Abstract. Georgia’s freshwater rivers, streams, and wetlands, among the country’s most biologically diverse aquatic habitats, are inadequately protected by Georgia’s current minimum instream flow level—7Q10 (the lowest average stream flow expected to occur over 7 consecutive days once every 10 years). The Georgia Environmental Protection Division uses this 7Q10 minimum flow statistic as a design dilution streamflow when determining allowable pollutant loadings from point source dischargers. Many of Georgia’s river systems have depleted or managed flows, jeopardizing aquatic habitats and organisms that depend upon the variable water flow of a natural river system. In December 1995, the Wildlife Resources Division of the Georgia Department of Natural Resources published a report entitled “A Recommended Method to Protect Instream Flows in Georgia,” which concluded that Georgia’s current instream flow level does not adequately protect the biological diversity of aquatic habitats. This note discusses potential legal authority for instituting variable minimum flow levels, allowing for consideration and protection of biological integrity and diversity.

INTRODUCTION

Most of Georgia’s 16 river systems have managed flow levels. The 7Q10 minimum flow was selected as a design flow for use in calculating permissible levels of contaminants with an eye to the utility of water for municipal, industrial, and agricultural purposes. New reservoirs in Georgia are designed to maintain at least the 7Q10 flow below the reservoir. When reservoir operation damps the natural high and low streamflows, dynamic interactions between water and land essential to the maintenance of aquatic ecotones are affected. Seasonal high volume flows are needed to lower water temperature, increase oxygenation, dissolve nutrients that have mineralized on the banks during low flow seasons, and sweep away accumulated organic materials and sediments. Many fish spawn just before or during seasonal high flows; inundated flood plains serve as nurseries for the fish and for the invertebrates upon which the fish feed. Seasonal fluctuations in water volume also affect channel morphology. Below dams, rivers tend to be narrower and more deeply incised. Ever higher levels are thus required to wet the flood plain. A constant, nonvaried flow level severely curtails variation in aquatic habitats and necessarily minimizes biological diversity. When the natural flood pulse of a river is impaired, the organisms that have evolved therein, that have adapted to and are dependent upon those seasonal variations, are adversely affected.

The Wildlife Resources Division Report confirms that Georgia’s 7Q10 minimum instream flow level does not protect the aquatic environment. “Peaking” hydroelectric power projects cause rapid fluctuations of instream flow levels, but this is not beneficial fluctuation, since it is arbitrary and short term rather than a natural, reliable cycle. A variable flow regime, assigned by reference to objective criteria and site-specific investigation, would at least approximate the natural flood pulse of the river systems and allow aquatic species to survive. Below are described potential legal bases for changing instream flow requirements. Some require special factors that may not often be present, but all are possibilities.

GEORGIA STATUTES

Georgia Water Quality Control Act (WQCA)

Under the Federal Clean Water Act, states are able to administer and enforce their own water pollution control programs, so long as they meet federal standards. Georgia’s WQCA (O.C.G.A. s12-5-20 et seq.) contemplates regulation of water quantity in its general statements of purpose, and in its provisions relating to water withdrawal permitting and water pollution prevention. The Act mandates that the water resources of Georgia “shall be utilized prudently for the maximum benefit of the people” (see state’s duties as public trustee under Public Trust Doctrine), “in order to maintain a reasonable degree of purity . . . and an adequate supply.” The statute speaks in terms of water quality AND water quantity “adequate for present needs and designed to care for future needs.” Authority is delegated to the Environmental Protection Division, which is to take use of surface waters into account in deciding what procedures will best protect the public interest.”

Permitting Provisions. The EPD is responsible for issuing permits for withdrawal, diversion, or impoundment of surface water. These permits are issued according to criteria like “object, extent, and necessity” of the withdrawal or diversion, “nature and size of the water source,” “impairment of the water source.”
other water uses,” and the extent and severity of that impairment. EPD is also to consider, among other circumstances, resultant reduction of water flow in other water courses. “Reasonable” is the criteria that governs competing uses (see common law under Riparian Rights). The WQCA permitting provisions allow for withdrawal as reasonably necessary, unless such withdrawal results in unreasonably adverse effects on other uses—including but not limited to public use, farm use, and potential as well as present uses. The EPD has three options under the WQC Regulations for establishing minimum flow levels: 1) 7Q10, 2) “non-depletable flow” (7Q10 plus that needed to ensure availability for downstream users), and 3) “other appropriate” instream flow levels. The EPD rarely avails itself of the option to assign an “other appropriate” level in order to protect aquatic ecosystems. In light of the substantial exceptions to permitting requirements (no permit needed for various withdrawals of less than 100,000 gallons per day, or for farm uses, including irrigation and turf watering), “other appropriate” levels should be assigned more often.

Pollution Prevention Provisions. The WQCA defines pollution as “manned or man-induced alteration of chemical, physical, biological, and radiological integrity of water.” The EPD is to establish standards for water quality “in accordance with the public interest in water supply; the conservation of fish, game, and aquatic life; and agricultural, industrial, and recreational uses.” In establishing these standards, the EPD is required to “[e]stablish or revise . . . permissible limits of surface-water usage for both consumptive and nonconsumptive purposes.” Regulation of water usage in terms of volume and instream level seems thus to be within the province of the WQCA since it affects the physical and biological integrity of Georgia’s water and directly relates to public environmental and recreational interests. The 7Q10 level impinges on those public interests and should, according to the provisions of the Act, be revised.

Regional Plans. The director of the EPD shall, according to the WQCA, develop river basin management plans for Georgia’s 16 river systems. These plans are specifically intended to promulgate goals like “improving aquatic habitat and reestablishing native species of fish, restoring and protecting wildlife habitat, and providing recreational benefits.” These plans should account for instream flow levels that are needed to adequately protect and foster propagation of fish and wildlife. The Wildlife Resources Division Report clearly indicates that the current 7Q10 minimum does NOT accomplish statutory goals.

Citizen Suit Provision. The WQCA provides that persons “aggrieved or adversely affected” by actions taken under the Act have the right to a hearing before an administrative law judge and subsequent judicial review. “Persons are ‘aggrieved or adversely affected’ where the challenged action has or will cause them injury in fact and where the injury is to an interest within the zone of interests to be protected or regulated by the statutes.” Citizens whose recreational uses or aesthetic or scientific enjoyment are harmed by unsuitable flow levels may fall into the category of persons aggrieved or adversely affected and may sue to have the requisite flow levels changed. There is not yet any Georgia precedent, but the Ninth Circuit has held that citizens may, pursuant to the Federal CWA, sue to enforce water quality standards like minimum instream flow requirements. The citizen suit provision may thus not be limited to enforcement of numerical effluent limitations. Northwest Environmental Advocates v. City of Portland, 56 F.3d 979 (9th Cir. 1995) (relying on P.U.D. No. 1 v Washington Dept. Of Ecology, 114 S.Ct. 1900 (1994).

GA Water Supply Act

This Act (O.C.G.A. s12-5-470) deals with the provision and management of water facilities and services, including supplying, distributing, treating, storing, and diverting, channeling, or controlling water flow. It gives the Department of Natural Resources the power to manage water projects and facilities “for the purpose of promoting . . . the use of the industrial, recreational, commercial, and natural resources of the State of Georgia for the public good and the general welfare.” The DNR is to promulgate standards that protect watersheds and wetlands and has the power to “do all things necessary or convenient” to carry out its duty. In order to further the public good and adequately protect Georgia’s aquatic resources, the DNR should set instream flow standards that more adequately approximate natural conditions. The WSA gives the DNR authority to do this; the Act specifically provides that, “being for the welfare of the state and its inhabitants, [it] shall be liberally construed to effect the purposes hereof.”

GA Marshlands Protection Act

Georgia’s provisions (O.C.G.A. s12-5-286 et seq.) for protection of wetlands, providing that no alteration take place without a permit, could also be used to protect instream flow levels. Obstruction or alteration of natural flow, increased erosion or shoaling, and conservation of marine life (with particular reference to water and oxygen supply) are explicit considerations. Reduced instream flows entail change in the seasonal wetlands of the floodplain; a wetlands permit should thus be obtained before any upstream withdrawals or impoundments are made. The state has the authority to condition these permits on variable flow levels sufficient to maintain the ephemeral wetlands.

Game and Fish Provisions

This statute (O.C.G.A. s 27-1-6.) gives the DNR power to acquire lands or waters for, among other purposes, “wildlife restoration, propagation, protection, preservation, research, or management.” The DNR could use that power to claim a certain portion of instream flow, which it could release on a seasonally varied schedule.

GA Scenic Rivers Act of 1969

Designated rivers with “valuable scenic, recreational, or natural characteristics which should be preserved for the benefit
and enjoyment of present and future generations" are herein protected from construction of structures which will "impede the natural flow." This Act (O.C.G.A. s 12-5-350 et seq.) protects Georgia's scenic rivers from hydroelectric power projects, creation of reservoirs, or other substantial diversions or withdrawals that would alter instream flow levels. It provides legal authority for efforts to protect instream flows by limiting such diversions.

STATE COMMON LAW

Riparian Rights

Georgia water rights (O.C.G.A. s 44-8-1 et seq.) are based on a natural flow theory with a reasonable use proviso. A riparian owner, one who owns property adjoining a body of water, "has a natural and equal right to the use of the water which flows therein as it was wont to run, without diminution or alteration." Pyle v. Gilbert, 265 S.E.2d 584, 586 (Ga. 1980). Georgia courts have held that use or detention of water is permissible only as is necessary and unavoidable on account of a reasonable use. Whether a use is reasonable is a question of fact and depends upon the circumstances of a particular case. Courts have considered such factors as the purpose for which water is being used, the initial nature and size of the water course, and the interests allegedly being harmed. The trier of fact must ultimately engage in a sort of balancing test to determine which values prevail. Ecological values should figure in this balance.

If one riparian owner is deprived of part or all of her reasonable use and enjoyment of the water that would naturally flow across her property by an upstream diversion or impoundment that alters that flow, she has a common law cause of action in trespass or nuisance. Trespass implies an actual invasion of one's property; nuisance is applicable when a riparian owner has been deprived of the beneficial enjoyment of her property by the unreasonable acts of another. The change from a natural flood pulse to the 7Q10 level impinges on riparian rights. Alterations of instream flow affect channel formation and vegetation and wildlife, perhaps decreasing the fish population or leading to excessive algae growth, and could give rise to a nuisance action for impaired enjoyment of riparian rights.

The prospect of having to pay damages to riparian owners (note that the measure of damages for an ongoing, abatable nuisance is "cost of repair") would be an incentive for the adoption of instream flow regimes that preserve riparian property values. The value of flowing water "is property, to protect which the owner may resort to any [means] which may be employed for the protection of private property rights." Price v. High Shoals Mfg., 64 S.E. 87, 89 (Ga. 1909). Riparian property values recognized in Georgia include instream water flow needed to protect reasonable uses, among which may be fishing, recreation, aesthetic enjoyment, and effects on adjoining land.

Suits brought by riparian owners are, however, of limited applicability. Like other property rights, riparian rights can be lost by adverse possession. If an owner has used so much water that the natural flow of a stream is altered for 20 years or more, then that owner has gained the right to continue to do so. "He no longer has the duty to return the natural flow of the stream." Brown v. Tomlinson, 272 S.E.2d 258 (Ga. 1980). The 7Q10 minimum instream flow rule has been in place since 1974; many of Georgia's major impoundments and diversions have also been in place for at least that long. Common law actions based on infringement of riparian rights would only be useful tools, then, in cases of new impoundments or upstream uses--only where the 7Q10 flow has not already been in place for 20 years. A property owner may have a viable case even on an already "managed" river where instream flow, though subject to the 7Q10 minimum requirement, has not yet been actually reduced to that level. (Though the right to reduce the river to that level existed, it was not exercised.) If the property owner can claim "use" of the instream flow, then perhaps she has a prescriptive right to the present flow level.

Public Trust Doctrine

The state owns navigable waterways and the land beneath them in trust for the benefit of the citizens of the state. This trusteeship derives from the federal navigability-for-title doctrine where, in the exercise of constitutional commerce clause powers, the federal government has the power to regulate navigable waterways as they may affect interstate commerce. This power vested in each state at the moment it joined the Union; thus, though "navigability" is a federal issue, the state decides what to do with the public trust. In this context, the definition of "navigable" is quite broad. It covers waters that were navigable in the past, that are presently navigable, and that could in the future be made navigable. Boone v. United States, 944 F.2d 1489, 1492-93 (9th Cir. 1991). The trust also covers waters that feed into or directly adjoin navigable rivers or streams. To all practical purposes then, the state is trustee of waters within its borders and has an obligation to choose among uses to assure that those waters are used for the public benefit. Originally, benefits to be considered were related to navigability and commerce; the public trust doctrine now applies to public interests in recreation and environmental protection as well. National Audubon Society v. Superior Court, 658 P.2d 709, 718-19 (Ca. 1983), cert. denied, 464 U.S. 977 (1983). Georgia could thus assert its power as trustee and mandate that waters be regulated to further the public's environmental and recreational interests in preserving riverine ecology. The public benefit would be served by an instream flow that mimics natural seasonal variations. Such regulation, really an appropriation (since a variable flow regime would require that more water be periodically released into the river system) by the state would most likely not be a compensable taking. So long as the benefit sought is sufficiently connected to the public interest, that appropriation would be the exercise of a government power that predates and exists concurrently with private property rights. United States v. Chandler-Dunbar Co., 229 U.S. 53, 69 (1913).

FEDERAL INVOLVEMENT--STATUTORY BASES

Generally, the federal government has deferred to the states regarding the allocation and use of water within a state's borders.
However, as it becomes increasingly apparent that water resources are strained by current needs, the federal government has preempted state regulation of water use, or at least worked closely with the states, in several statutory and common law contexts.

Clean Water Act

The goal of the Clean Water Act (CWA) is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The Act (33 U.S.C. §1251 et seq.) specifically mentions "protection of fish, shellfish, and wildlife." Regulation of instream flow in order to protect aquatic ecology would thus seem to be within the province of the CWA; however, the Act also provides that "the authority of each State to allocate quantities of water within its jurisdiction shall not be superseded, abrogated or otherwise impaired." Federal agencies are to cooperate with states in developing comprehensive solutions to reduce pollution and manage water resources. Georgia administers its own water pollution programs, in accordance with federal standards. These programs are, according to the CWA, supposed to take water needs of fish and wildlife into consideration. "Due regard shall be given to the improvements which are necessary to conserve such waters for the protection and propagation of fish and aquatic life and wildlife." Among the improvements enumerated is the inclusion of storage for the regulation of streamflow. Federal agencies could thus, under the auspices of the CWA, work with state agencies to ensure that Georgia is furthering the federal goals expressed in this statute by allowing for instream flow levels that protect and preserve aquatic biological diversity.

Section 404. This part of the CWA prohibits discharge of dredged or fill materials into the waters of the United States (navigable waters) unless appropriate and practicable steps have been taken to minimize the potential adverse effects of the discharge on the whole aquatic environment. A permit from the Army Corps of Engineers is required for any project that entails such dredging and filling. The Forest and Wildlife Service and the National Marine Fisheries Service must be given an opportunity (generally 90 days) to comment and respond to a 404 permit application. Before a permit is issued, the Corps is to give full consideration to the views of federal and state wildlife agencies. If an impoundment or diversion project that entails dredging and filling will alter flow levels and otherwise adversely affect aquatic life, then those wildlife agencies can register their disapproval. (If, however, the Corps feels that the reasonably forseeable benefits of a project outweigh its reasonably forseeable detriments, it will grant a permit. The EPA has veto power over this decision, if it is determined that the proposed project will have an unacceptably adverse effect on wildlife or the environment, but this veto power is seldom used.) Normal farming, ranching, and forestry activities - including maintenance of structures and roads and construction of irrigation and drainage ditches - are exempted from the 404 requirements. Nonetheless, the 404 permitting provisions could serve as a basis for protecting instream flow levels related to construction and development projects like bridges, dams, and reservoirs.

Rivers and Harbors Act

Enacted under Congress' commerce power (see Public Trust Doctrine), the RHA (33 U.S.C. §403) prohibits obstruction or impairment of navigable waterways, except as approved by the Chief of Engineers and the Secretary of the Army. Interference with the course of a navigable stream, an impoundment or other withdrawal, without the requisite approvals violates this Act. Congress can, under the auspices of the RHA, both abate existing interferences and prohibit new ones. It has been held that ecological considerations may be grounds for denial of a permit. Zabel v. Tabb, 430 F.2d 199 (5th Cir. 1970), cert. denied, 401 U.S. 910 (1971). However, ecological effects, without some material obstruction of navigable waters, are not enough to trigger a permit requirement. United States v. Cannon, 363 F.Supp. 1045 (D. Del. 1973). The RHA would be relevant then, only to unapproved or new obstructions of navigable waterways. In such circumstances, approval could be conditioned on sufficient and variable instream flow levels.

Federal Power Act

This Act (16 U.S.C. §§791-823) gives the Federal Electric Regulatory Commission power to regulate water use in connection with hydroelectric power projects. FERC can mandate minimum flows necessary to protect fish and wildlife. FERC's authority in this regard has not usually been used to further ecological goals. Instead, FERC has generally preempted state minimum flow rates in the interest of ensuring that its hydroelectric power projects are economically feasible. California v. FERC, 495 U.S. 490 (1990). Note, however, that the Wild and Scenic Rivers Act limits FERC's authority.

Wild and Scenic Rivers Act

This statute (16 U.S.C. §1275 et seq.) designates rivers to be protected for their aesthetic, ecological, and recreational values. It provides that the Federal Electric Regulatory Commission shall not license the construction of any project "on or directly affecting" one of these rivers, or (until further studies are completed) on any one of the rivers designated for potential addition, and that projects above or below a designated or potential wild, scenic, or recreational river area "will not invade the area or diminish the scenic, recreational, and fish and wildlife values present." Part of the Chatooga is a designated national wild and scenic river. The entire Chatooga, Suwanee, Ogeechee, and St. Marys rivers are designated potential additions to the national wild and scenic rivers system. These rivers, and any relevant tributaries, are protected against the imposition of a 7Q10 flow level, since, according to the Wildlife Resources Division Report, that level would diminish fish and wildlife values.

Endangered Species Act and Migratory Bird Conservation Act

Under the ESA (16 U.S.C. §§1531-1544), federal agencies have the authority to establish minimum flows as necessary to
protect endangered species. The MBCA (16 U.S.C. s715) establishes a similar prerogative with regard to protection of migratory bird habitats. Either of these avenues for establishing variable instream flow regimes require particular circumstances (the presence of an endangered species or important migratory bird habitat) and established causation (an empirical connection between instream flow levels and species protection).

National Environmental Protection Act

NEPA (42 U.S.C. ss4331-4335.) requires that an Environmental Impact Statement be prepared for “all major Federal actions significantly affecting the quality of the human environment.” It has been argued, with varied success, that a project’s effects on biological diversity should be considered in an EIS. Even so, courts substantially defer to agency expertise and generally do not gainsay an agency’s decision. NEPA mandates only consideration of environmental values; it does not mandate particular priorities or results. NEPA’s provisions for public notice and hearing could help to educate citizens about the need for instream flow regulation that mimics natural fluctuations. However, even for major Federal actions within Georgia, NEPA does not provide much substantive assistance with the institution of a variable flow regime.

Federal Common Law

Reserved Rights Doctrine

When the federal government withdraws land from the public domain and reserves those lands for federal purposes, it has been held that the government also implicitly reserves water enough to accomplish those purposes. Upstream diversion, withdrawals, or impoundments must thus allow enough water to continue to flow to avoid adversely affecting the federal purpose. Though Congress has seldom expressly reserved water for use on those lands, courts have implied an intent to reserve the quantity of water reasonably necessary to fulfill the purpose of the reservation. In Winters v. United States, 207 U.S. 564, 576 (1908), the Supreme Court held that Congress impliedly promised a reasonable quantity of water when it created an Indian reservation since otherwise the reservation would be “practically valueless.” Since then, the notion of reserved water rights has been applied in a variety of contexts; in Cappaert v. United States, 426 U.S. 128 (1976), the Court held that a reservation of water sufficient to ensure the survival of the Devil’s Hole pupfish was implicit in the creation of the Devil’s Hole National Monument. In United States v. New Mexico, 438 U.S. 696, 707 (1978), the Court somewhat limited the doctrine, declaring that “[n]ational forests are not to be reserved for aesthetic, environmental, recreational, or wildlife-preservation purposes (cite omitted).”

The federal government can claim a reservation of instream flows as necessary to further the purpose for which it set aside its lands. National parks and wildlife refuges in Georgia are thus protected against upstream appropriators of water. The government could exercise its reserved water rights and demand instream flow levels that protect aquatic habitats on its lands reserved for environmental and recreational purposes.

Conclusion

There are thus a number of legal means presently available with which to challenge or revise Georgia’s present instream flow policies. Citizens could bring suit challenging Georgia’s 7Q10 policy on the basis of harm to riparian rights or as “aggrieved parties” whose specific enjoyment of aquatic habitats has been adversely affected. The Wildlife Resources Division Report makes it apparent that state agencies must exercise their statutory authority and revise current instream flow levels in order to adequately protect the public interest. Federal agencies have statutory authority, in particular situations, to impose instream flow standards. Common law doctrines, the public trust doctrine and the notion of reserved rights provide other bases for challenging water allocations that do not protect the aquatic ecology. Other potential approaches include legislative withdrawal of entire streams or river systems from any further appropriation. Perhaps state agencies in place to protect fish and wildlife, or public recreational and environmental values could be given explicit authority to take a certain proportion of total instream flow and manage it in furtherance of those interests. Georgia’s current instream flow policy must be revised; a variable design flow that more closely matches natural instream flows should be instituted in order to appropriately protect ecological values.

Literature Cited