



Conflict and Irresolution

Harold A. Feiveson

The Tocks project followed a more or less routine course until the Corps' initial Environmental Impact Statement, issued in the fall of 1970, set off a shock of opposition. The rush of events that followed gathered into the controversy a variety of actors: public agencies supporting the dam, various competing private interests, the White House and Executive Office of the President, the governors of the Basin states and their staffs, and congressional chieftains. It was during this period also, when the protagonists were striving hardest to reach decisions, that a large fraction of the technical, economic, and political analyses relevant to the Tocks project were produced and examined.^a

I. FLOODS, DROUGHT, POWER, AND PLAY: THE PROFESSIONALS

A. The Corps and the Water Professionals

It was not surprising that the precipitating event was a study done by the Army Corps of Engineers. Throughout the Tocks controversy, the Corps has been the major planning agency, the major source of analytic studies, the most visible government agency in the region, and, consequently, the major target of people and groups opposed to the dam.

The Corps is a highly structured agency with a rigorous chain of command. The Washington headquarters, at the top of the com-

^aThe full citations for studies referred to in this essay and in the volume generally are given in a list at the end of this volume, pp. 407-411.

mand, maintains a close liaison with Congress and provides the final review and approval of plans developed at the Division and District levels. Although the Washington office is directed by a three star general and a thin layer of other Army officers, the office is mainly staffed by civilians. This is true as well at the regional levels, albeit with corresponding rank reductions for the military command; the Division offices are directed by one star generals, the District offices by colonels. The Washington headquarters report formally to the Secretary of the Army, although in practice most of their dealings are directly with Congress, from whom they derive the greater part of their political support.

Serious planning for and direction of Corps projects occur at the regional level, at the Division and District headquarters. The Tocks project falls within the jurisdiction of the North Atlantic Division headquarters, which includes the District offices from Norfolk, Baltimore, Philadelphia, and New York, and which has responsibility for all Corps projects in the Northeast. In early 1971 the Division came under the direction of General Richard H. Groves, a powerful advocate of Corps projects (and incidentally the son of the Army general who directed the WWII Manhattan Project to develop the atomic bomb). In this position, Groves presented the Corps testimony before the congressional appropriations committees in support of the Tocks project, and he was also the chief Corps contact with the Basin governors regarding the project.

Groves's message in these briefings was clear: Tocks was needed to protect people on the Delaware flood plain and to provide water for the growing population in New Jersey. Whatever the benefits of power and recreation supplied by the project, it was the flood control and water supply purpose that *really* counted. To Groves, although recreation accounted for about 50 percent of benefits in the Corps' formal benefit-cost calculation, recreation was "not something we will fight and die over." This idea was also echoed by the chief of planning of the Division, Herbert Howard, who believed that the inclusion of recreation in the multipurpose project, although economically justified, had actually made more enemies for the project than friends, and had deflected attention from the critical issues of flood control and increased water supply.

These views of Groves, Howard, and others were not lightly based. They had grown out of two long range planning studies for the Northeast, the North Atlantic Regional Water Resources Study (NAR) and the Northeastern Water Supply Study (NEWS), which vividly portrayed the growing demands for water in New Jersey and the difficulties of meeting this demand without Tocks. These studies

were not done in great detail, however; the responsibility for the detailed investigation of water supply alternatives had been delegated to the District Office.

From the beginning of the Tocks project as a component of the Delaware Basin Comprehensive Survey, the detailed planning and engineering design had been the responsibility of the Philadelphia District Office. Here, Tocks had assumed an important role in the District's planning. The Tocks Island Dam is a large project by any standard: it would be the eighth largest public works project of any kind undertaken by the Corps in the United States. It was by far the largest Corps civil project contemplated for the Northeast, and it represented 15 percent of the total value of authorized civil projects in the North Atlantic Division and 40 percent of those in the Philadelphia District.

By 1971 the Philadelphia District Office had lavished years of attention and effort on the planning of the Tocks project; the chief responsible officers were deeply committed to its fulfillment and were resentful of what appeared to them to be shallow and irresponsible criticism of the project. The civilian officer who perhaps best exemplified this attitude was Gordon Dilley, then Acting Assistant Chief of the Engineering Division. Previously, Dilley had been the Tocks project officer and in one way or the other intimately involved in the detailed planning of the project since the early 1960s. Dilley is a quiet, earnest person, trained as a civil engineer, with a reputation for thoroughness, integrity, and persistence (his Tocks adversaries would say stubbornness). He maintained a strong feeling for the outdoors and wild unspoiled areas; he liked to mention how his father, who often took him fishing as a youth, always thought the Corps "a catastrophe for trout fishing." But Dilley also grew up in Wilkes Barre, a community ever threatened by floods, which in the summer of 1972 was struck by one of the worst in American history. The desolation and anguish it brought in its wake were observed by Dilley in a sad visit soon afterwards.

Whatever the reasons, Dilley certainly felt deeply about the project's benefits, especially flood control and water supply. He saw the Corps' mission as stated in the preamble to the congressional charge to the Corps to develop land to its highest and best use for the benefit of its citizens. This meant to Dilley managing the river, not only for flood protection but also to make more water available, if that was what the citizens of the Basin states were demanding. Beyond the explicit economic benefits to be provided by the project, Dilley saw in it also a stirring accomplishment. He would comment how he hoped to find a way to have cable cars run up the sides of the

embankments and across the top of the dam so visitors could look down the dramatic spillways and onto the distant vistas. In this romantic and attractive vision, Dilley conceived of the dam as a magnet for tourists both young and old, a landmark that would draw visitors from all parts of the Northeast.

Dilley also recognized that there would be certain unavoidable adverse consequences, notably the disappearance of 37 miles of the flowing river and the mostly unpleasant impacts on the local people near the dam; but he rejected the notion that the project would do all sorts of other environmental harm, and he sharply resented the charge that he and the Corps were indifferent to environmental concerns. Indeed, Dilley took pride in the Corps' efforts to protect the shad and the oyster, and to survey historical and archaeological sites. Under his direction, the Corps incorporated into the Tocks project fish ladders to get the shad over the dam and a water release schedule that would leave the spring flows to the estuary unimpeded, a condition generally recognized as helpful to the oysters. The Corps also had sponsored detailed archaeological studies of the region, the first such studies done in the area, but whose findings were (perversely, in Dilley's view) then used by the dam opposition as another argument against the project.

The most important studies of the Tocks project by the Corps were done out of the Philadelphia office. These included the initial Basin Survey, contained in House Document 522, a series of benefit-cost calculations, and the Environmental Impact Statements. The final Environmental Impact Statement was much more thorough than the eight-page preliminary version; it involved substantial coordination with other agencies, most notably the Department of the Interior, who assessed the impact of the dam on fish and wildlife. Released in October 1971, the final statement contained in appendices a wide variety of public comment on the initial draft statement. The body of the statement was a reasonably thorough assessment of environmental problems that might be expected to accompany the project, but presented in a way that suggested that most of these were subject to control, compromise, and solution. In this sense the statement was rather upbeat and supportive of the Tocks project.

Environmental Impact Statements are also supposed to analyze alternatives to the project under study that conceivably could be less environmentally troublesome. This was not done systematically in the Corps statement, as was soon pointed out by several critics. In this respect it was not different from similar reports then being prepared in other parts of the country. Accompanying the Impact Statement was a study commissioned by the Corps under prodding by the

President's Council on Environmental Quality. This study, "An Appraisal of the Potential for Cultural Eutrophication of Tocks Island Lake" by Jack McCormick and Associates, played a critical role in the next act, which is described in section III below.

The Army Corps of Engineers provides a meeting ground for three kinds of sensibilities of a vivid stamp: that of the professional, the military, and the bureaucrat. The water professionals in the Corps, in fraternity with their colleagues elsewhere, take a marked pride in their hard-headed realism, above all in their willingness to think unblinkingly about the violence unleashed by a flooding river, and to gainsay any easy wishful thinking about human nature. They looked knowingly and without surprise at how the citizens' memory of the 1955 flood faded with time, until only they, the professionals, were able to keep clearly in mind the full flood dangers to the region. They noted, with perhaps a tinge of mock sadness, the general irresponsibility of the populace, not only forgetful of the potential power of an unshackled river, but quite willing against all common sense to dwell and build in the flood plain.

Could people really be relied upon to cooperate in the various nonstructural alternatives to flood control that the environmentalists so tirelessly harped upon? People cannot be controlled, but nature can. The professional's task, and what marked him as a professional, was fully to understand this—to look out for the citizen too careless to look after himself. Consider this engaging observation by Maurice Goddard, Secretary for the Environment of the Commonwealth of Pennsylvania, a strong supporter of the Tocks project and an exemplar of the old water professional:

Make no mistake, the forgotten man in the so-called Tocks Island controversy is the average citizen of the Basin who knows little, and cares less, about Tocks Island. He won't be heard from until he is flooded, until his tap runs dry, until he travels all day for recreation and gets turned away, or until his power fails.

He takes no part in the "controversy," but expects these things to be provided.¹

To the Corps professional, the proper defense against a flood is a dam. It represents and makes forever visible the direct counterattack. A dam is an elegant structure, a vivid and enduring symbol of the accomplishment, service, and engineering ingenuity of its builders. (Essays 5 and 6 in this volume capture well the truly stirring aspects of dams.) A dam is also what the Corps knows best how to build, what its experience has taught is the response to a flood; it is the

flood control measure over which the Corps has the clearest and least encumbered authority, in contrast to nonstructural approaches, which require multijurisdictional strategies mixing technical and social measures. Large dams also permit the design of multipurpose projects. Notwithstanding the Corps professionals' emotional focus on flood control and water supply, they are, as well, caught in the mainstream of the water resource field, which since the 1920s had placed emphasis on multipurpose dams, such as Tocks. Alternative packages of several single-purpose projects appear scarcely to have been considered.

The Corps' preoccupation was really more with floods, violent, one-shot events, than with drought, a gradual, more complex phenomenon. As noted in the preceding essay, until the great flood of 1955, the Corps was hardly interested in a dam on the Delaware; and since then, it was always the flood that was in the forefront in the Corps' sense of the rationale for the dam and its own sense of duty. As water supply came gradually to occupy a more important role in Corps planning, this sense of professional identity had to be translated to a new area. Thus droughts, in the imagination of the Corps professionals, came gradually to be thought of in the same sudden, cataclysmic terms as floods. The fact that a drought in the northeast United States meant essentially summer shortage and inconvenience was lost sight of in the drought's translation into a "disaster" and "catastrophe." This image of disaster was not restricted only to the Corps; it was shared fully, as noted below, by the water resource planners of the Delaware River Basin Commission.

The military ambience in which the Corps finds itself reinforces all these attitudes—a preoccupation with a violent antagonist, a pride in thinking about the unthinkable, a search for technical counters, and a disdain for a lazy thinking and uncontrollable populace. There is as well in the Corps a militarylike tendency to assume the worst of the adversary (in this case, nature) and to prepare to combat extreme though unlikely contingencies. The Corps, like the military, plans with prudence—there is little penalty to being overprepared or overcautious. Also like the military, the Corps is impatient with the adversary's counterattack. If predicted growth of odorous algae (eutrophication) in the Tocks reservoir seemed to call into question the value of the Tocks project, the Corps response was not to rethink the dam, but rather first to downgrade the importance of, and then to devise a plan to attack, the eutrophication.

The Corps is also a bureaucracy, with its own standard operating procedures and its own political ties. Like the other bureaucracies involved in the Tocks controversy, and indeed no more than the others, the Corps has wished to protect its own expertise from the

disorder of public and critical scrutiny. None of its procedures has been more protected than the benefit-cost analysis, which is discussed and, one hopes, demystified in the following essay. The Corps is also a political animal and it does try to respond to congressional wishes and, to a lesser extent, to local and regional interests. As long as Congress and the Basin state politicians appeared to want the Tocks Island Dam, the Corps felt a strong obligation to pursue its development.²

B. The Delaware River Basin Commission

By 1971, the staff of the Delaware River Basin Commission was hardly less enthusiastic in its support of the dam than the Corps of Engineers, although their ardor was perhaps somewhat less expected. The Tocks project certainly appealed to the staff on its merits. The staff saw the project as the keystone of their effort to resolve three problems that had marked the DRBC's prehistory and first decade: floods, drought, and pollution in the estuary. The potential impact of the project on the first two were direct and obvious. Less evidently, the project promised to bolster the DRBC efforts to abate estuarine pollution, by permitting the maintenance of a high flow of 3,000 cfs at Trenton at the top of the estuary. The DRBC believed that such flow enhancement would help to validate their abatement program, which was based on a specific mathematical model of the estuary keyed to the 3,000 cfs minimum flow at Trenton.

From the perspective of an agency trying to control pollution in the face of severe industrial and municipal opposition, the DRBC view was understandable. Environmental standards are notoriously difficult to justify and contain an inevitable degree of arbitrariness. They are thus especially subject to challenge. The DRBC control program for pollution in the estuary requires industry to reduce biological oxygen demand (BOD) discharges by significant amounts, the precise amount derived largely from the mathematical model. To the extent that the operation of this model could be shown to contain arbitrary or unsound features (such as the 3,000 cfs assumption), the easier it would be for industry to challenge the abatement program. Beyond this, to the extent that the model and abatement program were taken seriously, any substantial relaxation of the 3,000 cfs requirement might require increased abatement from industry, a change difficult to achieve for political reasons.

This concern of the DRBC, for example, is strongly, though somewhat obliquely, stated in a staff study completed in November 1971:

Nonetheless, unless the Trenton flow can be sustained at a minimum of 3000 cfs, the indications are that the pollution-abatement program estab-

lished on the basis of that flow would have to be redesigned to increase the degree of treatment or to allow a lower level of water quality with the current program. To avoid this *environmental disaster*, it will be necessary to replace from storage reservoirs any water that is diverted from the Basin or consumed within the Basin before it reaches the tidal river³. (emphasis added)

As against these real advantages, the alleged drawbacks of the project did not appear very compelling. The charter of the DRBC has been interpreted by the staff as charging the Commission to manage the waters of the Delaware to ensure adequate water supply and quality; it did not, in the view of the staff, charge the Commission to investigate changing patterns of land use in the Basin brought about by the development of water resources. Thus, not surprisingly, the DRBC adopted the comprehensive plan of the Corps, and later, specifically, the Tocks project, without any serious examination of the impact of the dam on roads, real estate transactions, land conversions, or economic development—all problems that were later to be of great concern to the governors of the Basin states. As a consequence, the DRBC commissioners (the governors) have in recent years relied for staff advice on Tocks principally on their own state oriented staffs.

The dam also promised the DRBC an interesting potential source of revenue independent of grants from the states—the ability to devise water rates and to sell water. This could be done without the dam, but the Tocks project would vastly increase the potential amounts that could be collected under such a scheme. This kind of enterprise would also reinforce the staff's ability to lead the Commission toward development of a regional perspective. The more the regional functions undertaken by the DRBC, the less important would seem the occasionally parochial points of view of the member states.

These claims of history, of the Charter, of a regional perspective, were all heightened by the character of the DRBC staff, above all by its remarkable stability, especially in comparison to the frequent changes in the Commission itself. Without exception, all the key members of the staff in 1971 were there at the DRBC's inception or very shortly thereafter. No other group or agency involved in the Tocks controversy had anything approaching such a record. The legal counsel to the DRBC, William Miller, was one of the Commission's architects in 1961; and the Executive Director, James Wright; the secretary, Brinton Whittall; the Chief Engineer, Herbert Howlett; the Director of Public Information, Dawes Thompson; and the Chief of Water Resources, Seymour Seltzer, all had held these positions since

1963. The vivid recollection of the 1963-65 drought was not just a product of an institutional memory.

The personalities and pre-DRBC background of the key staff members also helped to shape the DRBC position. James Wright came to the DRBC after graduate training in public administration at Syracuse and a career in public works administration in New Jersey and California where he was involved in water projects that dwarfed the Tocks enterprise. Wright, a rather droll and impressive person in his fifties, had been raised in a water resource tradition that scarcely questioned the subtle problems of environment and growth that now bothered so many. Although he would agree that in principle a new facility (a new source of water, for example, or a new power plant) could hasten future growth and create new demands, he felt there was no way to determine this in practice; a responsible bureaucrat has to act to ensure that any expected future demand will be met. Before coming to the DRBC Buzz Whitall had been on the executive staff of the Tennessee Valley Authority and also participated in the creation of the Delaware River Basin Commission. A reflective, precise thinker with a philosophic bent, Whitall was especially imbued with the innovative character of the DRBC as a regional institution; and he was sharply impatient with conservationists and others who argued for preservation of the "natural" river, while conveniently overlooking the tremendous changes already wrought by man along the Delaware. Both Howlett (who, like Wright, had worked on water projects in California) and Seltzer had long backgrounds in water resource engineering before joining the DRBC. Not until 1972 did the staff add a full-time ecologist.

The principal DRBC staff analyses supporting the Tocks project dealt with water supply needs; the other purposes of the dam received relatively little attention. The most complete and clear example of the water analysis was the staff report issued in November 1971, "Water Demands in the Delaware River Basin as Related to the Tocks Island Reservoir Project," which set forth systematically the projected growth of demand for Delaware water and the reservoir capacity this growth appeared to require. The DRBC staff attitude expressed in this report and elsewhere was clear: confronted with a rising demand, it was the DRBC's responsibility to ensure that it be met even under improbable conditions of severe drought; any shortfall would be unacceptable. How deeply this attitude was imbedded in the DRBC's perspective may be gauged from its response to a suggestion (forwarded in 1973 in a paper by a university-based observer of the Tocks controversy) that since the Tocks reservoir, above all, provides assurance against drought conditions, one should ask

how costly it would be to pay the penalty of falling substantially short in water supply for (say) five or six months every decade—and compare this cost to the cost of the Tocks reservoir. Falling short if there were no Tocks, so one might argue, would not be catastrophic, since one is talking at worst about shortages of perhaps 20 percent; shortages of this magnitude may require some temporary change in summer life style and some rationing but would not endanger the health of the community or its economic well-being.

The DRBC staff response to this speculation was sharp:

It is stated that the Tocks Island reservoir storage capacity will not be needed under normal conditions of rainfall. This is correct and true of all water supply projects. They are designed, like flood control projects, to meet adverse conditions that occur infrequently but which can be devastating. To suggest that we should live with those risks, and change our summer life style and accept rationing, instead of providing storage capacity which is physically and economically feasible, may be good theory but that's all. How does one effect change in summer life styles, under whose authority, and with what degree of assurance that they will actually change? How does a public official rationalize rationing as an alternative to a storage reservoir that could have been constructed? How does one know that the costs of falling short (if we do not have Tocks Island) would not be catastrophic? Does the paper really intend to say we should have *another disaster* before we see if we should have done something to prevent it? We suggest that while such assumptions are easy to make, they are totally speculative and unsubstantiated as real alternatives.⁴

The DRBC staff, like the Corps, has the professional's image of disaster. The constricted view of legitimate alternatives suggested by the response does reflect, however, the reality of politics and institutions in the Delaware Basin. The DRBC does not have an explicit charge to devise emergency preparedness plans, and the public does not, in fact, take kindly to enforced changes in life style. Nevertheless, emergency plans were instituted by the Basin governors in 1965, and it would not have been unreasonable, although it would have been out of character, for the DRBC staff to have investigated and refined such plans even while promoting the Tocks Island Dam. But they did not do this.

C. National Park Service

Since 1965, upon authorization by Congress of the Delaware Water Gap National Recreation Area, the National Park Service (NPS) of the Department of the Interior had, along with the Corps,

been one of the two planning agencies for the Tocks project. The NPS had been purchasing land for the recreation area under a separate appropriation, although the Corps had acted as agent for the NPS in the actual land acquisition process. Also, the NPS, in coordination with the Corps and state planning agencies, had devised a master design for the recreation area. It was essentially complete by 1971, when the headquarters for the fledgling recreation area were established and a Superintendent, Peter DeGellecke, designated. DeGellecke and his small staff had participated in the park design and were enthusiastically looking forward to its fulfillment. They were imbued with the idea of using the reservoir and swimming beaches as a sort of lure to attract people to the area where they could then be exposed to the less popular and familiar joys of hiking, camping, and nature study.

The Department of the Interior was not an altogether happy family, however. There were some people in the bureaucracy, even in the Park Service itself, who didn't like dams, didn't like mass recreation, and above all, didn't like Tocks. Such a person was Nathaniel Reed, the Assistant Secretary for the Bureaus of Outdoor Recreation, Sports Fisheries and Wildlife, and National Parks. Reed, who never thought much of the Tocks Island Dam, was attracted to the idea of a Delaware Water Gap National Recreation Area based on the *river* rather than on a reservoir. In this attitude, he was joined by several others in the bureaucracies under his direction. Many staff members of these bureaus were outdoorsmen of one sort or other, hunters, fishermen, and hikers. They were naturally sympathetic to the arguments of the conservationists, although they also felt a responsibility to their bureau charter, so that, for example, members of the Bureau of Outdoor Recreation found it difficult to argue against a high density recreation plan unless it could be found ecologically harmful. Members of the NPS also felt something of this split sensitivity; although the designers of the recreation area took pride, of course, in their designs, others in the Service were attracted to a natural systems design for the area.

In early 1971, Reed encouraged a small group in the Park Service, including DeGellecke, to examine the possibility of such a "natural systems plan." Since Interior had no special authority from Congress to implement this kind of plan, which also would appear to undercut the project as then conceived, the study was kept low key and confidential. It was completed in a week during the spring of 1971, undated and anonymous; only 200 copies were made, which were then distributed selectively to several government agencies. The study, "A Natural Systems Plan for the DWGNRA," sketched in broad outline

the concept of a recreation area organized around the free-flowing river with emphasis on hiking, biking, canoeing, and swimming in small offstream impoundments.

No numbers for the capacity of such a plan were given in the study, but the authors had privately calculated that it would be sufficient to accommodate about four million visitations annually, the number projected for the first stage of the reservoir-based design. This number evidently passed by word of mouth, for several people who subsequently read the study were sure that the design assumed a four-million capacity, although they could not recollect how they learned this. The study could not long be kept locked in the government, and it eventually leaked to the public. This greatly pleased the dam opponents, who believed the natural systems plan would provide an alternative for those who did not want the dam but who did want a park. By the spring of 1972, Reed was stating publicly that the law that created the Recreation Area in no way depended on the construction of the dam, an interpretation of the legislative history not accepted by the Corps.

Notwithstanding these events, the main line of the NPS effort was the design of the recreation area with a dam and reservoir. To park planners like DeGellecke the reservoir was attractive from many points of view. Above all, based on previous experience, DeGellecke believed that a park with a lake would attract several times more visitors than one without a lake. Furthermore, since most of the visitors to the area would concentrate at the lake, the rest of the recreation area, which would be far more fragile, could be better protected. Exactly how fragile it would be and thus how many visitors could be permitted in the recreation area were professional judgments made by the park designers. There is no published analysis to show how the estimate of a ten-million visitation carrying capacity for the area was derived. The design finally settled upon envisioned a three-stage development to accommodate four million annual visitations initially and ultimately the ten-million upper limit upon completion of the recreation area ten years later. Thus, by 1971, the Delaware Water Gap National Recreation Area was ready to be developed, along with the dam and reservoir.

By late autumn 1971, after the completion of the environmental impact statement, the Tocks project at last appeared ready to go. The proponents of the dam believed they had a strong case. The benefits appeared clear: water, power, recreation, and flood control. And the costs appeared minimal. All the critical supporting analysis—the benefit-cost calculations, the detailed planning, the demand

projections, the search for alternatives, the environmental assessment—had been completed; and there was scarcely any political opposition to the project. The Corps planned to start construction in early 1972.

II. RESERVOIRS OF DISTRUST: THE PUBLIC RESPONSE

With the issuance of the final Impact Statement and refinement of the engineering design for the project, the private interests both supporting and opposing the dam grew increasingly active.

A. Proponents

The water and power professionals in the Basin generally rallied behind the project, and for much the same reasons as their counterparts in the public agencies. Such support also reflected their own special interests. Thus the several local water supply authorities in the region, separately, and collectively through their umbrella organization (the Water Resources Association of the Delaware River Basin), were constantly engaged in a variety of lobbying activities in favor of the dam. Their fundamental argument was simply that the Basin needed more water; they believed that the safe yields of the present system were under strain and that without new sources growth in the Basin would be stifled.

Similarly, the electric power utilities supported the Tocks project as a way to ensure cooling water for the substantial number of power plants planned for construction on the Delaware downstream from the Tocks dam site. Without such assurance, the utilities would either not be able to expand as vigorously as they hoped or would themselves be responsible for providing the requisite water storage. The utilities were also attracted by the prospect that the Tocks project would permit the construction of a utility owned pumped-storage facility near the dam site to help meet peak demand requirements.

In addition to these professionals, business and labor organizations strongly supported the project. They wished for strong economic expansion in the region—more people, more factories, more jobs—and this seemed to call for more water and more power. Thus, virtually every Chamber of Commerce and organized business association in the region favored the Tocks project, and it was water and power, not flood control and recreation, that lent urgency to their concerns.

For much the same reasons as business, organized labor throughout the Basin region supported the project. Although this support

was often nominal, labor did lobby consistently for Tocks both in the state capitols and before congressional committees in Washington; and as the recession in the construction industry deepened, some members of the construction unions engaged in still more forceful actions: on one occasion they organized a "March on Trenton," in which thousands of construction workers surged through the streets of New Jersey's capitol to the steps of the governor's office, where they issued a series of demands for the thawing of frozen construction projects (Tocks included). On another occasion several dozen workers provoked a nearly violent confrontation with a citizen group reviewing the Tocks project: they surrounded the group's bus, punctured its radiator, and demanded the chance to present their case directly to the citizens group and to the local politicians and planners whom the group was visiting. (Frank Sinden, co-editor of this volume, was present at this latter incident.)

Part of the workers' concern was, of course, jobs, and especially construction jobs. But this concern was not directed merely to the dam itself; nor could it reasonably have been so. The dam, expected to take seven years to construct, would at a maximum employ a few hundred workers, as compared to a construction labor force of over 100,000 in New Jersey alone. As noted by one political observer, "there were more jobs in a half-dozen highway improvement projects than in Tocks." The concern of organized labor was more symbolic and indirect. Although Tocks would not produce substantial numbers of jobs, it was one of several projects in the Basin region—and one of the most visible—that appeared to be stymied by environmental measures and opposition. Tocks thus became symbolic of a long list of grievances and of the imagined unconcern of environmentalists for the plight of the working man. This apparent indifference seemed further galling to many members of the labor organizations who thought also about the recreation area. In supporting the reservoir-based and auto-accessed recreation promised by the project, they believed also that they were supporting the wishes of the average working man. They had little patience with the concerns and interests of the environmentalists and backpackers.

The construction opportunities afforded by the project were less important to labor than the water and power it promised. Tocks as a symbolic and real impulse to economic growth in the region formed the main part of labor's position on the project. Along with the water user associations, utilities, and businessmen's groups, labor believed that a rejection of Tocks would diminish the material basis for growth in the Basin—and worse, would signal a success for the naysayers, for all those who opposed growth either in the name of some elusive environmental purity or for selfish and elitist reasons.

B. The Environmentalists

The field of public action was of course not left only to project supporters. The opposition was substantial, and as time went on became increasingly colorful and inventive. The concerns raised by the opponents were many: the impact of the dam on shad and oysters in the estuary; the potential for eutrophication of the reservoir; the loss of a 37-mile stretch of the river; the destruction of a wild and lovely valley; the destruction of historical homes, many dating back over 200 years.

These specific objections, however, grew out of a more amorphous sensibility. To many opponents of the project, what really counted was the precedent and symbol. They saw the Corps as a sort of malevolent agent of "progress" all over the countryside, running away with the few wild, unspoiled areas left in the Northeast. They wanted to halt this momentum, to have the community face more thoroughly than it had ever done the costs of growth. The opponents of the dam, convinced of the real and symbolic costs of the project, looked hard and skeptically at the alleged benefits; indeed, these benefits to the extent that they were a measure of still more economic growth were not considered real benefits at all. Nor were the opponents appeased by reassurances of the professionals. They believed that the dam supporters were so persuaded of the project's benefits that they largely rationalized away its attendant costs.

Opposition to the project also continued to grow out of local grievances, especially in reaction to the Corps' land acquisition techniques. Many local citizens were coming slowly to believe that the project was not likely to bring the economic prosperity to individuals and to the community initially expected. Much of the concern of the local populace was directed at the recreation area as well as the dam. A good part of the land acquisition was, after all, due to the recreation plan. It was the planned expansion of recreation that would provoke the expected deluge of visitors to the region, and with it all sorts of requirements for new roads and new service facilities. The descent of outsiders to the region was especially upsetting to some. People simply did not fancy an influx of intruders into their quiet valley; and to a small minority there were perhaps ethnic and class overtones to this feeling, for they especially looked askance at urban visitors from New York and Philadelphia.

Reflecting these varied sentiments, a variety of citizens' groups employing a variety of tactics marshalled their forces in 1971 and 1972 to combat the Tocks project. Most of them have remained active from that time to the present, although their composition, their motivation, their relationship to technical analysis, and their tactics have sometimes shifted.

The locally-based opposition groups which march so visibly across the history of the controversy—the Save-the-Delaware-Coalition, The Delaware Valley Conservation Association, the Lenni Lenape League, and others—were really less groups than loose clusters of volunteers lending some financial, some moral, and some technical support to a few persons of great energy and dedication who did much of the work. The activity of any given group would thus wax or wane with the energy and engagement of a very few individuals. Very few individuals and even less money! An impressive aspect of the opposition movement was the vast imbalance in resources available to them as compared to those at the disposal of the public agencies promoting the project. With few exceptions, the project's opponents fought the dam on their own personal time, mainly with their own money, and with a passion that grew out of strong personal convictions or grievances.

Consider, for example, the Delaware Valley Conservation Association (DVCA). The DVCA thrice was at the frontier of the struggle against the dam: first in the early days of the controversy in the late 1960s under the leadership of a resident of Stroudsburg, Nancy Shukaitis, who later became an elected Commissioner in Monroe County, Pennsylvania, bordering the dam site; then in 1970 and 1971 when another local resident, Joan Mathieson, took up the cudgel; and last, when the controversy reached its peak, under the leadership of Mina Haefele. An intelligent and intense woman, Haefele was living as a tenant in her family's ramshackle old farmhouse overlooking the River several years after the house had been purchased by the Corps when she turned full time to the Tocks controversy. Full time in this case meant a flurry of varied activities—attending hearings in Washington, organizing mailing and telex campaigns directed at the Basin governors and Congress, writing articles, distributing press releases, and soliciting funds. She tried successfully to engage the attention of Washington-based environmental organizations, and with them helped coordinate Congressional lobbying efforts. Although (in the view of Haefele and her colleagues) analysis counted a lot less to the relevant policymakers, governors, and congressmen than did simple citizen pressure, she was herself most successful in marshalling evidence—to wit, in producing an analysis—suggesting that the Corps was trampling on the rights of individuals in the taking area, and through its destruction of historical homes, trampling also on the rich historical legacy of the valley.

Quite generally, the environmentalists did not shun the idea of technical and political studies. On the contrary, when the occasion arose, they jumped at the chance to encourage analytic work on the

project, and especially work on possible alternatives to the project. The two groups which most vigorously pursued this path were the regionally based Save-the-Delaware-Coalition and the more nationally oriented Environmental Defense Fund (EDF).

**Save-the-Delaware Coalition:
Recreation Without a Dam**

The Save-the-Delaware-Coalition, with representatives from dozens of conservation groups, was formed in response to the initial Corps Impact Statement, and soon came to play the most important coordinating role in focusing the environmental opposition. Under the direction of its chairman, Harold Lockwood, a lawyer from Philadelphia, the Coalition from its inception played a critical part in mobilizing political opposition to the dam. Members of the Coalition, especially Lockwood, tirelessly sought out policy makers in the state capitols and in Washington and otherwise lobbied strenuously against the dam. Lockwood—affable, energetic, imaginative—also persistently sought to encourage analytic work on the dam, and on possible alternatives to it, that he trusted would call the entire project into question. One of the Coalition's early efforts was to assign two of its members to put together and edit a series of papers prepared by several different authors over the previous years, which, taken together, sketched out a plausible picture of ways to achieve flood control, water supply increases, and recreation without a dam and reservoir. The volume that emerged, "Papers in Support of a Free-Flowing Delaware River" (October 1973) sought to question and counterbalance in some measure the massive studies done by the exuberant supporters of the dam.

In a second venture, the Save-the-Delaware-Coalition sought to sketch a vivid and attractive vision of the valley without a dam. Opponents of the Tocks project on Congressional staffs in Washington suggested that it would be helpful to them to have in hand a substantial report on the positive aspect of the opponents' position—that is, on the future of the land to be acquired by the government if no dam were built. It was taken for granted that this future meant a federal park of some sort. The Save-the-Delaware-Coalition eagerly took up this suggestion and immediately set about raising a special fund and seeking a professional consultant to prepare a plan. The prospect of a constructive, even creative, project contrasted refreshingly with the necessarily negative character of much of the Coalition's previous work. Each member, moreover, saw the opportunity of finally expressing his or her own vision of the Delaware's future in more concrete form.

Their visions, as has been noted earlier, were by no means uniform. Conservationists long concerned about creeping commercial encroachment on rural land at first welcomed the Tocks Island Dam and recreation area because it promised to take a large piece of especially attractive land off the market. As they became aware of the physical magnitude of the reservoir and of the numbers of people it was supposed to attract, however, the conservationists changed their position and opposed the dam while continuing to support federal acquisition of the land.

The landowners who joined the opposition were largely resigned to losing their own land, but hoped in some sad, altruistic way to preserve the land they were sentimentally attached to, at least for others. They did argue for remnants of private ownership or leasing on principle, avoiding positions that would benefit them personally in order not to weaken the opposition as a whole with the appearance of special pleading. Most landowners, it must be said, did not join the organized opposition, because they rightly saw little support in it for their interests. Of course all members of the opposition believed that the area should be preserved, but there was no consensus on what form the preservation should take. Indeed there was no occasion to establish a consensus, since all hands were occupied with opposing the dam. As it later appeared, each individual had formed in his own mind a vision of the Upper Delaware's future, embodying his own tastes and values. In addition, each person had made his own internal compromises with what he imagined to be reality.

Although the visions of the opponents differed in many ways, they were all similar in one fundamental and surprising way: virtually all reflected compromise on the issue of numbers of visitors to be provided for. They were willing to support a plan that called for just as many people as the first phase of the official plan they aimed to challenge, namely four million visitor-days per year. This is surprising not merely because conservationists are notorious crowd haters, but because it was precisely the large numbers of visitors envisioned in the official plan that was responsible directly and indirectly for the most severe and widespread impacts of the Tocks project—the impacts that most concerned the conservationists. People meant cars, and cars mean highways, and highways mean almost certainly the destructive, chaotic, and explosive development of Sussex and Warren Counties.

Every step in this sequence was in itself anathema to the conservationists, yet most of them shared the simple conviction that no plan without large crowds could compete in the political arena. Neverthe-

less, the "Concept Plan for a Delaware River Park," which emerged from the Coalition's efforts, provided an intriguing park design based upon the river, and one that could not so easily be expanded to accommodate the ten million annual visitor-days then envisioned as the final target of the Corps and National Park Service plan. The concept plan also served as the starting point for the Park Service's later intensive planning for a damless park. After some study, the Park Service concluded that the number of visitors should be no more than about two million per year.

**Environmental Defense Fund: Flood Control and
Water Supply Without a Dam**

During 1971 and 1972 another environmental group, destined to play an important role in the controversy, entered the fray. The Environmental Defense Fund (EDF) had been formed in 1967 as a national organization supported by private contributions and dedicated to mounting legal challenges to projects that appeared environmentally damaging. The usual *modus operandi* of EDF was to combat a project in the courts; but this time, the technical director of the Long Island Office, Leo Eisel, a young, serious, hard-driving water engineer, saw an opportunity to influence the decision before it reached the courts.

Eisel's first line of attack was to try to show that even apart from the adverse environmental consequences, the Tocks project did not add up in simple economic terms. To this end, EDF commissioned Gardner Brown, an economist at the University of Wisconsin, to undertake a critical study of the Corps benefit-cost analysis. The Corps had wielded its benefit-cost analysis as an argument for the dam, and the environmentalists believed they needed a public response that would at the least show the tremendous flexibility possible in such calculations. The resulting analysis did tend to neutralize somewhat the political potency of the benefit-cost analysis, although few persons probably took the structured benefit-cost analysis very seriously anyway.

The EDF emphasis then shifted, as had the Save-the-Delaware-Coalition's, to a search for alternatives. Eisel decided that flood control and water supply were the real driving purposes behind the project, and that unless one could show that these goals were unnecessary or could be achieved in other ways, the project would surely go forward; he chose flood control as the first object of investigation. Thus, in the summer of 1972, in cooperation with the New Jersey Department of Environmental Protection, Eisel and an assistant, Laurie Burt, launched a study of flood control in the Delaware

Basin below the dam site, poring over aerial photographs of the flood plain and counting structures, doing field surveys to document the substantial effect of flood plain zoning on the most vulnerable towns, like Burlington, which had reduced the potential damage from flooding on the main stem, relative to the Corps' projections of ten years before.

These investigations resulted in two studies, a preliminary report, "Flood Control—A Field Investigation," September 1972, and "Flood Control and the Delaware River," April 1973, both of which cast doubt on the importance of the flood control purposes of the Tocks Island Dam, and, above all, documented the potential of non-structural approaches. Eisel was encouraged in these studies by some of the policy makers, both in Congress and at the state level, who would soon be making the critical decisions respecting the dam, and to whom Eisel had easy access during the research phase of the enterprise.

Later in the controversy, EDF determined to pursue a concept known as high-flow skimming as a nondam alternative to water supply. The concept was sparked by the imagination and persistence of a physicist at the R.C.A. research laboratory in New Jersey, Smith Freeman; and it was carried out by Freeman and two Princeton University professors: Edwin Mills, an economist, and David Kinsman, a geologist. The three produced a study which suggested that sufficient water to provide an alternative to the water supply functions of the dam could be assured by offstream storage in existing reservoirs, with the water pumped out of the Delaware during high flow periods. This unconventional notion, introduced by three "amateurs," received little notice from the water professionals; and EDF decided that the idea, to get a fair hearing, would have to be examined by a recognized consulting firm who would play by all the traditional rules.

The contractor given the task was Disko Associates of New Jersey, and their report was released in October 1972. The study did conclude that high-flow skimming had substantial potential to increase the water yield of the Delaware, but the study proposed damming one of the most beautiful tributaries of the Delaware, Flatbrook Creek. Although the area flooded by this proposal would be significantly less than the Corps' plan for the main stem, the remedy appeared to many environmentalists almost as bad as the illness. The report presented a straightforward technical solution to a problem, but one that may have missed the central point of undertaking the study in the first place.

PIRG

Later in the controversy, still another environmental group entered the arena, this one with an even more pugnacious attitude than most of the older environmental activists. The New Jersey Public Interest Research Group (PIRG) was founded in the fall of 1972 as a student funded "watchdog" research organization of the kind Ralph Nader had been encouraging. The board of directors, made up mostly of students from Rutgers and Seton Hall Universities, soon had identified the Tocks project as a priority study area, and Chris Burke, the Executive Director and only full-time operative of PIRG, turned full time to the project. Burke, a recent graduate of Oberlin College, brought a clear and definite bias to the Tocks project: "We are suspect of the Corps and certainly suspect of power companies."

PIRG was concerned not simply with preserving the environment in the Delaware River Valley, but also with the broader social and economic impacts of the development on people living in the area. In land acquisition, for example, Burke maintained that the Corps had unjustly treated local landowners and had, to boot, adopted practices that flouted federal law. This deep-rooted distrust of government and big business provided the impulse to PIRG activities and the theme of the numerous press releases put out by PIRG. To Burke, the Tocks project had to be stopped not only because of its specific consequences, but also because it would simply add to what he perceived as a growth mania in the country (more water, more energy, more nuclear power plants) and deflect attention away from energy conservation and controlled growth strategies.

The Squatters

Although not an environmental group or even a group in league with the environmentalists, one other fragment of the public deserves brief mention — the "squatters," a band of some 40 to 100 illegal occupants of abandoned or condemned properties on the Pennsylvania side of the Delaware near the dam site. Feared by some, cheered by many, this small group of counterculture enthusiasts were a continual dramatic focus of journalistic interest. The origin of the squatters is subject of some local debate. Many residents on the New Jersey side claim that hordes of pop music fans, bound for a New Jersey rock concert that was cancelled at the last minute, stopped at the Delaware River and occupied some vacant farmhouses there.

Some original squatters, however, were once legal tenants of their properties. When the Corps of Engineers found itself faced with an

indefinite delay of construction plans, it decided to rent several of the properties it had acquired. Attracted by ads in the *New York Times*, a handful of Greenwich Village residents moved to Shawnee-on-Delaware for the summer. Finding the peaceful and pastoral setting ideal for a pioneer or commune type of life style, the squatters refused to vacate when their leases ran out. Passively resisting eviction attempts, and contesting government action in the courts, they had stayed on for years.

The local residents had somewhat mixed but mostly hostile reactions to the squatters. They believed them to be the source of countless illegal acts, widespread vandalism, and occasionally more violent crimes in the area. Their attitudes became more sympathetic and complex when (in an episode described in Essay 10) the Corps moved on the squatter homes with bulldozers in the dead of night.

With very little money and few active participants, the band of environmental activists opposing the dam were able to keep up a constant hubbub of criticism; and along with the criticism, they sometimes raised new ideas, new alternative possibilities to the dam and reservoir. Some of their anger, criticism, and ideas reached the policy making level and there provided valuable ammunition for their natural allies in the state capitals and in Washington.

However, whatever their abilities, the opposition activists could scarcely have had the success they did in confronting such a solidly supported establishment project if they hadn't also tapped some hidden springs of sentiment. There was, in fact, a constituency of ideas that the activists were able in some inchoate way to speak for and speak to—concerns about growth, pollution, overbearing technology, that were shared by many citizens and many policymakers.⁵

III. CLOUDS OVER WASHINGTON: THE POLITICIANS

Although the activities of the environmentalists were important, the main arena of opposition to the dam shifted unexpectedly in 1971 and 1972 to Washington: unexpectedly, because hitherto there had been no serious dissent to the project emanating from Congress or the Administration. Virtually every congressman with a district in the Basin supported the project, and perhaps more importantly, the project was strongly backed by the key public works subcommittees.

As with all legislation, public works appropriations must run a gauntlet in both Houses of Congress, from subcommittee to committee to the full House or Senate, to Senate-House conference, back

to the full Congress for approval, and thence to the President. And, as with all but the most extraordinary legislation, the fate of the bill is largely determined in the subcommittee and committee deliberations. Congress had authorized the Tocks project in 1962 and the DWGNRA in 1965. Thenceforward, the annual appropriations had each year to go through the two appropriations committees.

Appropriations bills must originate in the House: for Tocks, in the Subcommittee on Public Works of the House Appropriations Committee for funds appropriated to the Corps; and in the Interior Subcommittee for funds appropriated to the National Park Service for further land acquisition. These subcommittees then report to the full Appropriations Committee for "mark up" sessions in which the subcommittee reports are frequently amended. After approval by the full House, usually a formality, the journey begins again in the Senate, first in the Subcommittees on Public Works and on Interior and Insular Affairs of the Committee on Appropriations, then to the full Committee, and finally to the Senate. Differences between the House and Senate versions are then worked out in the House-Senate Conference.

The dominant factors in this process were the crusty and canny chairmen of the two Public Works Subcommittees, Joe Evins in the House and John Stennis in the Senate. These veteran congressional chieftains strongly supported public works in general, and their support for the Tocks project seemed to ensure an uneventful and successful passage of the project from the drawing board to the first bulldozer. But this easy state of affairs was suddenly disrupted, in large measure by a single study on eutrophication, the McCormick Report, which the Corps had commissioned in March 1971. The study achieved prominence due to the importance attached to it by the President's newly formed Council on Environmental Quality (CEQ), a small group in the Executive Office of the President responsible for reviewing the Environmental Impact Statements required under the new National Environmental Protection Act.

The McCormick Report resulted from a series of informal discussions between members of the Corps, CEQ, and others during the late fall and winter of 1970, at the time of the initial Environmental Impact Statement concerning the possibility of eutrophication (unwanted algal blooms) in the Tocks reservoir. (Essays 8 and 9 describe and discuss eutrophication in considerable detail; in fact, as is noted there, eutrophication is a complex phenomenon and can mean different things to different people). Eutrophication was a phenomenon often observed in other reservoirs and certain lakes, and despite the Corps' assurances that it should not be a serious problem

for Tocks, it was a natural concern to the CEQ. The Army agreed that construction would not begin until there was an independent study of eutrophication, and turned to Jack McCormick and Associates, a newly formed consulting group in Philadelphia directed by a terrestrial ecologist, Jack McCormick. The firm hired as chief consultant to the study Tom Cahill, a water ecologist, who actually wrote much of the report. The study was initiated in the spring of 1971, and released along with the Corps' Final Impact Statement in October 1971. Its main conclusion, that "accelerated cultural eutrophication is likely to occur after creation of the proposed Tocks Island Lake," had immediate impact.

The McCormick Report was received at CEQ in October, where it was reviewed by a young, thoughtful staff analyst, Steve Sloan, who at the time was responsible for reviewing *all* water resource projects in the eastern United States. In Sloan's view, the report suggested clearly the dangers of eutrophication of the Tocks lake and the foolhardiness of proceeding with the project before that danger was fully addressed; and he persuaded CEQ chairman Russell Train to so notify the Army. This Train did, adding in his comments CEQ's additional concern also that reservoir drawdown during the summer would expose mud flats and create a variety of detrimental impacts on recreation, water supply, fisheries, and downstream water quality.

After some further exchange of correspondence between CEQ and the Army, CEQ hardened its position, noting that its approval of the project depended upon assurance from the Basin governors that the environmental problems raised by CEQ, especially the eutrophication problem, would be adequately handled. Such a request by CEQ had no force in law and its influence on the Army depended on the degree of support CEQ could obtain from the White House and from Congress. The Army, on the other hand, would have liked the White House especially to direct the Corps to go ahead. But 1972 was an election year and the White House, as we now well know, was preoccupied with the coming election campaign.

The President's contact men (John Whitaker and John Ehrlichman) did not want to rock any boats unnecessarily; they neither wished to endorse the project over the objections of the President's chief environmental advisor and project opponents in the Basin states, nor to antagonize the congressional and local supporters of the project. They thus did not try overly hard to impose a decision one way or the other, but suggested rather that the Corps and CEQ work things out themselves. At the same time, the Office of Management and Budget, presumably acting under similar White House

guidelines, also took a hands-off attitude. This benign neglect forced, but also permitted, CEQ to look to Congress for support.

And in Congress CEQ discovered important allies: Howard Robison, a Republican representing the 27th District in New York, and a member of the Public Works Subcommittee of the House Appropriations Committee; Clifford Case, Republican senator from New Jersey, whose administrative assistant, Gar Kaganovich, had independently become wary of the eutrophication danger; Congressman Pierre duPont, Republican from Delaware, who had in the previous year been virtually alone among congressmen in speaking against the Tocks project; and James Buckley and Jacob Javits, senators from New York. But the key role in translating the CEQ misgivings into an effective constraint on the Corps was played by Robison, who managed both to place the CEQ stipulations into the Appropriations Bill for the Tocks project, and to persuade Governor Rockefeller not to issue an assurance that New York State would move quickly to meet those stipulations.

During all these maneuverings, the only analytic works that seemed to have had any real consequence were the McCormick study, and to a lesser extent the Impact Statement; even these studies appear to have been read by a mere handful of people: by Sloan at CEQ, and, in parts at least, by legislative assistants to Robison, Case, and duPont. Most of the concerned congressmen also had available as background a miscellany of studies produced by the Corps and DRBC, namely the 1961 Corps HD522 Survey, the most recent Corps benefit-cost analysis, and various DRBC staff studies and public information releases. However, it is doubtful that any of the congressmen had read these studies in any detail. Whatever the readership of these other studies, the eutrophication issue certainly became the most dominant politically, far surpassing in importance other environmental concerns touching, for example, the effect of the dam on oysters or shad.

There were probably several reasons for this. Perhaps most important, eutrophication (if it occurred), unlike the other problems, would significantly diminish one of the main benefits of the Tocks project—recreation. It thus seemed to undermine one positive argument for the dam. This perverse character of eutrophication was probably more important in its political impact than simply the calculable reduction in the monetary benefits of recreation it implied. Moreover, the impact on recreation affected a fairly clear constituency: those who would use the recreation area and those who would live nearby. It was also important politically that the

eutrophication issue could not simply be absorbed by the project. To combat (or at least ameliorate) the shad problem, the Corps incorporated a fish ladder; to ensure that the oyster beds would not be adversely affected, the Corps agreed to change the planned operation of the Tocks reservoir so that the spring flows into the estuary would not be diminished (a decision with a real, but largely hidden, cost). With eutrophication, however, the Corps could not on its own meet the environmentalists' objections; actions by the involved states in establishing effective sewage systems appeared necessary.

Moreover, eutrophication presented a vivid symbol of ecological hazard for those who were searching for such symbols. By comparison, the shad and oyster were deficient symbols: both resources had already suffered enormous injury from water pollution, and it was difficult for an urban populace to take the preservation of natural systems in their backyards as seriously as, for example, they might take the preservation of virgin areas of Alaska. Shad runs up the Delaware do not provoke the imagination of the Basin populace the way salmon runs have elsewhere. But eutrophication, as nature's backlash, was well matched to the East Coast's urbanity and skepticism.

The intellectual journeys that brought key figures in Washington to support or oppose the Tocks project were varied. Most congressmen on the public works subcommittees tended to trust the Corps' analysis and, in general, to favor public works projects, especially in a case such as Tocks where the project also appeared to have the support of a crucial regional body like the DRBC. The environmental mood of the 1970s had not yet descended on most of Congress. In a mini-debate on the Tocks dam on the floor of the House in 1971, James Wright of Texas doubtless spoke for many when he described with a religious fervor the case for intervention:

We cannot keep people from intruding upon the earth, and the interests of people must come first. Nature sometimes, as in this case, needs the corrective surgery of intelligent men, under the injunction given to us in the Book of Genesis, to subdue the earth and husband its resources.

And Wright also spoke for many congressmen in his contempt for those who argued for further study of projects such as Tocks. They reminded him, he said, of Kipling's description of old men:

They peck out, dissect, and extrude to the mind
The flaccid tissues of long-dead issues

Offensive to God and mankind
Like vultures over an ox
That the army has left behind.

Such attitudes were further reinforced by the personal experience of the congressmen with districts in the Delaware Basin. Some, like Frank Thompson of New Jersey, remembered vividly the floods of 1955, and others, like Fred Rooney of Pennsylvania, saw the project as an economic and recreation boon to their districts. Thompson also was attracted to the idea of establishing the precedent of public power in the Northeast; the 70 megawatts of electric power to be produced by the dam, trivial in economic terms, in this sense took on symbolic importance.

The chief congressional foe of the Tocks project in 1971—and virtually the only one at that time—was Pierre duPont. Through discussions with scientists at the University of Delaware, duPont and his administrative aid, Austin Olney, became convinced that the dam might cause a serious ecological imbalance in the estuary, robbing it of nutrients and fresh water flows and eventually affecting adversely oysters and other fish life. This concern in turn led duPont to question the apparently casual way in which the Corps had performed the environmental assessment required by NEPA; and this formed his main argument in support of an amendment he offered on the floor of the House to strike the \$3.7 million construction funds the Appropriations Committee had designated in the Public Works Bill.

It was this amendment that inspired the hyperbole of Congressman Wright quoted above, in a debate that ended with a crushing rejection of the duPont amendment in a voice vote. (In duPont's recollection, the "Noes" rolled across the Chamber like thunder.) By this time, however, the CEQ had entered the controversy, and duPont was soon to have several allies both in Washington and in the Basin states that now had to act on the Tocks decision.⁶

IV. THE GOVERNOR AND THE ADVISOR

A. Introduction

The events in Washington put off for a time the start of construction by throwing the responsibility for decision back to the DRBC. There appeared little question that Congress would appropriate the necessary funds to initiate the construction once the DRBC Commissioners approved the project and satisfactorily resolved the environmental issues raised by CEQ. The focus of decision thus

moved to the Commission—that is, to the four Basin governors, especially the governors of New Jersey and Pennsylvania, whose states would be most affected by the project.

Not until this time (early 1972) did New Jersey Governor Cahill begin to think seriously about the Tocks Island project. Until then, there was little reason for the Governor to focus on the dam. No decisions were necessary; the Corps had been implementing the various procedures required by the National Environmental Protection Act, and was otherwise gradually purchasing land and refining the project design. Whatever Cahill now decided would likely be decisive; his approval would almost certainly set the project in motion. Although the governor of New York and his chief environmental advisor saw some potential problems, virtually all other involved politicians appeared to support the project. The governors of Delaware and Pennsylvania were in favor of the dam, as were all the New Jersey and Pennsylvania congressmen with districts along the Delaware. The previous New Jersey governor, Richard Hughes, had also, while in office, formally endorsed the Tocks project.

There was, however, little political pressure on Governor Cahill to make the decision one way or the other. Outside the impact area itself, most of the public scarcely knew about the project, and its benefits were sufficiently diffuse and nonimmediate to discourage the formation of any strong pressure group (although, as already noted, there did exist some ardent bureaucratic sentiment in favor of the project). There was nominal support for the dam from labor, industry, the utilities, and some newspapers, but these groups never could make the project widely visible to the public. Although the Governor had supported the dam while he was a congressman from southern New Jersey, a change of sentiment now would cause him no more than a momentary embarrassment. For why shouldn't he have earlier been in favor of the project? It had appeared then as an excellent idea, an unmixed blessing of water supply, flood control, power, and recreation—for which, moreover, the federal government would pay almost entirely.^b Thus, in the spring of 1972, Governor Cahill believed himself open-minded on the project and politically unencumbered. With this frame of reference, he turned for advice to his Commissioner of Environmental Protection, Richard Sullivan.

Sullivan had become Commissioner in 1970 at the outset of the Cahill administration. Before this time he had been in the state government for over two decades, starting out as a \$2,900 per year air pollution control officer in 1951, and rising to the chief environ-

^bThis last was a delusion, as noted in section VI below.

mental position in 1969. Previous to his government career, Sullivan had studied engineering and also held graduate degrees in Public Health and English. By 1972 he had become an extremely effective advocate for an increased government role in environmental protection—an advocacy marked by a particularly affable and witty style of public speaking. His views on the environment were thoughtful, searching, and always reasonably pragmatic. Although a strong proponent of increased environmental protection, Sullivan remained aware of the economic, social, and political costs frequently associated with such protection, and he sought compromises.

Sullivan's views were moderate in another sense. While he had developed a lively respect for nature (illustrated, for instance, by his conviction that there were ecological benefits to be gained from a flooding river: "A river is not just a transportation corridor, but a biological system"), he was by no means a conservation purist. He personally enjoyed tent trailer camping, for example, and hoped that the planned Tocks recreation area would have provision for trailer camps—a prospect that appalled the Sierra Club and most other conservationists. From the beginning of his interest in the Tocks project, Sullivan was much more alert to the ecological arguments advanced by the project opponents than to the anguished notes struck by the backpackers and wilderness buffs, to whom he felt the state owed no special obligation.

The Department of Environmental Protection (DEP), which Sullivan headed, was formed in 1970 (on "Earth Day") at the time Sullivan became its Commissioner, by combining the agencies from the Division of Clean Air and Water (which Sullivan had directed previous to 1970) with several agencies from the Department of Conservation and Economic Development, including the agencies responsible for the development of water resources in the state. Thus DEP contained within it the two bureaucratic interests that would tend to feel most strongly about Tocks, pro and con. Much of the argument with respect to Tocks would therefore be worked out at Sullivan's level rather than the governor's. By 1972, Sullivan and DEP had established a strong reputation as environmental advocates. In several areas they had pioneered widely popular policies that had placed New Jersey at the forefront of the national attack on environmental despoliation (for example, the establishment of a motor vehicle emissions testing program). Although there was some grumbling from within the state, the environmental program of the Cahill administration was, in general, considered a definite political plus.

It was against such a background that Sullivan and his personal staff undertook their investigation of the Tocks issue. This review

was actually carried out in two distinct phases. In the first phase, during the spring of 1972, Sullivan, working more or less alone and without any substantial review of the relevant documents, concluded (for reasons to be indicated) that the project raised several serious issues that required more study prior to any decision to proceed. Governor Cahill accepted this view and announced it at the annual meeting of the DRBC in May to his startled colleagues, who had had no inkling of Cahill's doubts up to that point. The second and more intensive phase of the review then began in DEP. The staff person most responsible for working with Sullivan in this endeavor was Thomas O'Neill. O'Neill, like most of Sullivan's staff, was far more interested in the environmental aspects of DEP's responsibility than in the Department's residual responsibility for economic development. He had once been a U.S. Army intelligence analyst in Berlin, and before joining Sullivan's staff in 1971 had spent two years at Princeton University studying various techniques of social analysis. This background prepared O'Neill to be somewhat skeptical of professional analysts working in the bureaucracy, which when coupled with a view of the environment similar to Sullivan's, shaped the way he tackled the Tocks issue.

B. The Analyses

The analytic work on hand, as O'Neill and Sullivan initiated their review of the project, was sparse; it included, most importantly, the massive eleven-volume Delaware River Basin Report (HD 522) prepared by the Corps in 1961 (described above in essay 2); the Corps' Environmental Impact Statements; the ubiquitous McCormick Report on eutrophication; water demand estimates by the Delaware River Basin Commission; and two consultant studies of the expected social and economic impact of the project, one by Robert Nathan Associates investigating economic growth implications, and one by Edwards & Kelcey, analyzing the impact of the recreation area on new road requirements for New Jersey. Actually, at the time Sullivan initiated his review of the Tocks project, this last report was buried in the depths of the Department of Transportation; it was not known to Sullivan or the Governor, nor apparently even to the planners designing the recreation area.^c

In addition to these documents relating specifically to Tocks, Sullivan and staff were aware most significantly of the 1969 Report to the President on Flood Control by the special ad hoc committee asked to examine federal flood control programs. This report noted

^cThe annotated list of technical studies at the end of this volume contains the full citations of the studies referred to here.

that despite vast sums being spent on flood control structures, annual flood damage was rising dramatically in the United States for the reason that development on flood plains continued to grow. They were also aware of the work underway at the Environmental Defense Fund which indicated that in the fifteen years since the floods of 1955, development along the Delaware tributaries had risen markedly while the number of persons and structures in the main-stem flood plain (the part of the Basin that would be protected by the Tocks Island Dam) had stabilized or perhaps even declined. Coupled with this work, EDF had also helped to persuade Sullivan's group that flooding along a river provides ecological benefits, by fertilizing the lands adjacent to the river. This ecological argument was made most dramatically to Sullivan in a film, "The Flooding River," prepared by Lincoln Brower, an ecologist at Amherst. It is interesting to note in passing that EDF approached Sullivan on these matters, not the reverse; and only after Governor Cahill's announcement in May that he had doubts about the project.

These then were the expert documents and ruminations on the Tocks project available to Sullivan and staff. What story did they tell? In sum, the story seems to have been very spare. The entire array of analysis had almost no influence on the *personal* position of Sullivan or even (eventually) Cahill toward the dam, though it did, as will be noted, play an important political role nonetheless. In the first place, some of the studies were clearly contrived to support a particular goal, for or against the dam, and were consequently discounted by the DEP staff. The DRBC staff papers, for example, appeared to be building a case for the dam, and did not seem thorough or balanced in their arguments. Similarly, the Corps environmental impact assessments were organized to support the Tocks project. They displayed the impacts in as narrow a framework as possible while always counterpointing them with possible ameliorative measures (fish ladders and such).

Of course, not all the studies had this adversary character (for example, the Edwards and Kelcey Report, the Nathan Associates Study, the McCormick Report) and some that did contained interesting analyses that could not cavalierly be discounted simply because they were partisan. But much of the analysis also had insignificant impact because it did not seem to address the issues that really mattered to Sullivan and the DEP staff. For example, with the exception of the Nathan report, the studies never confronted the impact of the project on the future pattern of development in the rural areas of northwest New Jersey. Nor did the studies really say much about the manifold ecological implications that must follow

from the dam. Above all, the studies said very little about who wins and who loses if the dam is built.

Certain of the analyses did have an impact; at least they supported what O'Neill and Sullivan already believed, and were frequently referred to by the DEP group in ensuing discussions. Thus, the Edwards and Kelcey Report gave estimates of the massive costs of new roads required by the project, costs which had nowhere entered the Corps' benefit-cost analyses. The McCormick study seemed especially important, as already suggested, for if it became necessary to control the nutrient flows into the reservoir, New Jersey's plans for the construction of sewage facilities for effluents draining into the lake behind the dam would probably be significantly affected. (Also, New York State would have to become involved in the project in a much more direct and perhaps less neutral way than hitherto.) However, in sum, even the best analytic work available to O'Neill and Sullivan did little more than suggest that many secondary impacts of the project had not yet been fully considered.

C. The Bureaucracy

The skepticism toward the alleged project benefits engendered by these analyses was also reinforced in the eyes of Sullivan by the apparently far from disinterested positions taken by the water resources group within DEP and by the DRBC staff. The Corps of Engineers position had already been almost automatically discounted as deriving from a bureaucracy that would willy-nilly promote dams. But DEP's own water resource group might have been expected to hold a less committed view on the project. This expectation, however, gradually eroded as the DEP water professionals appeared to Sullivan consistently and uncritically to reject possible alternatives to the dam such as the high-flow skimming concept described earlier. Sullivan (and Cahill) also did not believe they could rely upon the DRBC staff—in principle available to the Governor qua Commissioner—for a critical assessment of the project. In particular, they did not think that the staff could comfortably adopt the more parochial statewide view Cahill needed, or capture the concern with land use that was appearing increasingly important to the Governor.

D. The Uses of Analysis

Persuaded by neither the available analyses nor the experts as to the proper fate of the Tocks project, O'Neill and Sullivan had to construct their own position. In doing so, they took a rather cool view of the project, perceiving in it little romance or drama. If it was to be built, it should be simply as a means to an end. And what was

this end? Was it worth the environmental complications the dam promised? The DEP group came increasingly to the view, as O'Neill later recalled, that "the project simply did not add up."

The benefits were derived from both implicit and explicit assumptions of continued growth in the demand for energy, for water, for recreation, and for flood plain development, while at the same time the costs of this growth were hardly addressed. The project appeared to be encouraging a haphazard development in rural north west New Jersey in return for some highly dubious benefits. The local politicians and planners in the primary impact area felt completely at a loss to cope with the expected rampant development in the region and ensuing pressures on local services of all types—fire, police, hospital, solid waste collection, road repair, and so forth.

As the DEP staff looked in such detail at the problems the Tocks impact region would experience, they began to question both the inevitability and the value of growth in that part of New Jersey, a process perhaps not clearly defined in their own minds, but certainly including the continuous conversion of rural and farm lands to more intensive uses. It is doubtful that any of the analytic work on hand at that time had any significant role in this growing skepticism, with perhaps the exceptions of the Nathan Study and the EDF work on flood control, especially the latter, which did suggest the paradox of flood control programs that encouraged the further development of the flood plains.

Notwithstanding these deficiencies, the available analytic work did have an influence. The analyses posed projections and Basin needs for water that had to be answered. Although these analyses were flawed and often unconvincing, there they were! And, politically, it is difficult to fight something with nothing. If Sullivan and staff were to oppose the Tocks project, they would have to do more than merely criticize the existing analytic work. In particular, the Commissioner, and ultimately the Governor, were faced with two apparently very strong arguments *for* the dam: (1) the dam would provide additional assured water supply from the Delaware; and (2) the dam would provide flood control protection for people and structures already on the main-stem flood plain.

The water supply argument was a blend of two separate points: first, that there was a requirement for more water; second, that Tocks was the best way to meet the requirement. Perhaps no argot of analysis is as misleading as the notion of "requirement" or "need." Above all, the concept hints ominously of disaster should the requirement not be met. The concept supports powerfully the bureaucratic and political syndrome of prudence, of not being caught short;

and it also supports the professional's concentration on disaster. The political system finds it difficult to accept the costs of shortages, even when these are neither too severe nor too frequent (a point made more fully in essay 1). To use them deliberately as a planning tool to discourage growth is even more difficult for politicians to accept. For these powerful political reasons, the DEP staff's response to the water supply argument for the Tocks project was to stress the possibility of some alternative to the dam: perhaps high-flow skimming, perhaps something else. But in the absence of any systematic investigation of alternatives, Sullivan and staff felt hard pressed to oppose the dam outright.

The flood control argument in favor of the dam was still simpler, and perhaps more powerful. Two pieces of analytic work appeared to be crucial in shaping the Governor's and Commissioner's views in this case: the detailed study of past and potential flood damage in the Basin by the Environmental Defense Fund, and the Corps' own benefit-cost analyses. The key points made by the EDF studies (reviewed earlier in this essay) were politically useful to Sullivan and the Governor. The studies had noted that there were continuing and rapid developments in the flood plains of the Delaware tributaries, where all the loss of life in the 1955 floods occurred, and that would not be directly protected by the Tocks Island Dam; by contrast, over the past decade there had been a substantial decline in the number of structures on the main-stem flood plain below the dam site. The Governor could safely argue, if he wished, that were flood control the goal, Tocks did not appear the most effective way to achieve it.

The importance of the Corps' benefit-cost analysis derived from its relatively low assessment of the project's flood control benefits—about \$2 million per year. This reflected the Corps' judgment that very severe flooding on the Delaware capable of causing hundreds of millions of dollars of damage was highly improbable. The low estimate, of course, markedly deflated the political potency of flood prevention as a major purpose of the dam. It stood, for example, in engaging contrast to the Corps' attempt to emphasize the costs of a single flood, probabilities aside, when it released a calculation estimating the effects of Hurricane Agnes had it struck the Delaware (above the dam site) rather than the Susquehanna Valley in 1971.

E. The Alternatives

O'Neill and Sullivan had now to translate these various perspectives into a defensible position for the Governor to adopt at the special DRBC meeting to be convened in September. They chose a threefold strategy. First, they did not confront the DRBC and the

Corps' analyses directly; although they were themselves skeptical of the benefit-cost and other studies, they chose not to emphasize this publicly. Second, they selected from the analyses already available certain problems which, they argued, required safeguards before the project should be undertaken; in particular, the analyses suggested that something would have to be done about control of flood plain development, new road construction, regional sewage facilities, and prevention of eutrophication. Finally, they stressed the importance of dealing also with problems only glancingly studied previously, especially the danger of uncontrolled growth in the impact area, which the local communities seemed ill equipped to handle. This threefold strategy did not include any call for new studies.

The arguments were woven first by O'Neill and then by Sullivan into a paper for the Governor setting forth six possible alternatives, ranging from an unconditional go-ahead for the project to outright opposition. By this time, O'Neill and Sullivan had personally reached the conclusion that the dam should not be built. They recommended, however a middle-of-the-road position, where the Governor would approve the project only if seven specified conditions were met. These conditions, which articulated the wanted safeguards (many of which they knew well would be difficult to achieve) were as follows.

1. That New Jersey and Pennsylvania enact legislation to give authority to the state governments (rather than to local zoning boards) to control land use in the Delaware Basin flood plains.
2. That the DRBC authorize the construction of a dispersed sewage plant system.
3. That a plan be devised to control nutrient flows into the Tocks reservoir for the purpose of preventing eutrophication.
4. That state and local units of government in New Jersey be given authority to control land use in the primary impact area.
5. That the federal government provide substantial funding for the construction of highways required to access the recreation area.
6. That the recreation plan be scaled down to accommodate a maximum annual user load of four million day visits (from ten million).
7. That the federal government consider payments in lieu of taxes to local units of government for loss of ratables as a result of federal acquisition of lands.

The question may be asked why this rather than the more drastic alternative was chosen. One reason certainly was the hope by both Sullivan and the Governor that the occasion could be used to wrest

from the New Jersey Legislature some legislation that would be desirable even were there no Tocks Island Dam: for example, the flood plain and primary impact area zoning authority. However, Governor Cahill has since also made it quite clear that he did not want all the conditions to be met too readily; they were deliberately framed to ensure a long breathing spell for people to think through the Tocks project anew. Probably the main reason why Cahill chose the more moderate alternative was that he was not yet ready to question sharply the value of more growth in the state.

F. The Decision

By the end of the summer of 1972, Governor Cahill had come to share Richard Sullivan's concern with the social impact of the project on northwest New Jersey and had fully accepted his suggested alternative. He now essentially shared Sullivan's perspective on the environmental hazards and was even more skeptical than his Commissioner of the alleged benefits of the project. For example, unlike Sullivan, who strongly supported the establishment of a recreation area, albeit without the dam, Cahill remained skeptical even of this. Moreover, the political dangers of opposing the dam still remained low. Not only was the project something most of the states' citizens hardly knew existed, there were now other politicians opposing the dam, notably Joseph Mariziti (R), who was running for Congress in the thirteenth Congressional District, bordering Tocks.

Before Governor Cahill announced his decision, he wanted to obtain a firsthand feel for the problem as it was perceived by local politicians. Consequently, on the weekend before the special DRBC meeting, at a breakfast meeting in an inn near the dam site, Cahill met informally with over 100 county freeholders, planning board members, and other local politicians from the Tocks region. Cahill later described this meeting as "electrifying." Cahill now heard the anguished laments of communities not prepared for the influx of ten million visitors per year to the recreation area. The politicians and planners had real and specific concerns: loss of tax revenue due to federal condemnations, not enough fire protection, insufficient police, no capability for solid waste disposal, not enough ambulances or hospital beds. Above all, without any effective zoning authority, the local communities seemed to stand completely helpless before a haphazard sprawl of motels, restaurants, and trailer camps, which the recreation area and new road construction would threaten to bring.

The vividness with which Cahill recalls this meeting is interesting. In a talk at Princeton after he left the governorship, Cahill commented that one of his greatest mistakes as governor was not under-

taking more such personal visits—whether to hospitals, schools, prisons, or reservoirs. Indeed, even the *trip* (by helicopter) to the breakfast meeting had an impact. The Governor recalled his shock at the extent of the land to be flooded by the project as, for the first time, he flew low over the 37-mile stretch of valley above the dam site.

The Governor duly announced his decision on September 13, 1972, listing the seven conditions that would have to be met before he could approve the project. It was a decision that neither supported nor opposed the dam outright.⁷

V. FROM IMPASSE TO STUDY

The period after the Cahill decision was a time of lazy maneuver and of general frustration. While the professionals sought somewhat desultorily to respond to the Cahill conditions, the Basin state governors each undertook still another review of the project: Malcolm Wilson of New York, now more than ever concerned about the impact of the project on the poultry and dairy farms of New York; Milton Shapp of Pennsylvania along with his old pro Secretary for the Environment, Maurice Goddard, steadfastly in favor of the dam; Sherman Tribbitt of Delaware, steadfastly uncommitted; and in New Jersey, a new Governor and new Environmental Commissioner, Brendan Byrne and David Bardin, hewing for the time to the Cahill holding pattern.^d For the environmentalists this was the season for looking for alternatives: the Save-the-Delaware-Coalition's alternative recreation plan and the Environmental Defense Fund's study of high-flow skimming, both previously mentioned, were done during this interlude.

But no one was happy with the impasse. The project hung over the environmentalists like a sword, and to the local populace surrounding the dam site, the indecision and frozen expectations were perhaps worse even than a determination to construct the dam. The Corps, the Delaware River Basin Commission, the water companies, and the utilities could not set their own plans in order until the project was finally approved or rejected once and for all. In the states, as long as the Tocks project remained in suspension, there could realistically be no sustained investigations or implementation of alternative water

^dCahill had lost in the Republican primary in the summer of 1973 on issues unrelated to Tocks. Byrne, a Democrat, entered office in January 1974, and Bardin replaced Sullivan soon thereafter. Tom O'Neill remained as staff assistant to the Environmental Commissioner and continued throughout this period to play a principal role in defining the state's position toward Tocks.

supply and recreation schemes. And in Congress, Joe Evins and John Stennis wanted the Tocks project resolved and off their subcommittees' agendas—one way or the other. In their view, each year's delay merely increased the cost of the project. They believed that the environmentalists wanted the project environmentally perfect before it even began, and that they would probably never be satisfied.

How to get the project off dead center had therefore become everyone's question by the spring of 1974. To Evins the answer was to precipitate a court test—vote out construction funds, set the first steam shovel into operation, and then let the environmentalists dare to seek an injunction; their arguments were, he believed, frivolous and overstated and would soon be seen as such. Partly to forestall such a maneuver by Evins in the House and by Stennis in the Senate, some of the dam opponents (or at least skeptics) in Congress launched a competing idea of how to break the impasse: an intensive, comprehensive, year-long study, after which the decision would be made.

Another study! Did anyone really expect that any study, no matter how thorough and imaginative, would change people's attitudes toward the project or goad reluctant politicians toward decision? And yet a study did promise some benefits. It might in fact make it easier for the skeptics in Congress and the states to find a basis for finally opposing the project outright, and it would anyhow forestall the start of construction still another year. To project supporters in Congress, the significance of the study promised to be its insignificance—with its completion, the policy makers would lose their last excuse for delay. There was also a fond (and small) hope held by some on both sides of the controversy that perhaps the study would in fact finally resolve the outstanding issues and persuade the *other* side that *it* was in error.

It could certainly not be denied that there were such outstanding issues. Indeed, despite the vast number and variety of studies that had been undertaken during the previous decade, a substantial fraction of the issues which policy makers and citizens really cared about still remained unclear, uncertain, and in many instances, altogether unexamined. The clearest such issue was whether the project was in fact needed—whether without the dam there were ways to achieve the project benefits of water supply, flood prevention, power, and recreation.

This question had both a narrow and a broad interpretation. In the narrow view, the issue was whether the benefits defined by the Tocks project could be met otherwise if the dam were not built. Could other ways be found to reduce flood damage on the main stem,

provide mass recreation at the Water Gap site, implement large scale storage of energy, provide water for power plant cooling, and, above all, make water available for export out-of-Basin to northern New Jersey? These questions had to some extent been addressed, but for the most part not very thoroughly. The agencies responsible for studying the alternatives and with the resources to do so were also the agencies most committed to the project; they displayed a coolness in pursuing alternative possibilities that could undercut the dam.

The search for alternatives could also be given a broader interpretation, and one in fact more nearly touching the kinds of arguments the protagonists in the controversy were actually forwarding. The analyst need not restrict himself to the specific purposes defined by the Tocks project, but could instead inquire more generally into ways to achieve a balance of water supply and demand in the Basin service region, flood reduction not only on the main stem, and so forth. Thus, for example, instead of investigating a natural systems alternative for the recreation area, one could instead consider ways to maximize recreation opportunities throughout the entire region, not merely at the Water Gap. Such an investigation would have been especially appropriate as a response to the often stated concerns of some of the dam supporters that a recreation area at the Water Gap should cater to the urban poor and working classes in Trenton, Philadelphia, Newark, and New York; it seemed rather to those who opposed the project that such concerns could better be resolved by a series of recreation opportunities close to the people, not by a relatively distant park to be reached only by automobile. But neither side of this dispute undertook a systematic regional analysis of recreation.

The water supply alternatives above all seemed to require the broader perspective. Even a casual examination called into doubt the uses to which the Tocks-created water supply were to be put. None of the major projected demands—water for cooling power plants, exports of water out-of-Basin to northern New Jersey, and enhanced stream flow to prevent a salt intrusion up the estuary—had been critically examined. Nor had the region's water supply potential been thoroughly explored.

Many of the environmental and social consequences of the Tocks project also remained in dispute, their analysis having inspired little field research, little theory, and little attention by scientists, economists, and other professionals. For example, the eutrophication issue, under study since 1970, remained unresolved. The best available water models were completely inadequate, and the data relevant to the Delaware Basin were markedly deficient. Also, at least one new

environmental issue had been raised that needed some further study. The Medical Society of New Jersey, under the prodding of one of its members, Dr. Gerald Rozan, had suddenly passed in May 1974 a resolution opposing the Tocks project. The basis of the opposition was the Society's concern that upstream runoff of chicken effluent into the reservoir might lead to salmonella contamination, the spread of a communicable disease caused by the salmonella bacilli.

With respect to the expected social consequences of the dam, no one had a clear picture of the probable secondary impacts: the expansion of roads, commerce, industry, and residential sprawl in northern New Jersey. Although the Nathan Associates study of 1966 had made an excellent initial attempt at such an analysis, there had been no systematic study since that time. There never had been a study of the project winners and losers, especially of the residents in the taking area, who would be the most deeply affected by the project. In sum, for reasons both simple and subtle (anticipated in essay 1 and discussed in detail in the final seven essays of this volume), a substantial variety of salient issues remained unresolved.

So the idea of a study finally did come to appear attractive to many, especially if its sponsorship and terms of reference could be widely agreed upon. These were no small tasks, however. Those who had doubts about the project wanted an independent agency to sponsor and define the scope of the study. But which agency? The Council on Environmental Quality, an initial candidate, did not have the staff or the experience to conduct a study of the character envisioned; nor was it a disinterested party who would be acceptable to the project supporters. The Environmental Protection Agency had the staff, but it also was suspect by some; John Stennis especially objected—EPA's budget is reviewed by the Interior Subcommittee of the Senate Appropriations Committee, on which Stennis does not serve. Another candidate, the National Academy of Sciences, objected to doing a study of such scope in the time allotted.

Beyond the difficulty of finding an appropriately independent and capable agency, several Congressmen felt that any review not piloted by the Corps would be a slap in the face to the Corps, and would provide a bad precedent of having outside agencies review Corps projects. Of course, the project opponents were not eager to have the Corps direct the project. However, since it was mainly the project skeptics who wanted the study, they finally had to give in somewhat. Congress resolved the question of sponsorship at last by appropriating the study funds of \$1.5 million to the Corps, but specifying that the Corps was to conduct the investigation in cooperation with the Delaware River Basin Commission—that is, in practice, with the concerned Basin states. This last was an important stipulation, for it

permitted the states to fight successfully for broad terms of reference, and to insist that the contractors examine a wide range of alternatives to the dam rather than merely review past procedures and studies. It also led to state representatives joining the Corps on the study management team; and it gave the states some input into the selection of the study contractor.

By January 1975 the contractors had been chosen (URS/Madigan-Praeger, and Conklin and Rossant, Manhattan-based engineering consultant and architectural consultant firms, respectively) after a competitive bidding process. They had \$1.5 million and eight months to complete the study. Almost twenty years after the floods that inspired the comprehensive survey by the Corps, and after over a decade of research and planning and four years of intensive controversy, there was to be still one more study, again under the direction of the Corps. Was anybody listening?⁸

VI. FROM STUDY TO DECISION

The idea of a million and a half dollar study was viewed skeptically on all sides. To the Corps of Engineers and the DRBC staff, the very existence of a new study would imply that their own long years of effort—including, for example, those eleven data-packed volumes of H D 522—were not sufficiently thorough or were otherwise deficient. They regarded the study as entirely unnecessary—a waste of time and money perpetrated by the environmentalists.

The environmentalists, on the other hand, were equally skeptical, but for a different reason. They regarded the conflict of interest created by putting the Corps of Engineers in charge of the study as so blatant, as such a clear case of the fox being set to guard the chicken coop, that they could expect no honest or objective information to be produced by it. In caucus they debated whether they should disassociate themselves from the whole undertaking and simply seek to discredit it, or whether they should cooperate in the hope of counterbalancing the bias (as they saw it) of the other side. They finally chose the latter course, and were surprised and somewhat disarmed when the consultants approached them in an earnest and respectful way rather than in the perfunctory way that they expected. Herbert Howard, the civilian officer of the Corps of Engineers who was given the delicate job of overseeing the study, was acutely conscious of the conflict of interest and took great pains to see that everything was done openly. Nevertheless the conflict of interest was real, and the dam's opponents retained a substantial degree of skepticism.

A less well defined third group was also skeptical for yet another

reason. This was the group of people who, potentially, could do the work. Many of these people felt that the six or seven months of real working time that would be available was too short to find convincing answers to the important questions. Thus, the consultants who finally agreed to undertake the study found themselves in an ambience of universal skepticism. Among other ways, they met it by announcing that their work would rely mainly on existing studies rather than on *de novo* research. This tended to excuse them with their colleagues who thought the time was too short to do new research, and it simultaneously tended to relieve the apprehensions of the dam's proponents who thought the past work adequate. It disappointed, however, those who had hoped the study might really attempt to resolve some of the nagging uncertainties that genuinely bothered the more conscientious decision makers. As it turned out, there were some exceptions to the policy of relying upon past work. Perhaps the most notable of these concerned the salinity of estuarine water, a problem crucial to the project rationale, which the study did tackle in a novel manner. (The story of this analysis is told in Essay 5.)

The study was taken seriously by the analysts and planners in each of the Basin states responsible for review of the Tocks project—but especially so by the New Jersey analysts. The project had always been more important to New Jersey than to her sister states in the Basin, and it remained so. New Jersey's review was far more intensive than those in the other states, particularly in its investigation of water supply. The review in New Jersey was under the direction of Bardin and O'Neill; and the themes and institutional setting shaping their outlook were similar to those that had guided the analyses of Sullivan and O'Neill two years previously. Above all, water supply again loomed as the issue crucial to the state's position on the entire project.

In a roundabout way, the consultants' study did finally provide an outline of what many in New Jersey had been seeking—an acceptable water supply alternative to Tocks. The study, first of all, projected future demand for water at levels much lower than those used previously by New Jersey planners, or by the Corps. The water demand projections were lower for two reasons: The population projections on which they were based reflected the latest U.S. government estimates, which were lower than the population data hitherto used by the state. Second, the consultants, again on the basis of the latest evidence, projected a much diminished demand for water for industrial use. They stressed in particular the relatively high fraction

(about two-thirds) of industrial demand that would be self-supplied by industry, thus reducing the demand for publicly supplied water. The consultants also calculated the sensitivity of water demand to projections of future economic growth in the region. In addition, the consultants' report contained a long list of relatively small water supply projects that could be undertaken in each of the Basin states, as supplements or, possibly, as alternatives to Tocks.

Although the consultants themselves had not done so explicitly, the New Jersey analysts reviewing the Tocks project under the direction of Commissioner Bardin and Tom O'Neill were able to extract from the consultants' study an interesting finding—that a plausible combination of intrastate projects *without Tocks* would probably serve to meet all the state's water needs for at least the next 25 to 50 years. Furthermore, the state analysts suddenly realized that the cost of these projects to the state would not exceed that of Tocks, even though the federal government would build Tocks at no initial cost to the state budget! The reason was simply that it would cost a vast sum of state money to bring the Tocks-supplied water from the Delaware to the northeast part of the state where the water would be needed. Through a good part of the Tocks debate, this cost had been forgotten—it never, for example, appeared prominently in the criticisms of the project's benefit-cost analyses. The belief that the federal government would be, in effect, financing state water needs was indeed one reason the states had found it so difficult to give up the Tocks projects.

Commissioner Bardin reported the results of the New Jersey analysis to Governor Byrne:

In summary, New Jersey seems unlikely to need the Tocks increment for from 25 to 50 years, as current projections indicate. From the standpoint of water supply, it would be desirable to preserve the option to build the dam and lake, but to defer the actual construction for as many years as practicable while perfecting the contingent right to divert (water from the Delaware). . . . From the environmental standpoint, building the intrastate projects ahead of Tocks would delay the impact on the existing valley and could preserve the free-flowing river for a substantial period at least. From the water supply standpoint the dam and lake project seems a "bird in the hand" which is painful to relinquish. . . .

If you believe that a large new lake would be an attractive amenity in place of the existing valley, and if you believe it is worth \$311 million of federal tax money to build it over the next few years . . . you will favor the dam and lake project.

If you prefer a free-flowing river for at least a generation, you will

nonetheless weigh the likelihood that New Jersey would need this water supply within 25–50 years, and its chances of securing it nearer to the time of need via this dam versus the risks you feel New Jersey should take. . . .⁹

One detects here still a reluctance to let the Tocks project—“a bird in the hand”—slip away altogether even if it isn’t needed for a while. To the environmentalist, the building of a dam is an irreversible action; it cannot be undone. And to a policy maker responsible for water supply, the final deauthorization of a project as significant as Tocks must also appear irreversible; it could be undone but at what a political cost!^e

The consultants’ study was completed in June 1975, and the governors of the Basin states had now to decide. On balance, the study appeared to have had little direct effect. In New Jersey, for example, the governor and his staff apparently assumed from the beginning that a study sponsored by the Corps would naturally favor the dam. Evidently no one in the governor’s office took the study seriously, an attitude that clashed oddly with the detailed attention paid to the study by the Department of Environmental Protection and its Commissioner. There had evidently been little contact between DEP and the governor’s office on this issue.

The study did, however, confirm the views of the policy makers and help steel them to decision. The study had also, as had previous studies, altered the terms of the decision in several significant ways. Approval of the project would not mean the same thing in 1975 as it would have in 1971, for the project had been much altered in the interim, as had the perspectives of those responsible for guiding and coping with its consequences. Similarly, a rejection of the project would lead to a different train of alternatives from that which would have ensued four years previously. Each study had its own small impact on these redefinitions of the project. Thus, for example, whether or not the dam were built, the design of the recreation park, the ways of bringing people to the park, and the sorts of things people would do once there had all changed in concept during the preceding years (gradually and grudgingly) under a steady flow of studies and criticisms, lengthy and short, technical and political. The water supply picture for New Jersey had also shifted markedly in focus during the years of controversy, no more so than in the preceding few months. This is a recurrent theme captured in several of the subsequent essays of this volume.

^eNew Jersey’s options were set forth with considerable dexterity in a companion report from Bardin to Byrne. An abridged text forms the Afterword of this book, pp. 403–405.

Some altogether new concerns had also been generated during the period of the consultants' study, notably through the intervention of the Medical Society of New Jersey noted previously. The Society, through an ad-hoc committee formed to review the consultants' study, suggested several potential public health problems that might follow in the wake of the Tocks project, including various dysentery-type infections caused by lake-bathing as well as by the possibility of salmonella contamination mentioned in its initial resolution. These health issues were particularly noted by Governor Byrne at the decisive DRBC meeting.¹⁰

On July 31, 1975, at a special meeting of the Delaware River Basin Commission, the Commissioners voted three to one *not* to request Congress to provide construction funds for the Tocks project. The governors of Delaware, New Jersey, and New York^f voted against construction; the governor of Pennsylvania voted in favor; and the Federal Commissioner to the DRBC abstained. By a vote of three to zero, with New Jersey, New York, and the United States in favor and with two abstentions, the Commissioners then approved a motion that the DRBC request Congress to provide continued funding for land acquisition.

This then was the decision. Few believe it was the final decision. The chief protagonists in the controversy were as divided at the end as they were at the beginning on its wisdom, and many of the issues which have bedevilled the controversy remain yet unresolved. It is still too early to tell whether another flood, another drought, or a new personality in one of the Basin statehouses or in Washington couldn't again revive the idea of a dam at Tocks Island.

NOTES

This chapter in part derives from several personal interviews, including importantly, with the following persons: Chris Burke, New Jersey Public Interest Research Group; Governor William Cahill, former Governor of New Jersey; Richard Curry, Special Assistant to Assistant Secretary for Outdoor Recreation, Sports Fisheries and Wildlife, and National Parks, Department of Interior; Robert Cyphers, Water Resources, Department of Environmental Protection, State of New Jersey; Gordon Dilley, U.S. Army Corps of Engineers, Philadelphia District; George Gardner, Special Assistant to Assistant Secretary for Outdoor Recreation, Sports Fisheries and Wildlife, and National Parks, Department of Interior; Mina Haeefe, Delaware Valley Conservation Association; Herbert Howard, U.S. Army Corps of Engineers, North Atlantic Division; Jack Isenogle, National Park Service, Department of Interior; Gar Kaganovich, Staff, Senate Committee on Appropriations; Harold Lockwood, Save-the-Delaware-Coalition;

^fHugh Carey replaced Malcolm Wilson as New York Governor in January 1975.

Austin Olney, Administrative Assistant to Congressman Pierre duPont (R-Del.) (telephone); Thomas O'Neill, Special Assistant to the Commissioner, Department of Environmental Protection, State of New Jersey; Dr. Gerald Rozan, Medical Society of New Jersey (telephone); Chip Seeger, Administrative Assistant to Congressman Joseph McDade (R-Penn.); Nancy Shukaitis, Commissioner, Monroe County (interview with Lynn Anderson); Lawrence Siegal, Staff Assistant to Congressman Howard Robison (R-N.Y.); Steve Sloan, former staff analyst of the President's Council on Environmental Quality; Hunter Spelling, Staff, House Public Works Subcommittee of Appropriations Committee (interview with Michael Reich); Robert Steenhagen, National Park Service, Department of Interior (telephone); Richard Sullivan, former Commissioner, Department of Environmental Protection, State of New Jersey; Robert Teeters, U.S. Army Corps of Engineers, Washington Headquarters; Jack Vandenberg, Assistant to Senator Clifford Case (R-N.J.); Brinton Whitall, Delaware River Basin Commission; Gary Widman, Staff analyst, President's Council on Environmental Quality; Edward Wisniewski, U.S. Army Corps of Engineers, Philadelphia District.

In addition, several of the participants in and observers of the Tocks controversy convened at Princeton in January 1973 for a highly illuminating discussion which I have drawn upon in preparing this chapter. The non-Princeton participants in this conclave were as follows: Joseph Browder, Environmental Policy Center; Hope Cobb, Sierra Club; Terance Curran, New York State Department of Environmental Conservation; Peter De Gelleke, National Park Service; Gordon Dille, Army Corps of Engineers; Steve Ebbin, George Washington University; Smith Freeman, Environmental Protection Agency; Alan Gitelson, Loyola University; Jerry Gollub, Haverford College; John Harte, Yale University; Herbert Howlett, Delaware River Basin Commission; Richard James, Schuykill Nature Center; Gar Kaganowich, Office of Senator Clifford Case; Richard KixMiller, New York, N.Y.; Lee Merrill, Rutgers University Institute for Environmental Studies; Thomas O'Neill, New Jersey Department of Environmental Protection; Leonard Rodberg, Institute for Policy Studies; Ann Satterthwaite, Washington, D.C.; Corinne Schelling, American Academy of Arts and Sciences; Donald Scott, New Jersey Chamber of Commerce; Robert Strassler, Alford, Massachusetts; Richard Sullivan, New Jersey Department of Environmental Protection; Robert Teeters, Army Corps of Engineers; Laurence Tombaugh, National Science Foundation; Francesco Trama, Rutgers University; Laurence Tribe, Harvard Law School; John Voss, American Academy of Arts and Sciences; William Whipple, Rutgers University Water Resources Research Institute; Brinton Whitall, Delaware River Basin Commission; Christopher Wright, Rockefeller Foundation; James Wright, Delaware River Basin Commission.

I also wish to acknowledge a special debt of gratitude in the preparation of this chapter to Lynn Anderson, who sensitively investigated impacts of the Tocks project on the local communities bordering the dam site, and to Tom O'Neill, whose contributions were many and were especially marked in section VI.

1. Letter from Maurice Goddard, Secretary of the Department of Environmental Resources, Pennsylvania, to Harold A. Feiveson, December 19, 1974.

2. This section derives from several personal interviews, among them Gordon Dilley, Herbert Howard, and Robert Teeters. The statement by General Richard Groves quoted in the text was made at the Princeton University Conference on Water Resources, April 1973.

3. Delaware River Basin Commission, Staff Study, "Water Demands in the Delaware River Basin as Related to the Tocks Island Reservoir Project" (1971).

4. Delaware River Basin Commission, "Staff Comments on Paper Entitled: 'The Tocks Island Dam Project,' Report No. 1, by H.A. Feiveson," Center for Environmental Studies, Princeton University, Princeton, New Jersey, October 1, 1973, p. 9.

5. This section derives from several personal interviews, among them Harold Lockwood, Mina Haefele, Chris Burke, Leo Eisel, and Smith Freeman.

6. This section derives from several interviews, among them Steve Sloan, Jack Vandenberg, Gar Kaganovich, Lawrence Siegal, and Austin Olney (telephone). See also, letter from Russell Train to Secretary of the Army, Robert Froehlke, October 20, 1971. Letter from Russell Train to General Counsel of Army, Robert Jordan, April 7, 1971. Pete duPont, "The Tocks Island Dam Fight," *Sierra Club Bulletin*, July-August 1972, pp. 13-18. The statements by James Wright were taken from this article.

7. Interviews with Governor William Cahill, Richard Sullivan, and Thomas O'Neill. See also William Cahill, "Statement Concerning the Tocks Island Dam," September 13, 1972, Delaware River Basin Commission. The film *The Flooding River*, by Lincoln Brower (1972) is available from John Wiley and Sons, New York.

8. Interviews with Gar Kaganovich, Lawrence Siegal, Jack Vandenberg, and Hunter Spelling. See also letter, from Malcolm Wilson, Governor of New York, to Congressman Joe L. Evins, May 10, 1974; letter, from Sherman Tribbitt, Governor of Delaware, to Harold Lockwood, Chairman, Save-the-Delaware-Coalition, July 9, 1974. The resolution of the New Jersey Medical Society was #39, "Opposition to Tocks Island Dam Project," May 15, 1974.

9. Discussion paper, David Bardin, July 1975.

10. Letter, Gerald H. Rozan, Chairman, Ad Hoc Committee, Medical Society of New Jersey on Tocks Island Dam Project to Governor Brendan T. Byrne, July 29, 1975.

