Inventory & Monitoring Reports, 2000-2013

Southeast Coast Network Overview

The Southeast Coast Network (SECN) is one of 32 National Park Service (NPS) Networks established to implement an integrated monitoring program under the Natural Resource Challenge. In 2001, the SECN began planning and implementing its long-term Vital Signs Monitoring Program and completed its long-term monitoring plan in 2008 (DeVivo et al., 2008). Beginning in FY2010, with the new Administration's focus on climate change science, the SECN began planning for enhancing its original program as a part of the U.S. Department of the Interior (DOI) and NPS strategy to improve the ability of resource managers to include climate change science in planning and management.

The SECN contains 20 parks, 17 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 range in size from slightly more than 20 to nearly 60,000 acres, and when considered with non-federal lands jointly managed with SECN parks the Network encompasses more than 253,000 acres.

The following is a catalog of current science products developed by the Inventory and Monitoring Program (I&M) for Ocmulgee National Monument (OCMU; Figure 1).

About the Park

OCMU sits on the "Fall Line" —the transition between the rolling Piedmont and the flat Atlantic Coastal Plain. A portion of the monument is within the city limits of Macon, GA. The Ocmulgee River comprises the boundary on the southwestern side of the monument. The Monument's natural resources have been heavily influenced by human activities including Interstate Highway 16 and its associated berm, which has essentially cut off the river from its floodplain and disrupted the natural flow of the area. Despite this and its proximity to Macon, OCMU has abundant wildlife. This is likely the result of a corridor, known locally as the "Greenway," connecting the monument to other natural areas to the south. Numerous bird species are present in the monument throughout the year. Migratory birds use the area as a stopover site during spring and fall migration. The threatened wood stork (*Mycteria americana*) feeds here during summer months. Numerous other wildlife also live here, including white-tailed deer, beavers, bobcats, alligators, and various reptiles and amphibians. Recreational fishing is allowed with largemouth bass and bream being two common catches. Within the last eight years, coyotes have entered the Monument. What effect this may have on the local ecosystem is unknown.

Threats to the native plants and animals in the Monument result mainly from human activity, and include non-native species invasion, deterioration of water and air quality, development, and the general proximity to the city of Macon. Non-native species are a disruptive influence in the Monument. Non-native invasive plants at OCMU include privet, Japanese honeysuckle, and kudzu. Non-native animal species include nutria, fire ants, feral pigs, as well as domestic dogs and cats. Feral pigs are responsible for a tremendous amount of resource damage in both the main unit and the detached Lamar unit. Fire ants are also a concern and are spreading across the park.

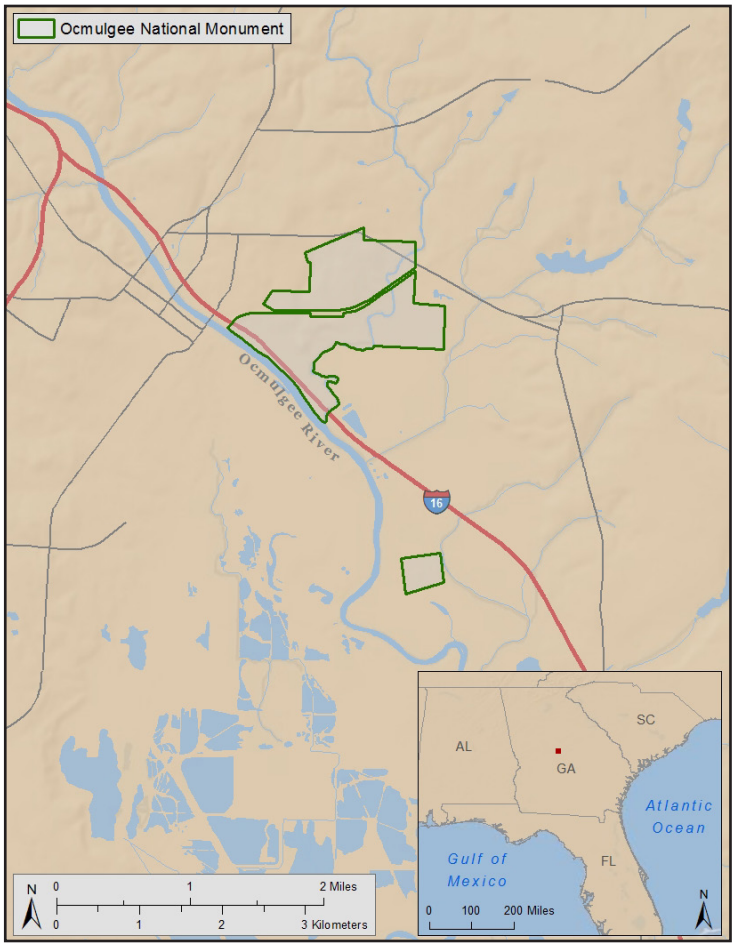


Figure 1. Location of Ocmulgee National Monument, GA.

Program Overview and Planning Documents

DeVivo, J. C., C. J. Wright, M. W. Byrne, E. M. DiDonato, and T. Curtis. 2008. Vital signs monitoring in the Southeast Coast Inventory & Monitoring Network. Natural Resource Report NPS/SECN/NRR—2008/061. National Park Service, Fort Collins, Colorado. (Appendices).

DeVivo, J. C., T. Curtis, M. W. Byrne, M. B. Gregory, and C. J. Wright. 2011. Southeast Coast Network climate science strategy. Natural Resource Report NPS/SECN/NRR—2011/436. National Park Service, Fort Collins, Colorado.

Wright, C. J., J. C. DeVivo, and K. Funk. 2008. Information management and archiving plan, Southeast Coast Inventory and Monitoring Network. Natural Resource Report NPS/SECN/NRR—2008/062. National Park Service, Fort Collins, Colorado. (Appendices).

Inventory & Monitoring Protocols

Monitoring protocols are detailed study plans that explain how data are to be collected, managed, analyzed, and reported. They are a key component of quality assurance for natural resource monitoring programs and are necessary to ensure that changes detected by monitoring efforts are not the result of measurements taken by different people or in slightly different ways over time. The SECN is developing several protocols and associated standard operating procedures, the following of which have been published.

Byrne, M. W., J. C. DeVivo, B. D. Smrekar, L. M. Elston, C. J. Wright, and E. Thompson. 2013. Protocol for monitoring vocal anuran communities in Southeast Coast Network parks. Natural Resource Report NPS/SECN/NRR—2013/720. National Park Service, Fort Collins, Colorado.

Gregory, M. B., J. C. DeVivo, E. M. DiDonato, C. J. Wright, and E. Thompson. 2013. Protocol for monitoring estuarine water and sediment quality in selected Southeast Coast Network parks. Natural Resource Report NPS/SECN/NRR—2013/644. National Park Service, Fort Collins, Colorado.

National Park Service. 2004. Ozone monitoring protocol for the National Park Service. Report No. NPS D-1654. National Park Service, Air Resources Division, Lakewood, Colorado.

Rasmussen, T. C., J. F. Dowd, R. J. McKinnon, B. M. Price, and R. D. Sherrell. 2009. Southeast Coast Network groundwater monitoring: Protocol development and analysis of existing data. Natural Resource Report NPS/SECN/NRR—2009/126. National Park Service, Fort Collins, Colorado.

Monitoring Data Reports

Data reports are concise reports that summarize the most recent year's data collection efforts as well as highlight any issues of potential concern. All data reports contain a bulleted list of significant findings as part of the executive summary section and are generally published in conjunction with a two-page resource brief containing an abbreviated subset of significant findings along with some limited project information including a broader programmatic overview of the sampling effort. Data reports are produced for all active monitoring efforts undertaken by the I&M program at both the network and national levels.

Air Quality

Sullivan, T. J., G. T. McPherson, T. C. McDonnell, S. D. Mackey, and D. Moore. 2011a. Evaluation of the sensitivity of inventory and monitoring national parks to acidification effects from atmospheric sulfur and nitrogen deposition: Southeast Coast Network (SECN). Natural Resource Report NPS/NRPC/ARD/NRR—2011/375. National Park Service, Denver, Colorado.

Sullivan, T. J., T. C. McDonnell, G. T. McPherson, S. D. Mackey, and D. Moore. 2011b. Evaluation of the sensitivity of inventory and monitoring national parks to nutrient enrichment effects from atmospheric nitrogen deposition: Southeast Coast Network (SECN). Natural Resource Report NPS/NRPC/ARD/NRR—2011/329. National Park Service, Denver, Colorado.

Weather and Climate

Fisichelli, N. 2013. Climate change trends for planning at Ocmulgee National Monument, Georgia. National Park Service Climate Change Response Program. Fort Collins, Colorado. Published Report-2195834.

Wright, C. J. 2012. Summary of weather and climate monitoring in Southeast Coast Network parks, 2011. Natural Resource Data Series NPS/SECN/NRDS—2012/365. National Park Service, Fort Collins, Colorado.

Wright, C. J. 2013. Summary of weather and climate monitoring in Southeast Coast Network parks, 2012. Natural Resource Data Series NPS/SECN/NRDS—2013/477. National Park Service, Fort Collins, Colorado.

Wright, C. J., E. Thompson, B. A. Blankley, M. W. Byrne, T. Curtis, and M. B. Gregory. 2011. Summary of weather and climate monitoring in Southeast Coast Network parks, 2012. Natural Resource Data Series NPS/SECN/NRDS—2011/309. National Park Service, Fort Collins, Colorado.

Sediment Quality Assessment

Burkholder, J. M., E. H. Allen, and C. A. Kinder. 2010. Assessment of water resources and watershed conditions in Ocmulgee National Monument, Georgia. Natural Resource Report NPS/SECN/NRR—2010/276. National Park Service, Fort Collins, Colorado.

Gregory, M. B., C. J. Wright, C. D. Jones, J. F. Dowd, and J. C. DeVivo. 2012. Summary of stream flow conditions at five river parks in the Southeast Coast Network, 2010. Natural Resource Data Series NPS/SECN/NRDS—2012/313. National Park Service, Fort Collins, Colorado.

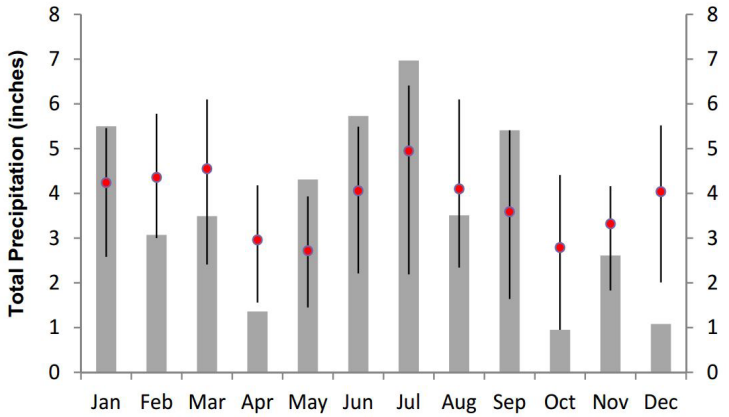


Figure 2. Total monthly precipitation during 2010 and the 30-year (1981 - 2010) monthly averages for Macon Middle Georgia Regional Airport station. The gray columns represent 2010 total monthly precipitation. The red circles represent he 30-year average; the lines indicate the 25th and 75th percentiles for each month of the 30-year period.



Figure 3. Tree swallow (*Tachycineta bicolor*) was a new species added to OCMU's official list in 2009. Photo by Thomas G. Barnes.

Jones, C. D., and M. B. Gregory. 2012. Summary of stream flow conditions at five riverine parks in the Southeast Coast Network, 2010. Natural Resource Data Series NPS/SECN/NRDS—2012/313. National Park Service. Fort Collins, Colorado.

Jones, C. D., and M. B. Gregory. 2013. Summary of stream flow conditions at five riverine parks in the Southeast Coast Network, 2012. Natural Resource Data Series NPS/SECN/NRDS—2013/505. National Park Service. Fort Collins, Colorado.

Groundwater Dynamics

Wright, C. J., and M. W. Byrne. 2012. Groundwater conditions in Southeast Coast Network parks, 2010. Natural Resource Data Series NPS/SECN/NRDS—2012/275. National Park Service, Fort Collins, Colorado.

Wright, C. 2012. Groundwater conditions in Southeast Coast Network parks, 2011. Natural Resource Data Series NPS/SECN/NRDS—2012/326. National Park Service, Fort Collins, Colorado.

Land Birds

Byrne, M. W., J. C. DeVivo, J. R. Asper, and B. A. Blankley. 2011. Landbird monitoring at Ocmulgee National Monument, 2009. Natural Resource Data Series NPS/SECN/NRDS—2011/305. National Park Service, Fort Collins, Colorado.

Amphibians

Byrne, M. W., and M. N. Moore. 2011. Incidence of chytrid fungus, *Batrachochytrium dendrobatidis*, in Southeast Coast Network parks. Natural Resource Technical Report NPS/SECN/NRTR—2011/477. National Park Service, Fort Collins, Colorado.

Byrne, M. W., B. D. Smrekar, M. N. Moore, and C. S. Harris. 2011. Summary of vocal anuran monitoring at Ocmulgee National Monument, 2009. Natural Resource Data Series NPS/SECN/NRDS—2011/157. National Park Service, Fort Collins, Colorado.

Smrekar, B. D., M. W. Byrne, M. N. Moore, and A. T. Presnell. 2013. Amphibian community monitoring at Ocmulgee National Monument, 2011. Natural Resource Data Series NPS/SECN/NRDS—2013/530. National Park Service. Fort Collins, Colorado.

Inventory Reports

In 1992, the NPS Inventory & Monitoring Program developed a strategy for creating and delivering a minimal set of products for 12 "baseline" natural resource inventories for all park units containing significant natural resources. The primary purpose of natural resource inventories is to document the presence of resources in parks and to assess and document the current condition and knowledge of natural resources in the parks. Baseline inventories for OCMU are either complete or underway (Table 1) and have been augmented by additional inventory projects of interest to the Monument. Inventories with published reports are listed below, although data are available for all completed reports.

Baseline Inventories

Byrne, M. W., and D. M. Lagana. 2009. Live-specimen key for the mammals of Southeast Coast Network parks. Natural Resource Report NPS/SECN/NRR—2009/122. National Park Service, Fort Collins, Colorado.

Davey, C. A., K. T. Redmond, and D. B. Simeral. 2007. Weather and climate inventory, National Park Service, Southeast Coast Network. Natural Resource Technical Report NPS/SECN/NRTR—2007/010. National Park Service, Fort Collins, Colorado.

Kohut, R. J. 2004. Ozone risk assessment for Southeast Coast Network. National Park Service. Fort Collins, Colorado. Published Report-2181546.

Tuberville, T. D., J. D. Willson, M. E. Dorcas, and J. W. Gibbons. 2005. Herpetofaunal species richness of southeastern national parks. Southeastern Naturalist 4(3): 537-569.

Table 1. Status of twelve baseline inventories at Ocmulgee National Monument [• – Complete; • – In Progress]

Inventory	OCMU
Air Quality Data	•
Air Quality Related Values	•
Base Cartography Data	•
Baseline Water Quality Data	•
Climate Inventory	•
Geologic Resources Inventory	•
Natural Resource Bibliography	•
Soil Resources Inventory	•
Species Lists	•
Species Occurrence and Distribution	•
Vegetation Map Inventory	•
Water Body Location and Classification	•

Webster, W. D. 2010. Mammalian diversity in nineteen Southeast Coast Network parks. Natural Resource Report NPS/SECN/NRR—2010/263. National Park Service, Fort Collins, Colorado.

Additional Inventories

Hymel, S. N. 2009. Inventory of marine and estuarine benthic macroinvertebrates for nine Southeast Coast Network parks. Natural Resource Report NPS/SECN/NRR—2009/121. National Park Service, Fort Collins, Colorado.

For More Information

The NPS Integrated Resource Management Applications (IRMA) portal (http://irma.nps.gov) is the start of a web-based "one-stop" for data, reports, and other information related to National Park Service natural and cultural resources. IRMA allows users to search, view, download, and print information from multiple sources and systems, all from a consistent user interface. No logins or passwords are required.

Information on activities of the SECN can be found at http://science.nature.nps.gov/im/units/secn/, including the Network's monitoring plan, descriptions of inventory and monitoring efforts, and links to data and final project reports.

For notification on the release of new reports from the SECN and job/internship opportunities follow us on Twitter @SECoastNetwkNPS or http://twitter.com/SECoastNetwkNPS.

SOUTHEAST COAST NETWORK
INVENTORY AND MONITORING PROGRAM

National Park Service. 2014. Inventory & Monitoring Reports, 2000-2013: Ocmulgee National Monument. Southeast Coast Network, National Park Service, Athens, GA.