

No. 142, Original

In the

Supreme Court of the United States

STATE OF FLORIDA,

Plaintiff,

v.

STATE OF GEORGIA,

Defendant.

Before the Special Master

Hon. Ralph I. Lancaster

STATE OF FLORIDA'S UPDATED PRETRIAL BRIEF

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INTRODUCTION

As Justice Holmes famously observed, “A river is more than an amenity, it is a treasure. It offers a necessity of life that must be rationed among those who have power over it.” *New Jersey v. New York*, 283 U.S. 336, 342 (1931) (apportioning interstate waters to protect, *inter alia*, downstream oyster fisheries). That is an apt description of the river system at issue in this case—the Apalachicola-Chattahoochee-Flint River (“ACF”) Basin—which is widely recognized as one of the most unique ecosystems in the United States, and in the world. And what Justice Holmes said immediately following the famous quote above is equally true here: Whereas the upstream State may have “the physical power to cut off all the water within its jurisdiction,” “clearly the exercise of such a power to the destruction of the interest of lower States could not be tolerated.” *Id.* It can no longer be tolerated as to the waters at issue here.

Since the 1970s, Georgia’s upstream water consumption from the Flint and Chattahoochee Rivers has grown drastically. Farmers in southwest Georgia are consuming exponentially more irrigation water from the Flint River Basin, and, according to Georgia’s own estimates, consumption in Metro Atlanta, which doubled from the 1970s to the present, may double again by 2050. These dramatic increases are having predictable and undeniable effects on the ecosystem: Florida’s Apalachicola River (fed by the Flint and Chattahoochee) has recently experienced the lowest flows in recorded history. These extreme low flows occur for months at a time and are gravely threatening not only a treasured natural resource, but also a way of life for the residents of the Apalachicola Bay region. This harm is worsening with every drought; if the status quo continues, Florida’s injuries will be catastrophic and irreversible.

Georgia’s own admissions and historical documents confirm that it has long recognized the dire problem its consumption is causing on this interstate water system. Indeed, twenty years ago, Georgia, along with Florida and Alabama, agreed that a multi-state solution was required.

In 1997, the legislatures of these states, along with the U.S. Congress, voted by wide margins for the ACF Basin Compact (the “Compact”), Pub. L. No. 105-104, 111 Stat. 2219 (1997), FX-209. And Georgia’s then-Governor acknowledged: “We fully recognize that Florida has a very real and significant interest in the future of Apalachicola Bay and its surrounding environmental ecosystems, and in her other uses of water. . . . [W]e can allocate the waters of these major river systems in a manner that is equitable and fair to all concerned.” FX-205, at GA00128575-76. The Compact dissolved in 2003 with the States unable to reach an agreement—and the problem worsened as Georgia’s water use grew.

More than a decade ago, Harold Reheis, the then-Director of the Environmental Protection Division (“EPD”) of Georgia’s Department of Natural Resources, admitted:

[S]ubstantial population growth in some regions of Georgia have been accompanied by significant increases in demands on our water resources to meet the water consumption desires of that burgeoning population. Advancements in irrigation technology during the 70’s and 80’s have allowed farmers in predominantly agricultural regions of Georgia to apply larger (and more timely) quantities of supplemental water to their crops to increase crop yields and profits. These increases in demand for water have not been accompanied by corresponding advancements in efforts to conserve; hence the amount of water we are collectively withdrawing and consuming has *dramatically increased*. [FX-7, at GA00014045 (emphasis added).]

And Georgia understands even today the harm wrought by its consumption. As the official overseeing its “Water Supply” programs acknowledged, the Flint River has fallen well below Georgia’s own definition of “sustainable flows” in 7 of the past 16 years. Caldwell Dep. 29:14-35:21 (acknowledging unsustainable flows in 2001, 2002, 2006, 2007, 2008, 2011, and 2012). And the principal aquifer feeding that river (the Upper Floridan) has seen losses from agricultural irrigation far beyond Georgia’s own sustainability metrics for that aquifer:

I can only conclude that the estimated current use of ground water from the Upper Floridan aquifer in the Dougherty plain is incongruent with the sustainable yield as determined by the sustainable yield criteria used in the ground water

assessment. [Caldwell Dep. 37:20-25.]

See also infra pp. 20-22 (describing Georgia’s recent failures to meet federal standards as well).

The impacts of Georgia’s consumption are beyond any reasonable debate. Objective data from federal government measuring devices tell the story clearly: dry and drought year flows to the Apalachicola River have been far lower in the past sixteen years than during any prior drought in recorded history. *See infra* pp. 16-21. During their failed Compact negotiations more than a decade ago, Florida and Georgia contemplated that extreme low flows would occur only very rarely (1-2% of the time), but now they are shockingly more frequent—in 2011 for 6 consecutive months, and in 2012 for 8 consecutive months. Without a remedy in this case, Florida will be subject to Georgia’s unconstrained growth, not only repeating the devastating events in the Apalachicola of the past decade (including the 2012 Apalachicola oyster crash), but making them far worse. For example, even under *existing* agricultural irrigation permits, Flint River Basin farmers could further increase irrigation by hundreds of thousands of additional acres, reducing Flint River flows to a tiny percentage of their historical levels.

High-ranking Georgia officials admit there is a problem, but acknowledge that they lack any “viable management tool” to fix it. JX-69, at GA00208715 (“There is no doubt that we need a viable management tool to deal with drought in the Flint River Basin . . .”). The one viable tool Georgia had in the 2000s—an auction process to buy out farmers’ irrigation rights during dry years—was abandoned in 2014 as too expensive. Similarly, although Georgia considered in 2009 whether to make infrastructure investments and implement other measures to supply and conserve water for Metro Atlanta’s uses, Georgia opted not to pursue many of those options. *See generally* JX-40; JX-41. And while Georgia’s EPD has repeatedly initiated studies to try to find solutions (*see infra* pp. 32-34), it appears that Georgia lacks the political will to implement any of them without a court order. Despite more than 20 years of negotiations, Georgia seems unable

to offer (much less agree to) any meaningful or binding obligation to constrain its own upstream consumption *to any extent*.¹ This case is Florida’s only opportunity to impose genuine limits on Georgia consumption.

Given Georgia’s inability to agree to any genuine constraints on its own conduct, an equitable apportionment of these interstate waters is necessary and entirely justified. Georgia itself previously recognized that before adopting its current litigation posture. Brief of Appellee the State of Georgia, *Georgia v. U.S. Army Corps of Eng’rs*, Nos. 02-10135D, 02-10135DD, 2002 WL 32641401, at *9 (11th Cir. Feb. 8, 2002) (“Whether or not Georgia obtains additional water supply [storage space] from Lake Lanier, . . . Florida will still be entitled to its equitable apportionment of waters flowing from Georgia and could still file an equitable apportionment case in the United States Supreme Court.”) (lawsuit filed by Georgia to compel Army Corps of Engineers (the “Corps”) to increase water supply available to Atlanta from Lake Lanier).

Under the federal common law of equitable apportionment applicable between riparian states, Georgia must use water from this shared resource reasonably and equitably, and it owes Florida an “affirmative duty under the doctrine of equitable apportionment to take reasonable steps to conserve and even to augment the natural resources within [its] borders for the benefit of other States,” including Florida. *Idaho ex rel. Evans v. Oregon*, 462 U.S. 1017, 1025 (1983) (citing *Colorado v. New Mexico*, 459 U.S. 176, 185 (1982) (*Colorado v. New Mexico I*)). The remedy Florida seeks in this case is a consumption cap. The concept of a consumption cap is not entirely new to Georgia; discovery has shown that Georgia has agreed on such caps with South Carolina and Alabama, albeit on a smaller scale. The consumption cap Florida seeks in this case

¹ Florida has always been open to serious substantive discussions about the possibility of a negotiated consumption cap, and remains so to this day.

has two principal elements.

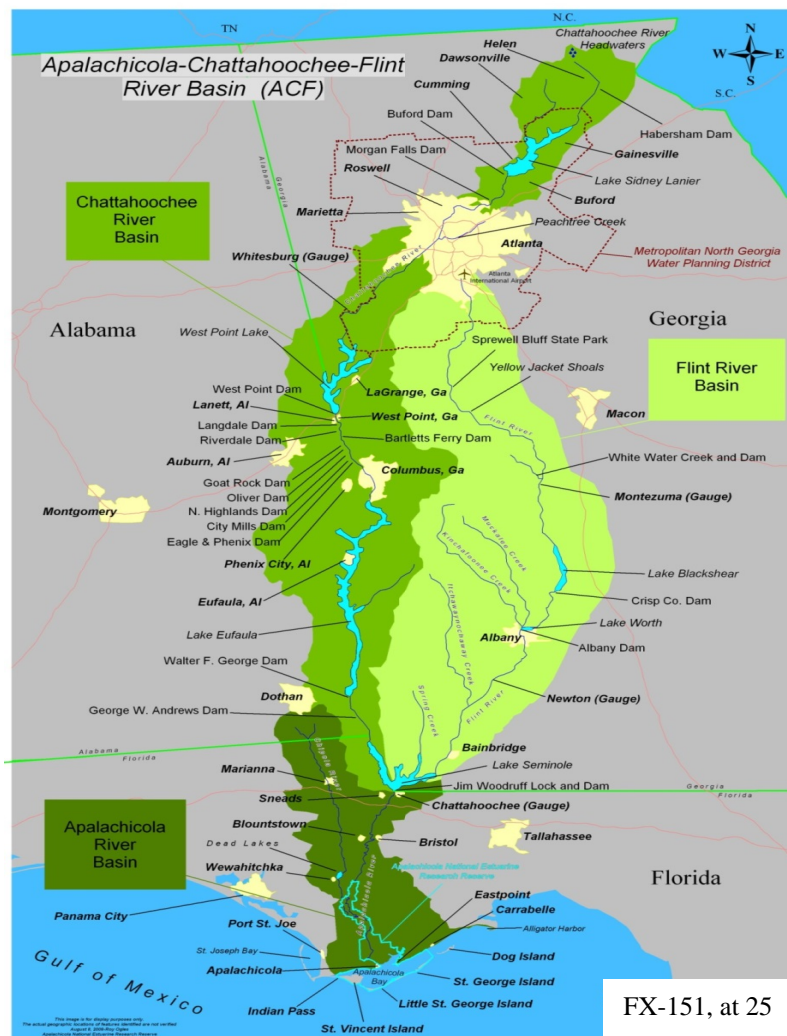
First, Georgia should be required to cap its annual average consumption of water from the ACF watershed. As described below (*see infra* pp. 37-38), this can be accomplished with a combination of reasonable conservation measures in Metro Atlanta and elsewhere in the state. The necessary measures are not novel; Georgia has previously contemplated each, but has either failed to implement or only partially implemented them. None of these measures needs to constrain the future economic growth of the Metro Atlanta region.

Second, additional consumption cutbacks are necessary during drought years, when Florida faces the greatest harm; during those years, Georgia's extreme levels of consumptive water use significantly worsen what are already reduced flows. Equity requires that Georgia share the pain with Florida, not avoid it at Florida's expense. Thus, in drought years, consumption can be reasonably capped so that net depletions of the Flint and Chattahoochee Rivers are reduced in key months, including by 1500 to over 2000 cubic feet per second ("cfs") in peak summer months. Florida will present testimony demonstrating a range of measures that can achieve such reductions, from lawn watering restrictions and leak abatement in Metro Atlanta to specific irrigation programs in the Flint River Basin and the Lower Chattahoochee area. Again, these measures are either actions Georgia has previously considered but never fully implemented, or measures Florida has already undertaken in the Apalachicola Basin.

After providing brief background on the Apalachicola region of Florida, this pretrial brief: (1) identifies the appropriate legal framework applicable here, pp. 10-15; (2) outlines elements of Florida's anticipated trial presentation, pp. 15-37; and (3) explains that, using reasonable conservation measures, Georgia can reasonably comply with Florida's proposed consumption cap, pp. 37-39.

BACKGROUND: THE APALACHICOLA BASIN

The Apalachicola River is fed by Georgia's Chattahoochee and Flint Rivers. The Chattahoochee River originates northeast of Atlanta, eventually forming part of the border between Georgia and Alabama. The Flint River originates just south of Atlanta and is fed largely through hydrologic connections with the Upper Floridan Aquifer and to some extent by other deeper aquifers. These two rivers converge at Lake Seminole north of the Florida-Georgia border and then form the Apalachicola River, which flows, unimpeded by any dam, into the Apalachicola Bay by the Gulf of Mexico. These rivers, their tributaries, and hydrologically connected waters comprise the ACF Basin.



The Apalachicola ecosystem is a protected national treasure. From the Apalachicola River's northernmost point and extending approximately 120 miles south to Apalachicola Bay's barrier islands, the Basin is roughly the size of Delaware. No written words could do justice to the majesty and beauty of the Apalachicola River and Bay. The Apalachicola National Estuarine Research Reserve ("ANERR") has released a 12-minute video presentation, "Apalachicola River & Bay: A Connected Ecosystem," depicting and describing the ecosystem as a whole. FX-675, <https://youtu.be/E7v1a9BLXW4>. Florida respectfully suggests the Court view this video to gain a better appreciation for the natural beauty and the geography of the Basin.

The Apalachicola Basin is uniquely rich in animal and plant life. The United Nations describes it as "one of the most productive estuarine systems in the northern hemisphere" and the place with "the highest species density of amphibians and reptiles in all of North America (north of Mexico)." FX-154, at 1. The Nature Conservancy puts it this way: "The Apalachicola River and Bay region is a biological hotspot, unique to Florida and home to a disproportionate number of imperiled species and habitat." Nature Conservancy, *Florida: Apalachicola Bluffs and Ravines Preserve*, <http://tinyurl.com/hprzlfwl> (last visited Oct. 9, 2016). Historically, Apalachicola Bay has been considered one of the country's least polluted and most resource rich systems, supporting a complex, productive food web and rich plant habitats that provide refuge and nursery areas for fish and shellfish. The Apalachicola region also is one of the most beautiful places in the country:



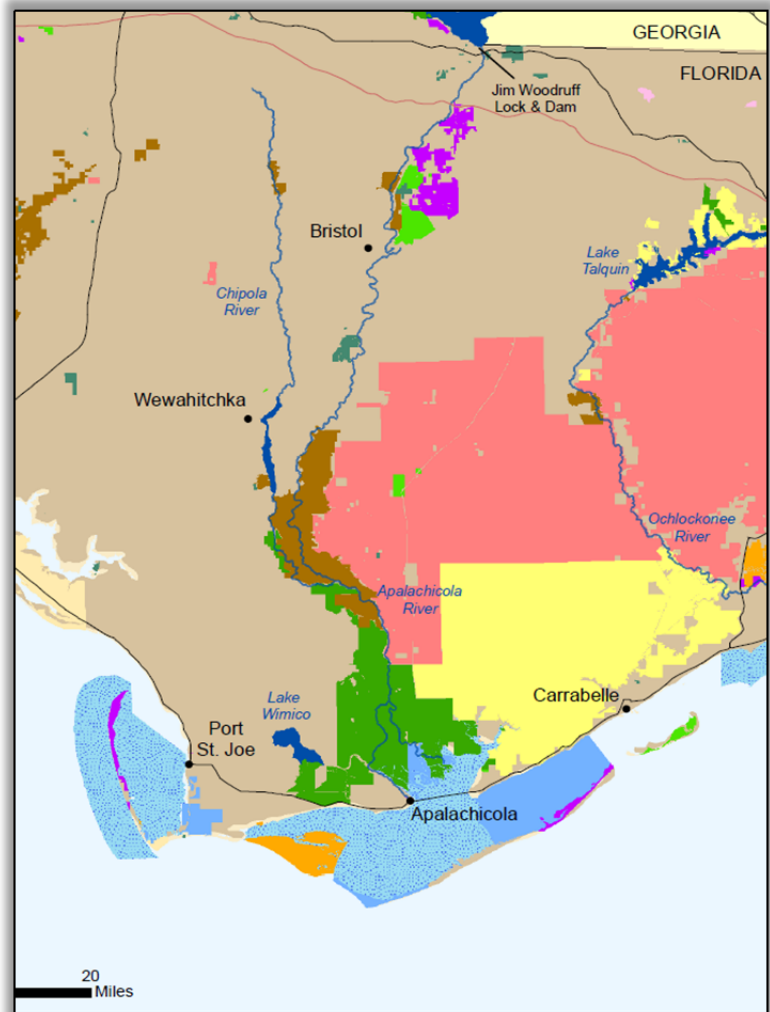
Apalachicola River, <https://clydebutcher.com/pc/photographs/> (last visited Oct. 10, 2016); FX-324a

Nearly fifty years ago, when Atlanta was a fraction of its current size and very few Georgia farmers irrigated, Florida began protecting the Apalachicola River and Bay through a series of legal actions that heavily restricted development. In 1969, for example, Florida designated the Bay as an Aquatic Preserve under state law, “set aside forever . . . for the benefit of future generations.” *See* Fla. Stat. §§ 258.36, 258.39(18). In 1979 and 1984, Florida classified the Bay and Apalachicola River as Outstanding Florida Waters, recognizing their “exceptional recreational [and] ecological significance” and affording them “the highest protection” against the permanent degradation of water quality. *See, e.g.*, Fla. Admin. Code § 62-302.700; JX-29, at 2; FX-137, at 1-2; *see also* 40 C.F.R. § 131.12(a)(3) (Clean Water Act’s “anti-degradation rule,” which is designed to prevent the degradation of water quality). Similarly, in 1979, the federal government designated the Bay and the lower Apalachicola River a National Estuarine Research Reserve under the federal Coastal Zone Management Act—the nation’s second largest such reserve—to preserve the ecosystem for long-term research, water-quality monitoring, education, and coastal stewardship. FX-151, at 1. And in 1984, UNESCO (an arm of the United Nations) selected the River and Bay for designation as an international “Biosphere Reserve” to ensure conservation of the region’s unique biological diversity. FX-154.

Florida has also engaged in a systematic effort to protect the region through conservation

land purchases. Since 1965, it has spent approximately \$466 million dollars to purchase and preserve over 342,000 acres within the Apalachicola Basin, and millions more to manage these areas and their wildlife, and has accepted land donations valued at an unadjusted cost of \$709,487. *See* FX-144. Many of these protected state lands are connected to each other or to lands conserved separately by the federal government or The Nature Conservancy. *See, e.g.*, FX-672. As a result, a substantial portion of the region is now protected state and federal conservation land (FX-143):

- Conservation Lands**
-  FDEP Aquatic Preserves
 -  Other Conservation Lands
 -  FDACS Florida Forest Service
 -  FDEP Division of Recreation and Parks
 -  FDEP Coastal Office
 -  FL Fish & Wildlife Conservation Commission
 -  Northwest Florida Water Management District
 -  Tall Timbers Research, Inc.
 -  The Nature Conservancy
 -  US Forest Service
 -  US Dept. of Defense, Air Force
 -  US Fish & Wildlife Service



In addition, Florida has undertaken extensive efforts to restore and protect areas of the Basin and the hydrologic connectivity between the Apalachicola River and sloughs and lakes, including by

halting dredging by the Corps (which was historically done to benefit upstream ports like Columbus and Bainbridge, Georgia), *see, e.g.*, FX-404; and restoring Tate’s Hell State Forest to its natural hydrology and ecology, *see, e.g.*, JX-133.

The region also contains historic communities, whose social well-being is intrinsically linked with the health and sustainability of the ecosystem and who rely economically upon Apalachicola Bay’s oyster, shrimp, and other fisheries, the production of tupelo honey, and tourism. For example, the Bay’s famous oyster fishery has been harvested since at least the mid-1800s. Until 2012, when the entire Apalachicola oyster fishery crashed, the Bay produced 90% of the State’s oysters and 10% of the nation’s harvest. Unlike many other areas in the United States, no automated or mechanical means of oyster harvesting are allowed on public oyster bars in Apalachicola Bay; as has been the case for generations, oystermen harvest on those bars from small boats using handheld devices known as tongs.

LEGAL FRAMEWORK GOVERNING THE PROCEEDINGS

“Equitable apportionment is the doctrine of federal common law that governs disputes between States concerning their rights to use the water of an interstate stream” or waterway. *Colorado v. New Mexico I*, 459 U.S. at 183. The doctrine is “neither dependent on nor bound by existing legal rights to the resource being apportioned,” but is “based on broad and flexible equitable concerns rather than precise legal entitlements.” *Idaho v. Oregon*, 462 U.S. at 1025. A few considerations warrant further mention here.

“The laws of the contending states concerning intrastate water disputes are an important consideration governing equitable apportionment.” *Colorado v. New Mexico I*, 459 U.S. at 183. When all the states subject to an equitable apportionment share a similar body of water common law, those principles guide the Supreme Court’s equitable apportionment analysis, subject to any modifications that equity so requires. *Id.* at 183-84 (holding that when “both States recognize

the doctrine of prior appropriation, priority becomes the ‘guiding principle’ in an allocation between competing States”); *New Jersey v. New York*, 283 U.S. at 342-43 (taking into account the riparian rights doctrine applied in both states); *Wyoming v. Colorado*, 259 U.S. 419, 456-57 (1922) (taking into account the prior appropriation doctrine applied in both states); *Nebraska v. Wyoming*, 325 U.S. 589, 618 (1945) (same); *see also* A. Dan Tarlock, *Law of Water Rights & Resources* §§ 10:20-21, Westlaw (database updated July 2016).

Both Georgia and Florida are riparian states, and not prior appropriation states where the “relative rights of water users are ranked in order of their seniority,” *Colorado v. New Mexico I*, 459 U.S. at 179 n.4. *See 5F, LLC v. Dresing*, 142 So. 3d 936, 939-40 (Fla. Dist. Ct. App. 2014); *Game & Fresh Water Fish Comm’n v. Lake Islands, Ltd.*, 407 So. 2d 189 (Fla. 1981); *Pyle v. Gilbert*, 265 S.E.2d 584, 586 (Ga. 1980) (citing *Hendrick v. Cook*, 4 Ga. 241 (1848)), *overruled in part on other grounds by Tunison v. Harper*, 690 S.E.2d 819, 821 (Ga. 2010); Ga. Code Ann. § 44-8-1. The background principle of the riparian rights doctrine is that a downstream user is entitled to the river’s *usual and natural* flow, subject only to diminution by *reasonable* upstream consumptive uses. *See, e.g., Colorado v. New Mexico I*, 459 U.S. at 179 n.4 (“Under the riparian doctrine . . . the owner of land contiguous to a watercourse is entitled to have the stream flow by or through his land undiminished in quantity and unpolluted in quality, except that any riparian proprietor may make whatever use of the water that is reasonable with respect to the needs of other appropriators.”); *Stewart v. Bridges*, 292 S.E.2d 702, 704 (Ga. 1982) (“Georgia’s water rights law is based on the natural flow theory of the riparian rights doctrine modified by a reasonable use provision. Under this theory every riparian owner is entitled to . . . have the stream pass over his land according to its natural flow subject to the reasonable use of the water by other riparian owners.”); *Robertson v. Arnold*, 186 S.E. 806, 809 (Ga. 1936); *5F, LLC*, 142

So. 3d at 940; Tarlock, *Law of Water Rights & Resources* §§ 3:55-58, 3:60.

Correlatively, *any riparian owner's use of water must be reasonable under the then-present circumstances, and prior use of water does not confer any absolute right to use that water in the future.* See *United States v. Willow River Power Co.*, 324 U.S. 499, 505 (1945); *Colorado v. New Mexico I*, 459 U.S. at 179 n.4; *Stewart*, 292 S.E.2d at 704; *Roughton v. Thiele Kaolin Co.*, 74 S.E.2d 844, 846 (Ga. 1953); *5F, LLC*, 142 So. 3d at 941; *Florio v. State ex rel. Epperson*, 119 So. 2d 305, 310 (Fla. Dist. Ct. App. 1960). So, for example, a farmer irrigating his or her crops in a particular fashion might be acting reasonably in a relatively wet period, but during a drought or an extended dry period the same type of irrigation method could be wholly unreasonable because of its impact on downstream users. *E.g.*, *Mason v. Hoyle*, 14 A. 786, 794 (Conn. 1888) (holding that mill operator's water withdrawals, while reasonable during most of the year, were unreasonable during three month dry season).

Notably, both Florida and Georgia employ so-called "regulated" riparian regimes, which make clear that the states in their sovereign capacity can and should regulate a riparian's use of water to protect the natural environment and ensure sustainability of the resource.² See, e.g., JX-

² See, e.g., *Tunison*, 690 S.E.2d at 821 (rejecting lower court's determination that irrigation was a superior water use to aesthetic and environmental interests); *Conservancy, Inc. v. A. Vernon Allen Builder, Inc.*, 580 So. 2d 772, 779 (Fla. Dist. Ct. App. 1991) (reversing permit grant because environmental impact was not properly considered); *Bd. of Trs. of Internal Improvement Trust Fund v. Levy*, 656 So. 2d 1359, 1363-64 (Fla. Dist. Ct. App. 1995); Ga. Code Ann. §§ 12-5-20 to -31 (establishing regulation of surface water resources); *id.* §§ 12-5-90 to -107 (establishing permitting regime for groundwater resources); *id.* § 51-9-7 (imposing reasonable use requirement); *id.* § 12-6A-2-4; *id.* § 12-5-31(l)(1) (permitting Georgia to declare emergency when necessary to prevent "serious harm to the water resources of the area"); Ga. Comp. R. & Regs. 305-1-.04; *id.* at 391-3-28-.01 *et seq.*; *Cowie Dep.* 94:24-95:16 (describing authority to augment river flows and limit permit holder withdrawals in support of wildlife); Fla. Stat. §§ 373.016-373.056 (establishing regulation of water resources); *id.* §§ 373.203-373.249 (establishing permitting regime); *id.* § 373.223(1) (imposing reasonable-beneficial use requirement for permits); *id.* § 373.016(3)(g) (declaring state policy to "preserve natural

21, at 43 (“Georgia is a ‘regulated riparian[]’ state . . .”). Indeed, Georgia’s laws recognize the need to conserve water for the health of the natural ecosystems. *Id.* (explaining that under Ga. Code Ann. § 12-5-96, “[t]he State must consider ‘injury to public health, safety, or welfare which would result if...[aquifer] impairment were not prevented or abated’, and the extent of any injury or detriment caused or expected to be caused to other water users, including public use” (alterations in original)); *id.* (“[A] maximum level of water withdrawals that caused injury or detriment would expose Georgia and existing users to legal action from the affected parties.”).

In determining an equitable apportionment between riparian states, the “guiding principle” is *reasonable use*. See *New Jersey v. New York*, 283 U.S. at 342-43; *Colorado v. New Mexico I*, 459 U.S. at 183-84. When determining whether Georgia’s consumptive use of water is reasonable, the Supreme Court will consider “all relevant factors.” *South Carolina v. North Carolina*, 558 U.S. 256, 271 (2010) (quoting *Colorado v. New Mexico I*, 459 U.S. at 183). These factors include, *inter alia*, the physical and climatic conditions, the degree to which Georgia’s uses are reasonably efficient, and the effect of those uses on Florida, including its wildlife and environment.³ See *id.*; *Nebraska v. Wyoming*, 515 U.S. 1, 11-14 (1995); *Colorado v.*

resources, fish, and wildlife”); see also James L. Bross, 4-GA Water and Water Rights § II (Amy K. Kelley ed., 3d ed. 2016) (Riparianism); Joseph W. Dellapenna, *The Law of Water Allocation in the Southeastern States at the Opening of the Twenty-First Century*, 25 U. Ark. Little Rock L. Rev. 9, 31-37 (2002).

³ Moreover, as a species of the federal common law, an equitable apportionment must be mindful of the long-standing trend in federal law toward increased consideration and protection of environmental interests. See *Textile Workers Union v. Lincoln Mills*, 353 U.S. 448, 456-57 (1957) (noting that federal common law applicable to a labor dispute “must [be] fashion[ed] from the policy of our national labor laws”); see, e.g., Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006, Pub. L. No. 109-479, 120 Stat. 3575 (2007); National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852 (1970); Wild and Scenic Rivers Act, Pub. L. No. 90-542, 82 Stat. 906 (1968); Fish and Wildlife Coordination Act, Pub. L. No. 73-121, 48 Stat. 401 (1934); Endangered Species Act of 1973, Pub. L. 93-205, Clean Water Act of 1977, Pub. L. 95-217, 91 Stat. 1566 (1977).

New Mexico I, 459 U.S. at 158. Unlike a prior appropriation regime, a riparian user has no absolute right to use a certain quantity of water in the future regardless of the circumstances. Here, this means Georgia’s consumptive uses must at all times be *reasonable* given the then-present climatic circumstances (including drought), as well as the harm Georgia’s uses will inflict in the Apalachicola Basin. The Court’s ultimate task is to determine a “‘just and equitable’ allocation” of the interstate water system. 459 U.S. at 183 (quoting *Nebraska v. Wyoming*, 325 U.S. at 618).

In addition, Georgia has an “affirmative duty under the doctrine of equitable apportionment to take reasonable steps to conserve and even to augment the natural resources within [its] borders for the benefit” of Florida. *Idaho v. Oregon*, 462 U.S. at 1025 (citing *Colorado v. New Mexico I*, 459 U.S. at 185). Georgia has a duty to “conserve the common supply.” *Wyoming v. Colorado*, 259 U.S. at 484. And Georgia should be required to “employ ‘financially and physically feasible’ measures ‘adapted to conserving and equalizing the natural flow.’” *Colorado v. New Mexico I*, 459 U.S. at 185 (citation omitted).

In an equitable apportionment action, the state seeking to prevent or enjoin a diversion by another state bears the burden of proving by clear and convincing evidence that the diversion has caused or will cause it “‘real or substantial injury or damage.’” *Id.* at 187 n.13 (citation omitted). Here, as a downstream riparian state seeking an equitable apportionment, Florida can make this showing by establishing that Georgia is diminishing the usual and natural flow of the Apalachicola River, and that such diminution is or will be injurious to Florida’s sovereign interests. *See, e.g., New Jersey v. New York*, 283 U.S. 336, 344-45 (1931); *Wyoming v. Colorado*, 259 U.S. at 457; *Colorado v. New Mexico I*, 459 U.S. at 187 n.13. Florida’s sovereign interests include its environment, wildlife, commerce, industry, culture, and similar interests.

See, e.g., New Jersey v. New York, 283 U.S. at 344-45; *Nebraska v. Wyoming*, 515 U.S. 1, 12-13 (1995) (holding that “to have a fair opportunity to present its case,” a state must be permitted to set forth evidence of environmental injury); *Illinois v. City of Milwaukee*, 406 U.S. 91, 103, 105 & n.7 (1972) (explaining that the injury need not be independently tortious, wrongful, or otherwise improper under federal and state law); *Connecticut v. Massachusetts*, 282 U.S. 660, 672 (1931) (discussing injury to “fish life”).

Once Florida establishes that it has been or will be injured, the burden shifts to Georgia to establish by clear and convincing evidence that its diversion is reasonable and equitable. As a matter of first principles and common sense, Georgia is in the best position (and has direct access to the necessary proof) to show that its diversion is necessary or equitable, as it claims, and therefore naturally should bear the burden of proof on that issue. *See Int’l Bhd. of Teamsters v. United States*, 431 U.S. 324, 359 n.45 (1977) (“Presumptions shifting the burden of proof are often created to reflect judicial evaluations of probabilities and to conform with a party’s superior access to the proof.”); *Nat’l Comm’ns Ass’n v. AT&T Corp.*, 238 F.3d 124, 130 (2d Cir. 2001). Accordingly, the Supreme Court’s recent equitable apportionment jurisprudence explicitly assigns the burden to the diverting state once injury has been shown. *Colorado v. New Mexico I*, 459 U.S. at 187 n.13 (“The burden has therefore shifted to Colorado to establish that a diversion should nevertheless be permitted under the principle of equitable apportionment.”). Riparian doctrine is generally in accord. *See* Joseph W. Dellapenna, *The Evolution of Riparianism in the United States*, 95 Marq. L. Rev. 53, 82 (2011); *Red River Roller Mills v. Wright*, 15 N.W. 167, 168-69 (Minn. 1883). In any event, the evidence will show that Florida should prevail under the principles discussed above regardless of who formally bears the burden.

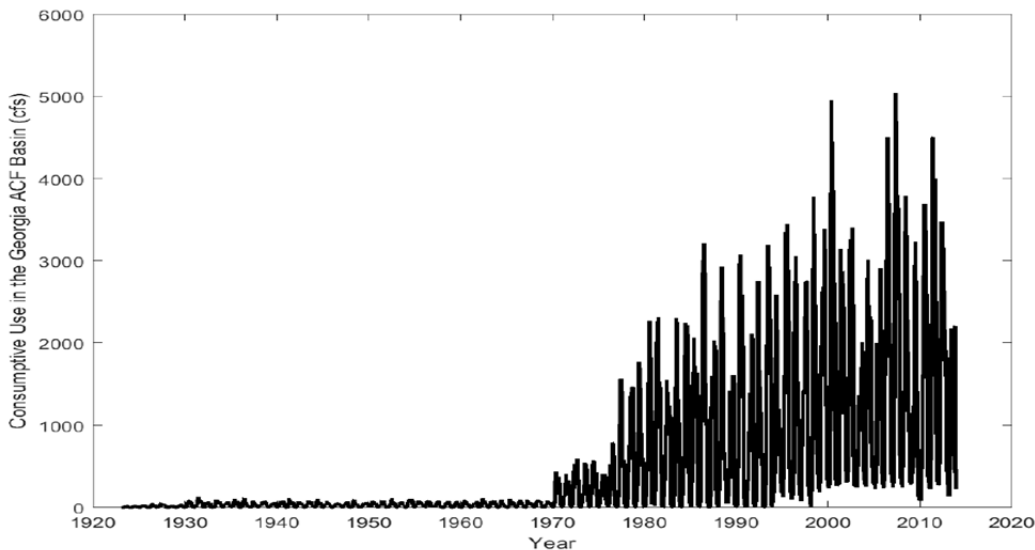
TRIAL PRESENTATION

While the science of hydrology and the like can quickly get complex, Florida’s case is

simple: (1) Georgia’s water use has increased exponentially over the past few decades; (2) the corresponding reduction in the water reaching Florida is causing serious harm to the Apalachicola region; (3) Georgia itself has recognized this harm, but refused to implement reasonable conservation measures to preserve this important shared resource; and (4) an equitable apportionment will significantly alleviate the present and future harms to Florida. The following is a non-comprehensive roadmap of elements of that presentation, integrating Florida’s anticipated evidentiary presentation with a number of specific legal and equitable principles.

I. GEORGIA’S UPSTREAM CONSUMPTION HAS DRAMATICALLY ALTERED THE HYDROLOGY OF THE ACF BASIN, MATERIALLY REDUCING APALACHICOLA RIVER FLOWS AND LEAVING NO DOUBT THAT FLORIDA HAS BEEN INJURED

There is no real doubt that Georgia’s upstream consumption of the waters of the Flint and Chattahoochee has increased dramatically since the 1970s even using conservative assumptions—*i.e.*, by *more than 10-fold from 440 cfs to about 5000 cfs during the peak summer periods* that are the most critical for the Apalachicola ecosystem, such as in the drought years of 2007, 2011, or 2012.



Total Consumptive Use in the Georgia ACF Basin From 1923-2013 Using Conservative Assumptions and Excluding Federal Reservoir Incremental Evaporation

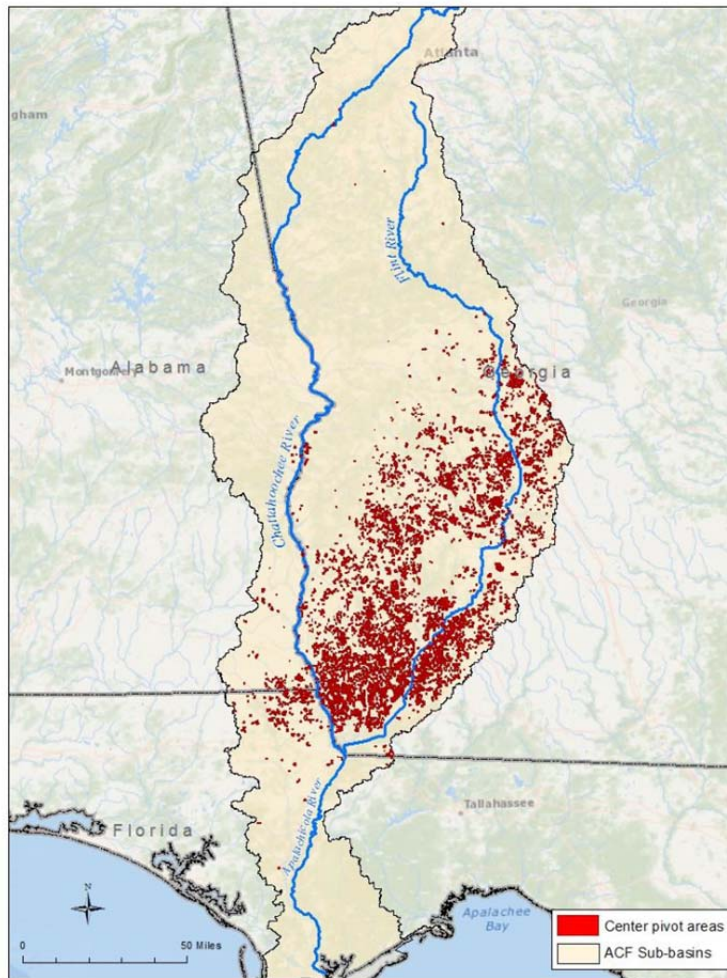
For instance, Georgia's *municipal and industrial* water ("M&I") use has grown as Georgia's population has exploded, particularly in the Metro Atlanta region (going from approximately 1.85 million in 1970 to 5.61 million in 2015, with projected growth up to 8.35 million by 2050). *See, e.g.,* JX-126, at GA02337389; Atlanta Reg. Comm'n, *ARC's 2014 Population Estimates: Steady as She Goes* at 2 (Aug. 2014), http://documents.atlantaregional.com/research/pop_estimates_main2014.pdf. Georgia's own projections demonstrate that its M&I consumption levels will continue to grow significantly, from 369.5 million gallons per day ("mgd") in 2011 to up to 627 mgd by 2050 unless steps are taken to limit future consumption. JX-164, at GA02451997.

Georgia's *agricultural* water use comprises a very large percentage of all of Georgia's water uses. Florida's expert analysis shows that Georgia's agricultural water use has increased significantly, from approximately 200-300 cfs in the early 1970s to about 4000 cfs in peak summer months in drought years. This has a substantial impact on streamflow: in a summer month of recent drought years, Flint River flows at the Bainbridge gage (the southernmost on the Flint before Lake Seminole) generally varied between 1100 and 3000 cfs. *In other words, in peak drought periods, Georgia removes considerably more water from the Flint than it leaves in the River.* Reduced flows in the Flint are particularly important, because the Flint River can provide an important portion of the flow to the Apalachicola River during dry summer months.⁴

Much of this agricultural water use is attributable to the widespread installation of center

⁴ Even Georgia's own experts admit that agricultural irrigation is substantially depleting its Flint River Basin rivers, consuming nearly half their flow. For instance, Georgia's agricultural engineering expert, Dr. Suat Irmak opined that surface and groundwater pumping for Georgia's agricultural irrigation resulted in a peak depletion of 1407 cfs in July 2012 of river flow to Florida. (The remaining mean monthly flow of the Flint River that month was only 1410 cfs at its southernmost gage at Bainbridge.) Florida will show that Georgia's impacts are even higher.

pivot irrigation systems in the ACF Basin, as shown below:⁵



Florida’s expert analysis of Georgia’s agricultural metering data demonstrates that many Georgia farmers’ irrigation practices waste significant amounts of water, because they apply water in amounts far larger than the recommended (or necessary) quantities for productive irrigation.

Consistent with Georgia’s unchecked growth in consumption, data maintained by the U.S. Geological Survey (“USGS”)⁶ demonstrates that Florida is receiving dramatically lower

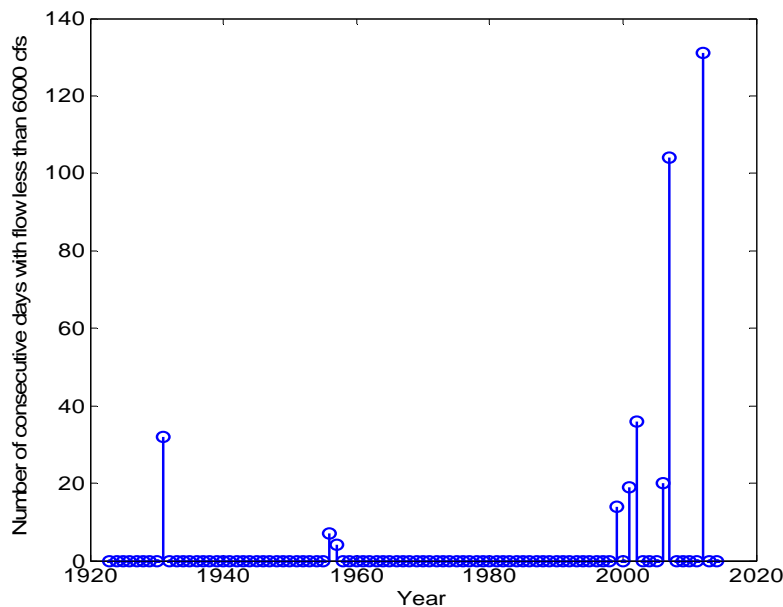
⁵ *Effects of Water Flows on Apalachicola Bay: Short and Long Term Perspectives: Hearing Before the S. Comm. on Commerce, Sci. & Transp.*, 113th Cong. (2013) (statement of Jonathan P. Steverson, Exec. Dir. of Nw. Fla. Water Mgmt. Dist.), <http://tinyurl.com/SteversonTestimony>.

⁶ See *Kansas v. Colorado*, 206 U.S. 46, 115-16 (1907) (relying on USGS data).

flows than at any time in a century of recorded history. The historical trend is unmistakable, both on the Flint and Apalachicola Rivers. *See, e.g.*, Attachment 13 to Fla.’s Mot. Motion *in Limine* to Preclude Expert Test. By Dr. Suat Irmak (Dkt. No. 473) (“Irmak Attach. 13”) (Bainbridge and Chattahoochee gage data). The average number of days when flows dropped below 6000 cfs (a biologically sensitive flow on the Apalachicola River) increased significantly over the past century. Such low flows were extremely rare before 2000: between 1922 and 1970, the average annually was 5.2 days. But between 1992 and 2013, the average jumped to 50.6 days. This trend has only worsened since 2000. Between 2000 and 2013, the average number of days with flows below 6000 cfs was 74.6. *See id.* Such low flows were rare before 1970, but now occur for months at a time. For example, Florida saw extreme low flows, averaging less than 6000 cfs per month, for an absolutely unprecedented eight *consecutive months* in 2012.

AVERAGE NUMBER OF DAYS WITH FLOW BELOW INDICATED THRESHOLD AT CHATTAHOOCHEE GAGE				
Threshold Discharge	1921-1970	1970-2013	1992-2013	2003-2013
6000 cfs	5.2	29.8	50.6	71.0
5500 cfs	2.6	19.0	32.7	54.0

Number of Consecutive Days Below 6000 cfs at Chattahoochee Gage



These phenomena cannot be explained by changes in the amount of precipitation that fell in the ACF Basin. In fact, in recent drought and dry years, far less river flow generally reaches Florida per inch of precipitation than in the past. As just one example: significantly less rain fell in the summer months of 1931 than in 2011 or 2012, yet in 1931 the flow on the Apalachicola River at the Chattahoochee gage was roughly 3700 cfs higher. This is more than 65% of the average Apalachicola River flow at the state-line for June to September in 2011 and 2012. The same is true when 1954 (the driest year in recorded history in the ACF) is compared to either 2011 or 2012. Many other such comparisons show similar changes.

YEAR	1931	1954	2011	2012
June-September Precipitation (Inches) (Livneh Dataset)	12.7	10.4	14.5	16.7
June-September Temperature (Fahrenheit)	80.5	81.0	79.5	77.3
June-September Streamflow (cfs) at the Chattahoochee Gage	9202	8968	5566	5419

Internal Georgia documents evaluating the Flint River recognize this phenomenon. In a November 2012 analysis, Georgia recognized that “[l]ow flows are getting lower [in the Lower Flint River Basin] due, in part, to irrigation withdrawals.” FX-56, at GA01643082. Georgia itself compared changes in the lowest daily flow (in cfs) between 1954 and 2011 and 2012 at various upstream gages (*id.*):

	1954	2011	2012
Ichawaynochaway Creek at Milford	120	5	3
Spring Creek at Iron City	9	0	0
Flint River at Albany	645	599	464
Flint River at Bainbridge	1930	1010	1050

Multiple objective measures from related contexts corroborate the extent of Georgia’s consumptive increases and their impacts on streamflow and on the ecosystem more broadly. For

example, under the federal Clean Water Act, states must ensure that established water quality standards are met. *See, e.g.*, 33 U.S.C. §§ 1311, 1313. To ensure adequate water quality on key portions of the Flint, Georgia determined a minimum “7Q10”⁷ flow of 2500 cfs at Bainbridge is necessary to comply with its Clean Water Act obligations and ensure the protection of aquatic life within the River. JX-21, at 125; *see also* Ga. Comp. R. & Regs. 391-3-6-.03. It is critical that Georgia satisfy that flow requirement, because the legality of the water permits it issues depends upon it. *See* JX-21, at 125; JX-12, at 25-26. Yet in many of the past 16 years, flows at Bainbridge were considerably below that required 2500 cfs level (for instance, in July 2012, average monthly flows at Bainbridge were approximately 1400 cfs). *See, e.g.*, Irmak Attach. 13.

Similarly, because both the extremity and the frequency of low flows impact the ecosystem, the U.S. Environmental Protection Agency (“EPA”) and the U.S. Fish and Wildlife Service (“USFWS”) developed guidelines in 1999 setting a baseline for appropriate and naturally varying river flows. FX-599; *see also* JX-21, at 123-24. Those guidelines, based on the entire hydrologic record, set 1-day minimum flows for each month that the Apalachicola River at the Chattahoochee gage has failed to meet for months in a row over the past decade—particularly in the summers of the drought years of 2007, 2008, 2011, and 2012. The guidelines also set minimum flows for 2- and 4-year periods (requiring flows to exceed the median flow in half of the years, and the lowest 25th percentile in 3 out of 4 years, respectively, of all 1-day minimum flows for a particular month). The Apalachicola regularly has failed to meet these guidelines since the 1990s.

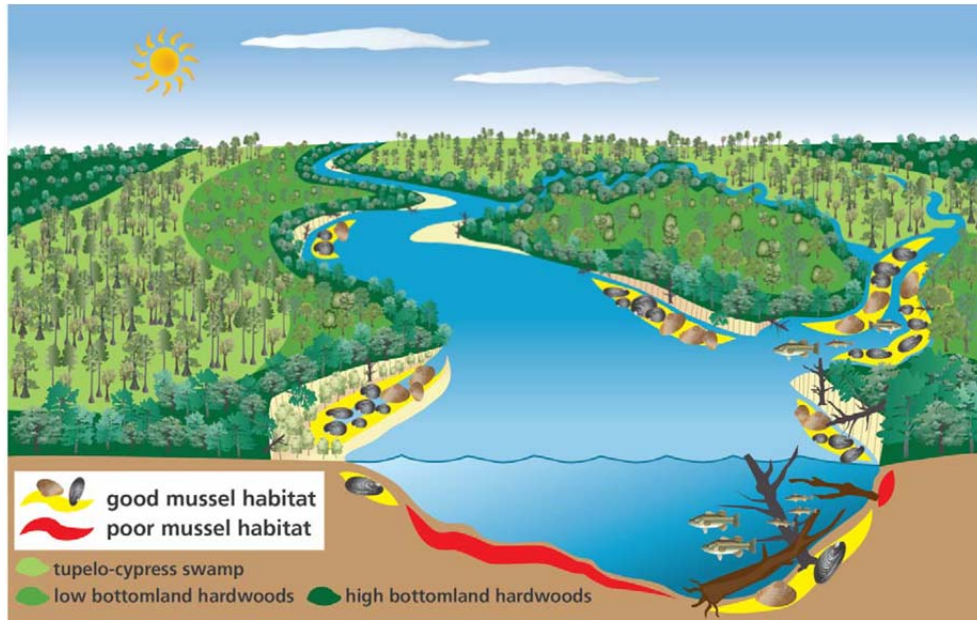
⁷ 7Q10 refers to the lowest seven-day average flow in a ten-year period. U.S. Environmental Protection Agency, Definition and Characteristics of Low Flows from DFLOW, <https://www.epa.gov/waterdata/definition-and-characteristics-low-flows-dflow#1Q10> (last visited Oct. 10, 2016).

The same pattern is evident on the Flint River, which led Georgia to conclude in 2006:

Since extensive development of irrigation in the lower Flint River Basin, drought-year low flows are reached sooner and are lower than before irrigation became widespread. Furthermore, low-flow criteria established by the U.S. Fish and Wildlife Service designed to protect aquatic habitats are not met more frequently and for longer periods of time since development of irrigation. *These data provide the clearest evidence that agricultural irrigation compounds the effect of climatic drought on stream flow in the Basin*

JX-21, at 22. Likewise, Georgia has violated its own 25% Average Annual Discharge (“AAD”) requirements (25% of the average annual flow of the stream) repeatedly throughout the Flint River Basin since 2006. *See, e.g.,* FX-24, at 6-7 to 6-8; Attachment 14 to Florida’s Motion *in Limine* to Preclude Expert Testimony by Dr. Suat Irmak (25% AAD for three sample USGS gages). Florida’s expert hydrologists—including two of the members of the field’s prestigious National Academy of Engineers—will explain these phenomena and their causes (*i.e.*, unreasonable upstream consumption by Georgia) in great detail.

The substantial impacts on the Apalachicola River and Bay, and the surrounding ecosystems, are also clear. Hundreds of riverine animal and plant species in Florida depend not only on flow in the main Apalachicola River channel to survive, but also on its channel margins, sloughs, and the floodplain (that is, the area outside of the main channel that receives flow through side-channels or when the river overtops its banks).



Conceptualization of the Apalachicola River, including sloughs (swamps or shallow lake systems, typically side-channels from or feeding the River) and floodplains

The yellow areas pictured above highlight the edges of the river bank (the river margins) and side channels, which are very sensitive to changes in river flow. Even modest decreases in flow can cause disproportionate loss in the extent of suitable habitat. For example, low levels can dry streambeds and cause mussel exposure and desiccation (that is, they dry up and die):



FX-607, FX-606 (showing dried up flats in channel margins with dead mussels)

During low flows, many of the side-channels (sloughs) that are fed by River flow—and in turn carry water to the floodplain—become disconnected. When they do, they can dry up completely or become stagnant and depleted of oxygen, killing the fish and mussels (some of

which may be protected by the federal Endangered Species Act) in the slough. Additionally, the almost complete lack of water in the sloughs and floodplain during extreme low flows has permanent impacts on swamp trees (like tupelo), a material percentage of which have disappeared in recent decades. Finally, when flows are extremely low, salt water from the Bay intrudes further up the River than normal, and significantly reduces the area in which very young sturgeon—which cannot tolerate high salt levels—can forage and grow. In short, reductions in flow affect all life in the Apalachicola riverine ecosystem. Less water in the River means less inundation of critical habitats for fish and mussels. As a result of extremely low flows, there is indisputable evidence of significant increases in harm to various species within Florida that depend on the river. Florida's expert riverine biologist, accompanied by a senior biologist from Florida's Fish and Wildlife Conservation Commission, will describe these issues in detail.

Low flow also causes significant impacts on the Apalachicola Bay. The estuary is a unique environment where salt and fresh water mix, and the plant and animal species in the Bay (including Apalachicola oysters) are adapted to this environment in which freshwater brings in nutrients and mediates salinity. The Bay has reached a point at which the reduced freshwater flows are substantially altering its ecology. For example, water quality changes in the Bay due to decreased flows (i.e., changes in the amount, quality, and proportion of nutrients, and changes in salinity, temperature, and dissolved oxygen) impair the biological production the Bay can support. The microscopic plants in the Bay (phytoplankton) depend on receiving a sufficient amount of the right kind of nutrients that come with freshwater flow; without sufficient flow, the plankton change and the entire food web that lives on these plants changes and becomes less productive—including especially the iconic oysters. Additionally, the increase in salinity that occurs when freshwater flow is low exacerbates this harm: high salinities cause species that

cannot tolerate such levels to disappear in favor of marine species.

These changes are particularly harmful in East Bay, the area nearest the River that normally sees high nutrient and low salinity levels and serves as a nursery for a variety of species, such as shrimp and blue crab. Unless the trend towards increasingly low flows is reversed, Apalachicola Bay will transition from a unique and treasured river-dominated estuary, with high nutrient input, a highly efficient food web, and high productivity, to a system characterized by more frequent, more severe low flows, and less productivity overall—almost just another part of the Gulf of Mexico. Florida’s estuarine expert, aided by several other Florida experts, government witnesses, and Apalachicola oystermen, will tell this story.

The environmental harms wrought by Georgia’s improper consumptive use are exemplified by the striking 2012 crash of the Apalachicola oyster industry. Until recently, the industry produced 90% of all of Florida’s oyster harvest. But higher Bay salinities, along with other impacts of low flows such as changes in plankton, have allowed marine predators such as oyster drills (snails) to move in and dramatically affect the oyster population.



Oyster Drills, FX-751a.

After extreme low flows in recent drought years—including absolutely unprecedented extreme low flows for 6 months in 2011 and 8 months in 2012, the Apalachicola oyster fishery crashed. The federal government, in granting a disaster declaration for the Apalachicola oyster

crash, was required to assess the cause of the crash, and particularly whether it was caused by the extreme drought year low flows or by “overharvesting” of oysters. In a series of analyses over a year-long review period, federal experts reached a comprehensive conclusion that a lack of fresh water from low river flows, rather than oyster overharvesting, was the principal cause. *See, e.g.*, Roy E. Crabtree, Florida Request for Federal Fishery Disaster Relief – DRAFT DECISION MEMORANDUM (Aug. 12, 2013), FX-413, at NOAA-0022898; Laura Petes, NOAA Climate Program Office, Input to Florida Gulf Coast oyster disaster declaration (Sept. 21, 2012), FX-412, at NOAA-0003818. Unlike in prior drought years when impacts quickly dissipated, this time the oyster fishery has not recovered. As Florida’s experts will explain, the well-being of the fishery is now in the balance. And lifelong Apalachicola oystermen will supply the Court with a direct and vivid perspective that neither lawyers nor outside observers can fully appreciate.

II. GEORGIA HAS LONG RECOGNIZED THAT ITS EVER-INCREASING CONSUMPTION LEVELS ARE UNREASONABLE AND YET HAS REFUSED TO TAKE GENUINE ACTION TO ADDRESS THE PROBLEM

At trial, Florida will present a timeline spanning from the early 1990s to the present demonstrating that Georgia fully understood that its growing consumption of water was causing significant problems for the ACF system, but did very little to address the issue. Georgia’s failure to take meaningful action to redress these harms justifies the issuance of an equitable apportionment decree in this case.

In January **1992**, the then-director of Georgia’s EPD, Harold Reheis, admitted to the federal government that “Georgia has [an] area of potential groundwater overdraft . . . in the southwestern corner of the state where there have been large withdrawals made in the last two decades for the irrigation of crops.” FX-1, at GA00811963. Even at this early stage, it was becoming obvious that these “large withdrawals” were problematic for both Florida and Georgia. For example, in a **1995** report, USGS warned that “stream-aquifer-flow declines upstream of the

Apalachicola River will reduce flows entering Lake Seminole and, subsequently, cause reductions in flow of the Apalachicola River.” JX-7, at 68. At the same time, the Wildlife Resources Division of Georgia’s Department of Natural Resources—the agency responsible for protecting the state’s wildlife resources—was raising the red flag, warning that Georgia’s standard for ensuring adequate flows in its rivers (the “7Q10”) was not “scientifically defensible” and could lead to “significant degradation of stream communities.” FX-36, at GA00100747.

Evidence of severe problems in the ACF Basin continued to mount. In **1999**, Georgia’s Chief of Fisheries concluded there is “clear evidence that groundwater is over-allocated in the lower Flint River basin.” FX-6, at FL-ACF-0254447. Director Reheis likewise acknowledged:

In southwest Georgia there are approximately 3000 wells in the Floridan aquifer which we believe can affect the flow of the Flint River during bad droughts. The big springs on the bottom of the Flint River from Albany on down to Bainbridge, which supply a substantial part of the base flow of the Flint River in this section, are all fed by the Floridan aquifer. When thousands of irrigation systems are operating during dry weather, such as we have been having this year [1999], one can see a significant reduction in Flint River flows. [FX-2, at GA02257045.]

By the late 1990s, the issue reached a crisis point: Georgia had granted so many irrigation permits that its own modeling predicted that the entire Flint River could dry up in a bad drought.

In a series of **1999** letters, Director Reheis explained exactly how the problem had developed:

The sections of the [Georgia] laws that require farmers to have permits (O.C.G.A. 12-5-31 and O.C.G.A. 12-5-105) are the weakest of all Georgia’s environmental laws. The original bills were specifically written in a very loose manner to place the minimum amount of requirements on agricultural water uses, because the wisdom at the time was that the General Assembly would not accept more than that in regulating farmers. [FX-2, at GA02257044.]

You asked how it came that the Legislature ordered EPD to regulate agricultural wells 11 years ago, but never gave us money to do the job. First, it is not an unusual circumstance that the General Assembly would give EPD an unfunded mandate. It happens again and again. Second, for the first several years of this 11

year time period, EPD was operating under the belief that we would not run out of water for farmers anywhere in south Georgia, and given that the law is extremely lenient with regard to agricultural permitting and water use, we essentially just issued permits for any farmer that requested them. Since we had so many applications and so few staff to handle them, we made it a simple paper exercise. . . . But we also thought, incorrectly, that since there was so much groundwater, it was no great problem that we were understaffed. [FX-3, at GA02257040-41.]

From an environmental protection perspective, Georgia's permit system supplied no limits at all. The permits did not require users to "measure or report how much they use or when," and "once issued and once use is begun," the "permits never expire." FX-5, at GA01186515. More than that, Director Reheis acknowledged that there was widespread unpermitted drilling of irrigation wells, and that in any event the agency lacked the resources to take any form of enforcement action against permitted and unpermitted irrigators alike. *See generally* FX-2; FX-3. Indeed, in a moment of candor, he admitted that while the permitting system had "worked well for the farmers," it had not "worked very well for the water resources." FX-2, at GA02257045.

Georgia knew very well that it had to stop issuing irrigation permits and cut back irrigation in drought years. Numerous internal documents demonstrate that the state knew it was digging itself deeper into a hole:

- "[W]e've already exceeded the 'safe' upper limit of permissible acreage in the lower Flint." [FX-4, at GA01419036.]
- "Status quo in issuing new irrigation permits will lead to an over-commitment of water resources, and over-use of the resource." [*Id.*]
- "Over-use will cause severe impacts on fish and other aquatic life in the Flint River and its tributaries." [FX-4, at GA01419037.]
- "If EPD does not limit additional irrigation use soon, Georgia's negotiators in the Apalachicola-Chattahoochee-Flint (ACF) River Basin Compact will not be able to negotiate an allocation formula with Florida and Alabama" and, as a result, "Georgia will end up in court sooner or later." [FX-4, at GA01419037-38.]
- "If new irrigation uses are not limited effectively and soon, it will create a bigger

Achilles' heel than we currently have.” [FX-4, at GA01419039.]

- “[I]t is necessary for EPD to impose a temporary moratorium on issuing certain additional irrigation permits in Southwest Georgia.” [*Id.*]

At the same time, certain high-ranking Georgia officials began to publicly and privately clamor for Georgia to take other significant proactive action to remedy the problem:

- “I do believe that the state will need to put a cap on water depletions one of these days from the Floridan Aquifer to keep water flowing in the lower Flint River in drought years” [FX-5, at GA01186514.]
- “In Kansas v. Colorado [514 U.S. 673 (1995)], the Supreme Court found Colorado liable for violating the . . . River Water Compact because it had permitted so much ground water use for farmers that their usage reduced the river flowage into Kansas. Colorado is forced to buy out farmers’ water rights (granted through state permits) This could happen to Georgia if we cannot deliver on an allocation formula commitment due to over-use by agriculture.” [FX-4, at GA01419039]
- “My objective is a good, long-term plan to manage our water resources for *sustainable use*.” [FX-5, at GA01186516 (emphasis added).]

Late in **1999**, Georgia’s environmental officials negotiated what Georgia hoped would be a solution with Georgia agricultural groups. The legislation was called the Flint River Drought Protection Act, and it mandated an “irrigation auction” in the Flint River Basin whenever severe drought was predicted, so that farmers with preexisting permits would be paid not to irrigate during such droughts. Director Reheis acknowledged that the relevant farming and agribusiness leaders all agreed that “this is good and fair.” FX-9, at GA01185040. Even one of Georgia’s experts in this case acknowledged that the FRDPA was a “reasonable” measure to deal with droughts. Georgia’s legislative history for the Act explains that it was explicitly intended to fend off litigation from Florida:⁸

⁸ See *Mannato v. SunTrust Banks, Inc.*, 708 S.E.2d 611, 612 n.1 (Ga. Ct. App. 2011) (noting that the Georgia State Legislative Summaries—known as the “Peach Sheets”—have been recognized as “legislative history” by the Georgia Supreme Court).

The underlying driving force behind HB 1362 [the FRDPA] was, in large part, the litigation between Georgia, Florida and Alabama over water rights in the region. The litigation actually motivated the Georgia Environmental Protection Division (EPD) to examine the Flint River water flow. In its initial studies, the EPD discovered that high use of irrigation during times of severe drought had the potential of dramatically reducing the flow of the Flint River. . . . Prompted by the discussions between the EPD and Corps of Engineers, members of the Georgia House of Representatives met with the Georgia Farm Bureau, state agribusiness leaders, individual farmers in the region and environmental groups to develop a solution to the water flow problem. That solution took the form of HB 1362, a mechanism to take acreage out of irrigation production during times of severe drought.

HB 1362 was viewed by many as a good faith effort by Georgia to reduce the amount of water consumption by farmers during times of drought, thus preserving the river flow into Florida. . . . HB 1362 was also seen as an environmental protection measure to preserve the ecology of the Flint River. [FX-10, at 30-31.]

Director Reheis explained to the public in a press release why it was necessary for Georgia to take these actions:

[O]ur ACF ground water and surface water computer models indicated that the combined effect of all irrigation in the Flint River Basin could dry up the Flint River above Bainbridge in the summer growing season of a drought year. Thank goodness the Flint did NOT dry up in Year 2000 (the year of record low flows in the Flint Basin), *but a number of large Flint tributaries did dry up that year over many miles of length.* [FX-15, at GA00181626.]

Unfortunately, any progress on Georgia's part to deal with its significant irrigation problem soon stalled. Georgia invoked the FRDPA exactly twice—in **2001** and **2002**—after which its auction fund was depleted. Soon after, in **2006**, Georgia inexplicably decided to lift major portions of its moratorium on new applications for irrigation permits in the Flint River Basin. *See* JX-21, at 23-24.

Biologists in Georgia's Wildlife Resources Division immediately recognized the predictable consequences that would follow:

[T]his sub-basin is grossly over-allocated and further allocation of water withdrawal permits for either surface water or Upper Floridian Aquifer groundwater would unquestionably destroy or irreparably harm the ecological health and diversity of the Spring Creek sub-basin. [FX-23.]

As did the USFWS:

[I]t is also unlikely that the mussels and the other aquatic inhabitants of the Flint River Basin will be sustained into the next century if significant changes in water use are not implemented in the near future. . . .

To ignore the dire status of these species is comparable to ignoring the condition of a residence as it falls into disrepair. The homeowner may avoid replacing shingles for a while but eventually the roof will develop a hole and the rain will come inside. The roof for the Flint River Basin is leaking, in some places quite badly. Dwindling species are indicative of a declining system. [FX-46, at GA00537492, GA00537494.]

Georgia nonetheless proceeded, rationalizing that it could attempt to offset these impacts by buying farmers' irrigation rights under the FRDPA in drought years. JX-21, at 45. But the FRDPA's irrigation auction was *never again* funded by Georgia's legislature. Consequently, although the Flint River Basin suffered severe droughts in **2007** and **2008**, the FRDPA was never implemented in those years.⁹ USFWS again admonished Georgia:

A measure not used was a provision of the Flint River Drought Protection Act to reduce irrigation withdrawals by 20 percent in sub-basins with greatest risks of experiencing low flows due to irrigation. This tool could have been utilized to keep flow in Spring Creek and other parts of the Flint River Basin. . . . The [endangered] mussel populations in Spring Creek appear to be on a steep trajectory to extirpation. [FX-47, at GA00537496-97.]

By **2009**, a Georgia EPD funded study concluded:

Our analysis of streamflow data show consistent and substantial declines in minimum and seasonal streamflow associated with the development and implementation of agricultural irrigation in the FRDP area of southwestern Georgia. This has resulted in some of the lowest flows on record during recent droughts. There is no climatologic indication that recent droughts were more severe or persistent than those in the past (*i.e.*, 1930's or 1950's). Thus, we conclude that water use is the primary factor causing record low streamflow and other alterations in regional hydrology. [FX-49d1, at 27.]

⁹ Georgia officials have described 2007 as "one of the worst droughts in Georgia history." FX-288. Georgia even sought federal disaster assistance for counties in the Flint River Basin. *See generally* FX-96.

By the **2011-12** drought, the need to implement the FRDPA was again critical. In January 2011, a Georgia hydrologist wrote to members of Georgia's Flint Regional Water Council with an unmistakable warning:

NOAA has released their climate forecasts for Winter-Spring 2011 To say that it reflects "doom and gloom" for the SE Region may be an understatement. . . . I am concerned that we are not hearing any discussion from GaEPD regarding pre-drought planning. . . . NOAA experts feel strongly that the drought will persist perhaps more than one year. Clearly the hydrologic and agricultural impacts on our region of Georgia will very likely be extreme. [FX-49a, at GA01048557.]

Although EPD personnel initially recommended a drought declaration in January **2011**, FX-78, at GA01597629, EPD decided in February not to declare a severe drought, FX-81. Thus, Georgia did not implement the FRDPA irrigation auction, and did not take *any other action* to limit irrigation related-water use in the Flint River Basin.

By June **2011**, FWS was again warning that "[o]ver-allocation of the ground water aquifer in the lower Flint and other areas needs immediate attention." FX-48, at GA00186367. Unsurprisingly, by September **2011**, EPD personnel were noting record high depletions of the Upper Floridan Aquifer and identifying record-setting low flows on the Flint River. *See* FX-82, at GA01614062. At this same time, Georgia's Lower Flint-Ochlockonee Regional Water Planning Council released its Regional Water Plan (the "LFO Plan," FX-24). This LFO Plan was developed pursuant to state law to ensure that water uses within the state were consistent with conservation and sustainable use. *See* Ga. Code. Ann. § 12-5-31(h) (noting plans "shall promote the conservation and reuse of water within the state, guard against a shortage of water within the state, promote the efficient use of the water resource, and be consistent with the public welfare of the state"); *id.* § 12-5-96(e) (noting plans should address "sustainable use"). The LFO Plan demonstrated that Georgia was far exceeding its own "sustainable yield" limits for the Upper Floridan Aquifer in the Dougherty Plain (the Lower Flint River Basin), as well as

Georgia’s “sustainability criteria” in dry and drought years for the Flint River generally. FX-24, at 3-6, 3-9 (horizontal row for Bainbridge gage identifying 1376 cfs shortfall).

By early **2012**, the ongoing drought combined with massive levels of 2011 agricultural withdrawals so significantly reduced the levels of the Upper Floridan Aquifer that it ceased to feed the flow of the Flint River or Flint tributaries throughout portions of the Lower Flint River Basin. FX-87, at GA00000368. Despite admitting the continuation of the severe drought, Georgia cynically (and incorrectly) concluded that there was no reason to invoke the FRDPA irrigation auction in 2012—*because the Flint River’s surface water and the Upper Floridan Aquifer had already been so depleted that even more pumping could not further worsen river flows. Id.* On March 1, 2012, Georgia’s current EPD Director, Judson Turner, confessed in a press release: “[N]o funds are currently appropriated” for use of the FRDPA, and “[t]here is no doubt that we need a viable management tool to deal with drought in the Flint River basin.” JX-69, at GA00208715. The death blow to the FRDPA came in **2014**, when Georgia amended it to make the auction process discretionary instead of mandatory. S.B. 213, 2014 Gen. Assemb., 2013-2014 Reg. Sess. (Ga. 2014), JX-105.

Still understanding that a “long term solution” was necessary, Georgia continued studying ways to implement an improved measure—including the specific unimplemented recommendations of the 2011 LFO Plan. The “[i]mpetus” for this action was “[e]xtreme low flows observed in recent years, unlike those observed in previous drought periods.” FX-67, at GA00217831. In internal documents, Georgia expressly recognized the “[r]egional and state benefits from increasing low flows in streams that flow into Florida.” *Id.*

As part of that study process, in late **2014**, after this case was first filed, EPD personnel met with groups of interested Georgia parties. A presentation given to key stakeholders by a

Georgia technical adviser during that meeting accurately described the current state of the Basin: “The flow in the Flint River is on a long-term decline that began more than 45 years ago. . . . Flows have declined in the **upper** part of the Flint from human consumption, [inter-basin transfers], and from [evapotranspiration] loss from myriad lakes and ponds constructed in the Flint watershed” FX-49b, at GA00278839 (emphasis added). Correspondingly, “[f]lows in the **lower** Flint have declined in response to reduced inflow from the upper Flint and to agricultural withdrawals from the aquifers, which reduce inflow to [the] river, and from streams, which have a direct effect on the resource.” *Id.* at GA00278840 (emphasis added). As a result, “[m]any streams in the lower Flint drainage[] have experienced severe reductions in short-term and long-term flow. The combined effects of irrigation pumping and drought create non-flowing conditions that did not exist prior to the late 1990’s.” *Id.*

At that same meeting, Director Turner explained that Georgia had only taken “modest” steps to address the problem in recent state legislation. JX-154, at GA00671253. Contemporaneous meeting notes record his instructions to the assembled group:

Florida’s equitable apportionment action before the Supreme Court is a challenge, of course, which can seem overwhelming.... However, Director Turner emphasized the importance of identifying the steps that can be taken today, rather than freezing to see what happens. [*Id.* at GA00671253-54.]

But Georgia did freeze. Although the internal notes then identify a series of possible remedial steps Georgia could take to alleviate low drought year flows, it has implemented none of them in the two years since the November 2014 meeting. Thus, like so many of Georgia’s past study efforts, no tangible benefits resulted from this study process either, leaving Florida with no relief.

Finally, just in **2016**, it became apparent Georgia does not know, and may not even *care* to know, the true extent of irrigation in its portion of the ACF Basin. In comparing the *irrigated acreage* data provided by Georgia in a Wetted Acreage Database completed this year (JX-129,

FX-659) to the data for *permitted acreage* data in Georgia’s Agricultural Permitting Database (JX-132), Florida discovered that roughly 90,000 irrigated acres in the Flint River Basin are not even permitted. *See* FX-311, 708. These irrigated acres are *illegal* under Georgia law. *See, e.g.*, FX-312, at 2 (setting forth permit requirements); JX-73; *see also* Ga. Code Ann. § 12-5-105 (“[A]ny modification in the use or capacity conditions contained in the permit . . . shall require the permittee to submit an application for review and approval by the director . . .”). Many of those acres are in sensitive portions of the Lower Flint River Basin, where withdrawals from the Upper Floridan Aquifer have greater impacts on streamflow on the Flint and thus Apalachicola Rivers. *See* JX-21, at 24-29 (describing sensitive areas). The evidence will show that Georgia has not taken any obvious, meaningful action to address these unpermitted withdrawals.

III. THROUGHOUT THIS SAME PERIOD, GEORGIA REFUSED TO NEGOTIATE IN GOOD FAITH OVER A MULTI-STATE SOLUTION

In 1992, Georgia initially acknowledged the need for an “equitable allocation of water resources within the ACF Basin,” committing in a Memorandum of Agreement to “participate fully” and “support” a Comprehensive Study of hydrologic, biological, and related issues to further that process. FX-195a ¶¶ 3, 6. But that process had begun to unravel by the late 1990s.

In 1997, after nearly five years of the Comprehensive Study, Georgia publicly took the position that it was willing to work cooperatively with Florida to address ACF water issues through an interstate compact (the ACF Compact), which was to be based on the data gathered in the Comprehensive Study. But Georgia was in fact secretly planning to pull a bait-and-switch after the Compact passed, as revealed by its lead technical representative’s handwritten notes:

If we tell Corps what we really want . . . it becomes public early. Fl[orida] and Al[abama] might be scared off, [and the] Compact may get scuttled. Fl[orida] and Al[abama] will learn sooner or later what we want and won’t like it. Big question is should they know sooner or later (after compacts pass)? [FX-206, at GA02322676.]

True to those handwritten notes, Georgia fundamentally changed its water use demands shortly after the Compact passed. Its demands for upstream consumption ballooned to levels significantly higher than those developed collectively by the parties as part of the Comprehensive Study. Georgia's projected need for future M&I consumption grew *7-fold*, FX-213, and Georgia's projected need for irrigation in the Flint River Basin, particularly during dry years, also drastically increased, *compare* FX-202 (Comprehensive Study Agricultural Water Demand Executive Summary), *with* FX-211 (May 1, 1998 memorandum detailing Georgia's later water demand estimates). Florida complained strenuously, but Georgia's demands never fell back to the levels identified in the Comprehensive Study.

The former Secretary of Florida's Department of Environmental Protection, David Struhs, will testify in detail about what happened. In short, Georgia was never willing to agree on any restriction on its own consumption. Although it was willing to negotiate with the Corps over how the dams might be run to offset some of the impacts of Georgia's consumption, that provided no real solution to the problem. The concern was that, even with some minimum flow limits (which were initially anticipated to be rare occurrences), future increases in Georgia's consumption would simply make those rare "minimum flows" into an everyday occurrence, destroying the Apalachicola River and Bay ecosystem. Secretary Struhs's concerns from more than a decade ago were indeed prophetic; extreme low flows occurred for nearly 6 months in 2011 and 8 months in 2012, leading to the crash of the Apalachicola oyster fishery.

In addition, in 2002 and into 2003, in the midst of the Compact negotiations, it became clear that Georgia was secretly negotiating a side-deal with the Corps to ensure it would not need to compromise with Florida. A federal judge who had stayed other litigation to allow for good faith negotiations between the ACF States made a specific finding that Georgia's conduct in that

context gave rise to “an inference of bad faith.” *Alabama v. U.S. Army Corps of Eng’rs*, 357 F. Supp. 2d 1313, 1318 (N.D. Ala. 2005), *vacated and remanded on other grounds*, 424 F.3d 1117 (11th Cir. 2005). Florida tried on multiple occasions to find a way to resolve the disputes, but Georgia never put a genuine, meaningful, and binding consumption cap on the table in any form.

IV. AN EQUITABLE APPORTIONMENT THROUGH A CONSUMPTION CAP IS A REASONABLE REMEDY THAT CAN REDRESS FLORIDA’S WORSENING INJURIES AND PREVENT CATASTROPHIC HARM

In this action, Florida will seek a cap on consumption consistent with the Special Master’s opinion of June 19, 2015. Florida’s experts will show how a reduction in Georgia’s consumptive use of water through several mechanisms would be a “just and equitable allocation,” *Colorado v. New Mexico I*, 459 U.S. at 187 n.13, that would alleviate the past damage caused by Georgia’s consumption and mitigate what would otherwise be substantial future harm.

The specific remedy that Florida seeks is straightforward and fair. It consists of two elements. First, Georgia’s annual average consumptive use and streamflow depletions in the Basin should be capped. Georgia, like many states, already measures major M&I consumptive uses of water in certain areas, and reasonable methodologies can be employed for agricultural uses as well. Second, in drought years, Georgia should share the pain by making additional consumption cutbacks. In those specific years, consumption should be capped so that depletions of the Flint and Chattahoochee Rivers are reduced in further key months, including by 1500 to over 2000 cfs in peak drought year summer months. Florida’s hydrology experts will explain how each element of Florida’s proposed cap could be administered, and exactly how Georgia’s compliance could be subjected to third-party verification.

Florida’s experts will also establish that Georgia can select from among a wide range of reasonable measures that can achieve the required reductions, from lawn watering and other

outdoor water use restrictions in Metro Atlanta (similar to those Georgia required beginning in September 2007, JX-24) to specific Flint River Basin irrigation-related programs. These measures are not novel; they are routinely employed by states dealing with water shortages. They are all measures that Georgia itself has previously imposed or contemplated but failed to fully implement, or that Florida has already taken in its part of the ACF Basin. These measures should not constrain Metro Atlanta's growth in any material way in the future, or severely impact Georgia's farming economy. The burden of any agricultural remedy would fall on the State, not individual farmers, because the State is the entity that *created the problem* by excessively granting irrigation permits and because the State can fund a solution.

Likewise, Florida's hydrological experts will demonstrate that water saved through the consumption cap will reach Florida. The majority of the water savings from potential measures Georgia could implement will involve its agricultural irrigation and will therefore benefit flows in the Flint River. There are no federal dams on the Flint, and Lake Seminole, formed by Woodruff Dam, has minimal storage and is operated by the Corps as a "run-of-the-river" project: water simply runs through the lake and is released rather than stored. Thus, increases in inflows and decreases in consumption directly from the Flint, as well as from the lower Chattahoochee River (the portion of the Basin between W.F. George Reservoir and Lake Seminole) inevitably will augment the amount of water reaching Lake Seminole and thus Florida. Contrary to Georgia's view, Florida's experts' analyses show that it is a physical impossibility to offset or trade significant quantities of water conserved by withholding more water in Lake Lanier (which supplies water to Metro Atlanta).

Indeed, even if this were technically possible (it is not), there is no basis to believe that the Corps would seek to operate their dams in a manner to annul a U.S. Supreme Court equitable

apportionment. See U.S. *Amicus Curiae* Opp'n to Mot. to Dismiss at 19 (Dkt. No. 66):

It is at least plausible that a cap on Georgia's consumption, particularly with respect to the Flint River, which is unregulated by the Corps, would increase the basin inflows and thereby increase the amount of water flowing into Florida. Georgia gives the Flint River short shrift, suggesting in a footnote that the Corps would increase impoundments upstream to offset increased flows from the Flint River. But that speculation is entirely unwarranted, particularly where the current operational protocols provide for matching basin inflows during most flow conditions. It is also plausible that an increased flow during wet times would provide a cushion during low-flow periods, so that it would be possible to maintain a flow rate of greater than 5,000 cfs for a longer period of time without any alteration of the Corps' operations.

The simple fact is that although the Corps operates multiple federal reservoir projects in the ACF Basin, water from 62% of Georgia's ACF watershed area flows into the Flint River and is not controlled by the Corps. Thus, as the United States argued in its opposition to Georgia's motion to dismiss, a "cap on Georgia's *consumption* would not necessarily require implementing action by the Corps" or any alteration to its operations, because the cap "would increase the basin inflows and thereby increase the amount of water flowing into Florida." *Id.* at 11, 14, 19.

Finally, Florida's experts will show that the extra water that would reach Florida through a consumption cap would significantly benefit Florida's ecology, especially compared to a future in which Georgia's consumption would substantially *increase*. Increased flows would in turn increase water levels in the River, connecting more of the ecosystem and reducing the amount of time the system suffers from significant harm. Similarly, increased flows improve salinity, oyster populations, water quality, and the food web in the Bay, allowing it to stabilize and move back to its historical state.

CONCLUSION

For all the reasons identified above, Florida will readily satisfy its burden to show that Georgia's consumption has caused, and will cause, substantial harm. By contrast, Georgia cannot justify its activities as reasonable or equitable as required by Supreme Court case law.

No. 142, Original

In the
Supreme Court of the United States

STATE OF FLORIDA,

Plaintiff,

v.

STATE OF GEORGIA,

Defendant.

Before the Special Master

Hon. Ralph I. Lancaster

CERTIFICATE OF SERVICE

This is to certify that the STATE OF FLORIDA'S UPDATED PRETRIAL BRIEF and SUMMARY OF STATE OF FLORIDA'S UPDATED PRETRIAL BRIEF have been served on this 26th day of October 2016, in the manner specified below:

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