GULF ATLANTIC COASTAL PLAIN (GACP)

Location and Climate

The Gulf Atlantic Coastal Plain (GACP) lies within the Atlantic Coastal Plain and is within the USDA Southeast Climate Hub region. The climate is generally representative of the humid subtropical Level III Southeastern Plains ecoregion.

Historic Temperature

Historic average annual temperature in Tift County, GA (1981-2010) is 65°F. Mean maximum temperature is highest in July (91°F) and mean minimum temperature is lowest in January (37°F).

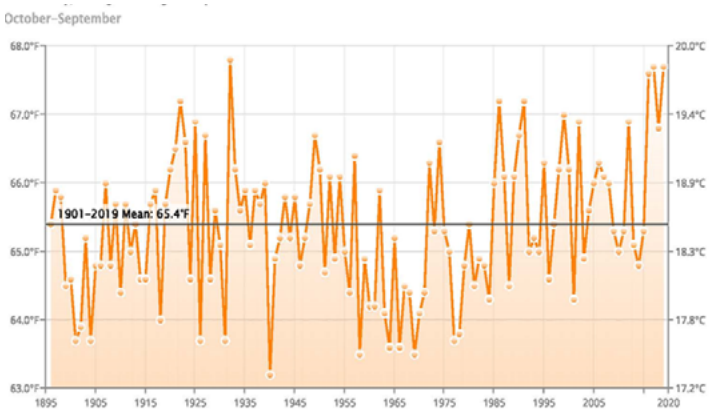
Historic Precipitation

Long-term average (1981-2010) annual precipitation is 47 inches in Tift County, GA. The least rainfall occurs in October with a monthly historic mean of 2.7 inches, while the greatest rainfall is typically in July with a monthly mean of 5.2 inches.

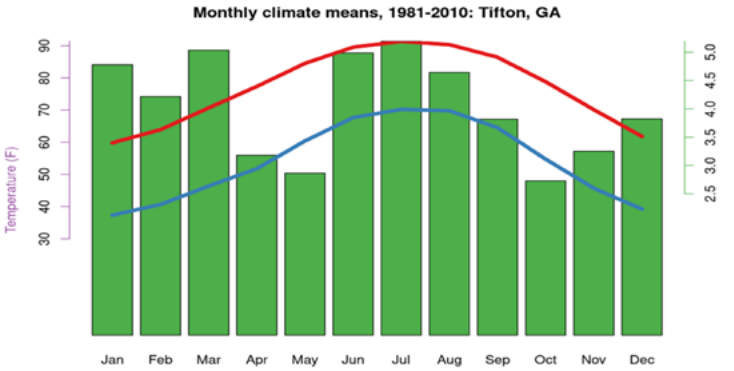
Growing Season

The effective growing season, when both precipitation and temperature are favorable, is normally May through October. However, cool season vegetables and winter covers are grown from fall until spring.

LTAR Network and USDA Climate Hubs are working to develop knowledge and technology for sound resource management **via research with partners.** The goal is to ensure **sustained crop and livestock production and ecosystem services** from agroecosystems, and to forecast and verify the effects of environmental changes, public policies, and emerging technologies.



Average annual temperature variation as compared to mean temperature 1901-2000 (credit: NOAA).



Max and Min temperature and mean precipitation 1981 -2010 (credit: Climate Toolbox).

Measuring Weather and Climate

The climate of the GACP is subtropical, with hot and humid summers and cool winters with few hard freezes. Annual precipitation is generally high, heavily influenced by intense short duration highly localized afternoon convective thunderstorms. Tropical depressions originating in the Gulf of Mexico can generate high precipitation. Drought conditions are relatively common, although generally short duration (1-3 yrs). Precipitation patterns in the region are strongly influenced by the position of the Bermuda High and phases of the El-Nino- Southern Oscillation

Impacts to Agriculture

Agriculture in the Southeast is some of the most diverse in the U.S., producing timber, food, and fiber. Farmers, ranchers, and foresters are feeling the pressures of a changing climate and weather variability. Droughts lead to reduced forage, crop losses, and tree mortality. Severe weather, primarily in the spring and summer, can cause crop damage due to hail and strong winds. However, the diversity of agriculture across the Southeast make the it more resilient to climate change.

For more information visit https://ltar.ars.usda.gov/sites/gacp/

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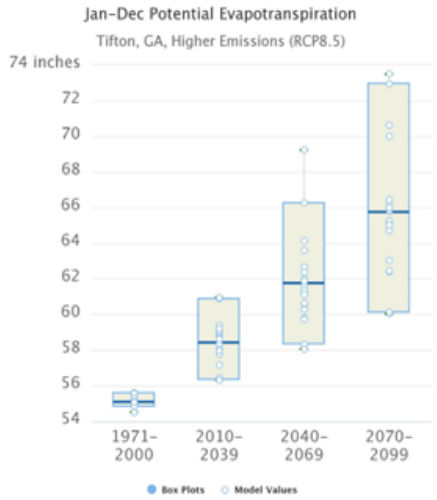
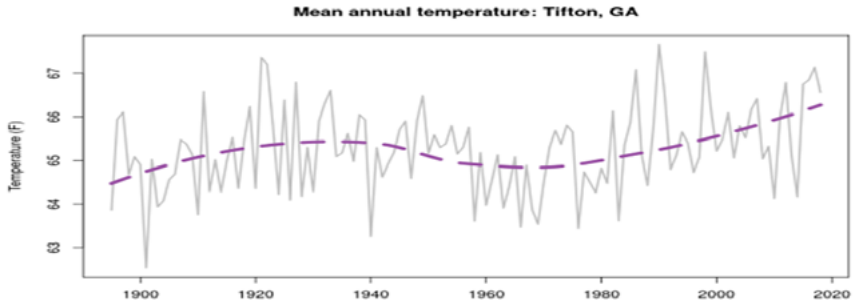
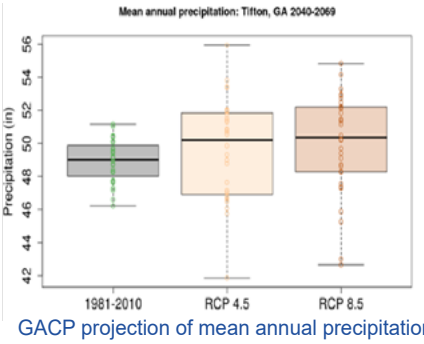


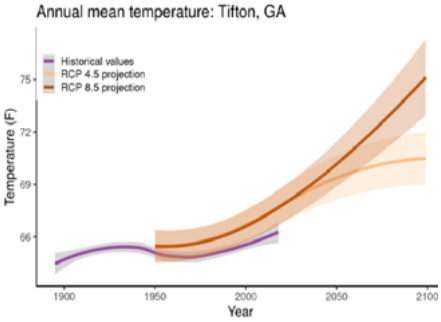
GACP future climate projections (credit: Climate Toolbox).



GACP mean annual temperature (F), 1895-2018



GACP projection of mean annual precipitation 2040-2069. Projected to become more variable and increase.



GACP mean annual temperature projections

Climate and Climate Change

(a) Evapotranspiration is projected to continue to increase at GACP (b) while summer time precipitation is projected to become more variable and decrease. As a result, crop production of summer growth food and fiber will become more difficult. Irrigation is a tool used to buffer against periods of low precipitation in the Southeast. The use of irrigation in the region has been increasing as farmers recognize its potential for improving yields and sustaining crops during periods of dry weather. As a result of these patterns in climate, irrigation demands throughout the region are expected to increase, increasing regional surface and groundwater demands.

To manage land sustainably, consider weather and climate.

Cropping Systems

- Increase organic matter to improve water holding capacity
- Increase use of conservation tillage and winter covers
- Increase microbial biomass and nutrient cycling
- Enhance biological diversity
- Increase irrigation efficiency

Grazing Systems

- Establish eleven month, full landscape coverage
- Increase water and nutrient efficiency
- Increase pest, pathogen, and drought resistance.

Landscape and Forest Systems

- Optimize for multi-year returns
- Develop innovative IPM and low-input pest control approaches
- Incorporate biofuels and winter crops
- Bring marginal lands into production
- Increase land use efficiency

USDA Southeast Climate Hub
U.S. Department of Agriculture

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Figure credit: Dr. Sarah Goslee

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