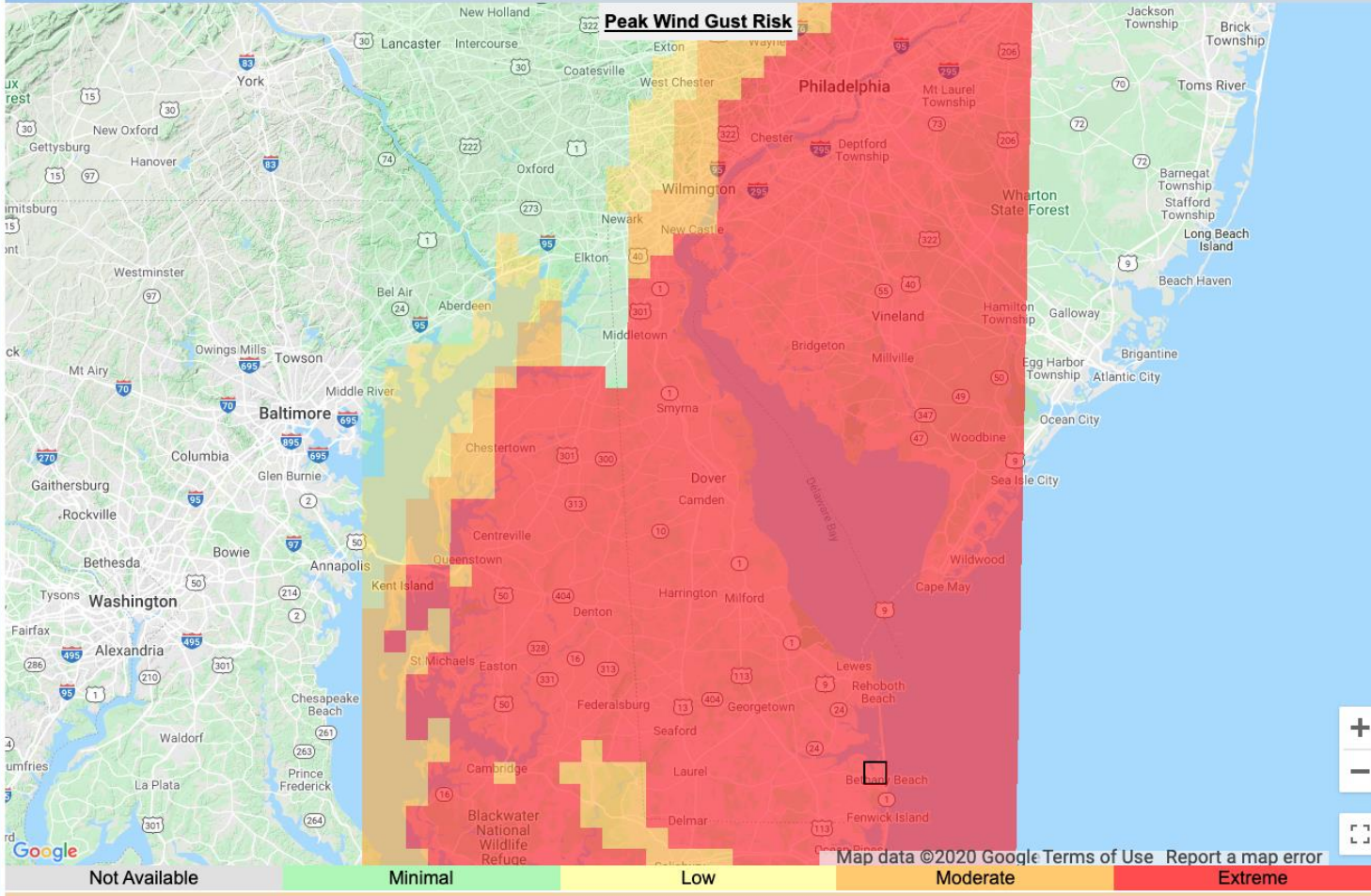
The Delaware Weather Hazards Index (DWHI)

Hurricane Isaias Example

Delaware Weather Hazard Index

Valid Through: 8/05/2020 9:57 am

48 Hour Potential Threats:



Max Heat Index: ☀️ 96°F
Min Apparent Temp: 🌬️🌡️ 74°F
Max Wind Gust: 🌬️ 74mph
Total Rainfall: 💧 1.66in
Snow: ❄️ 0in
Ice: ❄️❄️❄️ 0in
Convective Outlook: ⚡ Marginal
Coastal Water Level: 🌊 2ft

Map data ©2020 Google Terms of Use Report a map error

Agriculture



DIMS has been used to manage over 100 pivot systems per year over the last several years.

- Online irrigation management system (DIMS).
- Real-time and daily soil moisture and soil temperature data for 30 DEOS stations.
- Daily Ag-centric statistics provided (growing degree days, evapotranspiration, etc.) for all DEOS stations.



Delaware Climate Projections Portal



Dover ▼

Station ID: [USC00072730](#)

Location: 39.2583,-75.5167

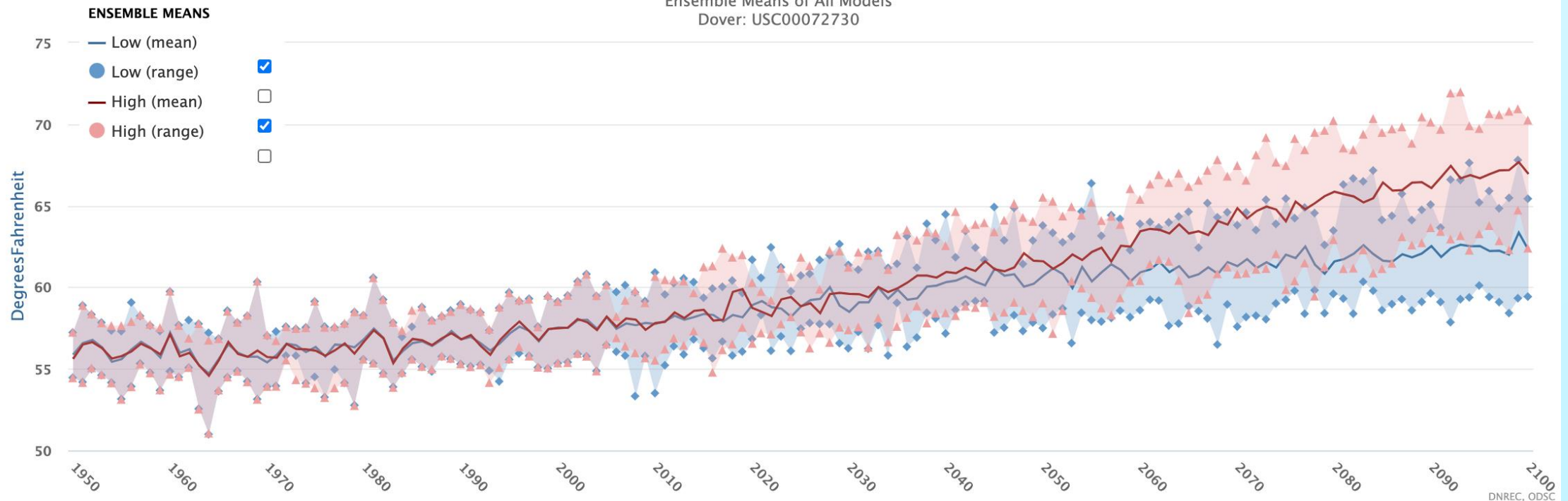
Elevation: 9.1 m

Average Temperature ▼

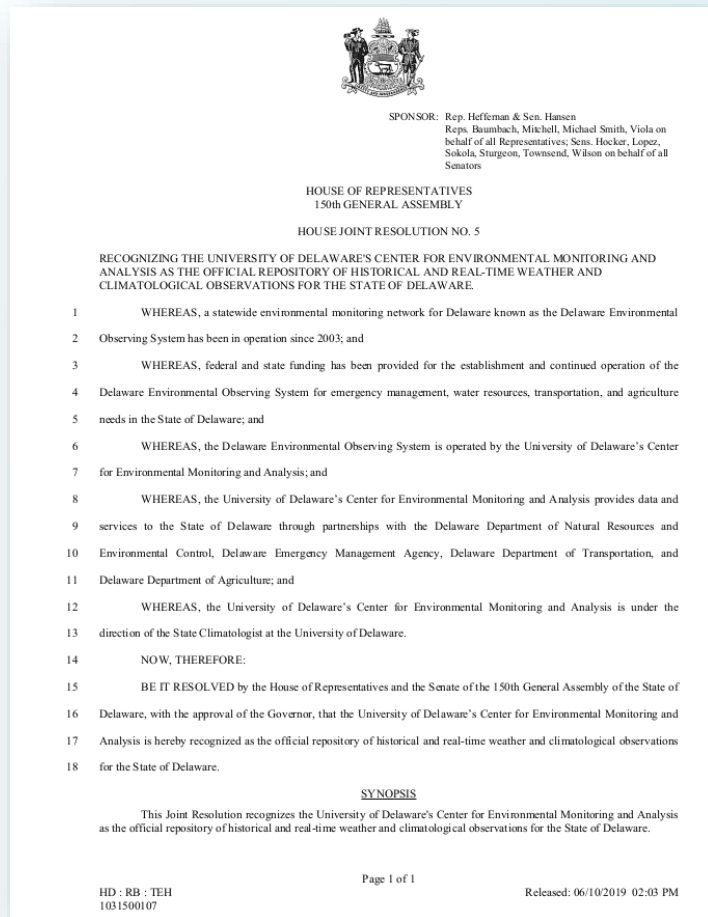
The average temperature value in a given time period (daily;seasonal; or annual). This is calculated by taking the sum of the maximum and minimum temperature values for the given time period and dividing that value by 2.

Average Temperature

Ensemble Means of All Models
Dover: USC00072730



Official Recognition from the State of Delaware



Effective July 17, 2019:

“The University of Delaware Center for Environmental Monitoring and Analysis is hereby recognized as the official repository of historical and real-time weather and climatological observations for the State of Delaware.”

- HJR 5 (150th General Assembly of Delaware)



Questions or Comments?

CEMA Website (general info):

<http://cema.udel.edu>

Real-time Environmental Conditions for Delaware:

<http://www.deos.udel.edu>

Satellite Receiving Station:

<http://udsrs.udel.edu/>

Delaware Coastal Flood Monitoring System:

<http://coastal-flood.udel.edu/>

Delaware Water Quality Portal

<http://demac.udel.edu/waterquality/>

Weather Hazards Index for Delaware:

<http://deos.udel.edu/dwhi/>

Delaware Climate Change Projections Portal:

<http://cema.udel.edu/declimateprojections/>

