

No. 142, Original

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**In The  
Supreme Court of the United States**

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STATE OF FLORIDA,

*Plaintiff,*

v.

STATE OF GEORGIA,

*Defendant.*

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**STATE OF GEORGIA'S PRETRIAL BRIEF**

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## INTRODUCTION

The Supreme Court places a heavy burden on States like Florida that seek to upset the *status quo* through a common-law equitable apportionment action. As the Court has explained, “the equities supporting the protection of existing economies will usually be compelling,” *Colorado v. New Mexico*, 459 U.S. 176, 187 (1982) (*Colorado I*), because the “harm that may result from disrupting established uses is typically certain and immediate, whereas the potential benefits from a proposed diversion may be speculative and remote,” *Colorado v. New Mexico*, 467 U.S. 310, 316 (1984) (*Colorado II*). This case begins and ends with these principles: Georgia’s existing water uses are compelling, disrupting those uses will cause certain and substantial harm, and Florida’s claimed injuries are speculative or not attributable to those uses.

Georgia is home to over 98% of the population and economic activity in the Apalachicola-Chattahoochee-Flint River Basin (“ACF Basin”). ACF waters in Georgia support a city of five million people and a multibillion dollar agricultural industry. And yet, despite those highly beneficial uses, the vast majority of water in the Basin flows through to Florida, both in times of plenty and in times of drought. Florida receives more than 90% of available water under most conditions. And even in the worst drought conditions, the United States Army Corps of Engineers (“Corps”) guarantees flows to Florida of at least 5,000 cubic feet per second (cfs) in most cases—an amount Florida itself says is “enough water both to supply approximately 19 million people *and* irrigate approximately four million acres of farmland.”<sup>1</sup>

Before the Supreme Court will interfere with a sovereign State’s decisions on how to use the water within its own borders, the Court requires a plaintiff State to demonstrate an injury caused by another State that is “real and substantial,” *Idaho ex rel. Evans v. Oregon*, 462 U.S.

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<sup>1</sup>Fla. Mot. *in Limine to Preclude Expert Testimony* by Dr. Philip Bedient and Dr. Sorab Panday at 3 (Sept. 16, 2016) (emphasis in original).

1017, 1028 (1983), and that constitutes “serious damage to her substantial interests and those of her citizens,” *Colorado v. Kansas*, 320 U.S. 383, 398 (1943). A plaintiff State, moreover, must prove those injuries by clear and convincing evidence: “Society’s interest in minimizing erroneous decisions in equitable apportionment cases requires that hard facts, not suppositions or opinions, be the basis for interstate diversions.” *Colorado II*, 467 U.S. at 320-21.

This case fails at the outset because Florida cannot meet its burden of proving real and substantial injury by clear and convincing evidence. As Florida readily admits, this is not a case of economic harm. Rather, Florida attempts to establish a series of ecological harms that it claims must be caused by Georgia’s upstream water use. But these harms either do not exist, are based on speculation, or were caused by factors other than Georgia, such as operations of the Corps, uncontrollable forces of nature, or Florida itself. For example, Florida says that Georgia caused its oyster collapse, but Florida’s own leading scientists at the University of Florida studied this issue for thousands of hours and “did not find correlations” between Apalachicola River flows and the 2012 oyster collapse. Florida also claims that Georgia’s water use has endangered the fat threeridge mussel, but the U.S. Fish and Wildlife Service has estimated that between 6 and 18 million fat threeridge live in the Apalachicola River, ten times prior estimates. And Florida has been forced to concede that it was the Corps (not Georgia) that fundamentally changed the river’s habitat when it built Woodruff Dam and dredged the river channel.

The evidence will also show that Georgia’s water use is “equitable” by any measure. The Atlanta metro region is a nationally recognized leader in water stewardship. Georgia has spent millions on water conservation in the region, and both per capita and total consumptive water use have *declined* in Atlanta over the last twenty years. Tellingly, Florida has dropped the expert it retained to critique Atlanta’s water conservation efforts. Moreover, since the late 1990s when

scientific evidence first began to suggest that agricultural irrigation could have an impact on streamflows, Georgia has directed significant funds and resources toward agricultural water conservation. Georgia has extensively studied agricultural water use in the ACF Basin, enacted a suite of measures to promote conservation and efficient water use, provided resources to farmers to improve irrigation efficiency, and placed limitations on new irrigations permits in key areas. Those efforts have had real and meaningful impacts and have stabilized water use in the region.

Florida also has not advanced a remedy that is reasonable, proportionate, cost-justified, or that would provide Florida relief in the absence of the United States as a party. Florida proposes draconian reductions in Georgia's water use—cuts that will cost hundreds of millions (if not billions) of dollars and will generate a mere fraction of the water that Florida suggests. In some cases, Florida proposes entirely implausible reductions that would meet or exceed the total amount of water Georgia consumes on a monthly basis. Those dramatic and costly reductions will also yield no benefit to Florida in drought times because of the way the Corps manages dams and reservoirs in the Basin, which involves increasing storage in reservoirs and not supplementing downstream flow until drought conditions have abated. And even if the Corps did allow that additional water to pass into the Apalachicola River, Florida has come forth with no evidence—let alone clear and convincing evidence—that those additional amounts would remedy the ecological harms of which it complains. Accepting Florida's proposed remedies would thus inflict massive economic injury on Georgia's farmers and Atlanta's water supply, without providing any measurable benefit to Florida.

For those same reasons, the evidence has now clearly shown that the United States is a necessary party to this dispute, and that this case cannot be fairly adjudicated in the absence of the United States as a party. Both Georgia *and Florida's* experts have determined that

reductions in Georgia’s consumptive use will not lead to material increases in flow at the state line during dry months and drought years without Corps involvement. Indeed, when Florida’s own expert modeled a scenario in which Georgia’s agricultural water use was reduced by 50%, there was little to no increase in state line flows during recorded dry months and drought years. These expert analyses prove what Georgia has consistently argued: without Corps involvement, any limitations on Georgia’s water use will not provide Florida meaningful relief.

For these reasons, and for those discussed below, Georgia respectfully asks that the Special Master deny Florida’s requested relief, which will only serve to jeopardize Georgia’s economy and the well-being of its citizens, while providing no corresponding benefit to Florida.

## **ARGUMENT**

### **I. Florida Must Overcome Substantial Burdens Of Proof.**

As the plaintiff in an equitable apportionment action, Florida must prove its case by clear and convincing evidence. *Colorado II*, 467 U.S. at 316. That burden is “much greater” than in an ordinary civil case. *Connecticut v. Massachusetts*, 282 U.S. 660, 669 (1931). This Court imposes that demanding burden because it is “conscious of the great and serious caution with which it is necessary to approach the inquiry whether a case is proved” in an original jurisdiction action. *Kansas*, 320 U.S. at 393-94. Florida is asking the Court to intervene in a dispute between two sovereign States and impose restrictions on one sovereign’s internal activities at the behest of another. That is a serious and sensitive task. *Colorado II*, 467 U.S. at 314. Before the Court will take the extraordinary step of intervening in a State’s affairs, “the case must be of serious magnitude and fully and clearly proved.” *Kansas*, 320 U.S. at 393.

Florida’s burden is even higher because it seeks to disrupt substantial and longstanding uses in Georgia. Because “the equities supporting the protection of existing economies will usually be compelling,” the Court begins its analysis from the presumption that Georgia’s

substantial upstream economies should be maintained. *Colorado I*, 459 U.S. at 187. To overcome that presumption and upset the status quo, Florida must prove four things by clear and convincing evidence: (1) that it is suffering “real and substantial injury or damage,” *Idaho*, 462 U.S. at 1027; (2) that its injury is proximately caused by Georgia’s upstream water use, and is not caused by other factors; (3) that Georgia’s upstream water uses are inequitable; and (4) that its proposed remedy will redress its alleged injuries and that the benefits of its proposed remedy “substantially outweigh the harm that might result” to Georgia, *Colorado I*, 459 U.S. at 187.

Relying exclusively on footnote 13 from *Colorado I*, Florida argues that the downstream state need only prove injury and causation, and then the burden shifts to the upstream state to prove that its use is equitable and that a remedy is not justified.<sup>2</sup> That misreads the law. *Colorado I* and *Colorado II* do not distinguish between upstream and downstream states for burden purposes. To the contrary, those cases placed the burden of proof on the state seeking to disrupt the status quo. *Colorado I* made clear that the state seeking to change the status quo must “demonstrate[] by clear and convincing evidence that the benefits of the diversion substantially outweigh the harm that might result.” 459 U.S. at 187. And *Colorado II* reiterated the “long-held view” that the “proposed diverter” bears the burden of proof on most issues in equitable apportionment cases. 467 U.S. at 316. Colorado thus bore the burden of proof not because it was the “upstream state,” as Florida claims, but because it was the state seeking to disrupt the status quo with a new diversion. *Colorado I*, 459 U.S. at 177. Florida’s burden-shifting theory is also inconsistent with other equitable apportionment cases. The Supreme Court has long required states seeking to change the status quo to prove both inequitable upstream use and that a proposed remedy will redress its harms. *See Kansas v. Colorado*, 206 U.S. 46, 117 (1907); *Idaho*, 462 U.S. at 1028; *Washington v. Oregon*, 297 U.S. 517, 522 (1936).

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<sup>2</sup> See Fla. Resp to Ga. Mot. for Extension of Expert Discovery Deadlines at 2-3 (Mar. 15, 2016).

## **II. Florida Cannot Show Clear And Convincing Evidence Of Substantial Injury Caused By Georgia's Water.**

The first two elements of the equitable-apportionment analysis can be addressed together: Unless Florida can prove by clear and convincing evidence that it is suffering substantial injury, and that its injury is caused by Georgia's water use, Florida is not entitled to an equitable apportionment. *Idaho*, 462 U.S. at 1029 (denying relief because "Idaho ha[d] not carried its burden of demonstrating a substantial likelihood of injury"); *Washington*, 297 U.S. at 544 (denying relief because "[i]f any wrong has been done, it is unsubstantial and uncertain"); *Connecticut*, 282 U.S. at 667-69 (denying Connecticut's request to cap Massachusetts' proposed withdrawals because Connecticut had not established injury or causation); *Pennsylvania v. New Jersey*, 426 U.S. 660, 663 (1976) (*per curiam*) ("[A] plaintiff State must first demonstrate that the injury for which it seeks redress was directly caused by the actions of another State").

Florida has no evidence of economic harm in this case.<sup>3</sup> There is no evidence, for example, that Florida has been deprived of water for municipal or industrial purposes, or that it has been left with insufficient water for agricultural irrigation. Nor is there any evidence that any local economy in Florida is being harmed. Instead, Florida relies on a series of speculative ecological harms to try to meet the injury requirement. Discovery has shown, however, that those arguments have no merit and that Florida has failed to carry its burden on injury.

### **A. Georgia's Water Use Did Not Cause Florida's Oyster Fishery Collapse.**

Florida began this case by alleging that it suffered "real and substantial injury" because Georgia's upstream water use caused the oyster fishery in the Apalachicola Bay to collapse in 2012. *See* Compl. ¶¶ 6, 43, 54, 56. This allegation has itself collapsed in discovery, principally on the basis of scientific study and analysis conducted by University of Florida experts.

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<sup>3</sup> *See, e.g.*, Sunding Tr. 16:22-17:2; Phaneuf Tr. 25:14-22.

Although the Florida legal team attempted to derail these experts' research, the University of Florida put science ahead of politics and published its findings. And those findings foreclose Florida's attempts to attribute the 2012 oyster collapse to Georgia's water use.

These studies began when Florida Governor Rick Scott requested research on the cause of the 2012 collapse.<sup>4</sup> Professor Karl Havens, an ecological biologist at the University of Florida, assembled a team of experts that came to include oyster biologist and marine fisheries expert, Dr. William Pine, also of the University of Florida. After more than two years and thousands of hours of research, Dr. Pine just last year published a peer-reviewed journal article entitled "The Curious Case of the Eastern Oyster," which remains the definitive analysis concerning the subject of the 2012 Apalachicola Bay oyster collapse. Dr. Pine and his colleagues reached the following unambiguous conclusion:

*We did not find correlations* between Apalachicola River discharge measures ... and our estimated relative natural mortality rate ... or oyster recruitment rates[.] The overall relationships between freshwater flows, drought frequency and severity, oyster recruitment, and harvest dynamics *remain unclear*, and this is an area of ongoing work.<sup>5</sup>

When asked under oath whether he had seen evidence to support Florida's allegation that "[r]educed freshwater inflows ... precipitated a collapse of the Apalachicola Bay oyster fishery," Compl. ¶ 54, Dr. Pine unflinchingly testified: "No."<sup>6</sup> He also testified that there was no "clear" or "convincing" evidence "of a connection between Apalachicola River flows and oyster mortality."<sup>7</sup> Dr. Havens similarly testified that his team "never found any quantitative linkage between flow from the [Apalachicola] river and the crash with the oysters."<sup>8</sup>

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<sup>4</sup> Ex. 1 at UFL\_0053544 (12/3/2012 Email from Pine to Havens); Havens Tr. 86:6-14.

<sup>5</sup> Ex. 2 at p.4 (Pine, *Curious Case* article) (emphasis added).

<sup>6</sup> Pine Tr. 308:8-19.

<sup>7</sup> Pine Tr. 291:14-25.

<sup>8</sup> Havens Tr. 175:18-21.

Florida's lawyers in this case understood how devastating these findings were for this case. As Dr. Pine put it: "I was told by my FWC colleague that the attorneys thought the papers should be withdrawn, and if they were published...they could 'make things difficult for me.'"<sup>9</sup> Florida's legal team was "not happy" with Pine's findings.<sup>10</sup> Dr. Pine was told there was concern that his papers "may be disadvantageous to Florida's legal position in the current litigation."<sup>11</sup> And, as he reported contemporaneously, "[a]t issue is the perception that the work I've led undermines the State of Florida's assertion in the ongoing lawsuit that the Apalachicola oyster collapse was caused by water policy in Georgia."<sup>12</sup> Dr. Havens likewise recognized that "[r]esults from some of the [Sea Grant] funded research strongly supports the Georgia case."<sup>13</sup> Florida's lawyers threatened Pine with retaliation precisely because he had found that Florida "can't figure out what caused the collapse because the evidence isn't clear."<sup>14</sup> This led Pine to hire his own attorney to protect his academic independence and represent him in any further dealings with Florida state officials and members of Florida's legal team.<sup>15</sup> This is the opposite of "clear and convincing" evidence that Georgia's water use caused the oyster collapse. Science, not threats and suppression of facts, should prevail, and here the science found no connection between river flow and the health of Apalachicola oysters.

The truth is that Florida's own mismanagement of its oyster fishery had a devastating impact on Apalachicola Bay oyster populations. In September 2012, Governor Scott wrote a letter to the Federal Government seeking federal aid to deal with the oyster situation. Although

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<sup>9</sup> Ex. 3 at UFL\_00214273 (12/20/2014 Pine email).

<sup>10</sup> *Id.*

<sup>11</sup> Pine. Tr. 363:13-20; Ex. 3 at UFL\_00214273 (12/20/2014 Pine email).

<sup>12</sup> Ex. 3 at UFL\_00214273 (12/20/2014 Pine email).

<sup>13</sup> Ex. 4 at UFL\_00251508 (2/9/2015 Havens email).

<sup>14</sup> Ex. 3 at UFL\_00214273 (12/20/2014 Pine email).

<sup>15</sup> *Id.*

he did point to the (later-disproved) theory of low flows from the Apalachicola River as one potential cause, Governor Scott also admitted that

[h]arvesting pressures and practices were altered to increase fishing effort, as measured in reported trips, due to the closure of oyster harvesting in contiguous states during 2010. This led to overharvesting of illegal and sub-legal oysters further damaging an already stressed population.<sup>16</sup>

This pressure to fish was driven by fear that oil from the Deepwater Horizon oil spill might reach the Bay and harm the oyster habitat.<sup>17</sup> Not long after the Governor's letter, Florida realized that blaming its own conduct could jeopardize its ability to secure federal disaster aid.<sup>18</sup> Florida hastily drafted a report that blamed the collapse on Georgia's upstream water use. It then submitted that report in an attempt to obtain a federal disaster declaration.<sup>19</sup>

But Florida cannot avoid plain facts. In the two years immediately prior to the collapse, oystermen fished at unprecedented and unsustainable levels with regulatory requirements and fishing restrictions eased by the State to encourage it.<sup>20</sup> Florida also tolerated the removal of "sublegal" oysters, which deprived the Bay of the less mature oysters that are necessary to sustain the population.<sup>21</sup> As a report issued by the Florida agency charged with monitoring oysters found:

The practice of harvesting sub-legal oysters appears to be an extension of a *'use it or lose it' attitude* that prevailed during the fall and winter of 2010. ... Throughout the period when oil posed an unpredictable threat to the oyster

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<sup>16</sup> Ex. 5 at FL-ACF-02425652 (9/6/2012 Gov. Scott disaster request).

<sup>17</sup> Ex. 6 at FL\_SEA\_GRANT\_40074-75 (FDACS Oyster Resource Assessment Report); Parrish Tr. 110:15-111:1 (stating that the "general consensus" was to harvest the resource in case the oil spill impacted the bay).

<sup>18</sup> Ex. 7 at FL-ACF-02016441 (4/23/2013 Heil email) (NOAA employee flagging over-harvesting concerns associated with Florida's disaster application); Ex. 8 at FL-ACF-01936043 (NOAA official's "initial conclusion was overharvesting"); Ex. 9 at FL-ACF-BERRIGAN-0000198 (4/29/2013 Estes email) (conversation with NOAA official flagging lack of intervention by Florida management and over-fishing concerns).

<sup>19</sup> Ex. 10 at FL-ACF-03475196 (Florida Gulf Coast Oyster Disaster Report).

<sup>20</sup> Ex. 11 (Order No. EO 10-19) (summer oyster bars opened ten days early); Ex. 12 (Order No. EO 10-25) (increased from five to six days); Ex. 13 (Order No. 10-32) (increased from six to seven days; opens winter bars two months early); Ex. 14 at FL-ACF-04088387 (6/17/2010 Press Release).

<sup>21</sup> Ex. 15 at UFL\_00233421(2012 Oyster Resource Assessment Report).

fishery, less effort was directed toward enforcing size limits, perhaps, yielding to the view that it would be more beneficial to harvest the available resource.<sup>22</sup>

Even as the oyster population declined due to intense fishing, Florida refused to close the Bay to allow the oyster population to recover.<sup>23</sup> As Dr. Havens wrote, “the [Fish and Wildlife Commission] won’t close the bay to harvesting despite evidence that the bay’s population of oysters is almost 100% depleted.”<sup>24</sup> All of this fishing had a devastating impact. As Florida’s own contemporaneous agency reports found, “the overall condition of many reefs has declined substantially over the past two years as a result of continuous harvesting from Cat Point and East Hole Bars, concentrated and intensive harvesting by the majority of the fishing fleet, and the excessive harvesting of sub-legal oysters.”<sup>25</sup>

Florida also failed to take critically needed steps to restore the oyster reefs that its own policies had so badly damaged. Florida officials admit that a process called “re-shelling” is the single most effective method of restoring the oyster resource.<sup>26</sup> Yet re-shelling efforts in the years immediately prior to the collapse decreased to a mere fraction of historical levels, and today Florida no longer independently funds them.<sup>27</sup> Notwithstanding the recommendation of Drs. Pine and Havens that Florida aggressively resume re-shelling,<sup>28</sup> Florida has not undertaken meaningful re-shelling efforts or other efforts to restore the oyster habitat.<sup>29</sup>

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<sup>22</sup> *Id.* at UFL\_00233421 (emphasis added); *see also* Berrigan Tr. 151:2-14 (Florida’s enforcement of legal size oyster rules was “lax” after the oil spill).

<sup>23</sup> Lipcius Tr. 310:10-311:11; Ex. 16 at 25-31 (Lipcius Rep.).

<sup>24</sup> Ex. 17 at UFL\_00248654 (9/2/2014 Havens email).

<sup>25</sup> Ex. 15 at UFL00233420 (2012 Oyster Resource Assessment Report).

<sup>26</sup> *See, e.g.*, Berrigan Tr. 76:5-77:14; 78:25-79:5 (“Restoring habitat [through re-shelling] is an important aspect in restoring reef functionality.”); 81:25-82:5 (Re-shelling is the “most cost effective way” to protect oyster resources).

<sup>27</sup> Lipcius Tr. 322:17-324:5; Berrigan Tr. 107:3-111:8 (describing difficulties in securing money for re-shelling).

<sup>28</sup> Ex. 18 at FL\_SEA-GRANT\_41141(2013 Oyster Situation Report); Ex. 2 at p.4 (Pine, *Curious Case* article).

<sup>29</sup> Lipcius Tr. 322:17-324:5; Berrigan Tr. 107:3-111:8 (describing difficulties in securing money for re-shelling activities from the state legislature during his tenure); Ex. 19 (Oyster\_Cultch\_time\_Series.xlsx); Hartsfield Tr. 123:6-124:12 (noting that as of August 2013, only 2% of areas that needed re-shelling had been re-shelled).

**B. Georgia Has Not Caused Substantial Injury To The Apalachicola River.**

Florida also attempts to prove “real and substantial injury” by arguing that Georgia’s upstream water use has caused harm to various species in the Apalachicola River and its connected floodplain. Florida’s river ecology expert, Dr. David Allan, concedes that he did not study most species in the river.<sup>30</sup> Instead, he focused primarily on mussels, Gulf sturgeon and other riverine fish, and Tupelo trees. The evidence shows, however, that the federal dam at the state line and river dredging are largely to blame for any changes to the ecology of the river and that populations for the species Dr. Allen studied are stable or increasing.

*Impact of Federal Dam & Dredging.* Through its operation of dams and reservoirs, the Corps often provides Florida with more water than it would otherwise receive during dry months or times of drought. But as scientists from federal agencies and the State of Florida have repeatedly concluded, the construction of Woodruff Dam by the Corps has also been the single biggest cause of ecological change to the Apalachicola River. The United States Geological Survey (“USGS”) published a paper in 2006 that expressly found that “water-level decline caused by channel change is probably the most serious anthropogenic impact that has occurred so far in the Apalachicola River and floodplain.”<sup>31</sup> That “channel change” is the result of the Corps’ construction of Jim Woodruff Dam and navigation dredging in the Apalachicola River—not Georgia’s water use. As Florida’s witness on riverine injury testified: “[w]herever you have a dam...the dam impedes sediment flow down the river. The river is hungry, and as a result, it will scour any material below a dam. And as it scours, it will lower the bed of the river.”<sup>32</sup> That same witness acknowledged just what USGS found: “[t]he entrenchment right below the dam

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<sup>30</sup> Allan Tr. 216:12-262:5 (no study of birds, amphibians, reptiles, or mammals).

<sup>31</sup> Ex. 20 at 1 (Light, et al., *Water Level Decline* article)

<sup>32</sup> Hoehn 30(b)(6) Tr. 89:23-90:8.

has had an impact on species.”<sup>33</sup> And Matthias Kondolf, one of Florida’s retained experts, wrote a paper in 2009 that concluded that “the Apalachicola River ecosystem has been severely degraded through a long history of navigational dredging by the U.S. Army Corps of Engineers.”<sup>34</sup> Dr. Kondolf also opined that Corps “activities have destabilized and widened the river channel; reduced the river’s hydraulic complexity and habitat diversity; smothered and displaced habitat in the river’s rich sloughs, floodplains, and channel margins; and altered the river’s flow regimes.”<sup>35</sup> These are the conclusions of Florida’s own scientists and experts.

**Mussels.** Florida has historically claimed harm to three endangered species of mussels in the Apalachicola River: the fat threeridge, the purple bankclimber, and the chipola slabshell. The United States Fish & Wildlife Service (“USFWS”)—the federal agency charged specifically to monitor and protect those species—has repeatedly found that the flow levels established by the Corps are sufficient to protect those species and their habitat. In fact, though Dr. Allan, claims the fat threeridge is somehow in peril, USFWS estimates that there are now between **6 and 18.6 million** fat threeridge living in ten times the suitable habitat previously believed to exist.<sup>36</sup> That population is thriving, not failing, and the Government has begun the process of de-listing the fat threeridge from the endangered species list.<sup>37</sup>

Nor are the Chipola slabshell or purple bankclimber impacted by Georgia’s upstream consumption. The USFWS found as much in its 2012 and 2016 biological opinions, and

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<sup>33</sup> *Id.* at 91:12-13.

<sup>34</sup> Ex. 21 at FL-ACF-03388635 (6/9/2009 Hoehn email); Kondolf Tr. 64:20-65:18.

<sup>35</sup> Ex. 21 at FL-ACF-03388635.; Kondolf Tr. 69:12-70:15; 72:5-73:20.

<sup>36</sup> Ex. 22 at 124 (2016 USFWS Biological Opinion); *see also* Ex. 23 at USFWS0043974 (Smit, *Using Sonar* article) (estimating number of fat threeridge mussels in Apalachicola River at more than 8 million as of August 2013); Ex. 24 at USFWS0088935 (2/3/2015 Zettle email)) (FWS is “moving forward with the reclassification” of the fat threeridge mussel as of February 2015.).

<sup>37</sup> Hoehn Tr. 149-50; Ex. 23 (Smit, *Using Sonar* article); Ex. 25 (6/7/2013 Information Memorandum); Ex. 26 (6/10/2013 Information Memorandum); Ex. 27 (7/30/2013 Kaeser email); Ex. 28 (FDEP 2013 Coordination Act Report); *see also* Ex. 29 at 2-199 (2015 Draft EIS for Water Control Updates) (“Ongoing studies by the USFWS in the Apalachicola River suggest that previous estimates likely underestimated the population of fat threeridge in the middle river reaches.”).

Florida's expert admitted that he cannot claim Georgia harmed either species. Like the USFWS found, Dr. Allan conceded that "the Chipola slabshell is not thought to be vulnerable to water-level changes."<sup>38</sup> He also admitted that the purple bankclimber only lives in stretches of the river that have been dramatically altered by Corps activities and therefore any harm to that species cannot be tied to Georgia.<sup>39</sup> And with regard to habitat for all three species, USFWS found in 2012 and again in a report released *just last week* that the Corps' reservoir operations and current flow levels "will not destroy or adversely modify designated critical habitat" for those species.<sup>40</sup>

In fact, Florida has admitted it has no evidence of population decline caused by Georgia for *any* mussel species. As Dr. Allan testified: "I did not do any population studies on these three species."<sup>41</sup> Florida cannot possibly claim clear and convincing evidence of harm to mussels where Florida has developed *no* evidence of population level declines of any mussel species (and, in fact, where at least one species has made a robust recovery); where the evidence shows the mussels are unaffected by Georgia; and where the USFWS has repeatedly concluded that water flows in the Basin are sufficient to maintain these species.

***Gulf Sturgeon.*** Florida officials acknowledge that any harm to historic sturgeon populations is the result of the construction of Woodruff Dam by the Federal Government, not of Georgia's water use. The dam prevents sturgeon from accessing historic spawning areas in Georgia, and it will continue to do so regardless of how much water Georgia uses or does not

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<sup>38</sup> See Allan Tr. 418:6-19.

<sup>39</sup> See *id.* at 402:19-25 ("My analysis did not pursue the issue of harm to the purple bankclimber.").

<sup>40</sup> Ex. 30 at ii (2012 USFWS Biological Opinion) (finding all three endangered species stable or increasing under Revised Interim Operating Plan over objection by Florida); see also Ex. 22 at 187-89 (2016 USFWS Biological Opinion).

<sup>41</sup> Allan Tr. 423:9-13.

use.<sup>42</sup> Other witnesses in this case agree.<sup>43</sup> Florida also has no evidence that Gulf sturgeon populations have declined in recent years.<sup>44</sup> In fact, population estimates by USFWS in 2012 found that Gulf sturgeon populations are stable or gradually increasing,<sup>45</sup> and in the report released last week USFWS reaffirmed that the population is “stable.”<sup>46</sup> Dr. Allan, for his part, testified that he could not offer an opinion on whether the sturgeon population is “increasing, declining or remaining stable”—not exactly clear and convincing evidence of harm.<sup>47</sup>

***Tupelo Trees.*** Florida has also claimed a diminution in Tupelo tree populations. But that species also has been impacted by the channel changes to the river caused by Woodruff Dam and dredging activities of the Corps. By deepening the river channel, those activities led to lower water levels and less inundation even at the same level of flow coming from Georgia.<sup>48</sup> As the USGS has recognized, “[a]s a consequence of this decreased inundation, the quantity and quality of floodplain habitats for fish, mussels, and other aquatic organisms have declined, and wetland forests of the floodplain are changing in response to drier conditions.”<sup>49</sup>

### **C. Florida Cannot Prove Ecological Harm To Apalachicola Bay.**

Florida’s argument that the ecology of the Apalachicola Bay as a whole is at a “tipping point,” is not based on real-world evidence, let alone the clear and convincing sort, and relies on an attenuated causal chain through the entire food web that cannot possibly be sustained. *See*

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<sup>42</sup> Ex. 31 at FL-ACF-03393541 (5/32/2013 Hoehn email) (“The [Jim Woodruff Dam] also resulted in reduced access to historically important upstream spawning habitat. . . . Important species most affected include the federally listed Gulf Sturgeon[.]”); Leitman Tr. 120:5-121:6 (the “population of Gulf sturgeon has declined significantly since Jim Woodruff Dam was constructed, . . . the construction of the dam limited the potential spawning habitat for the sturgeon”).

<sup>43</sup> Weller Tr. 54:3-6; Leitman Tr. 120:5-24.

<sup>44</sup> Allan Tr. 193:24-194:12; 515 (admitting no information about change in population of Gulf Sturgeon).

<sup>45</sup> Ex. 32 at 3 (USFWS and NMFS, 2009 Gulf Sturgeon 5-Year Review).

<sup>46</sup> Ex. 22 at 103 (2016 USFWS Biological Opinion).

<sup>47</sup> Allan Tr. 194:11-12.

<sup>48</sup> Ex. 21 at FL-ACF-03388635 (6/9/2009 Hoehn email); Ex. 20 at 1 (Light, et al., *Water Level Decline* article).

<sup>49</sup> Ex. 20 at 1 (Light, et al., *Water Level Decline* article).

*Aransas Project v. Shaw*, 775 F.3d 641, 656 (5th Cir. 2014) (rejecting similar argument under Endangered Species Act on proximate causation grounds).

To begin, there is no evidence of harm to so-called “primary producers”—the phytoplankton and other organisms that make up the lowest level of the food chain.<sup>50</sup> Aquatic vegetation has recovered in the Bay since being devastated by Hurricane Dennis in 2005, and the community structure of plants and animals in the Bay remains strong and dynamic.<sup>51</sup> Florida’s expert on these microscopic organisms admitted that she had “no information or data that food availability in the Bay is impaired” or “negatively impacted” for white shrimp, blue crab, or any fish species<sup>52</sup>; and that she had “not done any analysis that would permit [her] to identify minimal flows in the Apalachicola Bay that would be required for the ecosystem not to be harmed or in peril,”<sup>53</sup> rendering the rest of her opinion pure speculation.

Florida also has no evidence of harm to organisms at higher levels of the food chain, such as fish in the Apalachicola Bay. Florida’s expert on these organisms—Dr. Jenkins—had exceptional difficulty testifying as to which organisms in the Bay had been harmed.<sup>54</sup> He also testified that he could not “point to a decline in the number of freshwater species among the 12 most abundant species in the bay, from the 1970s to the 2000s.”<sup>55</sup> In light of this and similar testimony, Florida dropped Dr. Jenkins from its witness list. Florida’s other ecology expert, Dr. Glibert, testified that she had “no data or information indicating any fish species in the Apalachicola Bay has been negatively impacted by impaired food availability,” because her

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<sup>50</sup> See Ex. 33 at 61-63 (Menzie Rep.).

<sup>51</sup> *Id.* at 114.

<sup>52</sup> Glibert Tr. 73:13-18; 73:19-74:2, 75:2-8; 76:17-77:1.

<sup>53</sup> *Id.* at 107:16-22.

<sup>54</sup> Jenkins Tr. 65:18-69:11.

<sup>55</sup> *Id.* at 443.

“analyses did not go into specific fish species.”<sup>56</sup> With Dr. Jenkins out of the case, Florida has *no* testimony on harm to the fish populations of Apalachicola Bay.

In contrast to this complete lack of evidence about harm to the Bay, Georgia’s ecology expert, Dr. Charles Menzie, demonstrated that there is simply no evidence that the Bay is suffering severe ecological harm, much less that it has reached any kind of “tipping point.” And Georgia’s oyster ecology and marine fisheries expert, Dr. Romuald Lipcius, showed that shellfish in the Bay, such as shrimp and blue crab, have not suffered population declines.<sup>57</sup> Even Dr. Glibert, who is the leading proponent of Florida’s misguided “tipping point” theory, admits that “estuaries are dynamic systems,”<sup>58</sup> that “ecosystems can come back from ‘tipping points,’”<sup>59</sup> and most tellingly, that even if a “tipping point” had been reached in 2011-2012, recent flow data “is consistent with a trajectory of recovery.”<sup>60</sup> Moreover, she admitted that she could not “identify any period, prior to 2011 and 2012, when the Apalachicola Bay estuary did not recover from ecological stress to the estuary.”<sup>61</sup>

**D. Florida Cannot Create New Legal Definitions Of “Harm” To Compensate For Its Failure to Develop “Clear And Convincing” Evidence.**

Realizing it cannot demonstrate clear and convincing evidence of substantial injury caused by Georgia, Florida has attempted to define “harm” so broadly that it includes virtually *any* change to *any* species for *any* reason. Florida believes it has suffered injury “if the species has had anything ranging from death to a disruption of anything regarding its life cycle.”<sup>62</sup> Thus, Florida would have this Court define “injury” for equitable apportionment purposes as constituting disruption to any portion of a species’ “life cycle” or any action that “disrupt[s]

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<sup>56</sup> Glibert Tr. 76.

<sup>57</sup> Ex. 16 at 65-66 (Lipcius Rep.).

<sup>58</sup> Glibert Tr. 288:13-18.

<sup>59</sup> *Id.* at 285:12-286:12.

<sup>60</sup> *Id.* at 706:8-706:22; 707:1-708:4.

<sup>61</sup> *Id.* at 307:16-308:10.

<sup>62</sup> Hoehn 30(b)(6) Tr. 60:18-24.

some part of their needs.”<sup>63</sup> For example, one of Florida’s experts defined harm as the “reduction of access to optimal feeding habitat,”<sup>64</sup> though he refused to say how far below “optimal” will actually cause a species to suffer harm.<sup>65</sup> And that exposure to sub-optimal feeding habitat, according to Florida, need not even result in the death of a single organism in order to constitute harm.

Florida’s definition of harm is indefensible. This Court has never found that mere “disruption” in the life cycles of species—without any evidence of an actual or imminent decline in population—is sufficient to justify the extraordinary remedy of equitable apportionment. To the contrary, this Court will intervene in a dispute between states only when the injury is shown to be “of serious magnitude.” *Kansas*, 320 U.S. at 393. That demanding standard requires, at the very least, that Florida prove some actual decline in the species with respect to which it alleges injury. Activities that do not reduce the population of a species, but instead may (or may not) “disrupt” its lifecycle, are not the “hard facts” showing injury this Court demands and are thus not cognizable injuries in equitable apportionment actions. *Colorado II*, 467 U.S. at 320-21.

**E. Florida Cannot Show By Clear And Convincing Evidence That Georgia’s Water Consumption Is Decreasing Flows At The State Line.**

Finally, even if Florida could clear the injury and causation hurdles (and it cannot), Florida’s claims would fail at yet another level of the causal chain: Florida does not have clear and convincing evidence that Georgia’s consumptive water use has materially reduced the volume of water flowing from Georgia into Florida. This is primarily because the Corps largely controls the amount and timing of flow entering the Apalachicola River at all times of the year through its operation of a complex system of dams and reservoirs in the Basin. No water enters

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<sup>63</sup> *Id.* at 62:10-11; *see also id.* 63:3-4 (a species is harmed “if *any* parts of [its] life cycle[] are disrupted”).

<sup>64</sup> Allan Tr. 509:20-21.

<sup>65</sup> *See id.* at 511:5-9.

the Apalachicola River from either the Chattahoochee or Flint River without passing through the Corps' facilities, including Woodruff Dam located at the Florida-Georgia border.<sup>66</sup> The federal reservoir system offsets natural variability in streamflow in the ACF Basin, which the Corps does by storing water in the reservoirs during high-flow conditions and releasing water to "augment" flows during dry times. This has the effect of "smoothing out" the impact of flow variability, including that resulting from upstream water use, which renders the link between Georgia's water use and state-line flow tenuous.

At the outset, experts on both sides agree that, for the vast majority of months in the vast majority of years, Georgia's consumptive water use has only a *de minimis* impact on streamflows in the ACF Basin.<sup>67</sup> Since 1980, Georgia's total annual water use in the Basin has reduced streamflows in Georgia by less than 1,000 cfs per year.<sup>68</sup> By comparison, that is less than 5% of the average annual flow entering the Apalachicola River.<sup>69</sup> Georgia's water use also has no material impact on state-line flows if the analysis is limited to May to September, the months in which flows are typically at their lowest. In those months, since 1994, total streamflow reductions caused by Georgia's consumptive water use averaged approximately 1,170 cfs, or the equivalent of less than 10% of streamflow in the Apalachicola River during that period (approximately 15,000 cfs).<sup>70</sup> Thus, even when water is generally in its greatest demand and flows are at their lowest, Georgia's water use represents a relatively small percentage as compared to state-line flow. An overwhelming majority of water remains available for Florida.

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<sup>66</sup> Ex. 34 (USACE Scoping Report).

<sup>67</sup> Sunding Tr. 281:6-9 ("Virtually all of the discussions that I have had with other Florida experts have focused on dry years. I just haven't heard any issues raised about average or wet year problems.") Dr. Allan, Florida's ecological expert assumes no flow-related harms occur in the riverine ecosystem during the months of October through February. Ex. 35 at 132 (Allan Rep.).

<sup>68</sup> Ex. 36 at 3-4, 36-37 (Bedient Def. Rep.); Ex. 37 (20160223-ACF-GA-total-consumptive-monthly.xlsx); Ex. 38 (USGS Groundwater and Surface Water Data).

<sup>69</sup> Ex. 36 at 3-4.

<sup>70</sup> *Id.* at 4, 37-38 (Bedient Def. Rep.); Ex. 37 (20160223-ACF-GA-total-consumptive-monthly.xlsx); Ex. 38 (USGS Groundwater and Surface Water Data).

Not only does Georgia consume only a limited amount of water in the rivers in Georgia, the fact that the reservoirs redistribute water throughout the ACF Basin has the effect of minimizing the impact of Georgia's consumptive use. During seasonal low-flow and drought periods, the Corps strategically releases water from federal reservoirs to guarantee a minimum flow to Florida. Indeed, during drought periods, actual flows at the state line are often significantly higher than they would be in the absence of Corps operations. Most relevant here, during times of drought, the Corps guarantees flows of at least 5,000 cfs into the Apalachicola River (except in very narrow circumstances when it can be lowered to 4,500 cfs).<sup>71</sup> As a result, Georgia's consumptive use often has no direct effect on flows entering the Apalachicola River, especially during low-flow and drought periods when Florida purports to need water the most.<sup>72</sup>

To the extent Florida asserts it is receiving less water than it did historically, the evidence shows that such decreases are largely due to an increase in the severity and frequency of natural droughts. The past 15 years of record have seen several severe, multi-year droughts, including droughts in 1999-2001, 2006-2008, and 2010-2012.<sup>73</sup> Indeed, according to NOAA, the 24-month period from December 2010 to November 2012 was the driest 24-month period ever recorded for the State of Georgia, and drought conditions for those years were acutely focused on the southwest corner of the State.<sup>74</sup> Georgia's expert hydrologist has found a clear, direct relationship between precipitation and streamflow in the ACF Basin.<sup>75</sup> In fact, Florida's own hydrology expert, Dr. George Hornberger, concluded that flow declines within Florida were attributable to "natural climate variations" resulting from "the dry period in the last roughly 15

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<sup>71</sup> Ex. 29 at ES-11 to ES-12 (2015 Draft EIS for Water Control Updates) (explaining that during "drought operations," "the minimum release from Jim Woodruff Lock and Dam is 5,000 cfs [and] any basin inflow above 5,000 cfs may be stored"); *see also id.* at 2-70 to 2-73 (describing RIOP operations); Ex. 39 at 17-23 (Bedient Rep.).

<sup>72</sup> Ex. 36 at 37-38 (Bedient Def. Rep.).

<sup>73</sup> Ex. 40 (US Drought Monitor data).

<sup>74</sup> Ex. 41 (NOAA Drought Annual 2012).

<sup>75</sup> Ex. 36 at 72-76 (Bedient Def. Rep.) (finding a relationship after analyzing over 80 years of precipitation and streamflow data).

years.”<sup>76</sup> The evidence thus shows that any lower streamflows into Florida are the result of these multi-year droughts, not Georgia’s consumptive use.<sup>77</sup>

There is also some irony in Florida’s attempts to blame Georgia for reductions in streamflow. The evidence will show that over the past several decades a material amount of Apalachicola River water has been lost *entirely within Florida’s borders*. Since 1978, Florida’s contribution of flows to the Apalachicola River has declined from approximately 5,000-6,000 cfs to approximately 1,000-2,000 cfs.<sup>78</sup> Florida does not contest this long-term decline.<sup>79</sup> And as Florida’s percentage “share” of water contributed to the Apalachicola River has been shrinking over time, Georgia’s “share” has been increasing.<sup>80</sup> In a very real sense, Florida is asking Georgia to make up for water that Florida has lost in the last 40 years.

### **III. Florida Cannot Show Clear And Convincing Evidence That Georgia’s Water Use Is Inequitable.**

Beyond proving injury and causation, Florida must also prove that Georgia’s upstream water use is inequitable, which it cannot do. The Court will closely evaluate the nature and value of Georgia’s uses, and can “decline[] to grant any relief ... on the ground that the great benefit to [the upstream state] outweigh[s] the detriment to [the downstream state].” *Colorado I*, 459 U.S. at 186; *Kansas*, 206 U.S. at 117 (denying relief notwithstanding “perceptible injury” where upstream use “transform[ed] thousands of acres into fertile fields”); *Washington*, 297 U.S. at 523 (denying relief where remedy would injure upstream state with no benefit to downstream state). The evidence shows that Georgia uses water in the ACF Basin for highly beneficial purposes,

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<sup>76</sup> Hornberger Tr. 573:3-8; Ex. 42 at 18-19 (Hornberger Def. Rep.).

<sup>77</sup> Ex. 36 at 74-76 (Bedient Def. Rep.).

<sup>78</sup> *Id.* at 76-77.

<sup>79</sup> Fla. Reply in Support of Mot. *in Limine* to Preclude Expert Testimony of Dr. Bedient and Dr. Panday on “Lost Water” at 3-4 (Oct. 7, 2016).

<sup>80</sup> Ex. 36 at 78-79 (Bedient Def. Rep.).

supporting millions of people and billions in economic output. At the same time, Georgia has been a conscientious and effective steward of water resources.

**A. Georgia’s Water Consumption Is Plainly Equitable.**

There can be no dispute that Georgia uses ACF waters for highly beneficial purposes. ACF waters are the principal municipal and industrial water supply for the Atlanta Metropolitan Area, the ninth largest metropolitan area in the United States.<sup>81</sup> Approximately 5.1 million citizens in Georgia rely on the ACF Basin for their daily water supply, including drinking, cooking, cleaning, and other everyday uses.<sup>82</sup> As this Court has noted, “[d]rinking and other domestic purposes are the highest uses of water[,]” and “[a]n ample supply of wholesome water is essential.” *Connecticut*, 282 U.S. at 673. ACF Georgia is also home to many industries and businesses for which water is a key input, including manufacturing industries such as poultry processing and aircraft manufacturing, and green industries such as greenhouse production, landscaping, and horticultural services. Together, those industries contribute nearly \$13.5 billion to total Gross Regional Product (GRP) and employ nearly 50,000 people.<sup>83</sup>

ACF waters are also the driving force behind Georgia’s agricultural industry, which is one of the largest and most productive in the Nation. In 2013 alone, agricultural revenues in ACF Georgia from three key row crops (corn, cotton, and peanuts) were over \$1 billion, and total agricultural revenues for the region exceeded \$4 billion.<sup>84</sup> ACF Georgia accounts for over 25% of all peanut acreage nationwide, and grows nearly half of all cotton in the State, which is the nation’s second largest cotton producer. Within the ACF Basin, substantial economic

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<sup>81</sup>Ex. 49 at GA02451835 (Georgia’s Comments on Water Control Manual Update).

<sup>82</sup>Ex. 44 at Att. A, p.2 (4/29/2016 Metro District Memo); Ex. 45 at 16 (Mayer Rep.).

<sup>83</sup>Ex. 43 at 28-29 (Stavins Rep.).

<sup>84</sup>*Id.* at 30.

activity also depends on output from the agricultural sector, contributing an additional \$687 million per year to GRP.<sup>85</sup>

Farmers must irrigate to ensure the viability of their crops and provide the agricultural commodities on which the State and our nation depend. Without irrigation, farmers lack a reliable source of water for their crops, particularly during dry periods. Even Florida's agricultural irrigation expert agreed that "farmers using dryland farming are at an increased risk of low yields" and "face an increased risk of crop failure compared to farmers who irrigate."<sup>86</sup> Another of Florida's experts explained that crop yield "is extremely responsive to supplemental irrigation"<sup>87</sup> and without irrigation, "complete crop failure" was possible.<sup>88</sup> Crop yield data bears this out: without irrigation, Georgia's farmers would produce 51 percent smaller peanut yields, 78 percent lower cotton yields, and 93 percent lower corn yields during dry years.<sup>89</sup> Even during normal years, both Georgia and Florida experts agree that yields from irrigated fields are significantly greater than yields from non-irrigated fields for all major row crops.<sup>90</sup>

In comparison to the highly beneficial purposes to which Georgia puts the waters in the ACF Basin, Florida's uses are relatively minor. In 2014, the permanent population of the Florida portion of the ACF basin was less than 3% of the total population of the Basin, and ACF Florida accounts for less than 1% of the economic activity in the basin.<sup>91</sup> Florida has relatively little agricultural activity in the ACF Basin.<sup>92</sup> And there is no large metropolitan area in ACF Florida

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<sup>85</sup> Ex. 44 at Att. 2 (4/29/2016 Metro District Memo); Ex. 43 at 30-32 (Stavins Rep.).

<sup>86</sup> Bottcher Tr. 81:8-18.

<sup>87</sup> Hoogenboom Tr. 89:20-23.

<sup>88</sup> *Id.* at 117:20-118:1.

<sup>89</sup> Ex. 43 at 33 (Stavins Rep.) at 33.

<sup>90</sup> Ex. 46 at 16-17 (Irmak Rep.); Ex. 47 at 10 (peanuts), 18-19 (corn), 27-28 (cotton), 36-37 (soybean) (Hoogenboom Rep.).

<sup>91</sup> Ex. 43 at 22 (Stavins Rep.).

<sup>92</sup> Barr Tr. 254:13-15.

that must be supported. Even the oyster industry Florida seeks to protect generates only between \$5-8 million in revenue per year.<sup>93</sup>

In light of Georgia's highly beneficial uses, and Florida's comparatively minor uses, Georgia's consumptive water use is exceedingly reasonable. ACF Georgia is home to 98% of the population in the ACF Basin, has 99% of the economic activity in the ACF Basin, 5 times the land area of ACF Florida, 80 times more employees than ACF Florida, 56 times the population than in ACF Florida, and a GRP that is 129 times larger than ACF Florida.<sup>94</sup> Yet, Georgia consumes only a small fraction of the water available in the ACF system, and the vast majority of water flows through to Florida.

What is more, there is no indication that Georgia's water use will substantially increase in the near future. Georgia's projected water supply needs for the entire ACF Basin through 2040 would amount to an increase in Georgia's water use of only 62 cfs.<sup>95</sup> The resulting decrease of streamflow at the state line during low-flow periods resulting from that increase would often be 0 cfs, as a result of the Corp's regulation of water in the Basin.<sup>96</sup> Florida's asserted fears of "ever-increasing" water use by Georgia are therefore unfounded.

**B. Georgia Has Made Substantial Efforts To Conserve Water For Municipal And Industrial Purposes.**

Florida has struggled to make a case against Atlanta's municipal and industrial conservation practices. Florida has now dropped the sole expert it had retained to critique Atlanta's conservation measures. And for good reason: Georgia has invested heavily in comprehensive efforts to conserve water for municipal and industrial purposes.

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<sup>93</sup> Ex. 48 at 43 (Phaneuf Rep.). Dr. Phaneuf also admits that the total annual revenue from the combined harvest of shrimp, crab, and finfish is only \$4.5 million.

<sup>94</sup> Ex. 43 at 18, 22 (Stavins Rep.).

<sup>95</sup> Ex. 36 at 7 (Bedient Def. Rep.).

<sup>96</sup> *Id.* at 54.

To begin, the vast majority of water that Georgia withdraws from the ACF Basin for municipal and industrial purposes is thereafter treated and returned to the system, after which that water is free to flow down the watershed. The Metro Water District<sup>97</sup> returns *more than 70%* of the water it withdraws back to the ACF Basin.<sup>98</sup> That is true even in drought years. In 2011, Georgia achieved a return rate of over 70% during one of the worst droughts in State history.<sup>99</sup> Return rates are projected to reach 75% by 2050.<sup>100</sup> Achieving those high return rates has been extraordinarily costly. For example, Gwinnett County spent more than \$1 billion to construct a water reclamation facility capable of returning 20 mgd of wastewater back to the Chattahoochee River and 40 mgd to Lake Lanier.<sup>101</sup>

Georgia also has required all water systems and local governments within the Metro Water District to enact some of the most aggressive conservation measures adopted anywhere in the United States. Those mandatory practices include: residential and commercial water audits; replacement of older, inefficient plumbing fixtures; award-winning education and customer outreach programs; low-flow retrofit kits for residential units; high-efficiency toilets in government buildings; multi-family high-efficiency toilet rebates; meters with point-of-use leak detection; and high-efficiency plumbing fixtures in new construction.<sup>102</sup> Georgia requires rigorous water loss audits that must be validated by a third party.<sup>103</sup> Additionally, the Metro Water District and other water providers in the ACF Basin implement increasing block rate,

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<sup>97</sup> The Metro Water District encompasses 15 counties and 92 separate municipalities in the metropolitan Atlanta area and is tasked by statute with preserving and protecting water resources. The Metro Water District develops comprehensive regional and watershed specific water resource plans to be implemented by local governments.

<sup>98</sup> Zeng Tr. 632:7-11; Ex. 45 at 15 (Mayer Rep.); Ex. 49 at GA02451997- GA02451998 (Georgia's Comments on Water Control Manual Update).

<sup>99</sup> Zeng Tr. 523:19-23.

<sup>100</sup> *Id.* at 42:24-44:8.

<sup>101</sup> Ex. 45 at 51 (Mayer Rep.).

<sup>102</sup> *Id.* at 80:4-14, 695:7-18; Ex. 50 at GA02451936 (1/11/2013 Gov. Deal letter); Ex. 45 at 58-59 (Mayer Rep.).

<sup>103</sup> Ex. 45 at 26 (Mayer Rep.).

conservation pricing—an important practice reducing overall water use.<sup>104</sup> These forward-looking measures have been supported by billions of dollars of investment by local governments and water suppliers in the Atlanta metropolitan area.<sup>105</sup>

Georgia has also implemented drought-management rules designed to reduce M&I water use during periods of severe drought. Those rules establish pre-drought mitigation strategies<sup>106</sup> and set forth graduated increases in restrictions based upon the level of severity of a drought.<sup>107</sup> Georgia has not hesitated to utilize these tools. For example, during the 2007-2009 drought, Georgia ordered an almost total outdoor watering ban<sup>108</sup> and mandatorily required all water suppliers in the Atlanta region to reduce their use by 10%.<sup>109</sup> Georgia updated the drought rules in 2015 to incorporate additional pre-drought mitigation strategies; a drought declaration process; a menu of drought response strategies; and a drought response committee.<sup>110</sup>

In 2010, Georgia enacted the Water Stewardship Act, which supplemented the Metro District’s water conservation and efficiency programs and was designed “to create a culture of water conservation in the state of Georgia.”<sup>111</sup> The Stewardship Act required local governments, public water systems, and state agencies to adopt permanent outdoor water use restrictions, increased block rate pricing for all residential customers, and required sub-metering in all new buildings and annual water loss audits for public water systems statewide.<sup>112</sup>

As a result of these conservation measures, M&I water usage in the Metro Water District has dropped dramatically—both in terms of total consumptive use and per capita use. Total M&I

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<sup>104</sup> Mayer Tr. 231:19-24; Kirkpatrick Metro District 30(b)(6) Tr. 49:10-15; Ex. 45 at 61 (Mayer Rep.).

<sup>105</sup> See Ex. 51 at GWNT-DWR0012553 (2009 Summary of Water Conservation).

<sup>106</sup> Ex. 52 (2003 Georgia Drought Management Plan).

<sup>107</sup> Ex. 53 at GA00081536- GA00081539 (Ga. Comp. R. & Regs. R. 391-3-30-.01-08).

<sup>108</sup> Ex. 54 at FL-ACF-02640133 (9/28/2007 Press Release).

<sup>109</sup> Ex. 55 at GA01210159 (10/23/2007 Press Release).

<sup>110</sup> Ex. 53 (Ga. Comp. R. & Regs. R. 391-3-30-.01); Ex. 56 (12/30/2014 Turner memo).

<sup>111</sup> Ex. 57 at § 1 (S.B. 370).

<sup>112</sup> *Id.* at §§ 2-3, 10.

consumptive use *decreased* from 1994 to 2013 in the Metro District, even as the population *more than doubled* over the same period.<sup>113</sup> Per capita water use in the Metro District has also declined rapidly since 2000—dropping from 155 gallons per capita per day (GPCD) in 2000 to 98 GPCD today.<sup>114</sup> Per capita water use in the Metro District is lower than Florida’s per capita rate in the ACF Basin, in Jacksonville, and in Tampa.<sup>115</sup> Florida’s own expert, Dr. Dracup, acknowledged in his deposition that “something below a hundred gallons per day per capita” would indicate that “water conservation measures are being appropriately implemented.”<sup>116</sup> With per capita use in Atlanta at 98 GPCD, Florida decided not to bring Dr. Dracup to trial.

In light of these efforts, Georgia has emerged as a national leader in public water supply management. In 2012, the Alliance for Water Efficiency gave Georgia the highest score given to any state nationally for water conservation and efficiency, while Florida earned a “C”.<sup>117</sup> Georgia also leads the nation in progress on auditing of public water systems,<sup>118</sup> and has been recognized as a leader for its water conservation, education, and customer outreach programs.<sup>119</sup>

**C. Georgia Has Made Substantial Efforts To Conserve Agricultural Water Resources.**

Georgia also has taken a number of wide-ranging, large-scale, and proactive measures to enhance management and conservation of agricultural water resources. Throughout discovery in this case, Florida has repeatedly cited a number of documents and public statements indicating that Georgia was aware of potential water management issues in the Lower Flint River Basin by the late 1990s. Florida ignores, however, what happened next: Georgia promptly took a series of

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<sup>113</sup> See Mayer Tr. 88:12-90:23, 102:12-19.

<sup>114</sup> *Id.* at 95:29-97:9, 101:10-102:6; Ex. 45 at 17-19 (Mayer Rep.).

<sup>115</sup> See Mayer Tr. 67:2-23; 74:20-76:19.

<sup>116</sup> Dracup Tr. at 132:12-18.

<sup>117</sup> Ex. 58 (State Scorecard).

<sup>118</sup> Ex. 59 at 45-46 (Water Audits in the United States).

<sup>119</sup> In 2015, the Metro District was awarded the prestigious 2015 EPA WaterSense Excellence in Education and Outreach award. See Ex. 60.

proactive and reasonable actions in response to these potential issues and developed a regime of comprehensive and effective water management in the ACF Basin.

In the late 1990s, signs emerged that, during times of extreme drought, agricultural pumping in ACF Georgia could have an impact on water levels in the Flint River. At the time, the evidence was uncertain. Very few scientists had studied the issue; the hydrologic models available were rudimentary; there were no precise studies of the amount of irrigated acreage in the ACF Basin; agricultural water uses were unmetered and estimates of total agricultural water use were often overstated; and the interaction and impacts of groundwater pumping to surface water flows was not fully understood.<sup>120</sup> Nonetheless, Georgia quickly implemented a process to comprehensively and scientifically study agricultural water use in the ACF Basin, while also taking steps to better conserve and manage water resources.

That multi-year process had two primary components. *First*, Georgia's Environmental Protection Division (EPD) placed a moratorium on new agricultural groundwater and surface water permits in the ACF Basin.<sup>121</sup> The moratorium, which prohibited any new permits in areas where streamflow was considered most sensitive to agricultural withdrawals, lasted for over *six years*. *Second*, Georgia initiated a Sound Science Study to better understand the impact of agricultural irrigation on surface water flows.<sup>122</sup> The Sound Science Study brought together technical experts, policymakers, farmers, environmental groups, and other stakeholders in a collaborative process that lasted several years. Georgia hired contractors to map irrigated acreage; collected data on irrigation application amounts for different crops and climatic conditions; measured distributions of agricultural water use; worked with USGS to study the

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<sup>120</sup> See Ex. 61 at USGS-0020249, USGS-0020260-USGS0020265 (Torak, *Water Availability and Competing Demands*) (explaining that the Torak and McDowell (1996) model was outdated but USGS working to fill data gaps and develop model to improve understanding of groundwater and surface-water interaction).

<sup>121</sup> Reheis Tr. 34:8-37:3.

<sup>122</sup> Reheis Tr. 288:19-290:3; Cowie Tr. 473:1-21.

hydrology of the region; commissioned the development of an advanced hydrologic model to study the impact of groundwater pumping on streamflows; and evaluated numerous conservation practices and irrigation efficiency measures.<sup>123</sup>

While the moratorium was in place and the Sound Science Study was underway, Georgia took other steps to improve conservation in the ACF Basin. In 2000, Georgia passed the Flint River Drought Protection Act (“FRDPA”), which empowered the Director of EPD to issue a prediction of “severe drought conditions” by March 1st of each year, and to administer an auction whereby farmers may voluntarily agree not to irrigate in return for monetary payments. EPD conducted auctions pursuant to the FRDPA in both 2001 and 2002, which resulted in the removal of 33,000 and 40,000 acres from irrigation, respectively, at a combined cost of \$10 million.<sup>124</sup> Policymakers had mixed views on the effectiveness of the auction process in the FRDPA, and Georgia ultimately amended the Act in 2014 with the goal of improving it. In the meantime, Georgia pursued other, more efficient programs to address conservation.

Building on the FRDPA, in 2003 Georgia passed legislation requiring the installation of flow meters on irrigation withdrawals.<sup>125</sup> Georgia has invested more than \$22 million in metering efforts under the Agricultural Water Metering Program, and over 11,000 meters have been installed throughout the state, including over 4,000 in the ACF Basin.<sup>126</sup> In addition to providing a benefit to growers, who can use this knowledge to better plan their irrigation activities, the agricultural metering data has been used for water planning and policymaking.

In 2006, after years of careful study and development, Georgia’s Sound Science Study culminated with the Flint River Basin Regional Water Development and Conservation Plan

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<sup>123</sup> Ex. 62 at GA00185754-755, GA00185783-792 (2006 Flint River Regional Water Plan).

<sup>124</sup> Ex. 63 at GA00201026 (Summary of FRDPA Auctions).

<sup>125</sup> Ex. 46 at 60-61 (Irmak Rep.).

<sup>126</sup> See *id.*; Ex. 64 at 11 (Torak, *Summary of Georgia Agricultural Conservation and Metering Programs*); Ex. 65 (USGS, GA Agricultural Water Conservation and Metering Program); Ex. 66 (GSWCC Metering Program).

(“FRB Plan”). The FRB Plan divided the Basin into different “zones” based on hydrologic sensitivity to groundwater withdrawals. After the issuance of backlogged permits, applications for new irrigation permits were severely restricted in the most sensitive zones, termed “Capacity Use Areas,” and remain so to date. New or modified permits in the remaining zones were required to implement a suite of advanced conservation protections, including end-gun shut-off switches, which prevent center pivot irrigation of non-cropped areas; leak prevention and repair plans; pump-safety shutdown switches; rain-gage shut-off switches; and low-flow protection plans that mandated cessation of irrigation during extreme drought conditions.<sup>127</sup>

Georgia has also implemented mandatory statewide and regional water planning, which requires regional councils—including councils located in the ACF Basin—to devise water management plans and update those plans every five years. Those plans, which are compiled with the support of expert technical consultants and policymakers, seek to identify the amount of water available in a given region, the amount of water that is projected to be required for agricultural or other uses, and management and conservation practices that will help use water resources efficiently. The first state plan was completed in 2008 and the first regional plans were completed in 2011. Currently the regional councils are in the initial five-year process of reviewing and revising their regional water plans.<sup>128</sup>

Georgia has also implemented aggressive efficiency requirements for irrigation equipment in the ACF Basin. As mentioned above, the FRB Plan requires all irrigation systems in Conservation, Capacity, or Restricted Use areas to implement efficiency measures. Georgia has also passed legislation mandating that all center-pivot irrigation systems—by far the most

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<sup>127</sup> See Ex. 62 at GA00185768-70 (2006 Flint River Regional Water Plan).

<sup>128</sup> Masters Tr. 696:3-24.

common irrigation systems—be at least 80% efficient.<sup>129</sup> These efforts have worked. Currently, farmers in the Lower Flint River Basin use low pressure irrigation systems to irrigate over 90% of the irrigated acreage in the region.<sup>130</sup> In the most hydrologically sensitive areas, farmers use low pressure irrigation systems to irrigate 93% of irrigated acreage.<sup>131</sup>

Georgia also makes numerous resources available to help farmers manage their irrigation systems more efficiently. The State has invested millions in a Mobile Irrigation Lab program, which (at no cost to farmers) audits the uniformity of farmers' center pivot irrigation systems and subsidizes the costs of retrofitting those systems to achieve greater efficiency.<sup>132</sup> Georgia has completed over 460 irrigation system retrofits, covering over 40,000 irrigated acres. Georgia has also funded institutes like the University of Georgia Extension, which has had over 250,000 face-to-face contacts with farmers and overseen 1,740 hours of farmer training;<sup>133</sup> the Georgia Water Planning & Policy Center, which provides technical assistance and educational outreach to farmers and helps them access USDA programs; and the Flint Soil and Water Conservation District, which has helped farmers implement conservation measures on over 200,000 acres.

Georgia's aggressive agricultural conservation efforts have continued in recent years. Significantly, during the historic 2012 drought, Georgia reinstated a moratorium on new agricultural water withdrawal permits, including new permits for withdrawals from the Floridan aquifer or from surface waters in critical areas.<sup>134</sup> That suspension is still in effect today, and there is no reasonable prospect of the moratorium being lifted in the future. As a result, irrigated acreage from the Floridan aquifer and surface-water sources in the most-critical areas of the ACF

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<sup>129</sup> See Ex. 46 at 63 (Irmak Rep.); Cowie Tr. 567:9-25; O.C.G.A. § 12-5-546.1(b).

<sup>130</sup> See Ex. 46 at 74 (Irmak Rep.); Ex. 67 (LF Mapping.pptx).

<sup>131</sup> See Ex. 46 at 73-74 (Irmak Rep.); Ex. 68 (GWPPC Mapped Pivots\_Flint Basin.xlsx).

<sup>132</sup> See Ex. 46 at 64-71 (Irmak Rep.); Eigenberg Tr. 46:20-47:2, 191:15-192:10.

<sup>133</sup> See Ex. 46 at 84 (Irmak Rep.).

<sup>134</sup> Ex. 69 at GA00043929 (Suspension Announcement).

Basin are effectively capped going forward, protecting against future growth. Moreover, in 2014 Georgia enacted new legislation creating new efficiency requirements for irrigation systems in the Lower Flint Basin and giving EPD the authority to protect stream flows generated from state-sponsored augmentation projects.<sup>135</sup>

Those efforts have had meaningful impacts on agricultural water use in ACF Georgia. Combined acreage irrigated from surface water and Floridan Aquifer sources in ACF Georgia has declined since 2004; irrigation efficiency has improved; and the streamflow impact of agricultural water use has remained relatively constant. At the same time, crop yields have increased as Georgia farmers have become more efficient users of water resources.<sup>136</sup> Taken together, the initiatives discussed above demonstrate that Georgia has taken a reasonable, responsible, and conscientious approach to agricultural water conservation.

#### **IV. Florida’s Proposed Remedies Will Not Redress Its Alleged Harms, Will Impose Extreme Costs, And Cannot Be Imposed Without The United States As A Party.**

Even if Florida could prove injury, causation, and inequitable use, it still would bear the burden of proving (1) that its proposed remedies will redress its alleged harms; and (2) that the benefits of its proposed remedies substantially outweigh the harms they will do to Georgia. *See Colorado I*, 459 U.S. at 187. If Florida cannot prove both of these elements by clear and convincing evidence, the Court will deny relief, as it has in past cases. *Kansas*, 320 U.S. at 385-86 (denying relief, in part, because “[b]efore the developments in Colorado consequent upon irrigation were to be destroyed or materially affected, Kansas must show not merely some technical right but one which carried corresponding benefits.”); *Washington*, 297 U.S. at 523 (denying WA’s requested relief, in part, because “[t]o limit the long established use in Oregon would materially injure Oregon users without a compensating benefit to Washington users”).

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<sup>135</sup> See Ex. 70 at GA00305431 (2014 FRDPA amendments).

<sup>136</sup> Ex. 46 at 145-49 (Irmak Rep.).

Both at trial and in post-trial briefing, Georgia will renew its argument and seek dismissal on the ground that the United States is a necessary and indispensable party that cannot be feasibly joined under Rule 19. In denying Georgia’s motion to dismiss on this issue, the Special Master found that Georgia and the United States had made a “persuasive case that the United States is a party required to be joined if feasible” under Rule 19(a),<sup>137</sup> but nonetheless held that the case could proceed “in equity and good conscience” under Rule 19(b) because, at the pleading stage, it was “possible” that Florida could obtain adequate relief through a *cap* on Georgia’s consumptive water use that would not affect the United States’ operations in the ACF Basin.<sup>138</sup> The Court cautioned, however, that Florida would have to meet its burden of proof on that issue at trial: “Having voluntarily narrowed its requested relief and shouldered the burden of proving that the requested relief is appropriate, it appears that Florida’s claim will live or die based on whether Florida can show that a consumption cap is justified and will afford adequate relief.”<sup>139</sup> Florida cannot make either showing. The consumption caps proposed by Florida are so costly to Georgia, and result in so few benefits to Florida, that they are neither “justified” nor “equitable.” And in any event, those caps—without the United States as a party—will not provide Florida meaningful relief from the harms it alleges.

Florida’s experts have proposed draconian restrictions on Georgia’s water use. Dr. Sunding—Florida’s lead economist—has proposed a number of drastic remedy scenarios, including scenarios (using his calculations) that would require Georgia in “dry” years to reduce irrigation of row crops by up to 71% and proposals that require Georgia to reduce outdoor domestic water use from anywhere between 20-75%.<sup>140</sup> Dr. Sunding believes (inaccurately) that

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<sup>137</sup> Order on State of Georgia’s Motion to Dismiss (June 19, 2015) at 8.

<sup>138</sup> *Id.* at 11-15.

<sup>139</sup> *Id.* at 13.

<sup>140</sup> Ex. 71 at 9, 75, 78 (Sunding Rep.); Ex. 72 at 2, 4 (Sunding Def. Rep.).

those scenarios could generate between 1,000-2,000 cfs in additional streamflow in peak summer months—amounts that sometimes exceed Georgia’s *total consumptive use* in those months. Indeed, according to Florida’s own experts, even completely eliminating *all* agricultural irrigation from surface water and groundwater in Georgia could not generate the peak summer flows that Dr. Sunding’s claims to achieve.<sup>141</sup> Dr. Flewelling, another Florida expert, has proposed similarly draconian remedial scenarios. He proposes reducing total agricultural irrigation by 50%, eliminating half of all man-made small impoundments, and eliminating *all* interbasin transfers.<sup>142</sup> He also proposed a scenario that would require banning irrigation on 150,000 acres in two watersheds that are critical to agricultural productivity in the basin.<sup>143</sup>

Unsurprisingly, the costs of those potential remedies are staggering. Two scenarios proposed by Dr. Sunding, which solely focus on agricultural water use, would cost Georgia between \$205-\$335 million each time the proposed restrictions are imposed.<sup>144</sup> Combining those agricultural water-use reductions with certain reductions in municipal and industrial water use proposed by Florida would cost Georgia \$433 million when restrictions are imposed.<sup>145</sup> And a final scenario proposed by Dr. Sunding—which he suggests would generate 2,000 cfs in streamflow—would cost billions. Dr. Flewelling’s scenarios, particularly his proposal to eliminate interbasin transfers, are similarly costly. These staggering impacts would dwarf any potential benefit to Florida, even if they did actually generate the streamflow Florida claims.

But Florida’s proposals will not generate nearly the amount of water that Florida believes. Dr. Sunding estimates that three of his scenarios will increase peak summer

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<sup>141</sup> Dr. Langseth testified that eliminating all agricultural pumping from surface water in the entire basin and eliminating all groundwater irrigation considered by Dr. Sunding would result in a peak summer streamflow of 1,231 cfs (636 cfs from surfacewater and 595 cfs from groundwater). *See* Langseth Tr. 869:1--870:9, 875:3-16.

<sup>142</sup> Ex. 73 at 38 (Flewelling Rep.).

<sup>143</sup> *Id.* at 39.

<sup>144</sup> *See* Ex. 43 at 52, 54-60 (Stavins Rep.).

<sup>145</sup> *See id.* at 53.

streamflows by 1,000 cfs. Georgia's analysis, however, shows that his measures would increase streamflows by only around 616-682 cfs.<sup>146</sup> Indeed, it would not be possible to generate 1,000 cfs increase in peak summer streamflows even if *all* row crop irrigation in ACF Georgia were eliminated in a dry year.<sup>147</sup> Dr. Sunding's purported benefits from M&I conservation are similarly impossible to achieve. Dr. Sunding testified that certain M&I conservation measures could generate 546 cfs in peak summer streamflows.<sup>148</sup> But even Florida's consumptive use expert found that that eliminating *all* M&I use throughout the entire ACF basin would have had a maximum impact of 468 cfs in the peak drought month of June 2011.<sup>149</sup>

Florida's proposed remedies also suffer from a much more fundamental problem: They will not lead to material increases in flows at the state line—at least without the Corps participating as a party in this case. Georgia's expert performed hydrologic modeling of 18 potential remedial scenarios using the Corps' ResSim model. That analysis shows that even significant reductions in Georgia's consumptive use would not materially increase state-line flows during many summer and fall months in dry years, because the Corps would offset any increases in Flint River flows with decreased releases from reservoirs on the Chattahoochee River.<sup>150</sup> The same is true with respect to Dr. Sunding's scenarios purporting to generate 1,000 cfs additional streamflow in peak summer months. Even assuming Dr. Sunding's scenarios could generate 1,000 cfs in additional streamflow, given how the Corps manages the integrated system of reservoirs to achieve multiple project purposes, a 1,000 cfs increase in Flint River flows *would not materially increase* flows in the state line in peak summer months.<sup>151</sup>

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<sup>146</sup> See Ex. 43 at 52-53 (Stavins Rep.).

<sup>147</sup> *Id.* at 78.

<sup>148</sup> Ex. 72 Table 1 at 2 (Sunding Def. Rep.).

<sup>149</sup> Flewelling Tr. 363:17-23.

<sup>150</sup> Ex. 36 at 60-69 (Bedient Def. Rep.).

<sup>151</sup> *Id.*

Florida's expert reached the same conclusion. Dr. Hornberger—Florida's expert on the “hydrological impacts” of Georgia's water use—performed modeling using his modified version of ResSim. That modeling showed that even draconian reductions in Georgia's water use *would not materially increase* state-line flows during many low flow months of dry years as a result of the Corps' management of ACF dams and reservoirs.<sup>152</sup> Dr. Hornberger admitted that, when he modeled a scenario in which Georgia's agricultural water use was reduced by *over 50%*, his results showed multiple months in which state-line flows *did not increase at all*.<sup>153</sup> Dr. Hornberger decided not to report these results in his expert report, but they were buried in his backup materials and they confirm Georgia's position and undermine Florida's.<sup>154</sup>

These findings are not surprising and, indeed, were presaged by Georgia at the outset of this case: reductions in Georgia's consumptive use do not cause increased flows at the state line in the summer months of dry years because of the significant role the Corps plays in managing water resources in the ACF Basin.<sup>155</sup> Releases from Georgia into Florida are tightly controlled by the Corps according to a precise set of rules and a careful balance of multiple federal project purposes. In dry times, that ensures Florida a 5,000 cfs minimum flow. Under the Corps' protocols, any additional water saved by reductions in Georgia's water consumption (at least during dry times) would be stored in upstream reservoirs and not passed through to Florida.<sup>156</sup>

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<sup>152</sup> Hornberger Tr. 417:11-418:1.

<sup>153</sup> *Id.*

<sup>154</sup> *Id.* at 415:21-416:5.

<sup>155</sup> Ex. 36 at 60-69; 69-71, 101 (Bedient Def. Rep.).

<sup>156</sup> See, e.g., Ex. 74 at ACE-0118072 (12/7/2007 Brandt email) (“Once the determination is made to exercise the trigger, releases from Jim Woodruff Dam would be made to meet the 4,500 cfs minimum flow, and storage of inflows above the 4,500 cfs would occur.”); Ex. 75 at ACE-0118126 (explaining that basin inflow “is all stored in W.F. George” during certain times); Ex. 76 at ACE-0118593 (Corps biologist stating that the Corps “intend[s] to store basin flows greater than 5,000 cfs if conditions permit... “[D]ue to the continuing drought we believe it is prudent to recover the storage as opportunities present themselves. Recovery of storage will assist us in continuing to augment flows to meet the 5,000 cfs minimum release requirement at Jim Woodruff Dam in support of listed mussels.”).

The only way to deliver reliable or meaningful increases above 5,000 cfs during these times would be to change the Corps' operational protocols—and that cannot happen as long as the United States is not a party to this case. Indeed, when Florida's expert on Corps reservoir operations, who has over 30 years of experience with management of federal reservoir projects, was directly asked whether the Corps would have to be involved in delivering a predictable flow to Florida, he answered: "I don't see how else you would do it."<sup>157</sup> Florida's expert also testified that "because the Corps operates the Woodruff Dam and that's what releases the water into Florida, there would probably need to be some involvement of the Corps."<sup>158</sup> And, like the other Florida experts who acknowledged the truth, Mr. Barton was dropped from Florida's witness list and will not be coming to trial.

To be sure, there are limited circumstances in which, under the Corps' operating rules for the reservoirs, increases in flow entering the reservoir system would lead to some increases in flows at the state line. However, this would almost always occur during high-flow months when water is already plentiful, and even those times are difficult, if not impossible, to predict.<sup>159</sup> There is no evidence that increased flows would occur during dry times or times of drought—when Florida claims to need the water most. For example, under hydrological conditions of 2007 (which was a drought year), Florida would receive no additional state-line flow for 273 days of the year, and the full benefit of any increase in *only 19 days* in the summer and fall months.<sup>160</sup> Under the hydrology of 2012 (another drought year), Florida would receive no additional state-line flow for 307 days of the year, and would not receive *any* benefit during the

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<sup>157</sup> Barton Tr. 205:14-20.

<sup>158</sup> *Id.* at 204:6-16.

<sup>159</sup> Ex. 39 at 26 (Bedient Rep.).

<sup>160</sup> *Id.* at 25.

summer and fall months.<sup>161</sup> Such unpredictable flows do not provide the kind of reliable remedy that equitable apportionment cases demand. Those cases ask whether the plaintiff state can be assured streamflows which are “fairly constant and dependable.” *Wyoming v. Colorado*, 259 U.S. 419, 480, 483-84 (1922). Without the United States as a party, however, there is no way to assure Florida a “constant” or “dependable” increase in flow. And there is, moreover, a virtual assurance that Florida will not get a dependable increase in flow—or any increase in flow—during the times that it claims to need it most.

In addition to the infrequency and unpredictability of these impacts, Florida has no evidence—much less clear and convincing evidence—that short-term flow increases across the state line would redress the ecological harms of which it complains. That is true both with respect to the Apalachicola Bay and the Apalachicola River.

Florida has put forth no evidence showing that consumption caps on Georgia’s water use would improve the ecology of the Apalachicola Bay. In fact, Florida’s own expert found that cutting Georgia’s agricultural consumption by **50%** and halting *all* interbasin transfers would result in only a ***1-3 part per thousand (ppt)*** change in salinity in East Bay (a portion of the Apalachicola Bay),<sup>162</sup> an ecologically insignificant amount.<sup>163</sup> Those same measures would result in ***less than 1 ppt*** change during the drought years of 2007 and 2012, the years in which Florida alleges its oyster industry suffered most.

No evidence proves, or even suggests, that such small changes in salinity levels would increase the population of oysters or in any other species in the bay. Florida’s oyster biologist did not attempt to analyze what effect, if any, Florida’s proposed remedies would have on overall

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<sup>161</sup> *Id.* at 28.

<sup>162</sup> *See* Greenblatt Tr. 182:1-16.

<sup>163</sup> Ex. 33 at 115 (Menzie Rep.); *id.* App C at C-15.

oyster abundance in the Bay.<sup>164</sup> Instead, his model evaluated only the counter-factual scenario where Georgia consumes *no water at all*.<sup>165</sup> In addition, Florida's expert on fish species in Apalachicola Bay failed to analyze *any* remedy or conservation scenario.<sup>166</sup> Thus, Florida will present no evidence of the effect of realistic reductions in Georgia's water use on the Bay's oyster or fish populations. *Id.* Georgia's experts, in contrast, have determined that even increasing streamflows by 1,000 cfs in peak summer months (as Dr. Sunding proposes) "would not have significant ecological benefits for the Apalachicola Bay."<sup>167</sup> Florida has no evidence to contradict that determination. In fact, Florida's Bay biology expert and one of its state employees admitted that it was impossible to quantify precisely what salinity level would be desirable for any species in Apalachicola Bay.<sup>168</sup>

Florida also has not put forth evidence showing that consumption caps on Georgia's water use would improve the ecology of the Apalachicola River. Florida's riverine expert will offer no opinion on whether any of Florida's proposed remedies would have a material impact on the population of *any* species in the Apalachicola River region.<sup>169</sup> And even under Florida's amorphous and expansive concept of "harm," Florida's own expert found that cutting Georgia's agricultural consumption by 50% would improve the number of "flow days" by miniscule

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<sup>164</sup> White Tr. 51:24-53:9; Ex. 16 at 57-58 (Lipcius Rep.) (observing that because Florida's oyster experts did not evaluate the proposed remedy scenarios, the State of Florida does not have a "modeled estimate of the effect of practical reductions in water use upon the Apalachicola Bay oyster population").

<sup>165</sup> Ex. 77 at 12 (White Rep.).

<sup>166</sup> Jenkins Tr. 330:21-331:3.

<sup>167</sup> Ex. 33 at 115 (Menzie Rep.); *see also id.* App. C, C-15; Figure C-7 (increasing freshwater inflows into the Bay by 1,000 cfs would have a negligible impact on salinity in Apalachicola Bay and that even that negligible change in salinity is "dwarfed" by natural variability in the system).

<sup>168</sup> *See* Jenkins Tr. 206:7-11 ("Q: And, likewise, you cannot tell me, as you sit here today, what value of salinity change impacts the nursery function for any species in East Bay? A: Precisely. I cannot."); Edmiston Tr. 73:4-12 ("The fish move around to the salinities and habitats they prefer natural variability is so great in the system that is impossible to set a number.").

<sup>169</sup> Allan Tr. 469:10-21.

amounts (on the average of just a few days per year over 16 years) and in some cases could actually *increase* “harm,” as Florida defines that concept.<sup>170</sup>

Moreover, for years prior to this litigation, Florida told federal courts that the Corps was the primary cause of the same injuries it alleges in this case, and that changes to the Corps’ operating procedures were necessary for those injuries to be fully redressed. For example, Florida told the Supreme Court in a related case that “[w]hen the Corp structures its operations to retain water in Lake Lanier,” that has “devastating consequences for the ecology and species of the Apalachicola River and Bay,” such as by “eliminate[ing] those water bodies’ hydrologic connections to stream and marshland habitats ... and increase[ing] salinity in the Bay.”<sup>171</sup> In addition, Florida argued to the U.S. District Court of the Middle District of Florida that “the Corps’ exercise of discretion was a ‘factual cause’” of its alleged injuries, because “the devastation of the listed mussels and the negative impact on the spawning by Gulf sturgeon would not have occurred ... *but for* the Corps exercising its discretion to hold water in storage in Lake Lanier.”<sup>172</sup> Florida has also argued in numerous letters to the Corps that “the Corps’ operation of dams, reservoirs and related facilities ... currently affects and will continue to affect” natural resources in the Apalachicola Region, and cited the very same injuries Florida alleges here, including harm to oysters, Gulf sturgeon, mussels, river-floodplain animals and vegetation, and Apalachicola Bay fisheries and estuaries.<sup>173</sup> Florida has thus admitted time and again, before multiple federal courts and agencies, that the Corps was the primary cause of its injuries, and that changes to Corps operations are necessary to redress those injuries. Florida cannot walk away from those admissions now because it finds it convenient to do so.

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<sup>170</sup> *Id.* 463:24-464:7; 465:11-466:16.

<sup>171</sup> Ex. 78 at 29 (*Tri-State Water Rights* Cert. Petition).

<sup>172</sup> Ex. 79 at 42 (Fla. Response in *Tri-State Water Rights Litig.*).

<sup>173</sup> See Ex. 80 at FL-ACF-02427524 (6/12/2007 Fla. Letter to Corps); see also Ex. 81 at FL-ACF-02427485 (Jan. 6, 2005 Fla. Letter to Corps).

In short, Florida has no evidence that any meaningful ecological benefit will result from placing a cap on Georgia's upstream consumption of water. The benefits of Florida's proposed remedies are speculative and uncertain, whereas the costs those remedies would impose on Georgia are certain and substantial.

### CONCLUSION

Florida will not be able to prove its case a trial. Discovery has shown that Florida does not have clear and convincing evidence that (1) it is suffering real and substantial ecological injury caused by Georgia's water use; (2) Georgia's water use is inequitable; or (3) its injuries would be redressed by a remedy that is possible without the participation of the Corps as a party, or that is justified in light of the substantial costs it would impose on Georgia. Accordingly, Florida's request for an equitable apportionment must be denied.

Respectfully submitted,

/s/ Craig S. Primis

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State of Georgia*

No. 142, Original

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In The  
Supreme Court of the United States

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STATE OF FLORIDA,

*Plaintiff,*

v.

STATE OF GEORGIA,

*Defendant.*

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Before the Special Master

Hon. Ralph I. Lancaster

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**CERTIFICATE OF SERVICE**

This is to certify that the STATE OF GEORGIA'S PRETRIAL BRIEF and APPENDIX OF EXHIBITS has been served on this 12th day of October 2016, in the manner specified below:

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