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NATURAL AND CULTURAL RESOURCES

November 13, 2018

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Hurricane Florence's Impacts on DNCR by Division

Division	Lost Revenue	Preparation	Damage and Recovery
Administrative Services - Capital Projects		895	
Archives and Records	97,250		
Historical Resources		425	47,127
Museum of History	17,433	404,045	137,247
Museum of Natural Science		13,400	28,000
NC Aquariums	560,223	72,593	224,282
NC Museum of Art		17,810	75,938
NC Symphony	172,524		
NC Zoo	142,998	31,205	11,412
Parks and Recreation	532,000	120,467	1,919,327
State Historic Sites	46,844	3,665	272,875
Tryon Palace	300,000	48,700	702,500
USS NC Battleship	45,000	678,000	533,100
Total	$ 1,914,272	$ 1,391,204	$ 3,951,809

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Hurricane Florence's impact on NC State Historic Sites

A catalog of images documenting the effects of Hurricane Florence on the North Carolina Division of State Historic Sites

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Overview of Damage

- Thirteen Sites sustained some level of damage from Hurricane Florence.
- Brunswick Town/Fort Anderson closed until further notice due to destruction of road access to the site.
- Fort Fisher, Town Creek Indian Mound, and Bentonville Battlefield sustained noticeable damage and were closed to the public for several days.
- Exhibits and collections at the Caswell Memorial were evacuated as a precaution. The Neuse River flooded significant portions of the site.
- Significant tree damage reported at Brunswick Town and Bentonville.
- Leaks reported in buildings at Bentonville, Historic Stagville, Duke Homestead, Fort Fisher, and House in the Horseshoe.
- No major structural damage occurred to any modern or historic building.

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HISTORIC BATH

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FORT FISHER

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OAK GROVE

The site sustained little visible damage despite its proximity to the landfall of the hurricane

BEACH GAZEBO

Both gazebos lost shingles but sustained no structural damage on initial inspection. The site's sewer system was temporarily out of order.

BEACH GAZEBO

The visitor center was without power for a period of time, suffered a leak in the skylight and had low water pressure.

Caswell Memorial

Tree Damage in Parking Lot

High Water (Photo Taken 9/17)

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TOWN CREEK INDIAN MOUND

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Flooding

Access to the site was restricted until Tuesday, September 18 due to flooded roads. While the Visitor Center and village site stayed relatively dry, other parts of the site were inundated by floodwaters including the picnic area, entrance and maintenance building.

Storm winds blew over a section of the stockade wall around the village.

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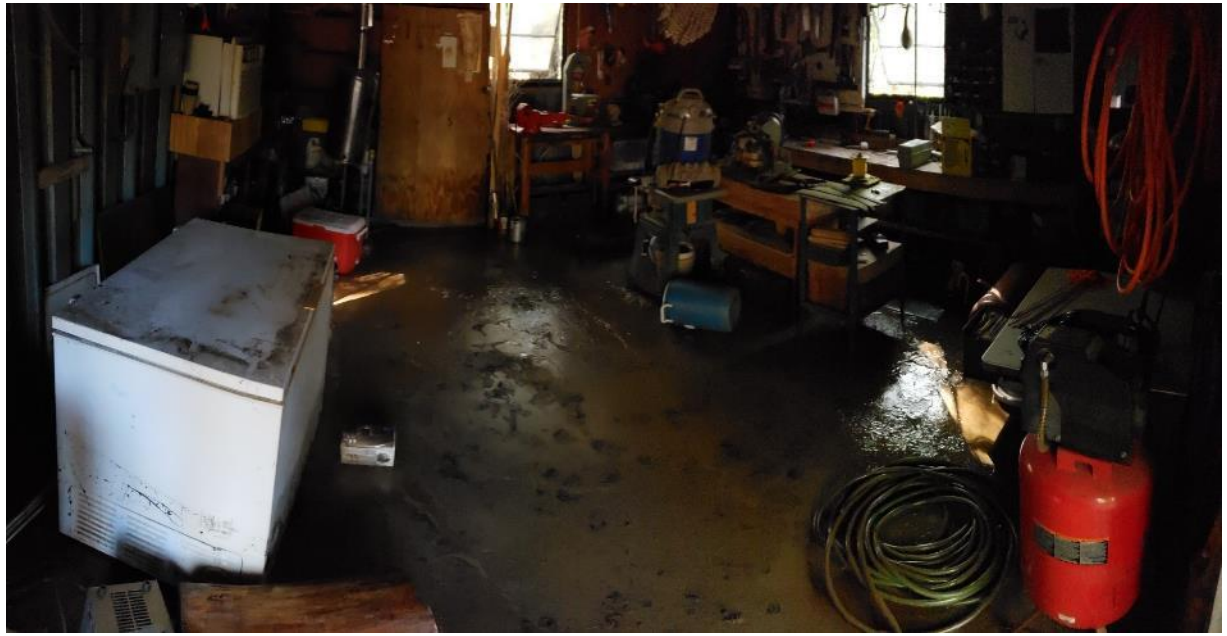
Storm Damage at Town Creek Indian Mound



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An Old Tree

Aycock reported one tree down near their barn.

A Tree Near the Mine

Reed Gold Mine reported a small tree down near the mine. Staff removed it Tuesday, September 18

A Leaner

A tree at Vance Birthplace uprooted and started to fall but was caught by another tree. The site is investigating having a contractor remove it.

Charlotte Hawkins Brown

Excessive water during the storm caused the new floor on the porch of the Canary Cottage to buckle.

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Historic Stagville

Wind driven rain made its way into the Hart House during the storm

Stains make it clear that water got into the house

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Duke Homestead

Water damage in the smoke house.

Evidence of water on ceiling of visitor center

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CSS Neuse Interpretive Center

The museum facility in downtown Kinston has never flooded, but Neuse River was expected to crest at all time high levels for the city on September 21. The back doors to the facility were sandbagged in case.

The E came off the sign during the storm.

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BRUNSWICK TOWN/FORT ANDERSON

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Closed Until Further Notice

The public road to the BT/FA historic site is still closed. The site is inaccessible except by traveling through Orton Plantation. Power was restored to the site on September 25 and water on September 28. Extensive site clean up remains. The site will remain closed until further notice.

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Road by Orton Pond Destroyed

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Approximately 52 Trees Were Damaged.

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Town Site Particularly Hard Hit

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House in the Horseshoe

The site was without power until September 20. Access to the site was limited due to the flooding of Deep River.

Damage was limited to some shingle loss and wind driven water leaks in the rental house.

BENTONVILLE BATTLEFIELD

Access to Bentonville was temporarily limited due to flooded roadways.
Besides some trees the site saw little damage. Rain did penetrate into the Harper house around windows.

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Tree Damage

The site counted and flagged 29 down or hanging trees

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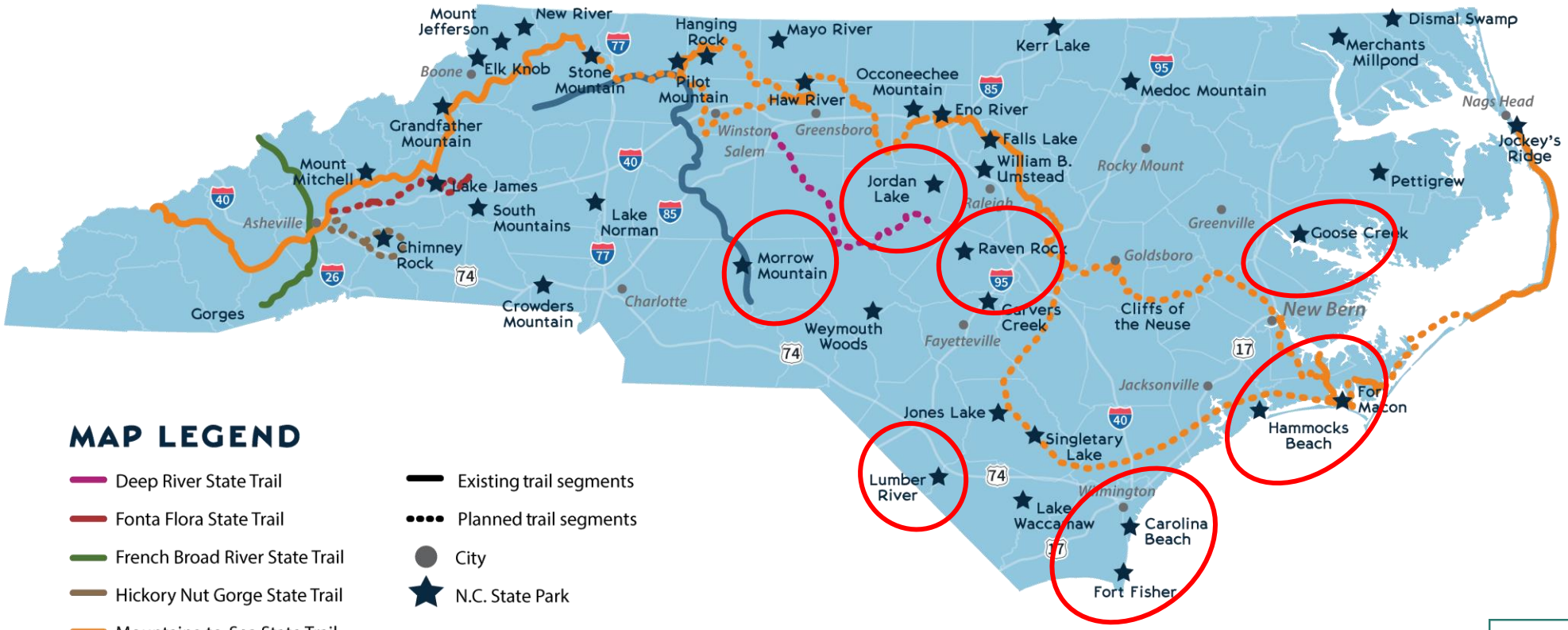
N.C. State Parks System Overview

The storms and flooding were widespread and numerous parks were affected.



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Damage estimates by type

Division of Parks and Recreation total: $2,039,794

Debris removal:	$572,621
Emergency work & protective measures:	$120,467
Roads and bridges:	$93,900
Dams and levees:	$8,500
Building damage:	$592,800
Public utilities:	$23,806
Recreation facilities:	$627,700

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State parks most heavily impacted:

Fort Macon (Carteret Co):	$426,800
Lumber River (Robeson Co):	$326,000
Morrow Mountain (Stanly Co):	$289,500
Hammocks Beach (Onslow Co):	$176,500
Goose Creek (Beaufort Co):	$129,906

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Impacts to local parks

- Survey of local parks departments showed $11.6 million in damage statewide
- Hardest hit areas: Wilmington, Jacksonville, Albemarle
- Accounting for communities that did not submit estimates, total damage to local parks is likely $15 million

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Lost Revenue: $532,000

Losses include revenue from camping, programming, service fees, parking fees.

Flooding of group camp at Raven Rock State Park

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Damage to stairs from fallen trees at Raven Rock State Park on Cape Fear River

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Damage to stairs from flooding and fallen trees at Raven Rock State Park on Cape Fear River

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Boy Scout footbridge damage at Raven Rock State Park

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Flooding at Jordan Lake State Recreation Area campground causing revenue losses

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Carolina Beach State Park flooding

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Fallen trees and structural damage at Carolina Beach State Park

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Damaged roof at Fort Macon's visitor center

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Flooding at the Fort Macon parade ground

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Flooded barracks building on Hammocks Beach State Park's Bear Island

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Structural damage to ferry hangar on Hammocks Beach mainland

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Flooding of the maintenance shop on Hammocks Beach State Park's Bear Island

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Flooding of nature center on Hammocks Beach State Park's Bear Island

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Dock damage at Hammocks Beach State Park

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Division staff helped with storm recovery in many ways

Rangers with children at a shelter in Orange County

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NC Park Rangers with NYPD and NY firefighters assist with security at shelters in New Bern

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Elementary students meeting at Hammocks Beach State Park while county schools were closed

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LESSONS LEARNED

1. Close parks early.
   - Avoid risks to visitor safety.
   - Secure facilities early
   - Allow staff to be redeployed if needed elsewhere

2. Prepare for higher than expected storm magnitude and duration. Expect the unexpected.

3. Well-designed parks, trails and game lands help mitigate the effects of storms.

FEMA buyout lands and urban floodplains should be repurposed as parks and trails.

- Considering the number of parks affected and the severity and duration of the storms, preventive measures kept the damages minimal.
- Future storm damages can be mitigated with flood-resilient design and construction.

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