Chapter 2

Historical Currents

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I. A DAM IS BORN

FLOODS BATTER THE NORTHEAST; 73 KILLED, DAMAGE IN BILLIONS; 4 STATES DECLARE EMERGENCIES

—Front page headlines,
The New York Times,
August 20, 1955

East Stroudsburg, Pa. August 20, 1955—Chaos and benumbed shock overlie this area today in the wake of the worst flood in its history.

There are thirty bodies in one funeral home alone, and no one knows how much higher the figures will go. Some estimates are at least 100. Helicopter pilots this afternoon reported seeing at least nine bodies floating in the still wildly overflowing Delaware River.

The greatest concentrated tragedy was at Camp Davis, the summer colony of fourteen modest bungalows near Analomink, three mines northwest of here. More than forty persons, most of them women and children from New York and New Jersey, were vacationing at the camp.

The toll at Camp Davis was twelve persons known dead and nineteen missing. . . .

It was there that the normally placid Brodhead Creek flashed up twenty-five to thirty feet in fifteen minutes Thursday night.

The camp residents fled to a building on slightly higher ground. As they

reached the attic, the structure collapsed hurling them into the turbulent water. . . .

—*The New York Times*,
Sunday, August 21, 1955

. . . the whole problem of flood control in the New England and Middle Atlantic States must now undergo searching examination. Obviously the whole existing system of dams and similar measures was grossly inadequate last week, and we paid heavily for that inadequacy. What measures need to be undertaken to prevent a repetition of this disaster? Our people look to and expect that our national, state and local government officials will answer this question and initiate promptly the needed remedial measures.

—*The New York Times*,
Editorial,
August 22, 1955

On August 11, 1955, the New York City Weather Bureau issued a hurricane alert, warning the area's residents to brace themselves for a disaster. Hurricane Connie, with over 150 mile-per-hour winds, was traveling up from the South Atlantic, and meteorologists feared that it might strike the densely populated urban area around New York. But on that Thursday afternoon, the path of Connie turned to the west and let loose its winds 500 miles south of New York on the Carolina coast. By the time she reached New York City on Friday, August 12, Connie's winds had slowed to a mere 75 miles per hour. A Weather Bureau spokesman declared, "It's as weak as a hurricane can be."

The third hurricane of the 1955 season, Connie packed more water than wind. The heaviest rains were on the coast, creating unexpected flooding problems for New York City. Between Thursday night and Saturday morning, 9.37 inches of rain fell on the city, cutting off electricity and telephone service to thousands of customers. The most disruptive incident was a two-hour halt for all trains to and from Grand Central Station. Connie continued to lose her punch as she moved northwest, and by the time she passed over the Great Lakes on Sunday (August 14) she was "just another rainstorm." By Monday, most of the damages in New York City had been cleaned up. For inland areas, Connie had been a mixture of blessings and sorrows. The rains saved many northeastern "drought-suffering farmers" from ruin and poured 18 billion gallons of water into four New York City reservoirs, filling them to 92 percent capacity compared with 74 percent one year earlier. But at the same time, Connie had left in her path 41 deaths.

While Connie disappeared over the Great Lakes, another hurricane named Diane was brewing in the West Indies. Early in the morning of Wednesday, August 17, Diane struck the North Carolina coast with 90 mph winds. The next day, the Weather Bureau announced that Diane had lost her force and the threat to New York City no longer existed. A Weather Bureau bulletin, which described Diane as a mere "storm" rather than a hurricane, noted that "the only serious danger now is from heavy rains and flooding." The same article in *The New York Times* remarked that Diane's rains "were much lighter than those that danced attendance to her big sister, Connie."[1] That Thursday, New York City relaxed "with Diane's passage into meteorological history" as the Washington Office of the Weather Bureau shifted its attention to a new low pressure area out at sea. News of Diane was completely absent from the front page on Friday, August 19, and the weather summary at the back of the *Times* spoke of the "remains of Diane."

It was one of those quirks of nature that revived Diane on Thursday night and transformed her into a "full-fledged flood-maker." Weather forecasters were all but ignoring Diane on Thursday as she dwindled to an apparently harmless low pressure area in central Pennsylvania. Then:

> . . . her winds reduced to a comparative whisper, . . . [Diane] sucked in vast quantities of moisture-laden air from over the Atlantic and . . . dumped the water by the ton in advance of her leisurely path.[2]

These new flood waters, unable to soak into grounds saturated one week earlier by Connie's rains, wreaked havoc throughout the Northeast. Pennsylvania, New Jersey, Connecticut, and Massachusetts were the worst damaged. Eight cities in Pennsylvania, including Scranton, the state's fourth largest, were without drinking water, power, or gas. And in New Jersey, four northwestern and central counties were declared disaster areas, as helicopters, scows, boats, and amphibious vehicles were mobilized to rescue those stranded in flooded and low-lying areas. Backup flood waters from tributaries washed away massive bridges spanning the Delaware River at Yardley, Phillipsburg, and Columbia.

Those areas struck most savagely by floods—and with the most tragic accounts of human suffering—were largely cut off on Friday, and it was not until Saturday, August 20, that the news became widely known. Some areas of East Stroudsburg, near the Delaware Water Gap, had been flooded to a depth of ten feet, and tributaries near the Gap alone counted 45 dead and 70 missing. The Camp Davis tragedy was the most concentrated source of suffering and death, but

similar incidents of flash floods on tributaries left Hurricane Diane with the reputation of a killer. The August 1955 floods in the Delaware Valley surpassed previous records set in 1936 and 1903 rainstorms. Later tabulations counted 99 deaths in the Delaware River Basin—all on the Brodhead Creek—and damages totalling nearly one billion dollars. It was by far the worst flooding ever experienced in the Basin, and it was to have important and long-lasting impacts.

Although plans for the Tocks Island Dam and reservoir can be traced to the late 1920s, the stimulus to begin real planning arose out of the flood waters of Hurricanes Connie and Diane. The floods of August 1955 shocked the public, sparked state and federal governments to action, and gave the Corps impetus to reconstruct the Delaware River Basin water resources through a comprehensive plan. It is noteworthy that although the floods of 1955 formed the immediate catalyst for the chain of events that solidified the Tocks plans, all the deaths and a large amount of the damages in 1955 occurred on the Delaware tributaries, not the mainstream which would be protected by the Tocks Island Dam.[a]

Within one week after the rains stopped, the U.S. Army Corps of Engineers initiated a survey of the damaged areas to assess the need for flood control. Although beginning in the 1920s the Corps had conducted numerous investigations of possible dam sites in the Delaware River Basin, its reports had consistently concluded that the severity of floods in the Basin did not warrant federal expenditures for control measures. Dam construction on the Delaware had also been opposed by the Interstate Commission on the Delaware River Basin (Incodel), a body formed in 1936 by the Basin states to coordinate management of Basin water resources. Incodel consistently opposed federal participation in its watershed. The floods of 1955, with their overwhelming costs in property and human life, catalytically transformed this situation. Nature's intervention set in motion a planning process for comprehensive Basin development, which became the basis for the Tocks Island controversy.

In mid September of 1955, the Senate Public Works Committee issued a formal request to the Corps of Engineers to review prior reports on the Delaware, to determine the extent of flood damages, and to recommend those measures necessary to prevent similar disasters. As part of this survey the Corps held hearings in January 1956 in Philadelphia and in three of the cities struck by the floods—Stroudsburg, Port Jervis, and Trenton—in order to secure data on damages and to record local views on the proposed investigation and

[a]The role of the Tocks Island Dam in preventing floods is discussed in detail in essay 6 in this volume.

on preventive measures. These hearings marked a major turning point in the history of the Delaware River Basin management. Many of the local officials and politicians who testified called for federal and state cooperation to develop the Basin's water resources, while the Democratic administrations in New Jersey and Pennsylvania appealed for federal government aid and leadership.

Among the private groups that began to organize was the Delaware River Basin Research, Inc., whose proclaimed purpose was the furthering of public knowledge about water resources management. This group, later renamed the Water Research Foundation, was an active lobbying force for the Basin's industrial interests, and its members included representatives from various power companies, petroleum and chemical firms, consulting companies, etc. It subsequently received a $131,000 grant from the Ford Foundation and gave a contract to the Syracuse University Research Institute to analyze the legal, fiscal, and governmental problems involved in managing water resources on an interstate stream.

The Corps of Engineers, in the same period, was gearing up to develop a comprehensive regional plan. By April 1956 it was circulating copies of a preliminary procedural plan. And in December 1956, the Philadelphia Office of the Corps submitted its "Procedural Plan of Survey" to the Chief of Engineers for approval. The survey was divided into 24 separate components, many of which were prepared by federal and state agencies other than the Corps, including, for example, the Office of Business Economics, the National Park Service of the Department of Interior, and the Federal Power Commission. The Corps supervised the various studies, designed the comprehensive plan, and prepared the final report.

In June 1960, the eleven-volume survey was completed. The fundamental purpose of this massive attempt at rational multiple-purpose planning for the entire Basis was set out in the preface:

> Of prime importance is water; man can survive without food longer than without water. What is true of the individual is true of his civilization. History has proven that civilizations perish, dwindle, or migrate because of lack of water, which in most instances occurs when the demand exceeds the supply. This does not happen all at once, but is in nature a slow process; however, if the impending disaster is evaluated and provided for, the loss of growth and development can be prevented.
>
> Lest we forget—the water resources problems of the future loom large indeed. We must aim to provide for future generations. If we persist in conservative planning, our efforts will not fulfill our needs. We must plan broadly so that it is possible to achieve our goals.[3]

The Corps believed that the Basin's needs could not be denied. There were the natural disasters—the droughts and the floods—that had to be prevented and the ultimate shortage of supplies that had to be avoided. Congress had decreed that the Corps was responsible for averting further disasters in the Delaware River Basin. The Corps felt it had a mission; the comprehensive plan with its dams and reservoirs was its means.

In August 1962 the Delaware River Basin Report was submitted to Congress as House Document 522, and that fall it came before its Committees of Public Works. The hearings before the Flood Control Subcommittees were cursory and brief. Only representatives for the Corps of Engineers testified, and in the House Subcommittee, for example, the project was approved after less than twenty minutes of discussion. Once approved by the House and Senate Committees on Public Works, the entire eleven-volume Delaware River Basin Comprehensive Plan became part of the omnibus Flood Control Act of 1962. Congress, which was preparing to break for elections, subsequently passed the Act (Public Law 87-874) in a voice vote, and the Delaware River Basin Comprehensive Plan, along with nearly 200 other public works projects, became law.

The Corps' development plan for the Delaware watershed proposed eight major multiple purpose dam projects requiring both federal and nonfederal participation: at Prompton, Tocks Island, Bear Creek, Beltzville, Aquashicola, Trexler, Maiden Creek, and Blue Marsh (map, p. xiv, shows those in place in 1976). The keystone to the comprehensive plan was the Tocks Island Dam and Reservoir—the only project proposed for the main stem of the Delaware River and by far the largest and most expensive component of the Basin plan. Tocks Island lay in the middle of the river five miles above the Water Gap. The earth and rock-fill dam was to be 160 feet high, and would create a long, narrow lake, rarely exceeding 2,000 feet in width, extending 37 miles up the Delaware Valley from Tocks Island to Port Jervis. From its vantage at Tocks Island the dam would control a drainage area of almost 4,000 square miles, one-half the total Delaware Basin runoff above Trenton. The project's multiple purposes included water supply, recreation, flood control, and hydroelectric power. The total project cost was estimated in 1962 at $120 million. The dam not only overshadowed all other water development projects planned for the Delaware River Basin, but promised to be one of the largest dams in the East.

In 1965 Congress expanded the Tocks project through the creation of the Delaware Water Gap National Recreation Area (PL

89-158) centered on the proposed Tocks Island Dam and Reservoir. For this purpose, Congress approved $37 million for acquiring 48,000 acres of land around the reservoir area and $18 million for construction of recreation facilities. DWGNRA thereby became the first inland national recreation area authorized east of the Mississippi.

The Tocks project would have its major impact in Warren and Sussex Counties of New Jersey, and Monroe and Pike Counties of Pennsylvania. These counties might loosely be termed the "primary impact area." It is from this region, and particularly the "taking area" within it (in which private property has been purchased by the government) that opposition to the Tocks Island project originated. The more than 20,000 people living on the approximately 8,000 properties slated for acquisition were losing an irreplaceable natural resource. It was a few spokesmen for these people who galvanized much of the initial opposition to the dam. In doing so, they had to fight a momentum to dam the Delaware which had gathered over five decades.

II. THE DELAWARE OF THE PAST

Europeans first came to the Delaware River in the seventeenth century. Henry Hudson is credited with discovering the expansive bay in 1609 while searching for a route to the Indies, but instead of travelling up the waterway, he chose to continue north, eventually exploring the river which now bears his name. A few years later, a Dutch adventurer, Cornelius May, came to the same spot, giving his name to one of the outer capes. The river was named for Lord Delaware, and, in 1623, the Dutch West India Company took formal possession of the Delaware. Control over the river, whose broad waters and deep channel provided easy access far into the interior of the new country, changed hands several times in the next few decades, going from the Dutch to the Swedes to the British and back to the Dutch, until in 1675 the colonized area was ceded to the British.

Indians came to the Delaware River Valley long before white men, and tribes of the Lenni Lenape nation, who called the river "the great tidal water stream," inhabited the area near the Water Gap. They also gave the large level area north of the Gap the name of Minisink, meaning "the water is gone," and this led early western explorers of the region to speculate that the area once contained a large lake, which disappeared when the Gap was formed. In the early 1700s the Europeans began to establish missions among the Indians, and by mid century their houses were scattered throughout the Dela-

ware, Lehigh, and Susquehanna Valleys. Although six or seven distinct tribes lived in the area, Europeans referred to all Indians with the same name, simply as the Delaware Indians.[4]

The first white settlers to the Minisink Valley were Dutch from New York, who traveled down from the north. The original attraction to the Minisink was copper. Dutch explorers who reached the Valley in 1657 by traveling up the Hudson to Kingston and then overland to the southwest were shown the valuable metal ore by Indians. They reported the discovery to their mother country, which was in need of the metal, and subsequently began a costly program to modernize Indian trails leading from Kingston to the area with copper deposits three miles above the Water Gap. This 104-mile stretch of road, the Old Mine Road, was the first road of any considerable length built in the United States. The trail is believed to have been completed as early as 1659, and in 1689 the first recorded white settler located in a valley one mile above what today is Port Jervis.

The road's construction opened up the area, and communities were established in the Minisink Valley for 40 miles or more on both sides of the river. Initially Minisink settlers traveled by the road to Kingston several times a year to sell their cider and wheat and to buy salt and other necessities, but once the more treacherous rapids were cleared in the river, most trade turned downstream and the road gradually fell into disuse.[5] Many of the homes established along the Old Mine Road during the 1700s still stand, and their threatened destruction by the Tocks project has been one of the deepest sources of bitterness and opposition to the project among the local inhabitants.

By the late 1700s the Delaware River had become one of the new nation's major interstate waterways. Its two main tributaries, the East Branch and the West Branch, rose in the western slopes of the Catskill Mountains of New York State, then joined together at Hancock, New York, to form the main stem, which wound its way to the southeast through rolling hills rich with timber. This portion of the river, from a few miles above Hancock to just below Port Jervis, served as the boundary between New York and Pennsylvania. The Delaware then met New Jersey at a point known as Tri-State Rock, where it turned 90 degrees to become the Pennsylvania–New Jersey line, and followed the Kittatinny Range of the Appalachian Mountains to the southwest. Fifty miles downstream from Port Jervis, the river cut sharply again, this time through the steep slopes of the Delaware Water Gap, flowing more leisurely to the south, past new factories at Trenton and Philadelphia, into the estuary of the Dela-

ware Bay, and eventually into the Atlantic Ocean. Although the upper reaches of the river's 290 miles from Hancock to the Bay were sprinkled with rapids and riffles, the Delaware, in comparison with raging western rivers like the Columbia and the Colorado, was tame with age.

The records of an interstate court case in the 1930s concerning diversion of waters from the Delaware River Basin provide a rich source of firsthand accounts of early navigation on the river. From the testimonies of 80- and 90-year-old residents along the river, New Jersey hoped to prove, for its legal argument, that the Delaware was navigable. These old timers described the two major modes of transportation that existed around the turn of the nineteenth century: rafts, and arklike vessels known as Durham boats. The rafts were enormous; two of them lashed together, as they often were, extended 40 to 50 feet wide and 180 to 200 feet long. They usually carried timber and sometimes carried sawed cherry and beech board from the headwaters of the river in New York to the mills and markets in Trenton and Philadelphia. These rafts served an important transportation function, often ferrying passengers down stream, and gave rise to numerous hotels along the river's banks for the raftsmen. It was not uncommon for 20 to 25 rafts to tie up at a single mooring where the expert pilots and raftsmen were resting for the night. Rafting continued as a major business until the twentieth century when, due to deforestation, the lumber business began to decline. Rafts on the Delaware finally disappeared in the mid 1920s.

Durham boats, invented by Robert Durham in 1723, came into regular use on the Delaware in the mid eighteenth century and at their peak in the early 1800s, several hundred of these vessels plied the river, employing two or three thousand men. The boats were described as somewhat longer and narrower than canal boats, in a shape resembling a "weaver's shuttlecock." Empty boats were poled upstream close to shore, so that their operators could use overhanging limbs and brush to pull themselves along. On return trips they carried minerals, flour, stone, sand, and other materials needed in the industrial cities of Trenton and Philadelphia.

Use of Durham boats declined precipitously when the Lehigh Coal and Navigation Company's canal began operations in 1832 and the Delaware Division Canal opened two years later. The Lehigh Canal was 73 miles long and paralleled the Lehigh River from Easton to White Haven, Pennsylvania; the Delaware Division Canal paralleled the Delaware River on the Pennsylvania side for 60 miles between Easton and Bristol. These canals did away with the necessity to wait for high water to transport goods and eliminated the physical strains

of fighting the current to go upstream and the dangers of maneuvering the rapids to go downstream. New towns were opened up for development and their industries began to flourish. The total tonnage of coal and other commodities hauled on canals reached its peak in 1855. Soon thereafter, with vast construction and rapid acceptance of railway transport, canals began to decline in use, and by 1901, both the Lehigh and Delaware Division Canals were losing money.[6]

Because of its importance to navigation, the protection and enhancement of the Delaware's channels began early. In 1783, in order to protect fishing and navigation interests, Pennsylvania and New Jersey signed an Anti-Dam Treaty, which prohibited the building of structures completely across the Delaware.[7] This Treaty was actually an interstate compact and provided that the river "in the whole length and breadth thereof, is and shall continue to be and remain a common highway, equally free and open to the use, benefit, and advantage of the said contracting parties."[8] Numerous acts based on the Treaty, concerning navigation and bridge construction, were passed in later years by both states. For 170 years this agreement not to obstruct the river was upheld, until it was abrogated in 1953 at a time when the two Delaware states were involved in an intense interstate controversy, to be discussed later.

The railroad brought other changes to the Delaware and its environs. In 1820 only a solitary hut stood at the Water Gap, but once the area was connected to Philadelphia and New York by rail, the number and size of resort establishments grew rapidly. By the turn of the century the riverfront at the Gap had become a fashionable resort area, offering bathing beaches, motor boats, canoes, and a chance to escape the summer heat of the cities for cool mountain air. And by 1930 the Gap could boast a choice among nearly twenty hotels.

Until the 1920s the main uses of the Delaware River were navigation and recreation, although the river also supported substantial sports and commercial fishing activities. But demands on the river were changing. In the late 1920s New York City experienced critical water supply problems which led it to propose and then procure out-of-Basin diversions from the Delaware watershed, against the violent objections of the downstream riparian states, New Jersey, Pennsylvania, and Delaware. The political history of this conflict over the Delaware's waters as it has unfolded since the 1920s well sets the stage for the more recent conflict over the Tocks Island Dam, for many of the salient political and technical issues that have marked the Tocks controversy have persisted in one form or other almost unabated for over half a century.

III. THE EARLY CONFLICTS

> "There is a sobering finality in the construction of a river basin development, and it behooves us to be sure we are right before we go ahead."[b]

In the 1920s there emerged the first systematic plans to exploit the Delaware River for municipal and industrial water supply. Although many of these early plans became sources of interstate friction and were never realized, they did contribute greatly to structuring present-day development schemes. Three major themes characterized this early period, and indeed the entire period up to the floods of 1955, First, New York City increasingly turned to dams on the Delaware tributaries to "solve" its periodic shortages. From this policy originated many of the early conflicts. Second, there were recurrent problems in establishing an agency to manage Basin water resources and to deal with federal-interstate disagreements. Third, natural disasters, both floods and droughts, repeatedly tested the decision making process.

For most of the towns in what would later be defined as the Delaware Basin Service Area (reaching from the Delaware's northernmost headwaters past Kingston, New York, to Bridgeport, Connecticut, south past New York City, and including eastern Pennsylvania, northern Delaware, and the entire state of New Jersey) water supply problems in the early twentieth century had not reached a point where the allocation of Delaware waters was a major issue. Trenton, Camden, and Philadelphia were pumping water for municipal and industrical uses from the river and then returning it—as they continue to do today. But New York City, which had been obliged early on to reach beyond the ambient, brackish Hudson to the fresh waters of the Hudson-Mohawk Valley, was facing the prospect of a severe shortage. The Catskill water supply system, scheduled for completion in 1928, would add significantly to the Croton Reservoir system, and additional ground water supplies would boost the City's dependable yield to above one billion gallons per day. But the City's water needs were growing even more rapidly, and the Board of Water Supply thought it only prudent to begin an investigation of other sources.[9]

Five alternatives were proposed, and four were rejected. The remaining proposal—to divert for the first time the headwaters of the Delaware River—appeared most advantageous to the City. Although it would initially require high capital construction costs, it was not

[b]This is a quote from the President's Water Resources Policy Commission, *A Water Policy for the American People*, 1950.

subject to debt limits, and it minimized operating costs, which would have to come out of the City's annual budget. It also avoided the politically difficult tasks of plugging up New York City's decades-old leaky water mains or of imposing metering on industries and residents accustomed to low, flat rate water prices. The project would supply an estimated 600 million gallons per day (mgd) of pollution-free mountain water from five Delaware tributaries, with gravity funnelling the precious resource into a reservoir on Roundout Creek, a Hudson tributary on the eastern side of the Catskill mountains, and then down to the City. All in all, the idea of damming the headwaters of the Delaware rather than using the polluted Hudson or its tributaries was very attractive to City officials. But gaining approval for the new reservoirs was not as easy as these officials had hoped.

In addition to the expected opposition from local residents whose homes and farms were to be flooded by the reservoirs, New York had to contend with the interests and demands of the downstream states. Although earlier conflicts had erupted between New Jersey and Pennsylvania over the use of the river, the states had not devised a legal mechanism, other than the 1783 treaty, for managing the Delaware River Basin. New York's entry into the debate, however, motivated the legislatures of New York, New Jersey, and Pennsylvania to authorize, in 1923, the appointment of a commission to draft an interstate compact for dividing the river's flow between the three states.

As negotiations continued into 1926 without any agreement in sight, the New York City Board of Water Supply made an ominous announcement: according to its calculations, by 1935 the City's water consumption would equal the available supply. Finally, in 1928, flaunting opposition by the downstream states, New York initiated legal steps to divert the Delaware headwaters. New Jersey responded to New York's threat to reduce unilaterally the Delaware's flow by filing a bill of complaint with the United States Supreme Court in April 1929 to halt all out-of-Basin diversions proposed by New York. Pennsylvania jointed the suit as an intervenor to protect its commercial, industrial, and community interests within the watershed. The Court appointed a Special Master to hear the states' arguments and supporting oral testimony, and thus was born the Delaware Diversion case, which established many of the basic issues that were to persist to the present day.

New Jersey argued four main points: first, that New York's proposed diversion would obstruct a navigable interstate waterway without the legally required consent of Congress, the Secretary of

War and New Jersey; second, that the diversion would deprive riparian owners along the river of the "natural, unobstructed and undiminished" flow of its waters, thereby violating common law as adopted and applied in New York and New Jersey;[10] third, that the diversion would adversely affect its own plans to develop navigation, hydroelectric power, and sanitation facilities, as well as harming the estuary and its oysters, the shad, municipal water supplies, farming, and recreation; and fourth, that there was no necessity for the diversion, since New York possessed other possible sources and was wasting water by failing to extend its metering and by maintaining the same water rates for over 50 years. In sum, New Jersey claimed that the diversion would impose an irreparable damage on the state and its citizens and demanded an immediate injunction.

New York, in turn, claimed that the diversion would have no injurious effects. Instead, the state argued that the reservoir system would actually be beneficial by removing flood and "waste waters" from the river that would otherwise flow to the sea without benefiting anyone and often causing damages. According to New York's counsel, the dams would allow releases during the dry months of July, August, September, and October, and level the river's flows, thereby improving water quality. Finally, New York pointed out that the City had an imperative need for water supplies and that previous attempts to reach an agreement with New Jersey and Pennsylvania had been rebuffed.

After hearing months of expert testimony from hydraulic, water supply, and sanitary engineers, from geologists, biologists, and agricultural specialists, and from many lay witnesses, the Special Master, Charles N. Burch, filed his report on February 2, 1931. Burch ruled that "no state should have a monopoly of the stream,"[11] and that "a reasonable diversion by New York City should not be enjoined."[12] Burch then proceeded to propose an equitable formula for diversion that would resolve New York's water supply problems without imposing substantial damages on New Jersey. He reduced the amount of the diversion from 600 mgd to 440 mgd, and he instituted minimum flows of 1,535 cfs at Port Jervis and 3,400 cfs at Trenton.

The Special Master was not in a position to suggest and analyze inventive solutions radically different from the main arguments presented by the states. His primary responsibility was to balance the conflicting demands of the involved states, his primary task to sort out conflicting expert testimony—to look for "outstanding facts from which the lay mind can safely draw inferences."[13] He did this task well, examining the experts with great care and listening not

only to the experts but as well attaching "considerable weight to the evidence of numerous lay witnesses who live on the banks of the river."[14]

Two years after New Jersey filed its complaint, Supreme Court Justice Oliver Wendell Holmes accepted the Special Master's Report and its conclusions, and in May 1931 he presented the Courts's opinion:

> A river is more than an amenity, it is a treasure. It offers a necessity of life that must be rationed among those who have power over it. New York has the physical power to cut off all the water within its jurisdiction. But clearly the exercise of such a power to the destruction of the interest of the lower States could not be tolerated. And on the other hand equally little could New Jersey be permitted to require New York to give up its power altogether in order that the river might come down to it undiminished. Both States have real and substantial interests in the River that must be reconciled as best they may be. The different traditions and practices in different parts of the country may lead to varying results but the effort is always to secure an equitable apportionment without quibbling over formulas.[15]

The Supreme Court's decision finally gave New York the official approval it needed for proceeding with plans to dam the headwaters of the Delaware and settled, though only temporarily, eight years of interstate bickering over water supply.

While the Court case was developing, another strand leading to the Tocks Island Dam began to unwind. In 1927 Congress passed a Rivers and Harbors Act, which embodied two new planning concepts: comprehensive management of Basin resources, and multiple purpose development. Section I of this Act, derived from House Document 308 (69th Congress, 1st Session), authorized the United States Army Corps of Engineers to conduct a series of Basinwide surveys of navigation, flood control, hydroelectric power, and irrigation needs to assess the feasibility of federal projects.

The survey of the Delaware conducted under this Act, known as the "308 Report," was important in two respects. First it contributed to transferring initiatives for Basinwide planning from the states to the Corps of Engineers, a trend that was further advanced by bitter political antagonisms generated during both the unsuccessful compact attempts of the 1920s and the ongoing Supreme Court case. Second, the broad investigation of the Delaware's needs contained in the 308 Report structured the future thinking of water resource planners. The Report identified all the "outstanding" power and water storage sites in the Basin (including Tocks Island) which

marked the later plans; and many of the Report's analyses and recommendations in January 1934 have remained virtually unaltered during the following 40 years.

However, in 1934, the Corps concluded that there was no urgency for dam construction in the Basin. The 308 Report noted that although disastrous flooding had occurred in the Lehigh Valley on several occasions, the Delaware Valley had not experienced any major floods since 1903, and that flood was judged to have a periodicity of 150 to 300 years. The Corps stated categorically that "there is no record of any flood on the Delaware which attained the magnitude of a disaster or caused great loss of life or property." The report concluded:

> The localities subject to flooding are widely scattered and flood losses occur so seldom that it is improbable that local support could be gained for any general flood-control project. Such flood problems as exist are purely local in character and in the few instances, where any considerable expenditure for protection is justified, it could properly be met by local interests without any Federal Contribution.[16]

The Corps concluded that while the Delaware was an important potential source of water supply and power that would probably be used at a future date, rather than the federal government assuming responsibility for such developments within the Delaware watershed, future projects "should be coordinated, supervised, or controlled" by an interstate agency. With this, the Corps handed responsibility for managing the Delaware River Basin back to the states.

At first the states needed some outside encouragement and support in the new undertaking. The country was in the depths of the Depression, and Roosevelt was initiating a vast array of New Deal programs that concentrated governmental powers in Washington. By 1935, partly in reaction to centralization, a nationwide movement towards greater interstate ties began, with New Jersey, New York, and Pennsylvania becoming the first states to establish Commissions on Interstate Cooperation. Representatives from these commissions and several federal agencies formed the nucleus of a group which in 1936 established the Interstate Commission on the Delaware River Basin (Incodel) to coordinate regional management of the Basin.

Incodel was created, not by compact, as had been attempted in the 1920s, but as the product of parallel legislation in Pennsylvania, New Jersey, New York, and later Delaware. Its mode of operation, which required the approval of eight legislative houses before any concrete actions could be taken, made Incodel into a mere channel

for agreement among the participating commissions and assured that it could not develop any measure of independence. Incodel also soon developed a strong antifederalist bias and solidly opposed federal intervention in Delaware River affairs. Partly for these reasons, in its early years Incodel shunned expensive plans that would require federal aid, and it focused almost entirely upon pollution control.

However, the policy began to shift after the war, especially in response to a severe drought that struck the Northeast in 1949. In the summer of that year, New Jersey and parts of New York experienced their driest June in the 78 years of weather records, and New York City water supplies dropped precipitously. The City turned to other available sources of water, squeezing an additional 50 million gallons a day from wells, ponds, and infiltration galleries tapped on Long Island and Staten Island, while officials implored residents to cut back on consumption. In mid October, due to light summer rainfalls and an upsurge in water consumption in the fall, City reservoirs registered only 50 percent capacity—the lowest level since their construction in 1916. Mayor Fred O'Dwyer called the situation "most serious," and in late December instituted a conservation program of "dry" Thursdays. On December 30, a spokesman announced that if consumption continued at the same rate, New York had only 71 days left before its water would be gone and only 44 days before pressure would fail.

One reason for New York's severe but brief water shortage in 1949 was that none of the reservoirs authorized by the 1931 Supreme Court case had been completed. Construction of two dams on Delaware tributaries (the Pepacton Reservoir on the East Branch and the Neversink Reservoir on the Neversink River) and of one dam on a Hudson tributary (the Rondout Reservoir on the Rondout Creek) had been postponed, first by the Depression and then by World War II. If, in 1949, New York had had this additional 440 mgd of Delaware waters (335 mgd from Pepacton and 105 from Neversink), the drought would not have caused such an extreme water shortage. The City responded to the crisis by announcing plans for a new reservoir at Cannonsville on the West Branch of the Delaware River, again choosing neither to develop the upper Hudson nor to attack more fundamental causes of the shortage such as the massive leaks in the City's water system and the lack of metering.

The crisis atmosphere produced by the intense drought and by the threatened diversion provided a major impetus to an Incodel proposal to survey the Delaware River Basin, and in the winter of 1949, at the height of the water shortage, the legislatures of New York,

Pennsylvania, and New Jersey appropriated funds to investigate possible development schemes. Incodel contracted two engineering firms—Malcolm Pirnie Engineers, and Albright and Friel, Inc.—to design an integrated plan to meet water needs in the Basin until the year 2000. Incodel received the consulting firms' final recommendations, known as the "Pirnie Report," in August 1950 and presented them to the state legislatures the following month. The Pirnie Report recommended a two-stage development of the Delaware River Basin, the first stage to include two dams on Delaware tributaries in New York and a main stem dam at Wallpack Bend, between the Water Gap and Port Jervis. (This dam would later be shifted a few miles downstream to the Tocks Island site due to unsatisfactory geologic conditions of the original location.) The eight-page report concluded with the recommendation that:

> . . . immediate consideration be given to the establishment by compact of a Delaware River Water Commission, with appropriate representation from each of the proprietary states, to which would be delegated power to plan, finance, construct and operate the Stage 1 integrated water project, to sell water service capacity to political sub-divisions and other water supply agencies and to provide stream flow regulations which would benefit each of the proprietary states.[17]

By 1952, New York despaired that the recommendations of the Pirnie Report would soon be acted upon. Unable to expand its water supplies while demand continued to rise, New York City once again considered itself caught in a bind, and in April 1952 the City filed a petition with the Supreme Court to modify the 1931 decision to allow a 800 mgd diversion from the Delaware watershed. Within two months New York State, New Jersey, and Pennsylvania had all joined the suit, and in February 1953 the issue of allocating the waters of the Delaware was back before the nation's highest court.

The second court case was also heard by a Special Master. In this instance the Special Master emphasized the importance of the states' reaching an agreement, and by mid 1953 they had designed a compromise which was subsequently endorsed by the Court. New York was allocated the 800 mgd it requested in exchange for allocating to New Jersey a "free" 100 mgd without compensating releases. The Court instituted a slightly revised formula for New York's compensating releases known as the "Montague formula," and appointed a river master to supervise it. Pennsylvania in turn gained New Jersey's abrogation of the 1783 Anti-Dam Treaty and a promise by New

Jersey to condemn land for a dam site on the Delaware between the two states. The Supreme Court adopted the Special Master's report on June 4, 1954.

The horse trading that characterized the 1954 Court case maximized each state's benefits. Although many of the same issues were raised once again (the effects of dams and diversions on salinity control, recreation, and shad and oyster populations), they received less emphasis in 1954 than they had in 1931. This may have been due to a change in New Jersey's position. Abandoning its 1931 position of total opposition to main stem dams and out-of-Basin diversions, the state recognized that similar measures would be necessary to solve its own water supply problems in the not so distant future.

In the spring of 1955, the District Office of the Corps of Engineers in Philadelphia completed the review of the 308 Report, requested by the Senate Committee on Public Works five years earlier, to determine whether changes in conditions warranted modifications in that report's recommendations. The preliminary draft of their review concluded that conditions had not significantly changed and that federal expenditures in the River Basis were still unjustified. The timing was spooky. Soon after the draft was completed the double hurricanes struck the Northeast.

IV. THE INSTITUTIONAL RESPONSE: CREATING AN "EXPEDITER"

The massive floods of 1955 indelibly altered the political debate over the necessity of a main stem dam for the Delaware River. The natural disaster created a powerful demand for more effective flood control measures in the Basin and gave the Corps of Engineers its mandate to conduct a comprehensive survey. While the Corps proceeded with its investigation, the governors of the four Basin states and mayors of New York City and Philadelphia entered negotiations aimed at the design of a suitable interstate commission. Changing its name to the Delaware River Basin Advisory Committee (DRBAC), this group of politicians began organizing support for the enactment of a new interstate compact to assure implementation of the Corps Basin development plans.

The process by which the compact was designed significantly determined the particulars and the tone of the document. State government representatives, with minimal federal participation, assumed the major responsibility for drawing up the terms of the agreement. Drafters of the compact had as their goal the creation of a

strong regional organization that would bind the federal government and the four states equally, and would have powers to develop and implement a comprehensive, multiple purpose river basin development program.

In September 1959, the Syracuse University report, which had been sponsored by the Water Research Foundation, was submitted; it bore the title "The Problem of Water-Resource Administration, with Special Reference to the Delaware River Basin." It was then passed to the Advisory Committee:

> The Syracuse researchers recommended initial establishment of a federal organization which could be phased into a federal-interstate organization at a later date. When the members of the Advisory Committee considered the recommendation, they decided that if a federal-interstate compact was the ultimate goal, it should be created initially. Thus, the committee decided to propose a federal-interstate compact organization which had not been tried in the past and for which there was no indication of federal support.[18]

The Advisory Committee made particular efforts to smooth those controversial issues that had snagged past proposals for the interstate-federal commission. The drafters resolved possible conflicts in the final draft as follows:

1. The Commission was given no jurisdiction over navigation.
2. The question of private versus public power development was left open.
3. The compact did not attempt to lay out a division of the Basin's water but left the allocation open to future negotiations.
4. No changes would be permitted in the Supreme Court's rulings for the 100-year term of the compact except by unanimous consent.
5. Philadelphia and New York City were not given voting rights but representatives were to be invited to advise the alternates from their respective states.
6. The federal government received the same one vote as did each of the four states.

After extensive consultations between the state oriented drafters and federal officials, the compact was approved by Congress, and on September 27, 1961, it was signed into law (PL 87-328) by President Kennedy. The compact endowed the new federal interstate commission, known as the Delaware River Basin Commission, with

unique authority and centralized power in the Basin. Section 318 of the compact establishes that:

> No project having a substantial effect on the water resources of the Basin shall hereafter be undertaken by any person, corporation or governmental authority unless it shall have been first submitted to and approved by the commission.

The DRBC also was accorded jurisdiction over out-of-Basin diversions, subject to the 1954 Supreme Court decision, as well as flood plain zoning. But the Commission's primary objective, according to Section 3.1, was the implementation of development plans in the Basin:

> Purpose and Policy. The commission shall develop and effectuate plans, policies and projects relating to the water resources of the Basin. It shall adopt and promote uniform and coordinated policies for water conservation, control, use and management in the basin. It shall encourage the planning, development and financing of water resources projects according to such plans and policies.

Pursuant to this end, soon after its creation the DRBC adopted most elements of the Corps' Delaware River Basin Report and comprehensive plan. The Corps' plans became the DRBC's commitment.

Passage of the Delaware River Basin Compact of 1961 and the Flood Control Act of 1962, which contained the comprehensive Basin development plan of HD 522, ushered the Delaware Valley and the country into a new era of water resources management. The DRBC reflected a unique concept of interstate-federal cooperation in the field of Basinwide planning and management. It has since been characterized as "one of the most sophisticated forms of 'cooperative federalism' yet attempted—the epitome of the American effort to obtain the advantages of decentralized decision making while simultaneously avoiding the perils of provincialism."[19]

As the DRBC was taking its first step in the early 1960s towards implementing the comprehensive development plan, another crisis developed—this time a drought—that provided further impetus for proceeding with the Tocks project. In 1961 the spring runoff needed to fill the Basin reservoirs and sustain water supplies through the dry summer months dropped drastically. In the next four years the entire Northeast received 25 percent less rainfall than normal, and by April 1965, as a result of the 44-month dry spell, New York City's reservoirs were at 40 percent capacity. Worried about the serious

shortage, City officials instituted a series of emergency ad hoc conservation measures—street cleaning was halted, the use of garden hoses was restricted, and the filling of backyard pools was prohibited—while the more fundamental problems of waste and leakage remained untouched.

In May, City restaurants were instructed to stop serving water to customers unless specifically requested. The City banned lawn sprinkling in June, and one month later, at the height of the drought, two blimps began flying around the city every night with flashing signs imploring New Yorkers to "Take Brief Showers Instead of Baths" and "Stop Running Hot Water on Dishes." Although some of these measures, such as the ban on serving water in restaurants, were more effective psychologically than in reducing consumption by a significant degree, New York City did manage to force water use down from 1,100 to 900 million gallons a day by the end of June.

But pleading with water users to reduce consumption was not enough to alleviate New York City's worst water shortage ever. More direct action was needed to increase the Delaware reservoirs' water supplies. City officials accomplished this by continuing to divert the full 490 million gallons a day from the Delaware watershed—as permitted by the 1954 Supreme Court decree—while ceasing, on June 14, 1965, the compensatory releases to augment the river's flow required by the same Court decision. By July 1, the flow at Montague had dropped to less than half the 1,525 cfs guaranteed by the 1954 decision, causing the "salt front" in the Delaware Bay to inch its way up towards the Camden well fields and the water supply intake for Philadelphia at Torresdale.[c] Although the salt front, at its closest, was still ten miles from Torresdale, local newspapers in New Jersey and Pennsylvania printed sensationalistic reports of the salt front daily advance and of its threat to municipal and industrial water supplies, fanning the passions of the general public.

New York's flagrant violation of the 1954 Supreme Court decree, which required that certain minimum flows be maintained at Montague and Trenton under all conditions, sparked immediate reactions:

> New Jersey's Governor Hughes, who was the current chairman of the DRBC and seeking re-election in the fall, accused New York City of "illegal" action and threatened to reopen the court litigation. Pennsylvania's Secretary of Forests and Waters, Maurice Goddard, leveled charges of "water piracy" and his counterpart in Philadelphia, Samuel Baxter, indi-

[c]A discussion of the salt front—what it is and what to do about it—is found in essay 5 in this volume.

> cated that the emergency was forcing the issue of New York City drawing upon Hudson water.[20]

On July 7, 1965, a cautious DRBC finally entered the renewed fracas between New York and its downstream neighbors over allocation of the Delaware's water. The commissioners met in an "extraordinary" session and declared a four-state water emergency; this provided the DRBC with absolute authority to ration and allocate water use in the Basin. Asserting that it was "hydrologically impossible" for New York to satisfy both its diversion and release requirements, the DRBC enacted three critical temporary modifications of the 1954 decree: (1) the Montague flow requirement was lowered from 1,525 to 1,200 cfs (i.e., from 1,000 mgd to 800 mgd); (2) New York City's diversions from the Delaware were cut from 490 to 335 mgd, and (3) New York City was directed to resume its 200 mgd releases. To boost flow levels, the Commission directed private electric power companies in Pennsylvania and New York to release up to 266 mgd from their hydro-power reservoirs. The combination of these stop-gap measures produced some beneficial effects, but New York City's water consumption plus the imposed releases continued to exceed its buildup of supplies.

In early August New York City officials announced that, if maintained, the DRBC's water use policies would force the Delaware reservoirs dry by the end of November. Mayor Wagner, reacting to this inauspicious prediction, initiated steps to buy and borrow water from private companies in order to sustain the City's supplies until the spring. In another emergency meeting, on August 18, the DRBC recognized New York's desperate plight and proceeded once again to juggle the Basin's water resources. The DRBC's intervention this second time, followed by late August rains, alleviated the immediate drought crisis. By late October the danger of salt contaminating Philadelphia's water supplies no longer existed; by Mid November New York's reservoirs had reached a level equal to the previous year; and in March 1966 the crisis was officially declared over.

For a young, untested agency, the Delaware River Basin Commission performed well in its handling of the drought and the various interstate complications. Joseph Sax, a noted legal scholar, reviewed the DRBC's activities during this period, writing:

> In the broadest sense the lesson deals with the function of law. We are used to considering the law as an institution which resolves disputes by defining relative rights and obligations upon a set of facts which are both known and static. And this, indeed, is what the Supreme Court decision did.

> We are not accustomed to viewing law as a device for promoting creativity; yet this, in essence, is what the Delaware River Basin Commission, as a law-making and law-enforcing body, did. Instead of simply dividing the water "available". . .on the basis of an analysis of some previously existing legal rule, such as the Court's decision or the compact terms, it changed the facts by seeking out, and inducing the parties involved to seek out, additional water supplies. Instead of merely allocating a scarce resource, it resolved the conflict to a significant degree by making the resource at issue less scarce.[21]

Sax thus praises the DRBC as an institution for its success in promoting a "creative search for alternatives" and considers it to be a better conflict resolving mechanism than the Supreme Court. But he adds that:

> [On] the other hand, one must be more than a little troubled by the fact that the Commission was in existence all during the time that the drought was developing, beginning in 1961, and that it did nothing to keep the crisis from coming to a head; that it was not mobilized to action until the crisis was at the disaster stage; and that when it did act, its solutions were ad hoc and temporary.[22]

From its first days, the DRBC also gave much of its attention to another area—controlling water quality in the Delaware Bay. The federal government in 1962 had funded a four-year, $1.2 million, comprehensive analysis of pollution problems known as the Delaware Estuary Comprehensive Survey (DECS). This investigation, which had grown out of the Public Health Service study of Delaware pollution for the Corps' HD 522, was staffed by young, mathematically oriented engineers. Using the latest analytic techniques, DECS developed four alternative plans and presented them in 1966 to the political decision makers on the DRBC. As has been pointed out by one careful observer of DECS, its development and implementation appeared to represent the "frontier of applied scientific fact-finding in 1966."[23] However, in fact, the DECS had a critical structural flaw: the division of bureaucratic responsibilities into a "thinking" agency (DECS) and an "action" agency (DRBC). This split discouraged serious refinement of the technical analysis once the technical plan produced by the DECS group was turned over to the DRBC for implementation.[24]

The function of the DRBC has thus been varied. It has acted sometimes as a compromiser seeking to resolve conflicts among the Basin states, and sometimes (as in the instance of DECS) as the chief framer of a Basinwide policy. In the instance of Tocks, the DRBC

role may best be characterized as that of an expediter, seeking to implement the comprehensive development plan developed by the Corps of Engineers. For the DRBC to be an effective expediter, however, it must operate by consensus—something, as will be seen, that was never achieved for the Tocks Island Dam.[25]

V. THE STRUGGLE RESUMES

No one likes to have his home condemned and to have his community reduced to ruins—particularly when he lives in an area as beautiful as the Delaware River Valley. Thus, it was completely predictable that the first signs of opposition to the Tocks Island Dam project would come from the local residents. They were the ones most directly affected and they were the ones who had the most to lose.

But for a long time, even the local people seemed passively to accept the plan to flood the Minisink Valley. Hardly a handful of people in 1960 opposed the dam; and in 1962, when Congress held hearings on HD 522, no one was active enough to make a real fuss. Many people living around the taking area believed that the project would contribute to the region's and their own economic betterment. Others felt that it was hopeless even to try to influence the government's plans, that they "couldn't fight city hall." Local residents reluctantly accepted the Tocks Island Dam and waited to see what would happen.

The first postauthorization public hearings on the Tocks project, held by the DRBC and by Congress in 1964, marked the beginning of more vocal dissent. Soon after these hearings, several local residents opposing the dam founded the Delaware Valley Conservation Association. In four days, they had gathered 1,000 signatures on a petition asking the House Appropriations Committee to hold hearings in Stroudsburg. The Committee granted the request, and the Congressmen appeared in Stroudsburg in April 1965 though with no noticeable effect on the character of the project planning then underway.

In the fall of 1966, local landowners were confronted by the first tangible evidence of the dam. Although Congress had yet to appropriate any funds for land acquisition for the project, the Corps notified 208 landholders by letter that their properties were being considered for the initial year of purchases for the Recreation Area only. In November, 604 landowners became plaintiffs in a class action suit to stop the Tocks Island Dam project and the Delaware Water Gap Recreation Area. The landowners' suit began in the federal court in Philadelphia, went to the Court of Appeals in the spring of 1967, and reached the Supreme Court in August 1968. The suit

was finally dismissed in October 1968 on the technical grounds that the government had not consented to being sued.[26]

While landowners organized their legal and political opposition to Tocks, environmentalists began protesting plans to transform a 44-acre glacial pond located atop the Kittatinny Ridge and inside the DWGNRA into the upper reservoir of a pumped-storage facility. A pumped-storage facility (as explained more fully below in essay 7) is a system for storing electric power. At night, when demand is low, electricity is used to pump water from a lower to an upper reservoir, and the stored water is then allowed to fall to the lower reservoir during the daytime, generating peak demand electricity. Although the comprehensive plan in HD 522 included provisions for development of pumped storage by private utilities as well as for public conventional on-stream hydropower, the plan authorized by Congress and by the DRBC provided only for the latter. Private development of pumped-storage by private utilities as well as for public

In March 1961 the first steps towards private pumped-storage were taken when the State of New Jersey and the New Jersey Power and Light Company agreed to an exchange of land, the utility receiving in the swap over 700 acres of state park land on Kittatinny Ridge in Worthington State Park, including the 44-acre Sunfish Pond. By 1966 the Corps was proposing that the Basin comprehensive plan be amended to allow the power companies to proceed. Although local newspapers in the early 1960s published occasional stories on the plans for constructing a pumped-storage facility, until 1965 few people even realized that Sunfish Pond had been sold. One reason for this ignorance is that engineering reports and public announcements commonly referred to the Pond, not by its known name, but as the "Upper Labar Reservoir," since it was directly above a small island of that name.

In 1965, Glenn Fischer, a local resident concerned about the fate of the Pond, sat on the edge of the Appalachian Trail collecting signatures and began writing protest letters to newspapers and politicians demanding that the Pond be returned to the state. Fischer then formed the Lenni Lenape League and, through press publicity, the group gained members and supporters; and in April 1966, a Warren County chapter was formed. One month later, on Mother's Day, the League organized its first protest pilgrimage up the two-and-one-half-mile mountain path to Sunfish Pond. The Lenni Lenape League conducted a vigorous campaign with the support of the New Jersey Audubon Society, Sierra Club, and other groups. "Save Sunfish Pond" bumper stickers and lapel pins began appearing all over the state. The preservation campaign reached a climax in the spring of

1967 when opponents to the project marched to the Pond with Supreme Court Justice William O. Douglas, making the Pond's future a major public issue.

A public hearing held in August 1967 by the DRBC to consider the utilities' proposed amendment to the comprehensive plan marked a turning point in the pumped-storage debate. For the power companies the main issues were to determine which customers would receive preference in the delivery of the additional power, to decide on charges for water use, and to allocate construction fees for the dam and reservoir. For the citizen groups the main issue was whether Sunfish Pond should be used as the upper reservoir. They argued that Sunfish Pond should be preserved for two basic reasons. First, if it were used as the upper reservoir, river water would have to be pumped into and drawn from the lake. This would of necessity destroy the Pond's pristine purity, change its water quality and ecology, and reduce its attractiveness due to extreme fluctuations in the water level. Second, as the largest New Jersey lake inaccessible by car, Sunfish was an important wilderness retreat that would be downgraded by facilities associated with the power station. The area's natural qualities, argued the conservationists, deserved preservation in the increasingly urban northeast megalopolis.[27]

By December 1967, Secretary of Interior Stewart L. Udall, responding to a barrage of letters from conservationists, had declared that the federal government would do everything possible to save Sunfish Pond and would press for modifications of the storage plant's design to avoid damaging the glacial lake. The press exerted a powerful force to save the Pond. In a late May 1968 editorial, *The New York Times* declared its support for two bills in the New Jersey legislature to repurchase Sunfish Pond, "a small but irreplaceable natural asset, which for that reason alone, deserves preserving."[28] Finally, in July, in a hearing at Trenton on the "Save Sunfish Pond" bill, the power companies announced a compromise plan for pumped-storage that did not use Sunfish Pond but instead expanded the existing Upper Yards Creek reservoir. Conservationists still opposed this scheme, however, claiming that the enlarged reservoir would leak and contaminate Sunfish Pond, and that the twenty-stories-high retaining dikes within 1,000 feet of Sunfish Pond and "smack in the middle of Appalachian Trail" would irreversibly mar the environment. Nonetheless, the companies' retreat from plans to use the glacial lake seemed to most of the public a victory for the conservationists.

But the Sunfish Pond issue was not completely resolved. As part of the compromise, the comprehensive plan had to be amended to

allow pumped-storage facilities. On October 22, 1968, the DRBC issued its amendment, known as Resolution 68-12, which contained a fairly strict list of conditions for approval:

> Sunfish Pond could not be used as a reservoir, and its recreation and conservation values could not be impaired. Construction of an upper reservoir was to occur with a minimum disruption of the natural environment. The Department of the Interior was to designate the exact location of the reservoir, and was to supervise restorative landscaping. Penstocks between the upper and lower reservoirs, and transmissions lines, would be buried underground; excavation scars would be restored and landscaped. The Corps and the DRBC would determine the pumping schedule, to correspond with the requirements of river management. Services and facilities to mitigate fishery problems would be paid for by the utilities.[29]

In March 1969, the New Jersey State Assembly voted to buy back the lake and property sold eight years earlier. Although the Senate never approved this bill, the power companies offered to return the Pond to the state without charge. On July 1, 1969, Governor Hughes accepted the deed to Sunfish Pond and 68 acres of surrounding woodland. The power companies retained over 600 acres on the Kittatinny Ridge.

Both the DRBC and the power companies came out of the Sunfish Pond controversy looking like "good guys." DRBC's Resolution 68-12 proclaimed, in effect, that the Commission was siding with environmentalists and giving primacy to saving natural resources from abuse and destruction. The utilities' gift of the Pond back to the state was equally good public relations. The environmentalists lost much of their support. The issue of regaining the remaining park land, for all practical purposes, disappeared from public view.

It is difficult to determine exactly how the compromise over Sunfish Pond was actually reached. Casey Kays, one of the Pond's most devoted protectors, maintains that it was pressures on the DRBC from Secretary Udall in Washington. Henry Smith, a later director of the Lenni Lenape League, hypothesizes that the legislative activities in the New Jersey State Assembly compelled the power companies to relinquish the Pond. Thomas Kean, the legislator who sponsored the bill to buy back the state property, believes that the major factor, in addition to pressure from Washington and the State Assembly, was public opinion. According to Kean's interpretation, the DRBC withdrew support for the power companies' position when citizen protest reached the offices of Congressmen and began to threaten the whole Tocks project. "The DRBC cares about one thing," says Kean, "And that is the Tocks Island Dam. They see their future as the 'Czar of

the Delaware' dependent upon the continuous source of revenue provided by Tocks. Resolution 68-12 was an attempt to short-circuit environmental opposition and prevent the transition of protest from Sunfish Pond to the Tocks project."[30]

But just as Sunfish Pond–related environmental concern was beginning to fade, a new controversy erupted. On January 1, 1970, President Nixon signed the National Environmental Policy Act (NEPA) into law, revolutionizing environmental control procedures in the United States. Section 102(2) (c) required all federal agencies to assess and make public the environmental impact of each major action. NEPA also established a Council on Environmental Quality (CEQ) in the Executive Office of the President to investigate environmental conditions in the nation, develop and coordinate new federal programs and policies, and generally advise the President on solutions. CEQ was also charged with overseeing the environmental assessment process and reviewing the final impact statements after the drafts were commented on by federal, state, and local government agencies as well as the public.

In 1970, pursuant to the National Environmental Policy Act, the Corps prepared an Impact Statement on the Tocks Island Dam project and in November presented its preliminary draft to the CEQ and the public. This preliminary Environmental Impact Statement, a cursory eight-page discussion of the dam's influence on the environment, seemed to invite public outrage. After the landowners' class action suit, and the Sunfish Pond dispute, the Impact Statement initiated the third round of the Tocks Island Dam Controversy. Proponents for the dam included no one who was particularly new to the Tocks dispute. The nucleus of those urging an early construction start included the Corps of Engineers, the Delaware River Basin Commission staff, and various industrial and business interests. Local citizens and local county officials organized two pro-dam lobbying groups: the Tocks Island Citizen Association and the Tocks Island Regional Advisory Council.

While the aftermath of the November 1970 Impact Statement came as a shock to the dam's proponents, it was a boon to the opponents. It gave them something concrete to react to, to criticize and to organize around. In December, three groups already opposing the dam—the Lenni Lenape League, the Delaware Valley Conservation Association, and the eastern Pennsylvania chapter of the Sierra Club—formed the Save-the-Delaware-Coalition. This organization of organizations set out to coordinate the various groups which opposed all main stem dams on the Delaware and supported the preservation of a free-flowing river.

From that time on, the two camps have battled. And they have turned out to be evenly matched.

NOTES

1. *The New York Times*, August 18, 1955, p. 1.
2. *Ibid.*, August 20, 1955, p. 1.
3. House Document No. 522, Delaware River Basin Report, U.S. Army Corps of Engineers, Vol. 1, 1962, pp. xxi–xxii.
4. Luke W. Brodhead, *Delaware Water Gap, Its Legends and Early History* (Philadelphia: Sherman and Co., 1870).
5. *Ibid.*
6. House Document No. 179, *Delaware River*, 73rd Congress, 2nd Session, 1934, pp. 70–73.
7. *The Fourth Annual Report of the Water Supply Commission of New York*, for the year ending February 1, 1909, State Water Supply Commission of New York, 1909, p. 424, in *Delaware Diversion Case*, vol. 7, p. 589.
8. House Document No. 179, *op. cit.*, p. 103.
9. A detailed history of water management before 1955 may be found in Roscoe C. Martin and others, *River Basin Administration and the Delaware* (Syracuse, N.Y.: Syracuse University Press, 1960), pp. 277–306.
10. New Jersey's Counsel, Duane Minard, equated New York's initial attempt to negotiate a diversion of the waters—which New Jersey claimed it owned by riparian rights—with the following story:

> "It's just like going to a man who owns a farm and saying, 'I will give you $10,000 for your farm.'
>
> The Owner says: 'Why, I couldn't take $10,000 for my farm.'
>
> The proposed purchaser puts his money back in his pocket and says: 'All right, I'll take it anyway.'"

In *Delaware Diversion Case*, vol. 48, p. 36.
11. *Delaware Diversion Case*, vol. 44, p. 4785.
12. *Ibid.*, p. 4786.
13. *Ibid.*, p. 4961.
14. *Ibid.*, p. 4902.
15. *New Jersey v. New York*, 283 U.S., 342-43 (1931).
16. House Document No. 179, *op. cit.*, pp. 3–4.
17. Incodel, *Report on the Utilization of the Waters of the Delaware River Basin*, prepared by Malcolm Pirnie Engineers and Albright and Friel, Inc., September 1950, p. 8.
18. Vernon D. Northrop, "The Delaware River Basin Commission. A Prototype in River Basin Development," *Journal of Soil and Water Conservation* 22 (2) (1967): 3.
19. Bruce Ackerman, Susan R. Ackerman, James W. Sawyer, Jr., and Dale W. Henderson, *The Uncertain Search for Environmental Quality*, New York: Free Press, 1974, p. 4.

20. Richard Hogarty, *The Delaware River Emergency*, cited in Joseph Sax, *Water Law, Planning and Policy* (New York: Bobbs-Merrill, 1972), p. 174.
21. Joseph L. Sax, *Water Law, Planning and Policy* (New York: Bobbs-Merrill, 1972), pp. 178–179.
22. *Ibid.*, p. 180.
23. Ackerman and others, *op. cit.*, Chapter 4.
24. *Ibid.*, Chapter 5.
25. Richard Hogarty, *The Delaware River Drought Emergency*, Inter-University Case Program #107 (New York: Bobbs-Merrill, 1970).
26. *Delaware Valley Conservation Association and the 604 Additional Plaintiffs v. Stanley R. Resor, Stewart C. Udall, and W. F. Cassidy*, 378 U.S. (October 1968).
27. Interview with Mr. Henry Smith, present director of the Lenni Lenape League.
28. *The New York Times*, May 24, 1968, p. 46.
29. William Hillhouse and John DeWeerdt, *Legal Devices for Accommodating Water Resource Development and Environmental Values* (Springfield, Va.: Technical Information Service, 1971), p. 187.
30. Interview with Mr. Thomas Kean, New Jersey State Assemblyman.