

Chattahoochee River National Recreation Area

National Park Service
U.S. Department of the Interior

Inventory & Monitoring Program
Southeast Coast Network



Summary of Stream Flow Conditions, 2010

Vital Sign Overview

Evaluation of stream flow characteristics offers some of the most appropriate and useful indicators for assessing aquatic ecosystem integrity, and for monitoring environmental changes over time. It also provides key support data for other vital signs indicators including water quality, threatened and endangered aquatic species, wetlands, and riparian habitat. The large amount of uncertainty associated with many projections for changes in water availability due to climate change means that more data is likely needed before the direction and magnitude of the influence can be measured. In order to evaluate the significance of changes in flow regimes due to naturally occurring and/or regulated conditions, the National Park Service Southeast Coast Network (SECN) began harvesting relevant data sets collected at selected sites and disseminating this data to Network parks in the context of historical flow characteristics and/or park specific flow thresholds. This report provides a summary of flow conditions and provides information on overall flow variability as well as the seasonality and timing of ecologically relevant flow events in rivers near or adjacent to SECN parks.

Significant Findings

Daily flows were never below the State threshold of 650 cfs at river mile 300.5 at Peachtree Creek during 2010. However, flows near this point were below the 750 cfs management target identified in the resource stewardship strategy (RSS) for a total of 17 days.

Low flow magnitudes dipped to their lowest levels during late summer at most parks with the exception those on the Chattahoochee where some of the lowest low flows were observed during the winter months just below Buford Dam when releases from the dam are at their lowest (Table 1).

Flows below Buford Dam on the Chattahoochee River were characterized as the “flashiest” large river

system in the SECN and had more than twice as many maximum and minimum pulse events than any of the other rivers in this analysis.

River flows along sections of the Chattahoochee were less than ideal (below 750 cfs) from 0–20% of the time; low flows were more common on section 3 than on sections 2 and 4 and may indicate a section where water withdrawals may have impacted recreational uses during the late summer and fall.

High flows (greater than 2,000 cfs; Figure 1) which impaired some fishing activities and allowed only midlevel paddling activities occurred approximately 28% of the time on section 1, 33% of the time on sections 2 and 3, and 42% of the time on section 4.

Status of Conditions – Median and Low Flow Magnitude

Table 1. Monthly median and low flow magnitudes for Chattahoochee River National Recreation Area during 2010. Darker blue color indicates higher flow magnitude in cubic feet per second (cfs).

USGS ID	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Median Flow												
2334430	3060	5205	3360	1250	2940	1430	1230	1680	1060	1270	1220	1010
2335000	3220	5820	3570	1325	2710	1460	1390	1700	1140	1210	1180	1020
2335450	3870	6615	3550	1580	2800	1430	1230	1530	905	1140	1170	1050
2336000	4050	7635	4540	1865	3340	1610	1380	1620	1175	1330	1450	1310
Low Flow												
2334430	626	613	661.5	1195	644	1410	1200	1680	1060	1270	1220	1010
2335000	2345	1590	1965	1325	1905	1460	1390	1700	1140	1220	1220	1070
2335450	1645	1026	1850	1410	1400	1470	1270	1560	921	1310	1280	1060
2336000	2280	1300	2180	1660	1800	1720	1390	1615	1430	1510	1550	1350

Status of Conditions – Monthly Flows

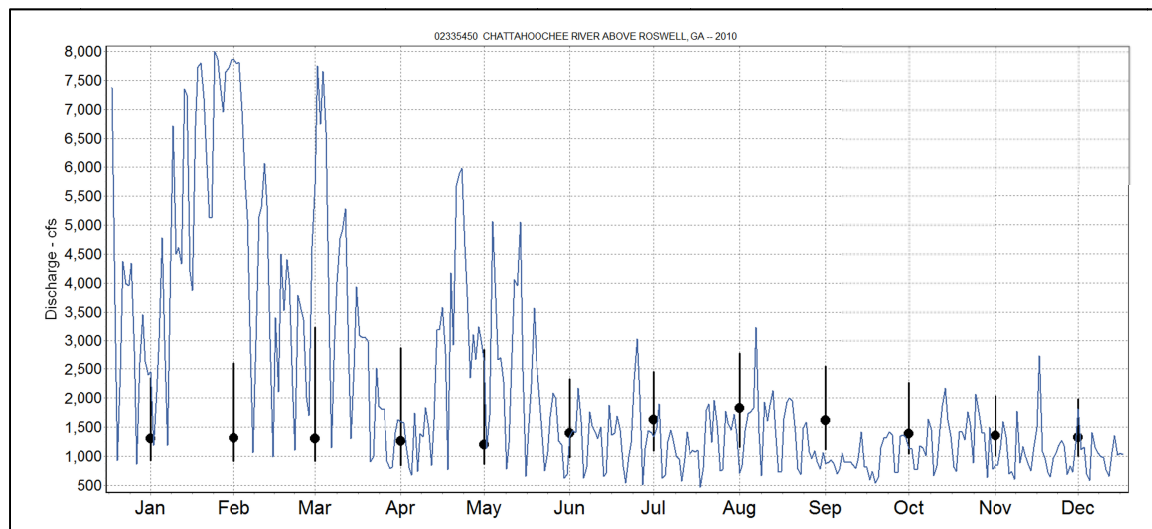


Figure 1. Daily flow (blue line), historical median monthly flow (dots) and interquartile range (25th and 75th percentiles; error bars) for the Chattahoochee River above Roswell, GA during 2010.

Sampling Area

The Chattahoochee River National Recreation Area is made up of 6,800 acres of mixed pine/hardwood forests and wetlands that buffer 48 miles of the Chattahoochee River (Figure 2). Surface water bodies within the park include the following: Chattahoochee River and associated tributaries, Bull Sluice Lake, Sibley Pond (in the Cochran Shoals unit), and Island Ford Pond. Upstream of the park is Buford Dam that impounds Lake Lanier. Water released from Lake Lanier through Buford Dam into the Chattahoochee River flows from the lower strata of the lake (hypolimnion during the stratification period). The dam also regulates the flow within CHAT. Current regulations require that the flow be 750 cfs at the confluence of the Chattahoochee River and Peachtree Creek; however, beginning in 2008 Georgia EPD allowed this standard to be lowered by 100 cfs during droughts to preserve storage in Lake Lanier.

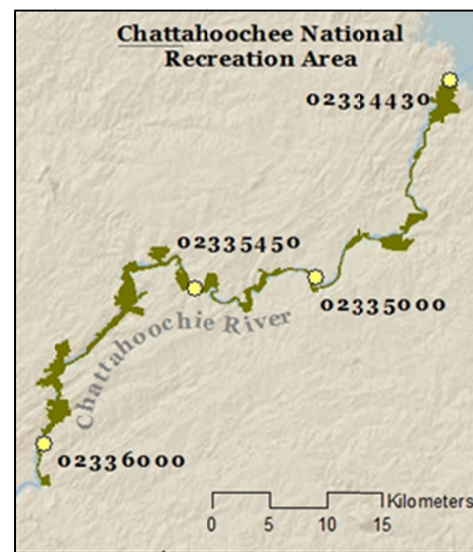


Figure 2. Chattahoochee National Recreation Area and USGS gages used in this report.

About the Southeast Coast Network

The Southeast Coast Network (SECN) includes twenty parks, seventeen of which contain significant and diverse natural resources. In total, SECN parks encompass more than 184,000 acres of federally-managed land across North Carolina, South Carolina, Georgia, Alabama, and Florida. The parks span a wide diversity of cultural missions also, including four national seashores, two national historic sites,

two national memorials, seven national monuments, two national military parks, as well as a national recreation area, national battlefield and an ecological and historic preserve. The parks range in size from slightly more than 20 to nearly 60,000 acres, and when considered with non-federal lands jointly managed with NPS, the Network encompasses more than 253,000 acres.

For More Information

SECN Home Page: <http://science.nature.nps.gov/im/units/secn/index.cfm>

SECN Reports & Publications: <http://science.nature.nps.gov/im/units/SECN/reports.cfm>

Inventory & Monitoring Program: <http://science.nature.nps.gov/im/index.cfm>

Data Downloads via the Natural Resource Information Portal: <http://nrinfo.nps.gov/Home.mvc>

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