

COLLABORATIVE EFFORTS TOWARD
RESILIENCE TO HYDROLOGIC EXTREMES IN
THE UPPER FLINT BASIN

Apalachicola-Chattahoochee-Flint Waters Conference

April 28, 2022



American Rivers
RIVERS CONNECT US[®]



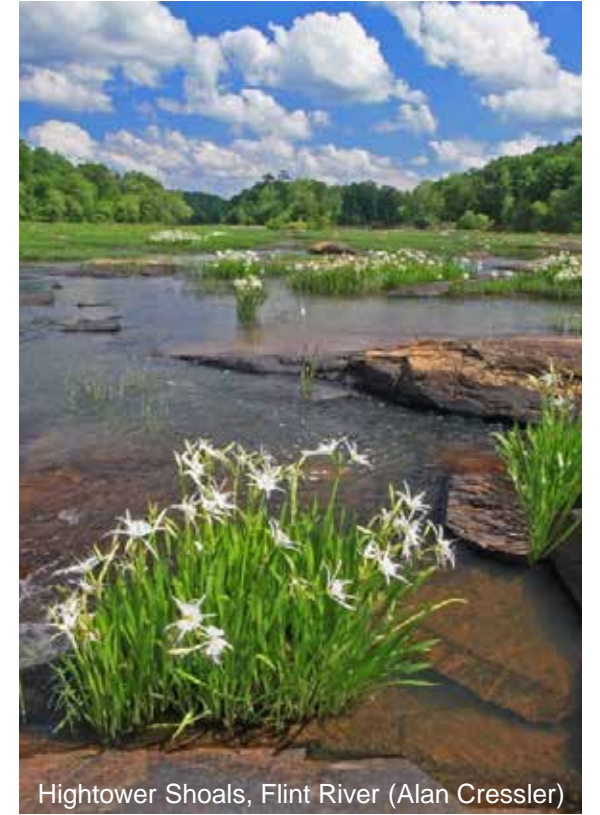
Flint River Jonesboro Swamps (Joe Cook)



Flint River floodplain, Joe Kurz WMA



Flint River above Sprewell Bluff (Jim Farmer)



Hightower Shoals, Flint River (Alan Cressler)

Upper Flint basin:

- high bio-geographic diversity
- important biodiversity within the region and the ACF basin
 - Main stem river free-flowing throughout
- popular for recreational boating and sportfishing

UPPER FLINT BASIN

- Approx. 2,600 square miles*
- Urban-suburban-rural landscape gradient
- Water supply for ~400,000 people

*land area of HUC unit 03130005, including a portion of the upper Coastal Plain (i.e., larger than the Piedmont upper basin)



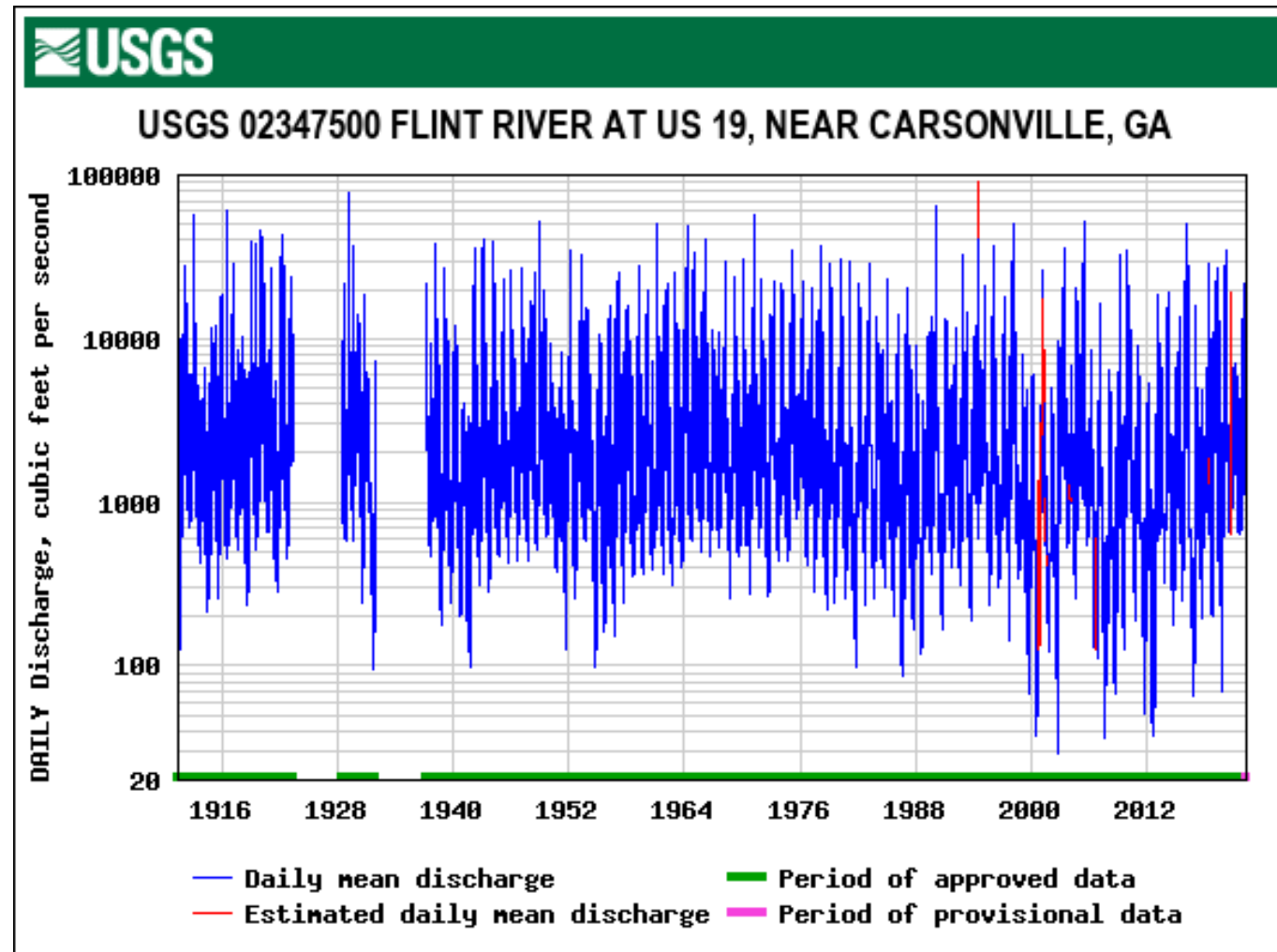
UPPER FLINT RIVER WATERSHED



- RIVER BASIN BOUNDARY
- INTERSTATES & HIGHWAYS
- MAJOR ROADS
- TOWNS, CITIES & DEVELOPED AREAS
- COUNTY BOUNDARIES

UPPER FLINT BASIN HYDROLOGY SINCE ~1975

- Increasing variability
- Lower overall water yield



DROUGHT IN THE UPPER FLINT



Drought flows above Sprewell Bluff, October 2016 (Alan Cressler)

Upper Flint River Working Group

Voluntary, collaborative group of conservationists, water utilities, scientists and other key upper-basin stakeholders

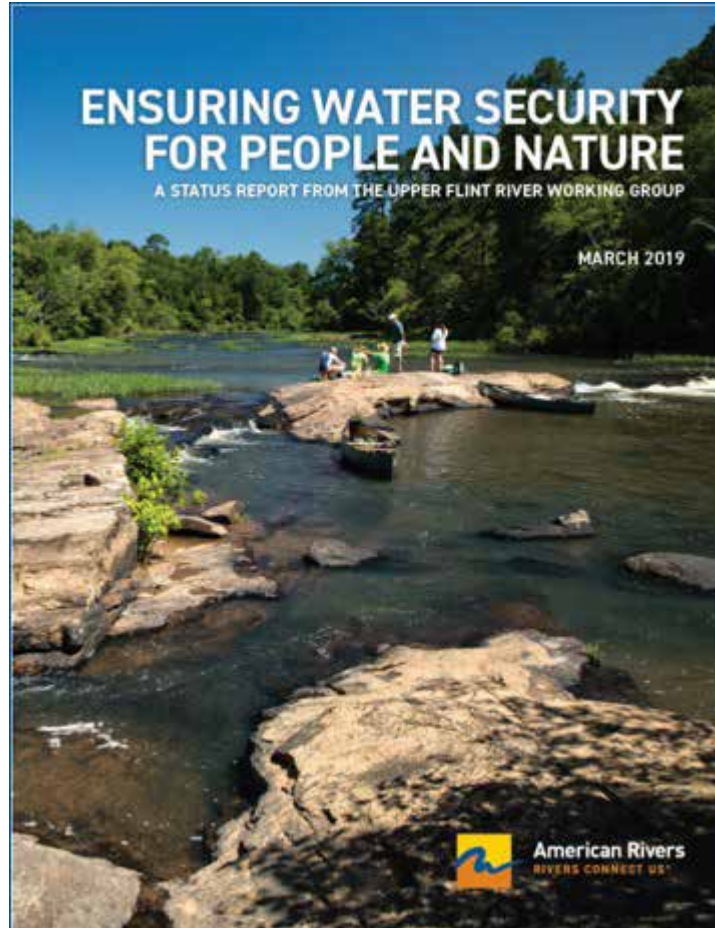




Photo: GA Wildlife Federation



Photo: Stacy Funderburke

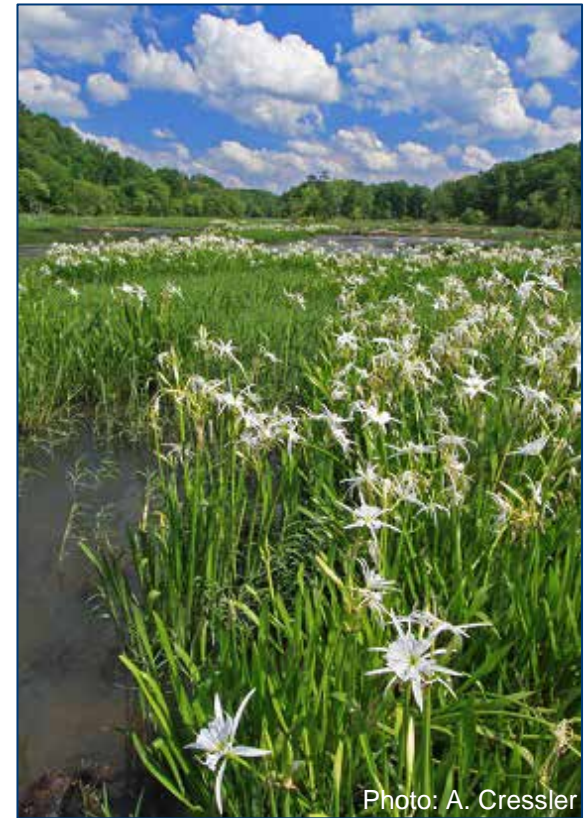
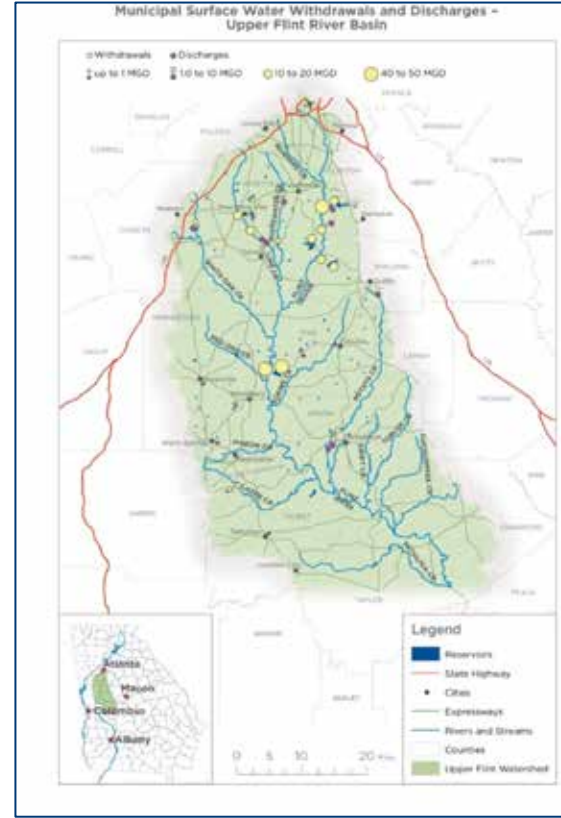


Photo: A. Cressler

Shared Goal: to ensure the resilience of river-related values to drought conditions

DROUGHT RESILIENCE GUIDANCE

Water planning should assess hydrologic indicators related to four critical drought-related issues:

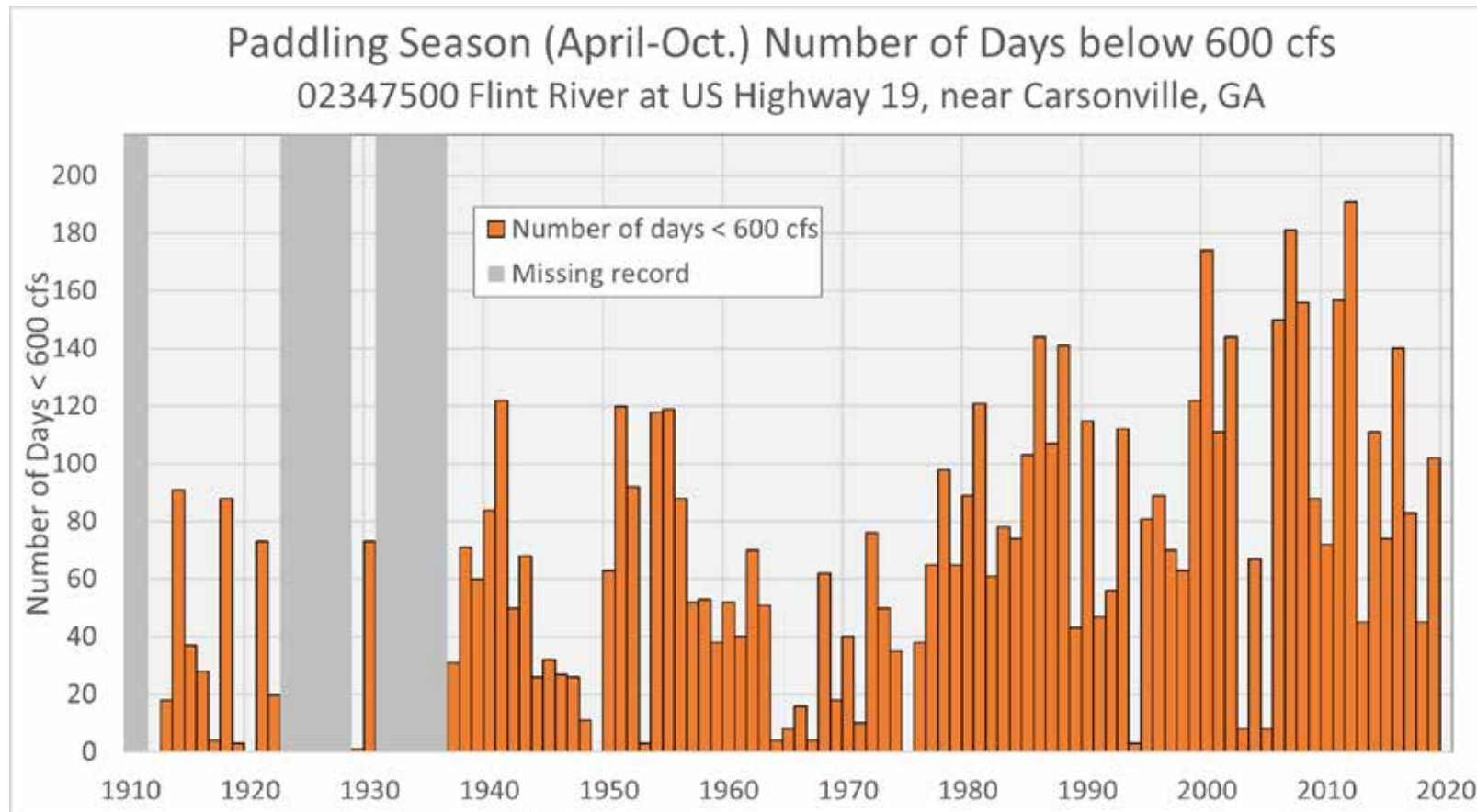
- Reduced recreational opportunity
- Declining flows for shoal habitat and aquatic life
- Exceptionally low river flows
- Novel drought conditions and public water supply



Alan Cressler

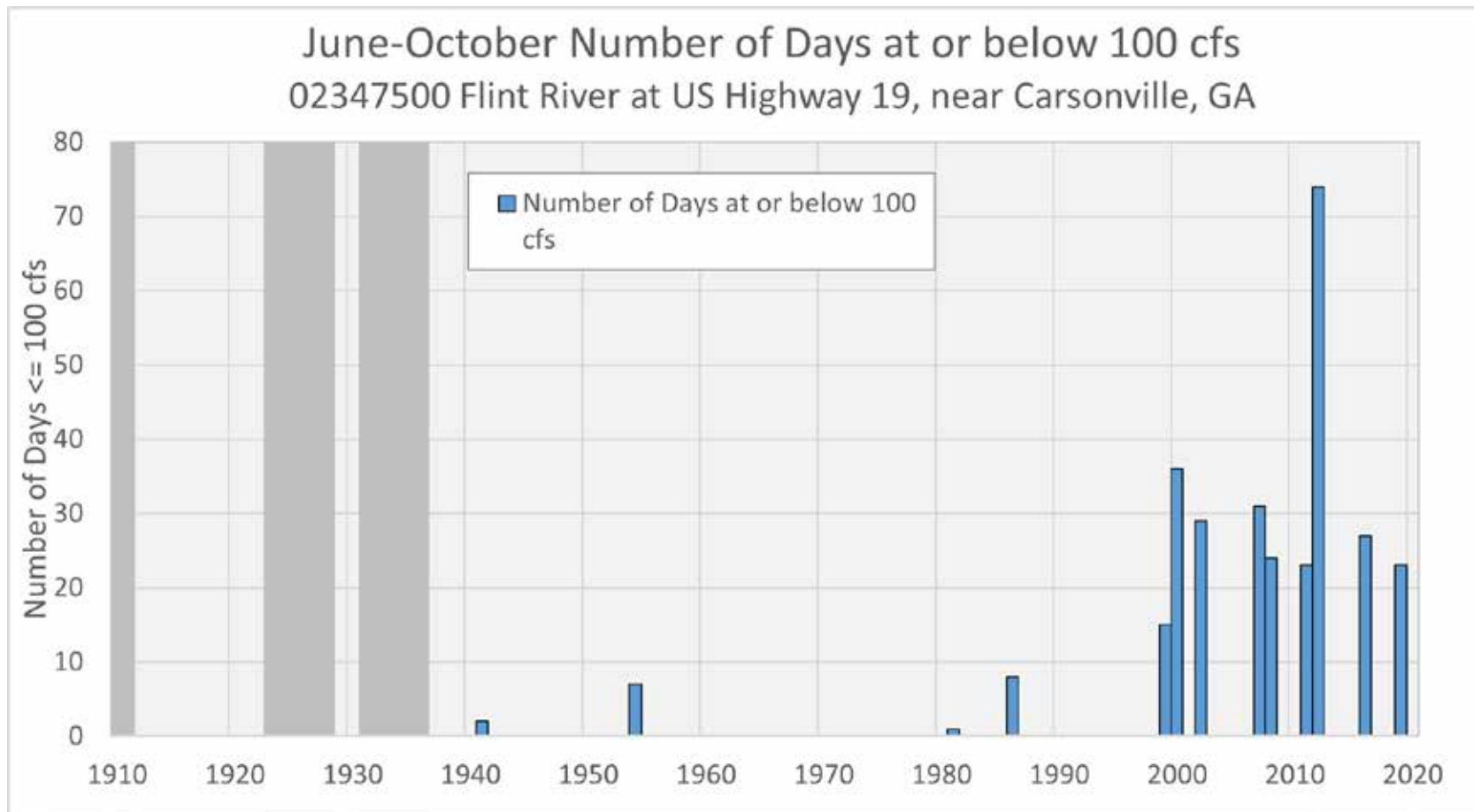
DRY-YEAR HYDROLOGIC INDICATORS

Recreational Paddling Minimum Flows Reduced Recreational Opportunity



DRY-YEAR HYDROLOGIC INDICATORS

Exceptionally Low River Flows “More Rock Than Water”



FLINT RIVER HEADWATERS

- Heavily urbanized landcover
- Complex physical and political geography
- Opportunities and momentum for watershed restoration

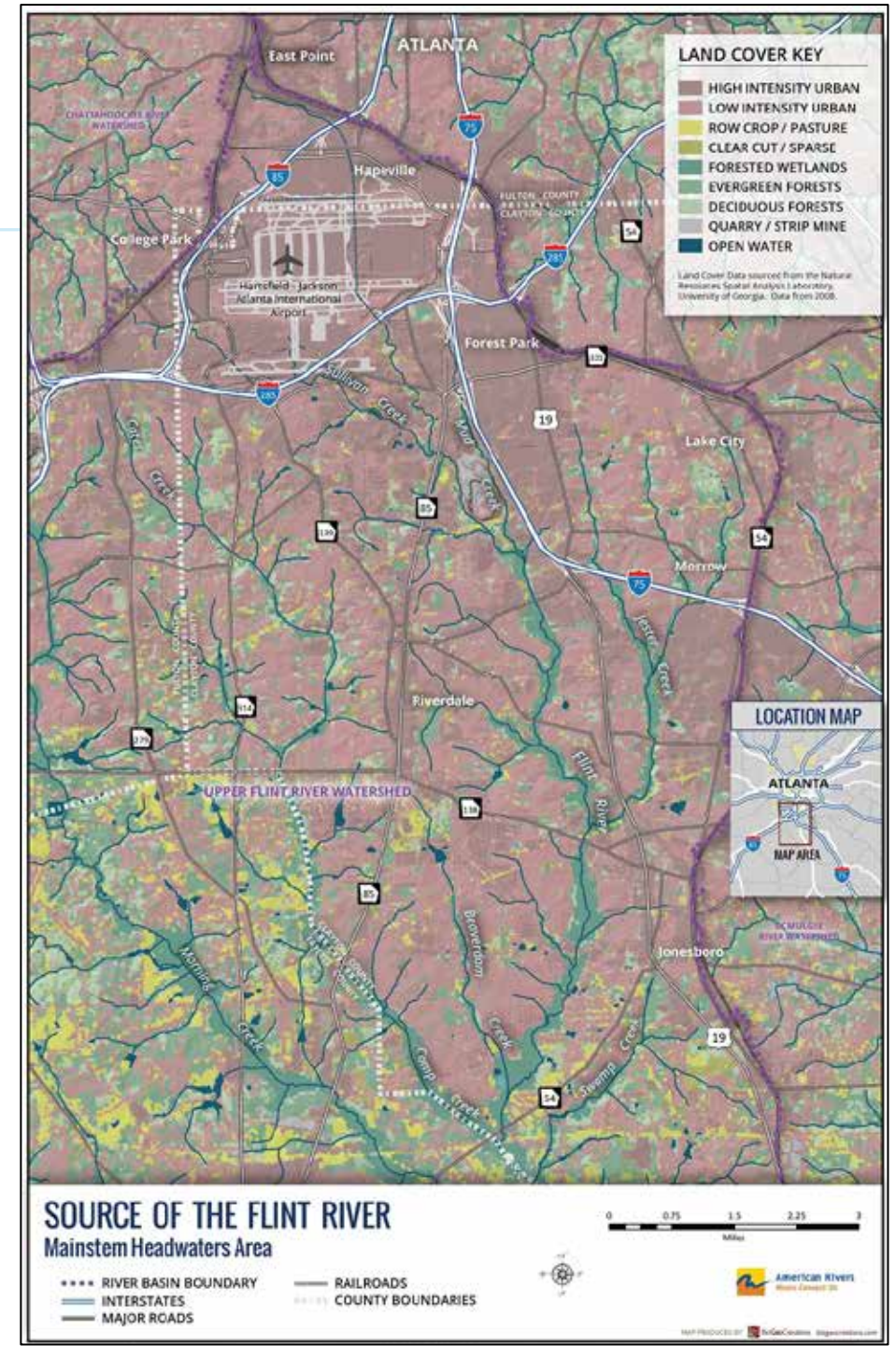




Photo: Stacy Funderburke



Impacts in South Metro Atlanta communities:

- Flooding
- Stormwater runoff
- Non-point source water pollution

HEADWATERS FLOODING

High Imperviousness + Increasing Rainfall Intensity

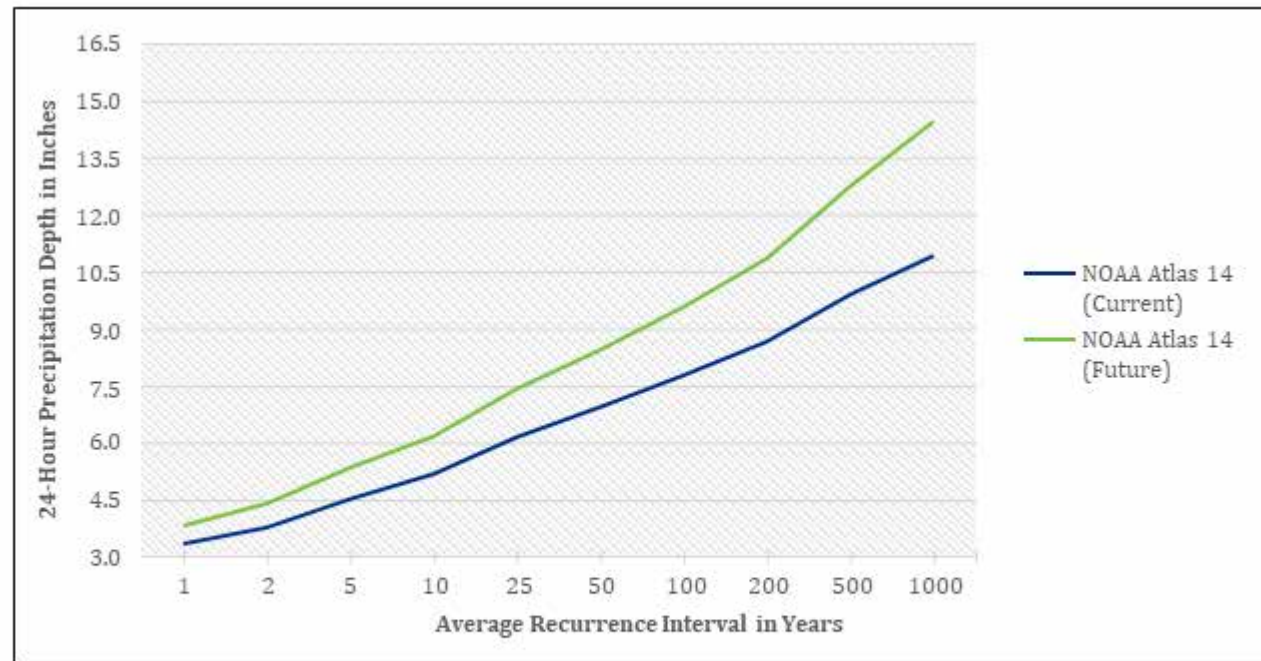


Figure 4: 24-Hour Precipitation Frequency Estimates for current and future conditions at the Atlanta Hartsfield AP location.

Source: Technical Memorandum to David Bell (Jacobs) from Mark Maimone & Sebastian Malter (CDM Smith). Nov. 24, 2021.
Subject: Determining Future Rainfall Frequency Estimates for MNGWPD Service Area. Available via www.northgeorgiawater.org.

Questions?

Thank you!

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