

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. Paul J. Kelly Jr.

STATE OF FLORIDA'S RESPONSE BRIEF

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ABBREVIATIONS

cfs	Cubic feet per second
Corps	United States Army Corps of Engineers
EPD	Environmental Protection Division
FEIS vol. 1	U.S. Army Corps of Eng’rs, <i>Final Environmental Impact Statement, Update of the Water Control Manual for the Apalachicola-Chattahoochee-Flint River Basin in Alabama, Florida, and Georgia and a Water Supply Storage Assessment – Vol. 1</i> (2016)
FEIS vol. 6	U.S. Army Corps of Eng’rs, <i>Final Environmental Impact Statement, Update of the Water Control Manual for the Apalachicola-Chattahoochee-Flint River Basin in Alabama, Florida, and Georgia and a Water Supply Storage Assessment – Vol. 6: App. J, Part 1, Final Fish and Wildlife Coordination Act Report</i> (2016)
FEIS vol. 7	U.S. Army Corps of Eng’rs, <i>Final Environmental Impact Statement, Update of the Water Control Manual for the Apalachicola-Chattahoochee-Flint River Basin in Alabama, Florida, and Georgia and a Water Supply Storage Assessment – Vol. 7: App. O, Extended Unimpaired Flow Report January 1939 – December 2012 for the Apalachicola-Chattahoochee-Flint (ACF) River Basin</i> (2016)
Fla. FoF	Florida Proposed Findings of Fact
Fla. Suppl. Br.	Florida Supplemental Brief
Ga. FoF	Georgia Proposed Findings of Fact
Ga. Suppl. Br.	Georgia Supplemental Brief
GWRI	Georgia Water Resources Institute
NOAA	National Oceanic and Atmospheric Administration
ppt	Parts per thousand
R&R	Report & Recommendation of Special Master Lancaster
UF	University of Florida
UGA	University of Georgia
USFWS	United States Fish & Wildlife Service
USGS	United States Geological Service

INTRODUCTION AND SUMMARY OF ARGUMENT

Georgia's Supplemental Brief is written as if there were no five-week trial in 2016, no Report of the Special Master in 2017, no subsequent statements by the Corps that it would "take [a decree] into account and adjust its operations accordingly," Record of Decision 18, and no decision by the Supreme Court last June. But all those things happened, and they all stand in the way of the position Georgia is advancing now.

After presiding over the trial, Special Master Lancaster issued a Report and Recommendation reciting his detailed record-based conclusions regarding Georgia's grossly inequitable conduct and the "real harm" suffered by Florida from the resulting "decreased flows in the River." R&R 31-34. Georgia ignores those statements and, instead, asks this Court to adopt a view of the case directly refuted by the trial evidence. That is especially evident when it comes to Georgia's claim that it consumes only "2.4" or "6.1%" of ACF Basin flows, and its grossly inflated cost estimates (which are based on the false notion that a decree would all but wipe out agriculture in southern Georgia).

As explained below, these arguments, and others, are at odds with the many prior statements of Georgia's own officials, multiple admissions by Georgia trial witnesses, and objectively verifiable data in the record. Georgia has long recognized the extent of its ever increasing consumption in the Flint Basin as well as the impact that such consumption would have downstream. Its officials have been warning for decades about harm caused by excessive irrigation. But Georgia ignored them, just as it asks this Court to do now.

In its effort to trivialize the benefits of a decree returning flows to levels necessary to restore and preserve the Apalachicola Region, Georgia also asks this Court to ignore

what the Corps has said about how it would respond to a decree. As if this case had been frozen in time, Georgia relies almost exclusively on the United States’ December 2016 Post-Trial Amicus Brief discussing Corps operations. But since then, the Corps has made clear it would review any decree and modify its operations accordingly, as the Supreme Court specifically stressed. *Florida v. Georgia*, 138 S. Ct. 2502, 2527 (2018).

This underscores an even more troubling aspect of Georgia’s Supplemental Brief: it basically asks this Court to ignore the Supreme Court’s decision in this case. The Court’s decision last June of course governs this remand. Yet, not only does Georgia largely ignore that decision—including the Court’s admonition on the need for “[f]lexibility and approximation” in resolving inter-state water disputes, *id.* at 2527—but to the extent Georgia recognizes the decision at all, Georgia primarily relies on *the dissent*.

And, in the end, Georgia asks this Court to ignore perhaps the most important point of all: without relief in this case, Georgia’s inequitable consumption will just continue to rise, flows will only worsen, and the Apalachicola Region will suffer even greater, and in all likelihood irreversible, harm. Georgia might deny that. But this Court should not.

ARGUMENT

I. GEORGIA IGNORES THE SUPREME COURT’S MANDATE ON THE PRINCIPLES THAT GOVERN THIS PROCEEDING

The starting point for this remand is the Supreme Court’s decision last June. Remarkably, however, Georgia repeatedly relies on the dissent as the authoritative source of law for this remand, quoting it more often than the majority. *See* Ga. Suppl. Br. 1, 3, 29, 39. Georgia even goes so far as to argue that “[t]he Special Master should reach the same conclusion that four Justices have already reached”—i.e., the *dissent*. *Id.* at 3.

That not only reveals a basic misunderstanding of what opinion controls here, but also a basic misunderstanding of the dissent. The dissent did not just view the evidence differently; it viewed it through a fundamentally different legal lens. First, whereas the dissent believed Special Master Lancaster applied the “correct legal standard” (*Florida*, 138 S. Ct. at 2536 (dissent)), the majority held it was “too strict” (*id.* at 2516). And second, whereas the dissent believed that Florida could not benefit from a decree because the Corps was not “bound by any decree” and would not necessarily accommodate a decree (*id.* at 2541 (dissent)), the majority held that the case should be decided on the premise that the Corps “will work to accommodate” a decree (*id.* at 2526 (emphasis added)). Once those two premises are corrected, the central pillars of the dissent’s analysis collapse.

Georgia’s argument on the standard of proof is also infected by this misunderstanding. The majority held that the “clear and convincing evidence” (CCE) standard applies to the complainant’s “*initial* showing of ‘invasion of rights.’” *Id.* at 2514, 2517 (emphasis added). But, critically, it further held that, when a State meets that initial burden (as Florida plainly has here), “th[e] Court, recalling that equitable apportionment is ‘flexible,’ not ‘formulaic,’ will seek to ‘arrive at a “‘just and equitable’ apportionment” of an interstate stream’ by ‘consider[ing] all relevant factors.’” *Id.* at 2515 (second alteration in original) (citation omitted); *see id.* at 2517. Georgia quotes (at 1, 37) from the *dissent* in arguing that the CCE standard applies at the later balancing stage, but the *majority* omits any reference to the CCE standard in describing the balancing inquiry. *See id.* at 2527 (quoting *Colorado v. New Mexico*, 459 U.S. 176, 187 (1982) (“*Colorado P*”). Moreover, applying a CCE standard at this later stage would be inconsistent with the majority’s

emphasis on the need for flexibility and reasonable approximation. *See id.*¹

Georgia's attempt to argue this case from the legal framework adopted by the *dissent* is a telling sign of how it fares under the one that actually controls.

II. GEORGIA IGNORES THE PLAIN EFFECTS OF ITS CONSUMPTION

A. Georgia's Consumption Estimates Are Drastically Understated

Georgia's defense is grounded on the implausible premise that its consumption is but a fraction of that identified by comparison of objective flowgauge measurements. *See* Ga. Suppl. Br. 2, 10-11. From that premise, Georgia claims that the benefits of a decree would be near non-existent (because Florida cannot get enough water to help) and the harms of a decree would be catastrophic (because a decree would shut down agriculture in southern Georgia). But this starting premise—the lynchpin of its defense—is overwhelmingly contradicted by the evidence. *See* R&R 30-34.

To estimate Georgia's total consumption, Florida used rainfall runoff modeling—a widely-respected approach, recommended by multiple federal agencies (including USGS and USFWS) and by GWRI. *See, e.g.*, Hornberger PFD ¶¶ 71, 83; JX-82 (USGS rainfall runoff model); FEIS vol. 6 at 69 (USFWS suggesting rainfall runoff modeling); FX-534 at 193-94. Florida estimated consumption through a comparison of current USGS river flow data to a rainfall runoff model calibrated to a historical period when consumption was much

¹ Neither of the *Colorado* decisions supports Georgia's position here. In those cases, the Court did not impose a CCE standard at the balancing stage at all. *See* Fla. Suppl. Br. 4 n.1. Moreover, Georgia is the diverting party here, just as Colorado was in those decisions: Florida has been acting to preserve the Apalachicola since the 1960s; the consumption at issue began to take off in the 1970s. R&R 31-32; Fla. Suppl. Br. 8. In this action, Florida seeks a cap that would restore flows to sustainable levels for the Apalachicola.

lower. Hornberger PFD ¶¶ 27, 71; *see also* Fla. Suppl. Br. 17. Rainfall runoff model results have consistently estimated Georgia’s peak consumption between about 4,000 cfs to over 5,000 cfs. *See* Fla. FoF ¶¶ 23-24.²

By contrast, Georgia used an “accounting” method that purported to sum up individual uses in the ACF Basin to arrive at total consumptive use. Such accountings are notoriously difficult to perform in large areas, because they require a comprehensive, fulsome, and accurate analysis of *all* uses in the Basin.³ Based on this “accounting,” Georgia maintains that its peak monthly average consumption in peak years is under 2,000 cfs, *see* Ga. FoF ¶ 23, even though objective USGS gage data shows that state-line flows during recent drought periods have dropped by up to 4,000-5,000 cfs compared with prior historic droughts, *see* Fla. FoF ¶¶ 3-7. Georgia has never explained how, if it consumes less than 2,000 cfs in peak periods, flows have dropped by more than twice that much according to objective gage data.⁴ And Georgia’s claims (at 10) that it consumes just 6.1% of ACF riverflows during drought were flatly contradicted by Georgia’s hydrologist witnesses, who admitted that Georgia’s actual consumption is equal to around one-third of

² Georgia’s selective criticisms (at 14) of that modeling work are unavailing. *See* Hornberger Tr. Test. (vol. 8) 2010:20-2011:4, 2012:7-15; Lettenmaier Tr. Test. (vol. 10) 2402:6-15, 2403:24-2404:7.

³ Georgia EPD Director Turner, who oversaw this “accounting,” testified that one of his *priorities* was to “protect against external and internal threats to agricultural water use.” FX-54 at GA00478438; Turner Tr. Test. (vol. 12) 2959:15-23; *id.* at 2956:25-2966:7.

⁴ Georgia called no climate expert at trial, and its technical advisors concluded that the flow reductions were caused by irrigation, not climate change. *See* Fla. FoF ¶ 6; JX-21 at 22-23. And as Florida showed at trial, Georgia cannot point to flow data at other locations and along other rivers in Florida to establish climate change as the cause of flow reductions. Fla. Post-Trial Br. 25-27, 35 n.6; Hornberger PFD ¶¶ 147-54; Lettenmaier PFD ¶¶ 21-36.

all river flow at the state line during peak months of recent drought years. *See* Zeng Tr. Test. (vol. 13) 3370:14-3371:5; Bedient Tr. Test. (vol. 15) 3992:2-12, 3994:20-3995:4.

The real answer is that Georgia’s “accounting” is substantially incomplete. Georgia itself has long understood that it fails to capture the full range of consumptive uses in the Basin. *E.g.*, FX-2; FX-3; FX-4; FX-5. This shortcoming is most apparent with respect to agricultural irrigation, where Georgia’s figures understate relevant acreage. Georgia’s most recent estimates of its ACF irrigated acreage—approximately 582,000 acres, Ga. FoF ¶ 37—are materially lower than any estimates Georgia has made in the past 15 years. *E.g.*, FX-219 at 9 (over 920,000 acres); FX-D-24 (826,877 irrigated acres as of 2014); JX-129.⁵ Even Georgia’s agricultural expert—whom it declined to call at trial—acknowledged that Georgia’s acreage total from its latest database (826,877 acres, FX-D-24) fails to account for up to 12% of relevant irrigation. Irmak Dep. 14:24-16:4.

Georgia’s “Wetted Acreage” Database—created while this litigation was ongoing—is also incomplete in other material ways, including because it omits numerous fields irrigated with systems other than center pivots. Sunding PFD ¶ 29; FX-309; FX-310. Georgia has never explained how it came to exclude those acres.⁶

⁵ This difference cannot be explained by Georgia’s argument that there is no relevant impact from irrigation pumping from the Claiborne or certain other aquifers. Even Georgia’s own witnesses testified at trial that such pumping reduces streamflow in northern portions of the Basin. *See* Panday PFD ¶ 4(v); Panday Tr. Test. (vol. 15) 3769:25-3770:6.

⁶ Studies by independent academic scientists highlight the magnitude of Georgia’s irrigated acreage underestimates, too. *See, e.g.*, JX-17 at 49, Table 3-14 (concluding *in 2005* that there were at least 724,000 irrigated acres in the Chattahoochee and Flint River Basins, without calculating the more than 160,000 additional irrigation acres permitted since that time (FX-D-16)). At trial, Florida demonstrated exactly how scattershot and incomplete

It is not just hundreds of thousands of irrigated acres that are missing from Georgia's estimates, either. Georgia admitted that it intentionally excluded (and withheld as privileged) *all* of the evaporation loss from the many thousands of farm irrigation ponds found throughout Georgia—despite estimates from GWRI that such losses could total as much as 1,200 cfs. *See* FX-534 at 191; Zeng Tr. Test. (vol. 13) 3208:7-10, 3368:6-22. It likewise excluded water piped out of the ACF Basin for use in other Georgia locations. *See* Hornberger PFD ¶ 82. And Georgia's total consumptive use calculations also ignore the incremental impacts of irrigation during a multi-year drought on aquifer watertable levels and the resulting extreme impacts on streamflow. *See* Fla. FoF ¶ 10; FX-49b at GA00278840. During the 2011-12 drought, Georgia officials were shocked by the lack of aquifer recharge, and memorialized their concern in contemporaneous documents. *See, e.g.,* FX-82 at GA01614062. But at trial, Georgia argued otherwise (that the aquifer recharges), relied on a model (Jones and Torak) regarding the short-term impact of irrigation, *see* Ga. FoF ¶ 39, and largely ignored evidence regarding substantial cumulative impacts of multiple years of irrigation pumping (including lack of groundwater recharge). *See* Panday Tr. Test. (vol. 15) 3824:23-3825:7.

For these and other reasons, GWRI concluded that the UIF dataset, which included Georgia's estimates, substantially undercounted Georgia's actual consumption, including

Georgia's knowledge about actual ACF irrigation practices is, by presenting evidence that Georgia was wholly unaware that permitted irrigators are actually irrigating up to 90,000 more acres than legally allowed. *See* Sunding PFD ¶ 40; FX-D-11. Georgia responded by creating a "task force" to try to understand how its own data could be so far off. *See* Turner PFD ¶¶ 126-27; Turner Tr. Test. (vol. 12) 2983:2-2986:23; FX-D-51.

by omitting “up to 70% of the actual crop water requirement.” Fla. FoF ¶ 24 (citing FX-534). This systemic undercounting in turn affected nearly all of Georgia’s hydrology-related calculations, including those modeling the benefits of any conservation efforts, because its hydrology experts relied (admittedly) upon Georgia’s (flawed) consumption estimates. *See* Bedient PFD ¶ 74; Panday Tr. Test. (vol. 15) 3806:10-3807:9.

Georgia claims (at 12) that the Corps validated its consumptive use estimates by “review[ing] and accept[ing]” Georgia’s data. Not so. The Corps did not validate this data; it simply cut and pasted it without gathering its own data, surveying irrigation acreage, or independently verifying Georgia’s conclusions. FEIS vol. 7 at 43. The evidence on this is clear: The Corps asked Georgia officials for this information by email, and the Corps then pasted text from Georgia’s response almost verbatim into the Corps’ report, without further analyses. *Compare* GX-608, with FEIS vol. 7 at 43. By contrast, the federal agency with specific statutory responsibility for conservation and wildlife (USFWS) explained that the dataset that includes Georgia’s consumption estimates “does not accurately represent the magnitude . . . of flow extremes”—i.e., extreme low flows—and recommended an “alternative model”—the same PRMS rainfall runoff model Florida used here. FEIS vol. 6 at 69.

Georgia’s consumption estimates are also contradicted by its own technical advisors. In 2014, for example, Georgia’s advisors concluded that agricultural irrigation had caused long-term reductions of 2,600 *cfs* at the USGS Flint River gage in Newton, Georgia, approximately 45 miles north of Lake Seminole. *See* FX-49b at GA00278832; *see infra* p. 17. Given the location of that gage, it would capture less than half of the long-

term reduction of flows from Georgia ACF irrigation. *See* Hornberger PFD ¶ 29 (Fig. 2) (location of Newton gage); FX-786 at 4 (Fig. 2.1) (irrigated areas). Extrapolated through the rest of the Basin, that figure suggests actual Georgia consumption levels consistent with Florida’s modeling (4,000-5,000 cfs at peak), and *much higher* than Georgia’s estimates.

B. Georgia Ignores Both Special Master Lancaster’s Report And Record Evidence That Demonstrates Real Harm To Florida

Georgia’s efforts to deny the ongoing injuries its consumption has inflicted are as baseless as its attempts to mask its consumption.

1. *The record evidence demonstrates real harm to the Bay*

Georgia argues (at 7) that the devastation of the Bay’s oyster population resulted from overharvesting. Special Master Lancaster rejected that argument, agreeing with NOAA and Florida’s witnesses that “the oyster collapse came as a result of increased salinity in the Bay caused by low flows in the River,” not “harvesting pressure.” R&R 32. Georgia does not even attempt to refute the evidence Special Master Lancaster cited, such as the compelling testimony of subject-matter experts who witnessed the collapse first hand. Berrigan PFD ¶¶ 36-49; Ward PFD ¶¶ 27-29, 32. Nor does it address NOAA’s finding that the 2012 oyster collapse was caused by low flows, FX-413; FX-412, or the testimony of multiple Florida witnesses, including Dr. Glibert, that even small but persistent salinity changes have significant impacts. *See infra* p. 15; Fla. Suppl. Br. 32.

Georgia cites studies by two UF professors, Drs. Pine and Havens, but Dr. Havens later testified that prolonged low flows caused the crash and there was “no evidence that overharvesting was a cause of the decline.” FX-485 at 3. Even the article Georgia cites

did not reach “any conclusions” about the effect of low flows, GX-789 at 2, and another article they authored stated that low flows likely caused the collapse. JX-167 at 6; *see also* Fla. Post-Trial Resp. Br. 36-39 (discussing evidence from Drs. Pine and Havens).

Georgia’s reliance on Dr. Lipcius (at 7) also fails. Dr. Lipcius specifically acknowledged oyster mortality occurred due to predation, ignored first-hand evidence showing the increase of such predation leading up to the crash, and failed to account for salinity in his data analysis. *See* Fla. Post-Trial Br. 47-48; Fla. Post-Trial Resp. Br. 31-32; *see also* Kimbro PFD ¶ 102; White PFD ¶ 114, 117.

Finally, Georgia claims that only “reductions in salinity of 20 ppt or more” could significantly affect oysters. Ga. FoF ¶ 17. This misrepresents the evidence. The experiment on which Georgia relies showed that predation decreased for every 1 ppt reduction. FX-797, app. II, at 38. And that was just one of the many laboratory and field experiments Dr. Kimbro performed to evaluate predator effects on oysters. *See, e.g.*, Kimbro PFD Fig. 2; ¶¶ 63-87; Fla. Post-Trial Br. 41. Considering all of those experiments together, Dr. Kimbro concluded they clearly show that changes in flow and salinity increased predation, leading to the crash. Kimbro PFD ¶¶ 2-4, 55-62, 83-84.

2. *Georgia also ignores evidence of real harm in the River*

The River floodplain relies on water flowing through hundreds of sloughs, which fill at various flow levels. Biologists commonly measure the health of floodplain ecosystems by assessing the periods in which the areas are inundated, measured by the number of days in which requisite flow levels occur. This “metric” or “instream flow” methodology is widely utilized, including by USFWS, EPA, and Georgia’s Department of

Natural Resources. *See* Allan Tr. Test. (vol. 3) 578:18-23; FX-599 at FL-ACF-02545883-84, -894; JX-122 at 17-23; GX-1325 at 42-43; FX-36. Florida's nationally prominent riverine biology expert, Dr. Allan, explained how experts use these metrics to quantify harm. Allan PFD ¶¶ 2, 4-6, 37; FX-790 at 115, app. C (Allan Rep.); Allan Tr. Test. (vol. 3) 557:5-557:12; 578:5-579:12. And here, the metrics—including population-level data and impacts from reduced productive habitat—show significant harm from reduced flows. Allan Tr. Test. (vol. 3) 570:19-572:7; Allan PFD ¶¶ 30, 40, 47-49, 53, 65-74; *see* JX-122 at 11-12; JX-168 at 44.

Georgia claims (at 5) that these metrics are meaningless, and that the only relevant question is whether entire species populations are moving towards extinction. This is tantamount to arguing that the Apalachicola floodplains are uninjured if just enough water flows to preserve some small portion of those areas and a sub-segment of the species populations that rely upon them. Of course, this ignores the fact that life in Apalachicola Bay depends on the flow of nutrients from the extensive River floodplain. *See, e.g.*, Glibert PFD ¶ 28. And it is also deeply cynical. Florida and the Federal Government have long recognized the unique ecological importance of the River floodplains and invested since the late 1960s to preserve them—protecting a common value all Americans share in Federal and State Parks and National Forests. Georgia seems to believe that evidence of harm to these natural areas is irrelevant unless they support large monetized industries, but the Court has repeatedly recognized that States have an equitable right to protect their environmental resources, too. *See* Fla. Post-Trial Resp. Br. 51 n.17 (collecting authorities).

Georgia also errs in its continued effort to shift blame to other causes, such as

construction of Woodruff Dam. While the river bed may be somewhat lower in the uppermost parts of the River as a result of “downcutting” during the Dam’s construction, the key sensitive floodplains at issue lie in the middle and lower portions of the River. Allan Tr. Test. (vol. 3) 553:22-555:6; Allan PFD Fig. 5; Hoehn PFD ¶ 24. Those areas are unaffected by historic downcutting. Allan Tr. Test. (vol. 3) 553:22-555:6; Hoehn PFD ¶¶ 19- 22. Nor is Georgia correct that historic dredging and channel changes somehow preclude relief. Florida addressed those issues in its prior brief (at 20), and nothing Georgia now offers undermines that prior discussion. *See also* Fla. Post-Trial Br. 57-58; Fla. Post-Trial Resp. Br. 42-44. And Georgia’s myopic focus (at 6) on changes at a single slough—Swift Slough—ignore the dozens of other key sloughs that disconnect between 5,000 and 7,000 cfs flows; the health of the floodplains depends on water filling as many of them as possible. Allan Tr. Test. (vol. 3) 580:18-581:12; Kondolf Tr. Test. (vol. 10) 2629:7-15.

III. GEORGIA GROSSLY UNDERSTATES THE BENEFITS AND GROSSLY OVERSTATES THE COST OF A DECREE

Because Florida has clearly established a substantial injury due to Georgia’s unreasonable consumption, the only question is whether the benefits of a decree will substantially outweigh the costs. That balance overwhelmingly favors Florida, especially given that the reasonable costs that Georgia *should already have incurred* are irrelevant, since “[n]o State can use its lax administration to establish its claim to water.” *Colorado v. New Mexico*, 467 U.S. 310, 321 (1984) (*Colorado II*); *Colorado I*, 459 U.S. at 184 (“[W]asteful or inefficient uses will not be protected.”); *see generally* FX-961, FX-961a.

A. Georgia’s Position On Balancing Rests On The Same Arguments Regarding The Corps That The Supreme Court Rejected

Georgia tries to dismiss the benefits of a decree by arguing that the Corps will hold the water apportioned to Florida back for use in Georgia and thus prevent any benefits in Florida. *See* Ga. Suppl. Br. 19-30. This is the same argument Georgia has made throughout this case. But it has already been rejected: In light of the Corps’ own statements about how it would respond to a decree, and the Court’s assessment of those statements, it must be taken as settled here that “the Corps will work to accommodate any determinations or obligations the Court sets forth if a final decree equitably apportioning the Basin’s waters proves justified in this case.” *Florida*, 138 S. Ct. at 2526.

Georgia never addresses that conclusion by a majority of the Supreme Court in this very case.⁷ Instead, it relies on the *dissent* for the proposition that Florida cannot secure meaningful relief because “the Court cannot force the Corps to make any changes to its Master Manual,” Ga. Suppl. Br. 29 (quoting *Florida*, 138 S. Ct. at 2541 (dissent)), and “there is no guarantee that the Corps would actually change any of its rules,” *id.* at 30. But the *majority* concluded (1) it is “clear” the Corps would seek to facilitate, not frustrate, a decree and (2) the flexible structure of an equitable apportionment action does not demand certainty about the future. *Florida*, 138 S. Ct. at 2526-27. That ruling is of course binding.

Even without an equitable decree, the Corps has exercised its discretion under the existing Manual to keep flows above the minimum levels prescribed. *See* Fla. Suppl. Br.

⁷ Georgia also attacks (at 24 n.7) the majority for “wrongly” claiming there were 19 days of “pass-through” flows in summer 2007 as a “historical” matter. But the Court directly quoted Dr. Bedient’s testimony that he was analyzing what “would have” happened in 2007 “if” certain conditions were repeated. *Florida*, 138 S. Ct. at 2522. And Georgia misses the point: This “19 day” scenario was proof that a decree could help generate additional flows even during nondrought operations. *See id.* at 2521-22, 2524.

28-29. It would do so all the more with a decree. Moreover, the Corps' decisions to revise its Manual in the past have come in response to Georgia's requests for more water for Atlanta and surrounding areas. *See* FEIS vol. 1 at ES-2 to -5; JX-126 at 1-2. Georgia's insistence that the Court cannot "force" the Corps to make changes ignores the fact that the Court could, of course, order Georgia to modify the requests that *prompted* those changes, further ensuring that none of the water apportioned to Florida would be held back for Georgia's use instead. *Cf.* Fla. Suppl. Br. 38-40.

Because it is now clear that the Corps would modify its operations to accommodate a Supreme Court decree, the ResSim modeling on which Georgia relies (at 20-22) to argue that a decree would not materially increase flows to Florida is no longer relevant. *Florida*, 138 S. Ct. at 2526; R&R 60. Georgia's prior modeling and expert testimony based on ResSim have no predictive value as to how the Corps will operate with a decree in place.⁸

B. The Benefits Of A Decree To Florida Will Be Substantial

Once Georgia's already rejected theory that the Corps will intentionally frustrate relief is put to one side, it is clear that a remedy here would produce critical benefits—not the "*de minimis* benefits" Georgia sets up (at 1) as a strawman. Historically, the River and Bay have repeatedly recovered from droughts and other natural disasters, so long as flows did not dip below 6,000 cfs persistently for months or years at a time. *See* Fla. Suppl. Br.

⁸ Dr. Bedient admitted that his ResSim modeling did not accurately predict state line flows. *See* Bedient Tr. Test. (vol. 15) 3965:8-3966:11. USFWS has cautioned that, while ResSim can identify trends in alternative comparisons, it is not intended to "replicate existing operations" or compare "absolute magnitudes." FEIS vol. 6 at 32. Therefore, ResSim cannot accurately predict the worst flows in drought years and cannot be compared to historic gage readings to quantify Georgia's consumptive uses.

31-32; R&R 8-10. Restoring flow levels that more closely approximate these historical conditions would, the evidence at trial showed, again lead to recovery.

Georgia insists (at 32) the salinity changes that would result from resumption of flows are too small to make a difference. But it is clear that comparable *increases* in salinity led to the crash, *see supra* at 9-10, and the evidence showed that restoring flows and salinity to levels closer to historical conditions would allow recovery from that crash. As Dr. Glibert testified, even a 1 ppt difference in East Bay, where salinity normally ranges from 0 to 5 ppt, means a 20-30% change in salt stress. Glibert Tr. Test. (vol. 7) 1869:23-1870:12. This is consistent with findings by USFWS that a 1 ppt increase in East Bay can meaningfully affect survival rate of juvenile Gulf sturgeon and oysters. JX-122 at 34.

Florida's oyster expert testified that the reefs in East Bay, close to the River's mouth, serve as refuges that can reseed the Bay when outer reefs are impacted; therefore, even small but persistent salinity differences that help preserve those reefs can have an enormous impact. Kimbro PFD ¶ 29; FX-797 at 2; Kimbro Tr. Test. (vol. 6) 1570:23-1572:2. The Bay's oyster population can recover, but only if there is a surviving oyster population to facilitate reseeding from those areas. Kimbro PFD ¶ 29; FX-797 at 2; Kimbro Tr. Test. (vol. 6) 1570:23-1572:2. But if high salinities persist or recur, salt water predators will control the Bay and recovery will not occur. Fla. Suppl. Br. 32.

In arguing recovery is essentially impossible, Georgia (at 32) mischaracterizes the remedy scenario modeled by Florida's experts and ignores key parts of their testimony. In an abundance of caution, Florida's experts modeled a *more conservative scenario* than the remedy Florida proposed at trial, *compare* Allan PFD ¶¶ 71-73; Allan Tr. Test. (vol. 3)

591:13-20 (noting remedy scenario added “a few hundred to as much as a thousand [cfs]” per month), *with* Sunding PFD ¶¶ 89-90 & tables 4-6 (discussing 1,000-2,000 cfs remedy scenarios), and testified that the additional water that could become available would result in even greater benefits, Allan Tr. Test. (vol. 3) 592:6-15 (“A greater remedy should result in greater benefits.”); White Tr. Test. (vol. 7) 1724:24-1725:14. Moreover, while Georgia focuses on the impact at oyster bars far from the mouth of the River, Florida’s experts testified that there would be a “much more pronounced benefit to the oyster populations” at the bars closer in which are critical to recovery of the whole Bay. Kimbro Tr. Test. (vol. 6) 1571:1-1572:2; White Tr. Test. (vol. 7) 1725:4-14; Fla. Suppl. Br. 32-33.

As to the River, meanwhile, Georgia argues (at 33) that any benefits should be discounted because Dr. Allan and Dr. Kondolf could not precisely “quantif[y] the actual ecological benefits” of additional flow into sloughs. But the Court emphasized that “[a]pproximation and reasonable estimates” would be sufficient on remand, *see Florida*, 138 S. Ct. at 2527, and Allan and Kondolf both testified that it is clear that additional water will significantly improve the River ecosystem by inundating additional habitat like sloughs. *E.g.*, Allan PFD ¶¶ 3(d), 26, 66-70; Kondolf Tr. Test. (vol. 10) 2629:7-17. Georgia’s insistence on greater specificity—as to this and every other aspect of Florida’s case—simply ignores the Supreme Court’s call for reliance on approximation and reasonable estimates.

C. The Costs Of A Decree To Georgia Will Be Reasonable

Meantime, Georgia’s cost estimates are wildly exaggerated. Florida’s expert Dr. Sunding explained in detail in live trial testimony exactly how a cap on consumption would

operate and the reasonable measures Georgia could choose to employ.⁹ Those measures were almost entirely initiatives that Georgia itself discussed internally but never implemented. The incremental fiscal costs of the proposed remedies of 1,000, 1,500 or 2,000 cfs—ranging from \$8.9 to \$35.2 million per year, Sunding PFD ¶¶ 89-90 & tables 4-6—are all a tiny fraction of the “billions” Georgia claims (at 40) here.

Georgia’s candid views about what can, and *should*, be done to limit consumption can be found in Georgia’s many internal documents discussing measures to mitigate the impact of irrigation, take other conservation measures, and build reservoirs. *See* Fla. Suppl. Br. 34-35,38; FX-69 at GA00077301 (Georgia officials: “We[’]ve been blessed and other states have spent far more money than we have/do. We may have to ‘afford’ it in the future.”). One such document (JX-154) memorialized a discussion between Georgia’s EPD Director and Flint Basin interests about a range of solutions that could, at relatively low cost, limit irrigation impacts. Among other things, the EPD Director referenced Florida’s Supreme Court case, admitting that Georgia had taken only “modest” steps to address irrigation and that new Georgia legislation to limit irrigation was needed (legislation which has never been passed). *See, e.g.*, JX-154; FX-69 (“We have to fix the [Flint River Drought Protection Act].”); Turner Tr. Test. (vol. 12) 2966:17-2968:1, 2970:6-14, 2972:20-2982:2; Cowie Tr. Test. (vol. 9) 2270:15-2275:25; *see also* R&R 33 (“[T]he exceedingly modest measures Georgia has taken have proven remarkably ineffective”).

⁹ *See* Fla. FoF ¶ 30 & Sunding Tr. Test. (vol. 11) 2879:12-2884:8 (comparing proposed remedy to similar remedies instituted in multiple States); Hornberger PFD ¶¶ 131-33 (testimony on tools to reliably predict drought); Sunding PFD ¶ 90 & tables 4-6.

Turner then introduced Georgia's technical advisors, who made a presentation almost mirroring Florida's evidence in this case. *See* FX-962 at slides 47-57 (Turner Dep. Designation); FX-49b. In these and many other documents, the outlines and feasibility of a solution are evident. *See also* Fla. FOF ¶ 22, 29-30.

The objective evidence also shows that a large percentage of the irrigation reductions would only involve the costs to Georgia's state government of imposing common-sense restrictions and enforcing its own laws: Georgia could reduce streamflow depletions by roughly 1,000 cfs in peak drought years simply by: (1) stopping wasteful irrigation practices that provide no benefit whatsoever to Georgia farmers (178 cfs); (2) enforcing its laws already on the books and stopping irrigation on up to 90,000 acres that are currently irrigated illegally (151 cfs); (3) following through with its existing commitments to leak abatement and enforcing drought-year lawn watering restrictions already on the books in Metro Atlanta (249 cfs); and (4) employing aquifer storage and recovery in peak drought years (400 cfs). *Sunding PFD* ¶¶ 31, 42-44, 46-47, 49-50, 72-73, 75, 89-90 & tables 4-6; *Sunding Tr. Test.* (vol. 11) 2856:22-2857:19; JX-41 at 28, figs. 13, 32; *Reheis Tr. Test.* (vol. 3) 678:8-680:1; Fla. FoF ¶¶ 30-33. Other than removing acreage that was not legally permitted for irrigation in the first place, these measures would have little or no impact on farmers. *See Sunding PFD* ¶¶ 89-90 & tables 4-6.

Other measures, such as forthrightly triggering the FRDPA, employing deficit irrigation, implementing permit buybacks, reducing evaporation from farm ponds, and switching high-value crops to deeper aquifers could also yield more than 1,000 cfs in peak

drought years.¹⁰ *Id.*; *see also* Fla. Suppl. Br. 35. And there are other measures Georgia could take, too, such as imposing a 12-15 inch cap on irrigation per acre. FX-874 at GA01418979; *see also* Stavins Tr. Test. (vol. 17) 4456:13-4458:15.

Georgia claims (at 38) that reducing agricultural irrigation in these ways would basically destroy the regional economy, and criticizes Florida for not including such costs in its remedy. But Georgia ignores that farmers could be compensated (as the FRDPA already contemplates) for reductions or (in the case of permit buybacks) elimination of irrigation, which would have offsetting benefits for the local economy, and a very limited effect on the State's budget. Sunding PFD ¶¶ 92, 113. Georgia itself has considered these proposals, or even passed them into law (FRDPA). *E.g.*, JX-154; FX-10 at 31. Moreover, those farmers who no longer irrigate could continue to farm their land as over half of Georgia row crop farmers have already chosen to do—without irrigation. FX-270. There is no basis for the approach that Georgia's expert, Dr. Stavins, took in assuming that the only alternative to current irrigation practices is *complete cessation of irrigation*, which the IMPLAN model he relied on assumes means no agricultural production at all and therefore zero economic benefit. *See* Stavins PFD ¶ 88; FX-784 ¶ 84. (Although Dr. Sunding ran the same IMPLAN model for his expert report that Dr. Stavins used in his testimony, Dr. Sunding explained the model's severe limitations in his report, including that it assumes zero economic activity on the land, excludes the benefits of triggering the FRDPA, and

¹⁰ Georgia's claim that Dr. Sunding overstates the streamflow benefits of Florida's proposed remedies by including acreage irrigated by aquifers other than the Upper Floridan Aquifer is incorrect, in part because Dr. Sunding did not include such acreage in those remedies. Sunding PFD ¶¶ 94-95.

thus greatly overestimates indirect costs. FX-784 ¶¶ 81-84; *see also* Sunding Tr. Test. (vol. 11) 2802:24-2803:16 (addressing seasonal workers).) Georgia's claims also ignore that eliminating wasteful irrigation practices and improving irrigation efficiency would have no effect on yield, and thus no indirect effects. Sunding PFD ¶ 91.

In short, Georgia has drastically overstated the costs of a decree. The true annualized costs would be at most \$35 million—a very small fraction of 1% of Georgia's state budget and miniscule in relation to either the Flint Basin or Georgia ACF economy. Sunding PFD ¶¶ 20-21, 113. But even that understates the interests on the side of the ledger for Florida. Ultimately, this is not a matter of simply dollar and cents, but of protecting and preserving irreplaceable natural resources.

* * * * *

In their candid moments, Georgia's own officials have recognized all this. They understand the problem's source (agricultural withdrawals), its magnitude, and that it is solvable with exactly the type of common-sense steps Florida has suggested—with limited impact on Georgia's economy and farmers. *See* Fla. Suppl. Br. 33-38. Yet Georgia has failed to act because, as Special Master Lancaster recognized, it lacks the political incentive (or will) to do so. R&R 34. This action represents the last, best hope to change that, and save the Apalachicola region from destruction. Under the framework established by the Supreme Court last June, the evidence overwhelmingly shows Florida is entitled to relief.

CONCLUSION

For the foregoing reasons, the Special Master should recommend the Supreme Court enter a decree equitably apportioning the waters of the ACF Basin.

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