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TOCKS ISLAND DAM, THE DELAWARE RIVER

AND THE END OF THE BIG-DAM ERA

A Thesis in
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By
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The Delaware Water Gap National Recreation Area sits in the backyard of both New York City and Philadelphia. What seemed to be a universally supported water policy to build a major dam across the Delaware River precipitated instead to one of the most contentious regional fights over water policy and dam building in the East. Had the dam been built, it would have been the eighth largest dam project ever attempted by the Corps of Engineers. The resulting reservoir was slated to inundate approximately forty miles of valley along the Pennsylvania-New Jersey border, up to its border with New York State. In this densely populated and rapidly urbanized watershed basin, echoes of power struggles and environmental crisis rippled throughout the Atlantic seaboard from New York City to Washington D.C.

Utilizing a mixed qualitative methodology that includes interviews, archival and legal research, and content analysis of multiple media sources, this dissertation examines how the Tocks Island Dam project came about, and how it fell apart after three decades of controversy, dissent, coalitions, propaganda wars, legal maneuvering, and chaos. This research provides a textural understanding of how the Delaware River became the nexus of conflicts between multiple and overlapping scales of water managers, large government institutions such as the Corps of Engineers and various alliances of stakeholders within a unique location in time and space. Uniquely situated chronologically as well as geographically, the fight over the Tocks Island Dam occurred during the tumultuous decades before and after the landmark environmental legislation of
the 1970s, and during the end of the Big Dam Era. The transition from the previous damcentered era of water policy in America to the more eco-centric era of environmental protection produced the most radical change in national water management directions in the last century. And during this transformation in national policy, the fate of Tocks Island Dam and the Delaware River became entangled in, and contributed to those larger social changes.

Today the resulting compromise of the decades-long struggle over water in the Delaware River, the Delaware Water Gap National Recreation Area, is by far the most visited park east of the Mississippi River in the National Park system. However, the original dilemmas about flood control, drought control, drinking water, and water quality still lurk in the backdrop of water tensions and will most certainly reassert themselves in the future.

Keywords: Water Resources, Delaware River, Resource Management, Qualitative Analysis, Environmental Conflict
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<td>Bureau of Reclamation</td>
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<td>CB</td>
<td>Cost Benefit Analysis</td>
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<tr>
<td>CEQ</td>
<td>Council on Environmental Quality</td>
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<tr>
<td>cfs</td>
<td>Cubic Feet per Second</td>
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<td>Corps</td>
<td>U.S. Army Corps of Engineers</td>
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<td>CWA</td>
<td>Clean Water Amendments</td>
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<td>DRB</td>
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<td>DRBC</td>
<td>Delaware River Basin Commission</td>
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<td>Delaware Valley Conservation Association</td>
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<td>DWGNA</td>
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INCODEL  Interstate Commission on the Delaware River Basin

LLL      Lenni Lenape League

mgd     Million Gallons per Day (1mgd=1.55 cfs)

NPS     National Park Service

SC      Supreme Court

TVA     Tennessee Valley Authority

WRA/DRB Water Resources AssociationDelaware River Basin

WRDA    Water Resources Development Act
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Preface

This is a story about a dam. It is also the story of the interconnected paths of law, geography, governmental bureaucracy, media, radical changes in water policy, and the rise of the environmental movement. Set against the backdrop of the Eastern seaboard with its concentrated population, industrialization, and urban sprawl sits the Delaware River; it serves as the border between Pennsylvania, New York, and New Jersey and incorporates parts of Delaware in the southern reaches of its flow before joining the Atlantic Ocean. The Delaware River has entered the 21st century with the main stem undammed, but this was no small feat considering its drainage basin supplies two of America’s largest cities (New York and Philadelphia), and its estuarial region runs from Trenton, New Jersey past Philadelphia, and onward to Wilmington, Delaware, containing one of the largest concentrations of heavy industry in America, as well as millions of people.

It was here, tucked into the edges of Megalopolis, that plans to build a huge multipurpose dam and reservoir set off a firestorm of controversy and became the lightning rod on which so many deeper social transformations sparked. The project was to be the eighth largest U.S. dam project built by the Army Corps of Engineers and the largest east of the Mississippi River. It would flood nearly forty miles of valley along the Pennsylvania-New Jersey border and hold back 250 billion gallons of water. Located in the backyard of New York City at the north end and Philadelphia to the south, it was to
rise to a height of 140 feet. From Congressional authorization in 1962 to de-
authorization in 1992, this project lived through several transformations in ideas about
how America should manage its water resources, only to be shelved during vociferous
contention about even larger debates on resources, governance, and the role of the citizen,
during the environmental movement. What started as a plan to build a dam swirled into
an intense emotional regional fight over water, environmental values, government
bureaucracy and dilemmas concerning how shared resources are managed.

When one thinks of water fights and controversial dams, it is usually the vast
American West that comes to mind. Because the area west of the 100th meridian (which
bisects our country into two halves: green America in the East and brown America in the
West) contains radically different topography, climate and precipitation regimes, the
traditions of resource law and management developed in the eastern United States do not
easily map onto the western United States. This geographic difference inspired different
traditions of resource law and regulation, different development patterns and different
brands of contestation than are usually seen in the east. I am from the middle of the
country, quite close to the 100th meridian. Perhaps for this reason, I take the clarity of
those differences—and their implications—for granted. However, the fight over the
Tocks Island dam, so close to the seats of economic and political power in the east shows
that this discontinuity flows both ways. The entrenched controversies over water
allocation, diversion, use, and storage that underlie daily existence in the West cannot
easily be mapped onto the East, nor can the modes of governance, alliances of power, or
formation of solutions be easily compared.
Planning for a dam project on the main stem of the Delaware River began thirty years before Congressional authorization. When plans began, officially starting with a comprehensive study of the Delaware River Basin finished in 1929, the major thrust of water resources centered on navigation and economic exploitation. The role of the federal government in this development was on the rise, as was an established bureaucracy of civil engineering and resource experts in the U.S. Army Corps of Engineers. During the middle stages of planning for a dam on the Delaware, American water management interests expanded to include major public works projects and flood control efforts, with heavy federal involvement. At the time of Congressional authorization, 1962, the thrust of water management had shifted again to the multi-purpose era of combined flood control, hydropower generation, and recreation as well as irrigation in the West, and the persisting need for drinking water everywhere. During the height of the controversy over building this dam on the Delaware, in the early 1970s, yet another transformation of water policy evolved as values from the environmental movement strongly impacted the entire process of decision-making and conflict resolution in resource management. The old style of bureaucratic command-and-control was giving way to a more transparent decision-making process that included public input. Even after Congressional de-authorization of the dam project in 1992, problems associated with command-and-control inspired changes in water management continued to impact the potential fate of the Delaware River, as emphasis has shifted into non-structural options for management of water resources and a reformulation of how much of the cost for these projects will fall to the federal versus state governments.
Thus, the problems on the Delaware cut an important transect in the evolution of water management practices, policies, and goals in this country. And there is not a rich literature on these transformations as they have taken place in recent decades in the Eastern half of the United States. There is practically no literature on the intractable problems of water management specific to the Delaware River during this formative time frame. Tracing the evolution of planning, followed by protracted dispute, and ultimately compromise in the case of a river in the East provides a needed counterpoint to the much studied water disputes in the West during this same time frame.
Chapter 1
Why Resources and Rivers are Hard to Manage

Introduction

Distribution, control and exploitation of this country’s resources have formed the basis of laws, policies, and at times our social consciousness. Resources are nothing short of the conduit between the natural world and our made world. Not surprisingly, limits on resources, and struggles over how to use them, continually shape and reshape our national policies. It should be remembered that policies and laws are not static truisms; what appears perfectly reasonable to one generation could be, and often is, turned on its head by the next generation. Thus each generation re-learns, through the expression of its own values and priorities, the lessons and dilemmas inherent in resource management. This dissertation centers on lessons learned from one such struggle, the fight over building a dam on the main stem of the Delaware River at a place called Tocks Island, and the generational change in approaches to water management from the 1930s to the 1990s, with special focus on the years between 1962 and 1992.

Where is the Delaware River?

The Delaware River drains approximately one percent of the United States land base, and is the 33rd largest U.S. River.\(^1\) Formed by the confluence of its East and West Branches near Hancock, New York, the Delaware flows southeast across the Appalachian Plateau for its first 76 miles.\(^2\) At Port Jervis, New York the river turns southwest and flows through the Minisink Valley to the Delaware Water Gap, where it then cuts through
the Appalachian Plateau and flows 77 miles to Trenton, New Jersey. En route to Trenton, the Delaware passes through Easton, Pennsylvania, where its first major tributary, the Lehigh River, enters the main stem of the river. At Trenton, the river becomes tidal, with the last 86 miles of the tidal river referred to as the Delaware Estuary. The Schuylkill River, the Delaware River’s second major tributary, enters the river at Philadelphia; during this stretch, the Delaware River forms the boundary between the Piedmont Plateau and the Atlantic Coastal Plain. Cape May, New Jersey and Lewes, Delaware form the official beginning of the Delaware Bay before the river joins the Atlantic ocean.

The Delaware River Basin, including the Delaware Bay and tributaries to the Bay, contains 13,465 square miles spread between the states of New York, New Jersey, Pennsylvania, and Delaware. The latest available basin-wide population estimates suggest that 7.5 million people live within the Delaware River Basin, and about 18 million people obtain all or part of their water supply from the basin. For its small size, the Delaware River Basin has a disproportionately large impact as its waters serve the most heavily industrialized and intensely populated area of the United States; this includes the metropolitan areas of New York City, Trenton, and Philadelphia. And yet, the topography of the valley is quite rugged relative to the urban areas nearby. At the historic Delaware Water Gap, the valley is a U-shape with Kittatinny Mountain rising 1,100 feet on the New Jersey side of the river. On the Pennsylvania side, a belt of farmland rises gently away from the shore then abruptly changes to the 500-foot bluff that marks the beginning of the Poconos plateau. It is here that planners envisioned building a dam on the Delaware River.
Figure 1.1: Delaware River Basin Tributaries and Major Dams
Transformation of the Earth through the use of natural resources is as old as the history of our species on the planet. But human interaction with the Earth and its resources has not remained a static relation—nor has our perception of this interaction. Nature has at times in Western history been considered a wild and dangerous place that must be subdued to mankind’s will; it has alternately been considered the supreme expression of grace and perfection that symbolizes mankind’s own fragile place in the universe. Nowhere have these two mutually exclusive visions of our environment had such deeply embedded cultural significance as in America—whose identity is so centrally intertwined with ideas of natural bounty and of massive resource exploitation.

In the early stages of nation building roughly outlined between 1500 and 1800, the major problem to solve was not how to preserve or conserve resources—nature existed in far greater abundance than labor or material wealth—but how to subdue the elements of the earth in a struggle preordained in Biblical scripture. Nature for those generations existed only to supply human need. Since the early days of colonization, Americans have been obsessed with resources and their exploitation. Natural endowments of resources not only contributed to early colonial economic growth and frontier expansion, but abundant resources helped form our national identity. Early boosters of colonization in the ‘New World’ described it as early as 1640 as an Eden of endless bounty in which the sky turned black from clouds of migratory fowl and fish practically jumped out of the rivers, into the nets of fishermen. The drive to conquer the
North American wilderness had been a basic theme of United States history since its birth.

By the latter decades of the 1800s though, came America’s first conservationist movement.\(^{10}\) Values changed as we came face to face with the limits of our wilderness. Those values would change again, and evolve with changes in philosophy, agenda, motivation, desire and concern for the world around us; but the underlying conflict, how to balance the needs of man within the limits of natural resources, has never been resolved.

What is and is not considered a resource also varies with respect to time. After all, nothing is a resource unless someone wants to use it. Resources have traditionally been defined not by any intrinsic value, but by their utility and demand. Only recently, has non-use also become a valued resource. Demand is also intimately connected with spatial distribution, and in the case of natural resources compared with other resources, this means uneven distribution based on natural processes, with no regard to where people are located. In Nevada, sand is not a resource but water is most coveted; in Kentucky, sand is imported to manufacture glass but water is in such large supply as to be a potential threat. Coal had no market value until people realized it could be burned for fuel and were able to overcome its spatial distribution in the process of economic exploitation. The coal had to be brought from its natural location to potential markets to be a viable resource. The manufacture of integrated circuits, microchips, and computers, has created a special need for silicon, which is not rare at all. Because scarcity and demand, or the perception thereof, drives interest in either exploiting, or conserving natural resources, circumstances are constantly in flux. As society changes and discovers
new uses for elements of the surrounding environment, different things may take on the label of ‘resource’ but in all of nature’s forms, its domination and use is so embedded in our daily experiences, and unavoidable in the purest sense, that most Americans do not give it a second thought.

One thing that cannot be avoided though, is the exponential impact of human use of the natural world and its resources. People cannot exist and thrive on the earth without leaving an ecological footprint, but the size and scale of that footprint, and the point at which the costs of resource use outweigh the benefits gained, are hotly debated as we begin the 21st century. As human population and consumption of resources rapidly increase, the amount of natural resources remains finite. Therein lies the conflict. As a consequence, environmental issues are interwoven into almost every facet of modern life. New developments, sub-urbanization, industrialization, consumption, recreation, transportation, how we eat, drink, travel or play—any activity has rippling impacts in the environment and requires resources.

Resource managers are tasked with how to collect and distribute finite resources among ever-increasing users with conflicting values and agendas. Specifically defined, resource managers are the individuals or agencies that are in immediate contact with the resource and have a direct stake in how that resource is used, misused, or not used at all. However, the term has blended into a more general lexicon of environmental decision-makers since it can include everyone from the local farmer to the forest ranger to the Secretary of the Interior. Just how resources get collected and distributed, and at what scale remains a contentious issue. Many voices contribute to debates on how to manage resources, but not all voices contribute equal weight or articulation; and no clear solutions
are in sight. One thing is certain though, power both to control one’s own circumstance and to control others often rests with the control of resources. Many philosophers and observers of natural resource exploitation have argued that, at best, we have only the illusion of control. Natural processes will continue in geologic time frames, despite any small tinkering by people in the time span of a generation or two. Mankind has the ability to build dams and canals, dredge wetlands, blast through mountains, and pave over the forest. With this temporary power to rearrange the natural world, we live in the illusion that we control nature—that is, until the next large flood, drought or wildfire. And when natural hazards do occur, we react to them as violent aberrations of otherwise controlled nature, rather than intricate pieces of larger natural cycles that march on, regardless of human activity.

It is in this confusion over human needs and natural processes, as populations grow, that resource managers must balance conflicting current demands and safeguard resources for future generations. Even the most basic questions about how this might be accomplished remain contentious. Who should be the managers of resources? What scale of management provides the most efficient and equitable marshalling of spatially dispersed resources that everyone wants? Vociferous debate continues about whether federal, state, regional, or local scales of management are more effective. We now have agencies and coalitions of managers at each of these levels that often operate in conflict with each other. What works at a local or regional level does not necessarily translate to the federal scale of managerial priorities, and vice versa.

The United States has a virtual menagerie of federal agencies that do not operate with the same mission, goal or agenda, even at the same scale of presumed management.
For instance, the Fish & Wildlife Service preserves habitat for fish, while the Bureau of Reclamation has built dams that restrict habitats—especially for Chinook and Salmon in the Pacific Northwest.\textsuperscript{13} Multiple non-governmental organizations exist from a local scale to the realm of the international, many of which are in conflict with each other as well as the established power brokers in resource management. Regionally, the western and eastern halves of the U.S. are radically different in terms of resource and population, thus different kinds of policies appear more applicable in one region than another.

Which of the many stakeholders who have interest in resources should be attended to first and who should have priority usage? America’s legal system is steeped in laws and regulations attempting to answer that simple question and is littered with lawsuits that pointedly show how unacceptably that question has been answered in the past. This intersection of law and geography is not well analyzed, yet speaks to the inherent conflicts associated with resource management.\textsuperscript{14} The processes of geography and the processes of law often inform each other in unexpected ways. Linkage between legal principles and local circumstance is hardly a one-way street. Geography can be seen as an on-the-ground understanding of local circumstances—that is, where things are, and why they are where they are, rather than somewhere else. At its most elegant, a legal principle delineates the boundaries of the constructed and cultural environment—that is what is acceptable or not, what people ought to do, no matter what they might really do. Our laws circumscribe the cultural environment just as surely as political and physical boundaries, and as such are porous, temporal and subject to change, reassessment and revision as circumstances change.\textsuperscript{15}
At times the spatial and the legal are in complete agreement, but often they exist in tension. To ‘stake a claim’ instantaneously gives one spatial and legal control over a mineral such as silver, for instance. But undocumented migrant farm workers persist in evading our legal system precisely because they have no defined geography. How do we reconcile the shifting banks of rivers that also function as boundaries between states? Before and after floods, as river channels meander, lands can shift across boundaries and become part one state and then the other. However, political boundaries, by definition, remain relatively fixed. In most cases this is not problematic, as established culture, politics, or historical affiliation remains, in spite of changing physical features.\textsuperscript{16} In the case of natural resource management, this shifting geography can get mired in confusion. For instance, when oil was discovered nearly a hundred years ago underneath the bed of the Red River that forms the boundary between Texas and Oklahoma, multiple parties laid claim to the resource. Oklahoma claimed a boundary (and associated mineral rights) out to the Texas side of the riverbank; Texas claimed a boundary that went to the middle of the river, but debated whether that was the middle of the flowing water, or the middle of the river channel. At least two different Indian tribes claimed sovereignty over the entire region; and the federal government could exert ownership over all waterways not specifically claimed by individual states.

The ‘boundaries’ between federal and state power are equally murky and ultimately refined, not in textbooks or historical treatises, but on the ground with physical manifestations, and in courts where those boundaries are tested and retested as power continually, mercurially shifts positions. The states of Kansas and Colorado, for example, have sued each other half a dozen times in the Supreme Court since 1904 over
shared use (or not) of the Arkansas River—with the latest round taking place in 2002. It is at points of contestation such as these, where gaps and holes in laws are revealed, that the terms, conditions, and consequences of social change are renegotiated.

Water Management

While similarities and overlap exist in resource management themes, each natural resource also poses unique circumstances. What may be applicable to forest management does not inform dilemmas related to interstate transport of natural gas or coastal zone management. A division can be drawn between natural resources that are mobile and those that are static. In other words, some resources are fixed in one contained political or jurisdictional unit, i.e. soil or minerals, and others move across political borders such as air, fish and water. Mobile resources, by their very definition, most often become transboundary resources and have their own unique set of problems to disentangle; a prime example of this can be seen as managers search for ways to regulate or reduce pollution as it travels in the atmosphere. Canada has been a most unhappy neighbor of the United States for decades as it seeks to reduce the amount of acid rain that blows from industrial plants in the Ohio River valley towards Canadian forests. The elusiveness of the problem is compounded by the paucity of solutions that can be implemented across political borders and within cascading jurisdictional regions. Grizzly bears don’t stop at customs; neither do rivers, clouds or atmospheric pollutants. Political boundaries may regulate people and jurisdictional control, but they are placed over an existing template of natural processes that do not abide by political wishes, restrictions or edicts.
This dissertation undertakes the study of only one resource—water. Water is a physical feature of the earth; it is also a resource of great controversy. Some consider water running in a river to be sacred and worth preserving; others consider it a wasted asset unless stored or redirected and used for economic gain. The most complex situations arise along rivers that run across multiple state or national borders in their flow to the oceans. There is the entire watershed basin to consider, the individual political subdivisions within the watershed such as states, counties and cities, the water needs and consumptive uses within these political units and the water itself as an integral part of a functioning ecosystem irrespective of human. As the prominent environmental planner, Peter Rogers, notes, “No other commodity is used with such reckless abandon as water, no other bulk commodity is demanded at such high quality, and no other natural resource is the subject of such intense struggles within the federal establishment and in Congress—not even oil.” Water also has deeply rooted cultural and historical value that, while intangible and not easily quantified, nevertheless plays a part in the decision-making process about how to use water resources.

In part, geography as a scholarly discipline is devoted to observing and understanding human-environmental interactions, so geographers have studied water in many forms and at multiple scales, both as a part of the natural world and as it intersects with human actions. As is true with all resource issues, water management is not merely a matter of science or economics, but also of governance, law, culture, history, public perception, and decision-making, with a large dose of aesthetics, nostalgia, and myth thrown into the mix. Today, water is manipulated, diverted, stored, bought, sold, borrowed, stolen, used, re-used, purloined, and polluted, on a new and unheard of scale
compared to the sum total of all generations that came before the last generation of the 20th century; it would be an understatement to suggest that water management has become complicated.

There are examples of river management studies from geographers, but also many fields of academic study and those of interdisciplinary backgrounds contribute to the literature on river management. However, problem definitions, contexts and analytical approaches move fluidly between and among the categories of engineering, planning, economics, international relations, geography, law, policy or history—again exemplifying the inextricably intertwined web of forces coming together to shape resource dilemmas and our ability to address them.

When looking at how geographers bring their skills to the conundrums of water resources, many options stand out. Work has been published in the categories of water quality and water quantity, water as hazard, water as transportation conduit, ground water and surface water, conservation and water demand forecasting. Geographers have traditionally approached the interactions between humans and water resources from a very pragmatic perspective—rather than develop broad theories, geographers in the U.S. have usually addressed specific problems and sought solutions.

Water issues appear sporadically in U.S. geographic literature through the early 1900s and center on exploration and physiography, as well as potential uses of waterways in transportation and navigation. By 1929, larger scales of water projects, water management and growing pressure on water sources, inspired more thoughtful analyses that accentuated complexity in water management. For example, in 1929, Haas acknowledged the paradox inherent in attempting simultaneously to serve
antagonistic interests of flood control and transportation improvement along the Mississippi River. Water related to agriculture took on new importance, as irrigation especially in the Plains and arid West became a regional obsession.\textsuperscript{24} Thus, side by side with more in-depth thinking about the implications of water management, the larger trend of water development as the unquestioned symbol of economic growth continued. As the technical abilities of water managers and engineers to divert and store water grew in scale and ability, so too did the cost of water management, the social impact of water management schemes, and the debate over their value. In the 1950s, debate over the relative costs and benefits of small dams versus big ones came to the fore.\textsuperscript{25}

During the 1970s and beyond, the tide dramatically turned away from large-scale, federally funded water management plans and towards a more bio-centric, conservationist approach to water—both as resource and as asset. Since the late 1970s, very few large dams have been built and large public works projects in general have fallen out of favor, with managerial priorities shifting to different scales of management [techniques]. Today, the political climate in America would all but ensure the failure of a large dam project, and some smaller dams are being removed for a variety of reasons. What direction water management will take in the coming decades remains unclear, but the radical change in priorities, management styles and values cannot be understated. This dissertation adds to the understanding of how this change came about, and how large government bureaucracies have adapted to those changes—or not—as the world of water politics redefines itself for the coming generation.
Controversy on the Delaware River

In order to bring some clarity to the conundrums faced by water managers at the turn of the 21st century, and the intrinsic problems associated with transboundary resources, I focus on only one river, the Delaware River, and examine controversies during the last four decades as the states of New York, New Jersey, Pennsylvania and Delaware have had to divide this shared resource. Narrowing still further, I examine the connected threads of water policy, law and management on the Delaware River during the life span of one specific proposed water project, the Tocks Island Dam. There exists a conspicuous absence in the literature from any discipline where one would expect to find work analyzing the fight over the Tocks Island dam, which is particularly intriguing given its magnitude and uniqueness in the northeastern U.S. One book was written about the history of the Tocks Island fight, and its players, but did not provide any context for larger national trends in water management, nor discuss the interconnected issues of geography and problems inherent in shared resources such as rivers.26

The Tocks project spanned seven decades from the first Corps of Engineers’ survey in the 192927 to final congressional de-authorization in 1992, even though the decades between 1962 and 1992 hold primary interest in this dissertation. Had the project been built, it would purportedly have provided flood control, potable water supply, drought control, hydroelectric power, and recreation. What makes this particular story so compelling is that it coincided with a major shift in America’s entire outlook on resources in general and in particular towards water policies away from structural public works projects and towards non-structural, bio-centric or conservation-based policies.28
After the Second World War, and up until 1960 when the Tocks Island project was acquiring technical, bureaucratic and congressional support, there was little concern or public debate about building this dam on the Delaware. Floods in the 1950s and drought in the late 1960s were followed by the devastation of floods brought on by hurricane Agnes in 1972, further encouraging a trajectory toward the dam’s construction. During this same time frame, however, the environmental movement was gaining steam, incubating and nurturing radically different attitudes towards resource management that would set in motion a reversal of pro-dam policies and water development schemes—schemes that had bipartisan Republican and Democratic support for fifty years or more.

A National Recreation Area was established in 1965 around what was to be Tocks Island Reservoir. Already behind schedule, the Corps delayed the start of construction in 1970 due to challenges about the quality of the newly required Environmental Impact Statement, and again in 1972, due to potential threats to endangered species habitat and political contention. In 1975 three out of four member states of the Delaware Basin Commission voted against construction of the dam, and in 1978 the Middle Delaware Scenic and Recreational River was designated in the region of the Tocks Island dam site. By 1985, the dam project had been deferred until the year 2000. But by then, a radically altered landscape of environmental science, policy and law suggests that a big-dam project would almost certainly fail as a policy option on the Delaware’s main stem. Finally, in 1992, the Tocks Island dam construction project was Congressionally de-authorized, fading away as a footnote on the scrap heap of Congressional litter.

The Tocks Island controversy is a classic conservation dispute but also an opportunity to disentangle the elements of environmental reform and find out what legal,
societal, and political elements came together to work such a sea change in the direction of water policy in this place, at this time. What started as a big-dam project—conceived, planned, organized and funded by bureaucrats in the large wheels of large government—swirled into a pitched battle involving ever more acrobatic maneuvers from coalitions of supporters and opponents [of the Tocks Island dam]. In the end, this fight exemplified the redefinition of values, motivations, decision-making and public participation in resource issues, and charted the virtual U-turn in water policy from water development to water conservation and protection. In the case of Tocks Island, the result of the dam fight was quite unexpected; nobody on either side of the controversy predicted that it would not get built.

The eruption over Tocks Island brought to the fore long-simmering but neglected quandaries about how conflicting values for uses of resources should be balanced, the scope and scale of governmental actions and their legitimacy, what constitutes a cost and what constitutes a benefit in the calculus of water use, and how the outcomes of policy are influenced. By reconstructing and deconstructing the processes leading up to the eventual derailment of the Tocks Island project, and placing it within a historical, legal, policy and institutional setting, I go beyond defining a resource issue and cataloguing the resulting resolution to that problem. I am attempting to make clear the context and implications of this project as a piece in the major shift in the direction of water policy in America from “the post WWII generation” to the “environmental generation” and then to the current state of water management. Multiple threads of information are needed to fully understand the intricately woven fabric of water management. In this dissertation, I follow the policies and the laws constraining or enhancing those policies, with use of
interviews and archival research to build a historical context within which to make sense of those policies and laws. Then there are the interlinked threads of science, decision-making and public perception of, and participation in, this process that also need to be analyzed to thoroughly understand the trajectory of both problems and solutions in water management.

**Interrogation of Relevant Qualitative Research Methods**

Before plunging into the fray of the fight over the Tocks Island dam, it is important first clearly to state how I went about the task of piecing together the fractured stories of the Tocks Island dam project and why this public works project became such a bone of contention. Thus, a short discussion of methods, tactics, data and analysis is needed. There exist multiple potential paths of enquiry when addressing any topic of study. The most important key is to ensure that the methods chosen lead toward answering the fundamental questions of interest. Because questions concerning decision-making as related to the history of water management elude standard quantitative analytical techniques, an essentially qualitative framework is needed for analysis of events, stakeholders, governmental institutions and their respective roles in the decision-making process. Open-ended research that proceeds inductively does not easily fit into the categories required in formal hypothesis testing. An analytical framework must be utilized which allows for multiple causes in conjunction or opposition that influence the decision-making process.
In the case of Tocks Island and the controversy surrounding the proposed building of a dam, I was fundamentally interested in understanding how this policy came together and the process by which it fell apart. This requires understanding the decision making structure in place at the time the project to build Tocks Island dam began, and how this structure enabled or constrained the particular players involved in their quest to either see the dam built, or see it permanently scrapped. More specifically, I concerned myself with bureaucratic and legal structure.\textsuperscript{30} Sayer (1992) states that the key question for qualitative researchers about structures could be phrased as ‘What is it about the structures which produce the effects at issue?’ In this case, I explore the structures and decision-making during the evolution of the Tocks Island dam project and ask what changed that encouraged the policy ultimately to come unraveled. What relations and processes worked to modify or oppose the set structure of decision-making so as to alter the outcome and precipitate a most unexpected conclusion to what appeared by all external measures to be a straightforward water management scheme? This study emphasizes how changes in the legal and bureaucratic structures created room for a new constellation of power alliances to arise, and through these new voices to renegotiate the terms of management for the Delaware River Basin. Questions concerning process, and those that ask ‘how’ and ‘why’ lend themselves to a qualitative method of enquiry. But among qualitative methods, a veritable grab bag of options is available.\textsuperscript{31}
This dissertation uses a mixture of different types of documents; thus it is worth noting the categories of documents available. Generally, documents fall into two types: primary or secondary. Primary documents can be characterized as eyewitness or personal accounts written by people who experience a certain event, in a specific time or place. For example, journals, autobiographies, and correspondence between people all are primary documents, as the information and viewpoints have been recorded ‘first hand’ by the author. This record differs from secondary documents, which are produced by people who may not necessarily have been present at the scene of an event, lived in a time, or seen a place, but who have received the information necessary to compile the documents. An accident report is filled out by a police officer, but that officer usually does not see the actual cars collide, and can therefore only write in a report the information gathered from those who were at the scene of the accident. Organizations, businesses and governments all keep continuous records of events that cannot be trusted solely to memory, and those tend to be more structured than personal documents. A good example of this sort of record is year-end financial records, or minutes of meetings. Printed mass media comprises a large sector of easily available secondary documents. In this dissertation newspapers, journal articles, non-fiction books, pamphlets, and press releases were used. Thus, both primary and secondary sources were important contributions of data to explore.

Happily, there has been no shortage of data available to examine. There exists a long and documented history about this public works project from cradle to grave, as it
were. The Corps of Engineers is known for its prodigious record-keeping tradition, and Tocks Island Dam has been no exception. The regional Corps repository in Philadelphia and field offices provided thousands of pages of documents in the form of formal reports, memos, press releases, pamphlets, and environmental impact statements. An interstate commission was created in 1961, the Delaware River Basin Commission (hereafter DRBC), specifically to oversee the completion of basin-wide plans. The DRBC provided many documents, and provided me access to an internal library.

In addition, lawsuits were brought by various plaintiffs in order to delay or halt the building of the dam. Tracing these lawsuits, briefs, appeals and debate concerning the laws themselves also provided a rich archival documentation of an entirely different viewpoint concerning both governmental processes and this particular public works project in the Delaware River basin. Often, a legal document can provide insight to an interested party’s frame of mind at the time of the legal action. There is also the added value of probing the societal constraints that all parties work within, rather than just the constraints of engineering, technology, topography, or budget.

A large amount of press coverage and propaganda accompanied the growing discontent and legal wrangling, thus leaving a large body of newsprint, and other media to explore. Newspaper coverage began in 1962, and continued in intervals until 1992. News coverage was sampled from a variety of sources in order to discern whether different views existed at different scales of interest. For instance, did local papers provide different coverage, or views, than regional or national newspapers? Over the decades, the tenor of coverage changed as the controversy spread. Other types of media,
including an underground newspaper, pamphlets, and op-ed pieces were also included in the analysis.

Congressional committees, subcommittees and investigations also produced much documentation concerning the debate over building the dam. Several local landowners testified with regularity at Congressional subcommittees. The Government Accounting Office investigated the validity of the Corps’ cost-benefit calculations. The Federal Bureau of Investigation also conducted its own investigation for the House Public Works Committee. As Tocks Island started to gain the reputation as being a bottomless pit of authorized federal funds, Congressional debates heated up. When a section of the river was declared a Wild and Scenic River, this decision required Congressional debate and agreement. Given the wealth of documentation, data were gathered from newspapers and pamphlets, also from archives related to the Corps of Engineers, the relevant legal actions and Congressional debates and committee hearings. Thus the advantage of access to both primary and secondary documentation augmented the breadth of the study.

Because this is a qualitative analysis that relies on interpreting data, the danger of falling away from scholarship and towards polemics should not be overlooked. The ‘trustworthiness’ of both the research and researcher relies on careful and constant attention to detail, context, and checking procedures. For this reason, I triangulated three strands of research: (1) the legal trajectory, (2) media coverage and (3) archival documentation. With multiple sources of data and multiple techniques of analysis, I assured that no single view would dominate an interpretation—that is, the individual stories would overlap, corroborate, or even contradict each other as the collage of analytical approaches re-searched the same ground from different perspectives.
From the tradition of historical analysis, the use of archival information and interviews was most helpful. This approach entails an interpretive approach to an event or series of events, within a specified time frame, and seeks a richer understanding of the motivations, causes and consequences that propelled event(s). This understanding is usually expressed in the form of a narrative.\textsuperscript{35} Reading and analyzing different types of documents especially well suited this study as the time frame spans decades, thus reducing the effectiveness of observational data. I also applied elements of legal analysis, due to the nature of the controversy surrounding Tocks Island, and how the changing legal system is entwined with the constraints of decision-making and policy. The method of legal research tends toward one of two approaches: follow all judicial proceedings associated with either specific parties or places or statutes through time, or trace the development of a legal idea through a series of applied cases.\textsuperscript{36} These two methods are not exclusive of each other and can often inform each other if the researcher employs both in the same study. I adapted the former, and followed the legal trail associated with the Tocks Island controversy through the time frame of the study. As more and more stakeholders entered into the debate, the amount and variety of legal tactics used escalated—and the arsenal of legal options available to different stakeholders also expanded during this same time.

When examining news coverage via newspaper articles, I employed content analysis. Broadly defined, content analysis is “any technique for making inferences by systematically and objectively identifying specified characteristics of messages.”\textsuperscript{37} It involves determining certain characteristics or features in a text then carrying out a search for them throughout the text. The most important requirement is that the categories
chosen suffice for the purposes of the study. Baily discusses how categories are chosen for content analysis and notes that they are generally not derived from theory, nor constructed out of thin air, but evolve as the researcher examines the documents to be studied and finds common elements.38

Content analysis involves both identifying the content characteristics to be measured, then applying rules for identifying and recording those characteristics when they appear in the texts one analyzes.39 This structured analysis was applied to newspaper articles in order to answer questions about (1) characteristics of the text, and (2) effects of the communication. Content analysis can be based on a search of either manifest content or latent content.40 Manifest content analysis assesses the surface or visible content of a document such as a political speech, trial transcript, or other document, for example, counting the number of times the word ‘damage’ appears in an environmental impact statement. This would be considered a content analysis for frequency. In this study, manifest content analysis is used with regard to space. The number of column inches devoted to the subject of Tocks Island within specific periods of time was tallied for various newspapers with different locations and circulations, as an index of the geographic scale of the controversy. Was this a grass roots rebellion, a statewide concern, a regional topic of debate or national in scope? Latent content analysis involves searching a document for themes. For the purposes of this dissertation, the unit of analysis chosen was the theme, (as opposed to individual words, or sentence or paragraph); this is sometimes referred to as the recording unit. In this case, categories of themes were examined such as whether a newspaper article expressed opinions that were either pro-dam or anti-dam and to what varying degree. Five categories were created
based on intensity: strongly pro dam, mildly pro-dam, neutral, mildly anti-dam, and
strongly anti-dam.

<table>
<thead>
<tr>
<th>Newspaper</th>
<th>Scale of Coverage</th>
<th>Circulation Numbers</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Daily</td>
<td>Sunday</td>
<td></td>
</tr>
<tr>
<td>New York <em>Times</em></td>
<td>National</td>
<td>1,130,740</td>
<td>1,672,965</td>
<td></td>
</tr>
<tr>
<td>Philadelphia <em>Inquirer</em></td>
<td>Regional</td>
<td>372,941</td>
<td>746,849</td>
<td></td>
</tr>
<tr>
<td>Trenton <em>Evening Times</em></td>
<td>State</td>
<td>143,000</td>
<td>167,400</td>
<td></td>
</tr>
<tr>
<td>Pocono <em>Record</em></td>
<td>Local</td>
<td>23,000</td>
<td>29,100</td>
<td></td>
</tr>
<tr>
<td>Cherry Hill <em>Currier Post</em></td>
<td>Local</td>
<td>80,566</td>
<td>98,843</td>
<td></td>
</tr>
<tr>
<td>Minisink <em>Bull</em></td>
<td>Local</td>
<td>estimated press run = 4000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1.1: News Media Sources and Scale of Coverage

To augment the above data, I sought out individuals to interview. The goal was to
speak with individuals who had divergent opinions and experiences relating to the Tocks
Island dam controversy. A diversity of opinion, as well as diversity of age group,
political affiliation, and location within the study area was needed for the widest possible
net of data on public opinions. In order to tease out all controversial and divergent
opinions, more than one informant from each of the previously mentioned categories was
interviewed.

The interviews were semi-structured, open interviews conducted in various
formats including person-to-person, telephone and email interviews. The physical and
social landscape now have been remade in reaction to the fallout from this most
contentious regional fight over the fate of the river, the local people and the place of both
in a basin-wide managerial plan. And it is in the memory of those who live there now, work there, and were associated with the dam fight that the nuances of this impact can be found. Of prime importance in the evolution of the seemingly intractable conflict are why

<table>
<thead>
<tr>
<th>Role of Actor</th>
<th>Number of Interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attorney</td>
<td>2</td>
</tr>
<tr>
<td>Reporter</td>
<td>2</td>
</tr>
<tr>
<td>Citizen landholder DRB</td>
<td>1</td>
</tr>
<tr>
<td>Citizen of DRB (PA)</td>
<td>2</td>
</tr>
<tr>
<td>Citizen of DRB (NJ)</td>
<td>2</td>
</tr>
<tr>
<td>Protestor</td>
<td>1</td>
</tr>
<tr>
<td>Corps (old guard)</td>
<td>2</td>
</tr>
<tr>
<td>Corps (new guard)</td>
<td>2</td>
</tr>
<tr>
<td>DRBC</td>
<td>2</td>
</tr>
<tr>
<td>NPS</td>
<td>2</td>
</tr>
<tr>
<td>Squatter</td>
<td>1</td>
</tr>
<tr>
<td>River Master</td>
<td>1</td>
</tr>
<tr>
<td><strong>TOTAL Number of Interviews</strong></td>
<td><strong>20</strong></td>
</tr>
</tbody>
</table>

Table 1.2: Number and Type of Interviews Collected

some voices were heard and others not in the process of determining whether Tocks Island dam should or should not have been built.
Constraints of the Study

The episode of Tocks Island took decades to evolve into the management conundrum that it became. As with most natural resource disputes, the cloud of dissention over the Delaware River and the Tocks Island dam did not just appear one day and disappear the next. The project spanned seven decades from the first basin-wide comprehensive development plan in 1929 to final congressional de-authorization in 1992. Previous to 1960 when the Tocks Island project was acquiring technical, bureaucratic and congressional support, there was little concern or dispute about building this dam on the Delaware. But what appeared simple in one decade became quite confusing in the next decade. Simultaneous with the planning and preparation for this massive public water works project in the latter 1960s, nationwide ripples of change reverberated throughout the entire political and cultural spectrum of society. These changes altered the way America’s environment, natural resources, and the individual’s roles in governmental processes concerning the former were viewed. Thus, I am looking at an evolving story, rather than directives handed down that merely were or were not implemented.

Certain clear points of change can be noted in a few specific years. However, in an effort to understand not just the events in question, but also the complex motivations behind competing interests that collided over the fate of this particular project, a broad time frame brackets the study. While this controversy is rooted in a long time-line of events, the dates of Congressional authorization in 1962 and Congressional de-authorization in 1992 form natural beginning and end points, with crucial dates in the
middle at 1966, 1971 and 1975. Thus, this time period from 1962 to 1992 bounded the study.

Within the spatial bounds of the states which contain the Delaware River basin, multiple scales of analysis could have been undertaken: local, within the valley which was to be flooded; regional, with the states of PA, NJ and NY seen both individually and as a unit; and finally, interstate/federal, with coalitions both pro and anti-dam, as well as federal-level bureaucracies. All of these scales were examined, but only as they intersected the Delaware River basin and as they formed a jigsaw puzzle of power alliances and competition within levels of government. It was the inherent clash of these scales of management that not only set the stage for conflict, but also revealed deep fissures in our ability to reconcile the uneven spatial distribution of natural resources, rivers a prime example, with political boundaries and hierarchical tiers of governmental control.

Concerning scales of governance, the central question of interest was two-fold: 1) what role did unexpected non-governmental forces such as media and grassroots protests have in altering the trajectory of entrenched decision-making in environmental policy, and 2) how have governmental institutions adapted to the changes brought about by the creation of environmental laws and regulations the 1970s? In the case of Tocks Island dam, what intersection of conditions occurred which altered the path of policy enough to derail the entire plan? Of course, to answer this big question several smaller ones must be addressed. Which unexpected forces arose in the Tocks Island controversy? What was the established bureaucratic structure for decision-making within large institutions (specifically the Corps) before outside factors disrupted the process? Clearly,
the expected result of planning within the sanctioned pathways of water management did not come to fruition. Thus, the various actors, roles and events had to be disentangled and prioritized according to relative influence on the outcome of the policy in question. I divide the interested parties into direct and indirect actors, and events as either circumstantial or direct.

A number of approaches and assumptions inform this work. For me, one assumption is that human interactions with the environment have been defined—and continue to be plagued—by problems associated with the domination and control of nature. Whether this comes with conscious awareness or not, the underlying interaction propels and motivates us to continually re-work and transform our surroundings to accommodate the desires of man. While this is a relatively new mainstream view, it has a long history in geography and the American conservation, progressive and environmental movements. America’s evolving views about the relative impact of humans on the planet have certainly changed perspectives over the course of time. This has done nothing to diminish the dilemma, however. Debates surrounding natural resources, their use, non-use, exploitation, conservation, preservation, and extinction continue unabated today.


4 Author, Cleaning up the Delaware. as cited in Featherstone, Interstate Compacts and Cooperation in Interstate River Basins.

5 CD of information acquired from the Delaware River Basin Commission Spring 2000.

6 Featherstone, Interstate Compacts and Cooperation in Interstate River Basins.


10 I place the start of this conservation era with the debate following publication of G.P Marsh’s widely read book detailing man as a negative agent of change on the landscape, George Perkins Marsh, Man and Nature: Or Physical Geography as Modified by Human Action (New York: Scribner, 1965 [1864]); the creation of the first National Park in 1872 (Yellowstone); the 1891 act granting the President authority to create federal forest reserves; the founding of the Sierra Club in 1892, and Frederick Jackson Turner’s declaration of the ‘closing of the American Frontier’.


Blomley, *The Legal Geographic Reader: Law, Power, and Space*, p.xix

As an example, look at Carter Lake, Iowa, and its location within the physical boundary of Nebraska: the Missouri River functions as the boundary between Iowa and Nebraska. Located outside Council Bluffs, Iowa, sits the small town of Carter Lake. However, the town of Carter Lake remained a part of Iowa, even after Missouri River changed its channel and stranded Carter Lake on the Nebraska side of the river. Now the channel of the Missouri River runs between Council Bluffs and Carter Lake—two places in Iowa.


Leopold, *The Flood Control Controversy: Big Dams, Little Dams, and Land Management*. discusses this in great length including the relative merits, drawbacks and conflicts inherent in attempting to satisfy both upper basin, tributary needs compared with lower basin main-stem needs.

See Albert, *Damming the Delaware: The Rise and Fall of Tocks Island*. Albert was on staff at the Delaware River Basin Commission for nearly 20 years, and continues activist work and conservation writing concerning the Delaware River. His historical look at water issues along the Delaware River is the only detailed account of the Tocks Island controversy to date.

The ‘308’ reports on the Delaware River came out during a stretch from 1929-1934, the final conclusions of which were stated in a comprehensive basin wide water-resources plan for the Delaware. Tocks Island dam is first proposed in this plan. *Delaware River Report 308*. House. 5221934: Pages.

This is not to suggest that Americans were all in agreement concerning this new awakening of environmental sensitivity, or that any consensus existed about how that might manifest itself, e.g. limits on logging, dam-building or mining; but what did become clear was that limits to these activities were needed. For the first time in the planning lifespan of the Tocks Island project, environmental concerns and worries about the need for limitations on large public works entered into the public debate. And this did call into question the merits of such a large, expensive, and permanent project such as the building of a dam on the last undammed major river in the east.

Stakeholders can have a broadly assumed definition that ranges from implicitly connected parties to the forming and implementation a policy or decision, to amorphous obligations to future generations not yet born. For the purposes of this dissertation, stakeholder is defined to be those parties or groups of people not explicitly included in the decision-making process. One of the issues that later inflames the controversy over whether to build a dam on the Delaware River at Tocks Island revolves around exactly who is included and who is left out of the decision-making process. More will be said about stakeholders in later chapters.

This is as opposed to other sorts of structures such as social, economic. See Andrew Sayer, *Method in Social Science*, 2nd ed. (London: Routledge, 1992), Iain Hay, *Qualitative Research Methods in Human Geography* (Oxford: Oxford University Press, 2000), for a more detailed discussion of qualitative methods in social science and geography.

Analysis for the Social Sciences and Humanities (Reading: Addison-Wesley Publishing, 1969). for extended discussions on the pros and cons of various qualitative techniques.


33 Bailey, Methods in Social Science Research.


38 Bailey, Methods in Social Science Research.

39 Bailey outlines five tasks facing the content analyst. Those include: (1) draw a sample of documents, (2) define the content of categories based on the purpose of study (3) define the recording unit (4) define the context unit and finally, (5) define the system of enumeration. The sample and content categories are mentioned above. According to Bailey’s breakdown, when analyzing for pro or anti dam sentiment, my recording unit is the theme; the context unit is the newspaper article; and the system of enumeration is the strength of intensity. When assessing relative interest in the dam project, the system of enumeration would be the space, or amount of column inches used for news articles.

40 Babbie as quoted in Hay, Qualitative Research Methods in Human Geography., pp. 76-77.

41 See Creswell, Qualitative Enquiry.

42 Further back, look for Marsh, Man and Nature: Or Physical Geography as Modified by Human Action., Muir, A Thousand Mile Walk to the Gulf., compared to Gifford Pinchot, The Fight for Conservation (Garden City: Harcourt, Brace, 1910)., or Tarr, "An Effort to Control a Glacial Stream.". In the recent past ideas about man’s relation to nature get a more complex and nuanced treatment such as with Leopold, The Flood Control Controversy: Big Dams, Little Dams, and Land Management., Reisner, Cadillac Desert.,
Chapter 2
Towards A Central Park for Megalopolis: Evolving Rationale for Building a Dam on the Delaware River

Introduction

One of the first pamphlets printed by the Corps of Engineers in an enthusiastic effort to publicize and garner support for the Tocks Island Dam in the 1950s touted the entire project as creating a Central Park for Megalopolis. How the respective states within the Delaware River Basin progressed from their early competition for development of water resources into a state of cooperation and mutual interest (real or perceived) requires delving into the early history of the states and their water consumption needs. To that end, a brief overview of the last two hundred years of water issues along the Delaware helps in understanding the foundation of divergent needs and simmering issues between the states in the basin.

This chapter explores early water uses along the Delaware, and the growing contention between water users of the Delaware River Basin. As development and population growth continued throughout the eighteenth century, and up to the beginning of the canal-building era of the 1820s-1840s, water sources became contentious issues, especially between the cities of New York and Philadelphia, which were in a break-neck competition for urban supremacy along the eastern seaboard. It is against this backdrop that the Corps of Engineers rose to power as the preeminent ‘builder’ arm of the newly formed federal government. The sources of friction among the states of New York, New Jersey and Pennsylvania over use of Delaware River water also arose during this competition for development at the close of the 1700s and on into the first two decades of
the 1800s. These states progressed from a mutual non-development policy in 1783 (lest one state develop water resources or block navigation at the expense of opportunity for the others) to total interstate cooperation and the development of an interstate compact and an interstate basin commission, in 1961.

We now know these states would come full circle to become once more competitors for the water of the Delaware, as the plans for mutual cooperation started to unravel. To understand the power alliances and deep-rooted desire for control over this water is to comprehend the full array of strength (both economic and bureaucratic) aligned in favor of the Tocks Island dam project. The background, history, and water troubles in the decades leading up the Tocks Island project explain how perfect this dam appeared as an answer to everyone’s problems. Well…not everyone’s.

Early Delaware River History

The history of the Delaware River as a shared resource is as old as the history of this country. Henry Hudson ‘discovered’ the Delaware River system in 1609 for the Dutch West Indies Company. A year later, the Englishman Samuel Argall repeated this discovery; neither appeared to inform the local residents, the Lenni Lenape Indians, that they too had been discovered. The Dutch ruled the Delaware River region until 1664 when the English captured it.³ This region became an important piece of real estate during the revolutionary war as both the Battle of Trenton, and the siege at Valley Forge occurred on the Delaware or its tributaries.⁴ Not surprisingly, navigation on the Delaware arose early as an issue in 1770 when private entrepreneurs raised money to
improve the passage of timber rafts through the rapids at Trenton. As business boomed and alterations continued, New Jersey and Pennsylvania established a commission in 1783 to determine ownership of each island in the Delaware. During that same year, the two states signed a mutual non-development treaty in order to assure that the river stayed free of obstruction and open to use by either state (Albert, *Damming the Delaware: The Rise and Fall of Tocks Island*, 1987).

In 1762, coal was discovered in the Wyoming Valley of Northeastern Pennsylvania, along the upper reaches of the Delaware River Basin and, by 1820, commercial shipments of coal began flowing down the Lehigh River, a major tributary of the Delaware. Although the U.S. Department of Labor lists the first recorded use of anthracite coal as 1762, and the first mining as 1775 near Pittston, Pennsylvania, it was anthracite coal discovered in the Lehigh region in 1792 that ushered in the coal industry with rapid speed—and with it vast interest in the Lehigh and Delaware Rivers as commercial highways for transport of coal to the markets of Philadelphia and New York.

Both rivers grew in importance as the conduit linking coal to its potential markets downstream. Due to the steep topography and dangerously unpredictable river channel along the upper Lehigh River, improvements came in the form of wing dams and canals from 1820-1839. Wing dams obstructed navigation, a point of contention between the states of New Jersey and Pennsylvania, while they diverted water into canal beds parallel to the river, thus allowing a more stable flow of water on which to transport arcs of coal. It has been said that the first shipment of coal down the seventy-two mile-long Lehigh Canal, in 1824, marked the start of the industrial revolution in North America. In fact, the Lehigh Canal opened to such success that other canals in Pennsylvania and New
Jersey quickly appeared: the Morris Canal (Phillipsburg to Newark, New Jersey); the Delaware and Raritan Canal (Bulls Island, Bordentown and Trenton, to New Brunswick, New Jersey); and the Delaware and Hudson (Honesdale, Pennsylvania to Kingston, New York) as well as the Schuylkill (Port Carbon to Philadelphia, Pennsylvania) canals completed the tapestry of re-plumbing that allowed coal from the Lehigh region of Pennsylvania to flow into New York City and Philadelphia markets.⁹

When the first entrepreneurs began to alter rivers for industrial purposes, political obstacles and infrastructural constraints were practically non-existent relative to today’s standards. For example, Lehigh Coal and Navigation (LC&N), America’s first recorded coal mining company, was granted monopolistic rights over the development of the entire Lehigh River by the Pennsylvania State Assembly—an advantage that would propel LC&N into becoming a regional economic force for the next 150 years.¹⁰ Contrary to later policy and practice, the federal and state governments at that time preferred to encourage private commercial development of water resources with minimal direct governmental intervention. Evolving technology of water-capture and dam building brought new opportunities for other kinds of water management in a rapidly expanding economy, however, and industrialists soon found themselves in competition with other water users. Growing contingents of competing interests wanted to use impounded water for municipal drinking water, canals, mining use, and flood control.¹¹

Such a frenzy of water development inspired this region that another similar pattern unfolded in New York at this same time that dramatically shifted the balance of power in water politics. Rising Republican stars such as Henry Clay and John C. Calhoun pressed for systems of canals and roads. An ambitious plan arose to connect
Albany, New York, on the Hudson River, to Buffalo, New York, at the edge of Lake Erie, via a canal through 364 miles of wilderness (including a northward spur to Lake Champlain,) but more importantly to connect New York City to the nation’s interior markets.\(^{12}\) The Erie canal opened in 1824 and not long after, Clay insisted that Congress not only had the right but, indeed, “a great national duty to open the veins of commerce that bound east to west.”\(^{13}\)

In 1907, the New York Legislature authorized flood-control and hydro-dam development studies in the Delaware River region of that state. Simultaneous to this act, an even larger scheme to develop a series of lakes in the Upper Delaware Basin upstream of Port Jervis that would require 20 hydropower dams created interstate controversy.\(^{14}\) Shortly after, New Jersey and Pennsylvania each promoted other river projects and the all but forgotten anti-dam treaty of 1783 rose out of the past as a lever used by each state to thwart the other.\(^{15}\)

By the 1920s, schemes to develop the Delaware River altered with demographic and technological trends. The canal-building fever of the 1820s turned out to be a mere bubble in the advance of transportation technology (quickly overtaken by railroad competition) and hydropower as a commercial interest lost ground to the thirst of New York City and Philadelphia—each of whom voraciously searched for expanding fresh drinking water supplies. For New York City, the question revolved around supply, while for Philadelphia water quality spurred the issue. New York City engineers completed the Croton Aqueduct in 1906, followed immediately by the Catskill System of reservoirs and dams from 1907-1928 creating nearly 150 miles of aqueducts funneling water from the
eastern side of the Catskills down into the city water supplies. Even before its completion, it was clear that the Catskill system would be inadequate to satisfy

Source: New York City Drinking Water Supply and Quality Statement NYC Dept of Environmental Protection 1998

Figure 2.1: New York City Regional Water Supply System
New York City drinking water needs, as the residents of that city had the dubious honor of being the largest per capita water users in the nation at the time. Running out of water options, New York engineers greedily eyed the Upper Delaware basin—and still do today. This ambition was, and is, especially problematic from a legal standpoint as the water law tradition in the Eastern U.S. stems from a tradition that makes it illegal to transfer water out of its basin of origin for use elsewhere.\(^\text{17}\) (This tradition runs completely counter to the evolution of water laws in the Western U.S. and is only the beginning of a diverging water history that complicates comparisons of Eastern and Western water politics.)

Philadelphia took a less costly approach of tapping closer water supplies, but they soon became so polluted as to threaten the health of city residents. Historically, the Delaware River had been noted for pollution problems, so much so that one of the city’s benefactors, Benjamin Franklin, left money to the city earmarked specifically for a water treatment system out of concern for water-borne diseases.\(^\text{18}\) In 1799, Philadelphia’s first pollution survey noted contamination entering the river from wharves, ships and public sewers.\(^\text{19}\) Problems only worsened with time, as Philadelphia had constructed 67 miles of combined sewage and storm drainage systems that emptied raw effluent directly into the Schuylkill and Delaware rivers by 1867.\(^\text{20}\)

A series of technical studies in the mid-1880s also looked at the Upper Delaware as a potential water source.\(^\text{21}\) Within Philadelphia, debates continued over the relative merits of building filtration plants versus the expense of reservoirs.\(^\text{22}\) In fact, during the years 1899-1911 the city did build sand filters, the largest of their kind in the world at that time. While heading off the threat of waterborne epidemics from the water supply,
problems still persisted with odor and taste of the water. The Delaware remained, however, one of the best fisheries for shad of any river along the Atlantic seaboard; that is, until its pollution problems became so intense that the shad industry collapsed and shad all but disappeared within the first two decades of the 20th century. Water pollution was the primary cause. It seems pollution peaked during the Second World War, when anecdotal accounts concerning the state of pollution were legendary. According to one report: “Aircraft pilots landing in Philadelphia for the first time were cautioned not to be alarmed when they smelled the Delaware River—at five thousand feet above the river. Gases from the River caused metal corrosion on the assembly line at a secret radar plant during the war years. All sorts of solids and other materials floated on the River.”

The city of Philadelphia alone could not create such a foul and fetid condition. One of the geographic misfortunes all port cities must face is the obvious, yet often forgotten, fact that all water flows downhill. Philadelphia not only created municipal and industrial waste, it was also the unasked recipient of in-stream suspended sediments as a by-product of natural erosion processes, as well as millions of gallons of raw sewage from other upstream communities as well as the cities of Trenton and Camden, all of which also ran downstream to the geographically disadvantaged city of Wilmington, Delaware.

Squeezed in between the behemoth neighbors of New York City to the north and Philadelphia to the south, sat the state of New Jersey. Not to be overlooked like the plain cousin at the party, New Jersey had plans of its own for the Delaware River. With more than 2 million people already living in northern New Jersey, and an annual growth rate
greater than New York City, the tiny state of New Jersey faced its own growing pains. By 1921 New Jersey had set its sights on Delaware water as the answer to its municipal and industrial problems.\textsuperscript{27} One plan involved a reservoir on a Delaware tributary, but required a pumping station on the main-stem of the Delaware near Belvedere. Another included a series of eight reservoirs to be built over several decades on New Jersey tributaries of the Delaware, but also included as a final stage a pumping station on the Delaware proper, near Wallpack Bend.\textsuperscript{28}

**Planning Stages for the Tocks Island Dam**

Established in 1802, the U.S. Army Corps of Engineers (hereafter, simply the Corps) asserted itself as the premier cadre of professional engineers who represented the federal government. They could build any kind of structure, anywhere, any time. Even before the 1920s, fifty years of federally funded hydrographical investigation and projects had already resulted in a half-finished breakwater and ice pier at Cape Henlopen, Delaware, a chain of rectangular piers at Philadelphia, and an ice harbor at Chester, Pennsylvania.\textsuperscript{29}

It seemed clear by the early 1920s that New York, New Jersey and Pennsylvania desperately needed a cohesive plan by which the waters of the Delaware River could be shared or allocated. The Tri-State Commission was created in 1923, with the goal of negotiating an interstate agreement on the waters of this shared resource, but the actual work of the commission fell on the shoulders of multiple existing agencies, including the Corps, which conducted detailed flow studies.\textsuperscript{30} Within the next year an interstate
compact had been drafted and the states then asked to ratify it. With only one other interstate compact in existence at this time, connecting seven states along the Colorado River to a mutual contract as of 1922, the proposal was daring and farsighted. Attempts were made to pass the bill in the three states in 1925 and 1927, with lengthy debate and much lobbying.

On the Pennsylvania side, one of the strongest lobbying efforts came from the Lehigh Coal and Navigation Corporation, which had been given monopolistic rights along a Delaware tributary a hundred years earlier; this early blurring of commercial and governmental interests now put Pennsylvania in a tight spot. Lehigh Coal and Navigation had many friends in the state house, and had very lucrative reasons for not wanting to see development along the Delaware. The next logical option would be development along the tributaries if no agreement could be found, and this corporation owned the entire Lehigh River.

Needless to say, all the neighboring states along the Delaware River were not getting along so well. Tempers flared between bureaucrats, citizens, politicians, regional developers and other conflicting stakeholders. Plans continued. Each state feared the others would snatch all the water. New York decided to act unilaterally, and tap the western slopes of the Catskills, which drain into the Delaware basin; talks broke down and the end result, an expensive two-year water fight, came in the form of a lawsuit heard before the Supreme Court in 1931. In the 1931 finding, the Supreme Court, as the only sanctioned pathway for interstate conflict resolution concerning water issues, was forced to decide matters of law; in actuality, the underlying problems were matters of allocation with roots in hydrology, geology, economics, and regional development. Without
expertise on these areas, ultimately all the Court could do was rule on allocation. But a simple calculus of who gets how much did not disentangle the underlying frictions between the states.

The final conclusions allowed New York City to divert 440 mgd of water, subject to certain conditions that would guarantee downstream releases. Simultaneous to this legal rankling, the Corps had been charged with completing what later came to be known as the ‘308’ Reports. Following the Rivers and Harbors Act of 1925, Congress directed the Secretary of War to produce a list of potential rivers on which power development might be possible in combination with other federal interests such as irrigation, flood control and navigation. Within this package, studies were authorized for the Delaware and its seven tributaries. This was the first comprehensive basin-wide water resources plan developed for the Delaware River and primarily dealt with dams, looking at over 30 potential dam sites, one of which was at Tocks Island. Tocks was by far the largest proposed reservoir site in the 308 Reports, with an expected storage capacity of 214 billion gallons in a reservoir that would extend out some 40 miles, to just below Port Jervis near the New York border. The 308 Reports signaled much more than the first comprehensive plans for the Delaware river; many rivers were studied and many 308 Reports produced that served as the basis for dam building projects all across the nation in the coming decades.

No great response came to the publication the 308 Report for the Delaware River when originally published, presumably because there was no money in the federal coffers to build massive projects. Then two successive storms caused major flooding along the tributaries of the Delaware. This and other floods (along the Mississippi especially)
prompted Congress to pass the Flood Control Act of 1936. Not only did this newest statute expand the responsibility of the federal government, but it also expanded the role of the Corps. The Corps flood control responsibilities would make it one of the nation’s largest dam-building agencies. From this point on, a plan to build a dam on the Delaware became the centerpiece of plans to develop the entire basin.

Adding to the existing pressure of building dams, it became apparent to everyone involved that, New York City demands would increase in the future beyond the 440 mgd of water allocated from the Delaware. And they did, in the form of a 1952 petition to the Supreme Court to increase its daily diversions to 800 mgd. The Court appointed a Special Master, an outside party to the dispute who consults witnesses, experts, seeks a compromise, then files a report to the Court. In 1954 a consent decree was signed by each state involved that allowed for New York City to increase its share of the Delaware (via the construction of reservoirs at Neversink, Cannonsville, and Pepacton), but with restrictions. Those restrictions require that New York make sufficient releases from its reservoirs to guarantee a minimum flow of 1,750 cubic feet per second (cfs) at Montague, New Jersey—a point on the main-stem of the river below Port Jervis, New York. The state of New Jersey was permitted to pull 100 mgd out of the Delaware from the Raritan Canal, for its northern metropolitan area in exchange for which New Jersey would build a reservoir on its side of the river that had been sought by Pennsylvania. This turned out to be an impoundment at Wallpack Bend near the Delaware Water Gap, and later came to be called the proposed Tocks Island Project. It should be noted here that the very existence of this petition and decree, only twenty tears after the 1931 Supreme Court ruling shows wide gaps both in conflict resolution and in water management policies.
along the Delaware River. The 1931 decision addressed the allocation dilemma at that time, but this clearly did not solve the underlying problem, as all interested parties endured another protracted round in court twenty years later over essentially the same allocation problems. In the intervening years, no long-term managerial framework had been established—leaving each party to pursue its own interests, ostensibly to the detriment of the other states along the river. No long-term framework for sorting out interstate water allocation and/or management that included all the states in question had been established in 1931. And the decree of 1954 did not accomplish this either. New York City got an increased share of Delaware River water, but still the population of the basin continued to grow; New Jersey and Pennsylvania continued to live in the shadow of growing New York City water demands, and it seemed clear that more Supreme Court battles would be inevitable in the future.

Concern with growing federal powers did spur enough interest and worry over loss of state control that some states generated their own cooperative planning efforts in water management. Each of the states of New York, New Jersey and Pennsylvania had Commissions for Interstate Development, but by 1936, they joined forces to create the Interstate Commission on the Delaware River Basin, or INCODEL. The state of Delaware joined INCODEL in 1938 and plans were discussed concerning two major priorities—water supply and stream pollution. INCODEL retained no regulatory or enforcement power, it served only as a venue to explore joint plans. The creation of INCODEL did clarify one thing though; some issues found all states in agreement, while other issues pitted each state against the other in attempts to allocate this shared resource.
But in general, it would be more beneficial to work out some sort of interstate agreement rather than fall prey to the unpredictability of federal plans or Supreme Court mandates.

The 1954 restrictions required that New York make sufficient releases from its reservoirs to guarantee a minimum flow of 1,750 cubic feet per second (cfs) at Montague, New Jersey—a point on the main stem of the river below Port Jervis, New York. New Jersey was allowed to continue its 100 mgd diversion out of the Delaware, in exchange for which New Jersey would build a reservoir on its side of the river that had been sought by Pennsylvania. This turned out to be an impoundment near the Delaware Water Gap, and later came to be called the Tocks Island Reservoir Project. At this point, it became clear to all states involved that track was being laid for the construction of a dam on the Delaware River as a solution to longstanding water problems in the region.

Flooding, Droughts and Federal Authorization

The past history of Delaware River Basin flooding indicates that floods can be experienced in all seasons of the year. However, two seasons remain particularly important. Severe floods that occur in the late winter and spring are compounded by snowmelt and moving ice; and those that occur in the late summer and fall have been associated with tropical storms moving up the Atlantic coast. In late summer 1955, the basin experienced its most severe flood caused by Hurricanes Connie (August 11th through 13th) and Diane (almost immediately after on August 18th and 19th). The path of the storm paralleled the flow of the Delaware, causing maximum flooding in the tributaries rather than on the main-stem. Within the basin, a hundred lives were lost and
severe flooding set records at stream flow gauges up and down the river; the river crested at Trenton with 329,000 cfs, a figure that is 12 percent higher than any flow ever recorded, and shockingly far above the average August discharge of 1450 cfs. The hurricanes caused $5,000,000 of damage in a dozen states, 20 percent of which happened in the Delaware Basin.

As often happens, disaster spurs much reaction. One week later, Pennsylvania and New Jersey politicians urged their legislatures to approve flood-control dams on the Delaware. The Delaware River Basin Advisory Committee was established to consider river basin management issues for the basin, at interstate level. At a federal level, the U.S. Congress authorized the Corps to undertake a basin wide study of water resources in the Delaware, the final result of which was the “Report on the Comprehensive Study on the Water Resources of the Delaware River Basin.” Albert notes that,

As studies go the Delaware River Basin Survey was large and uniquely comprehensive. It was the Corps’ first truly comprehensive river basin planning endeavor. There was little doubt from the beginning that the survey would recommend one or more dams for the Delaware River. The Corps, having a few dam building aspirations of its own, was well aware of the political interest in such a project.

Parts of the report were released in 1957, namely the special Tocks Island study, in which a reservoir at Tocks Island was found to have twice the capacity for water storage as the previously proposed Wallpack Bend site. The additional storage at Tocks Island would cost only about 50 percent more, and was seen as a better value than Wallpack Bend. Although no formal deal had been completed, the galvanized post-flood mood appears to have created considerable momentum and an assumption of universal support.

The Corps major problem in releasing the special Tocks Island study was containing the enthusiasm of the basin’s professionals. The Corps’ report addressed only Tocks Island’s practicability in comparison to a similar dam at Wallpack Bend. It had yet
to examine the dam’s economic feasibility and its relationship to other potential dam projects in the basin. In spite of this, some clamored for the immediate construction of a dam at Tocks Island. Francis A. Pitkin, INCODEL’s chairman, called for the initiation of construction in 1958.  

Now for the first time, the executive branch of the federal government entered the picture with full force. Previous to this moment, all water management dilemmas had been resolved through the Supreme Court, a Special Master, and allocation rules. The executive branch of the federal government had not really activated the full force of its bureaucracy or bent its attention to the Delaware River Basin—that is until the 1955 floods. By 1961, fully eleven federal agencies had major responsibilities in water resources management and eleven more agencies participated in an auxiliary capacity, gathering data of various forms. Those agencies came under the departments of: Defense, Agriculture, Interior, Commerce, Health-Education and Welfare, and Treasury. All of these cabinet level actors performed fragmented or overlapping functions resulting in a fragmented approach to management.  

In his assessment of federal agencies and their roles, Featherstone notes that the Corps was the principle agency involved in water management in the basin. Federally provided flood control had always included the basic skills of the Corps, such as flood control dams, channel improvements, and protective works. But in the Omnibus River and Harbors Flood Control Act of 1958, the Corps was charged with the authority to engage in limited water supply activities. The Act authorized the agency to provide water supply storage in federally funded reservoir projects.  

The Delaware River Basin Commission (hereafter, DRBC) was established in 1961 to administer the Delaware River Compact, as an idea that had sprung out of yet another study, this one conducted by a research group from Syracuse University. The
DRBC was charged with addressing and resolving major water resources problems that required regional solutions. These problems included water supply shortages and disputes over apportionment, severe pollution in the Delaware and its major tributaries, serious flooding, and institutional constraints compounded by the lack of coordination and cooperation among states. The Delaware River Interstate Compact followed soon after, which took the unheard of position of inviting a federal and interstate coalition in water management.\(^{49}\) The compact ensured that the previously bickering states (with two failed attempts at an interstate compact in the 1920s) would be balanced by a representative vote by the federal government. One short year later, in 1962, Congress authorized funding for the Tocks Island dam project.

Even before the newly formed water management infrastructure and grand plans could be put into place, Mother Nature came along to remind residents that riverine life shifts from extremes throughout the cycles of nature. On the heels of the worst flooding ever seen in the Delaware River Basin, the region found itself in the midst of drought. Nobody seemed worried about a lack of precipitation until reservoir levels dropped drastically throughout the river basin; flows also reached all time lows, just after having reached record flood levels a few years earlier. The entire region was rocked into heightened anxiety when in June of 1965 New York City failed to make its Montague flow releases.\(^{50}\) With New York City apparently taken off-guard, and no plan in sight for weathering the drought, the downstream states panicked, sensing that Supreme Court decrees would be moot if the drought continued. DRBC negotiations and conservation plans helped ease the situation so that the states all squeaked through the drought without
major catastrophe, but the underlying threat held deep implications for future planning scenarios.

Without the presence of water, all the elegant calculations and fair allocation schemes would amount to nothing. Everyone realized (for possibly the first time) that the allocation of water in the Delaware, based on guaranteed amounts of water released at Montague, really amounted to a line of dominoes that could all tumble, since downstream users completely depended on upstream users maintaining the flow in order to preserve the essential characteristics of the river; if the upstream flow could not be guaranteed at Montague, then the system of allocation downstream of that point would collapse.

While the users along most of the river concerned themselves with the quantity of water, those who relied on the river in the lower basin near the mouth of the river had to worry about drastic changes in the quality of river water created by changes in upstream flow. As rivers flow into seas, there always exists an area of transition in which saltwater mixes with freshwater; this stretch is an estuary. These regions, along with continental shelves contain some of the world’s greatest fishing grounds; but the estuarial regions also depend upon the seasonal timing of nutrients and freshwater as they flow out of rivers. When these factors fall out of equilibrium, the ecosystems within estuaries begin to break apart. The boundary at which freshwater meets saltwater, the salt front, varies with tidal flows but is also held in check by the river itself. Fresh water pours down while salt water pushes up the estuary, and the mixing of these two opposing water flows creates the estuarial balance. If water could not be relied on to flow down the Delaware, then the lower basin had to worry about saltwater intrusion into its freshwater supplies. During the drought of the mid-1960s, stream flow in the main stem of the
Delaware dropped to minimum flow of 1,309 cfs at Trenton and the salt front (defined as 250 mg/l isochlor) migrated 12 miles upstream from its normal range. Suddenly, freshwater supplies, and the users dependent on that freshwater, faced the danger of saltwater intrusion. Emergency contingency plans had to be formed in case the drought did not abate. In light of this threat, a study assessing the benefits of raising the pool level of Tocks Island Reservoir from its original 428-foot elevation to a new height of 450-feet seemed a reasonable addition to the plans. The extra water could be held in storage, and then released to repel saltwater intrusion in the estuarial region of the river, if another drought occurred. Thus, the ever-growing plans for the Tocks Island reservoir now encompassed another promise to save the region’s water users from potential natural hazards.

It is important to note that raising the pool level actually decreased the benefits of Tocks Island dam with respect to cost-benefit analyses. In order to garner federal funding allocations, the designers and builders of the dam needed to show that the costs of building the dam were less than the potential benefits that would result when the dam was built. If they could not show this, in other words if the ratio of benefit to cost did not come out as greater than 1:1, the dam could not be built. Seemingly insignificant details such as what proportion of water in a reservoir is allocated as active water storage pool, compared to the portion of the same reservoir that is allocated as flood-control pool actually change the economic calculus of the benefit-cost ratio. Thus, changing the pool height, or the prospective use of said water became critical in reassessing the potential cost versus benefits of Tocks Island reservoir. And Tocks Island already came perilously close to the ill-fated ‘less than one’ ratio.
As costs and benefits came under more scrutiny, and as concerns arose about the need for the project to be built at all, Tocks boosters found a gift-horse. Tocks Island became one of the first large-scale federal dam projects to use recreation benefits in the calculation of its benefit-cost ratio.

Central Park for Megalopolis

The frictionless universe in which ideas form eventually gives way to a more complex scenario of balancing forces and tensions. In the case of Tocks Island, this happened sooner rather than later. Even though recent natural weather events left people feeling both vulnerable and motivated to react in some way, sustained interest and financial backing also had to coincide with these feelings—and those were more tenuous. While plans already existed for reworking the Delaware River Basin, a plan is only the first step. It is true that the suggested water works projects in the Delaware River Basin Survey combined with the River and Harbor Flood Control Act of 1958 provided a strong push for dam building on the Delaware, but complications existed from the start.

One early complication concerned actual site locations of dam and spillway. The Tocks Island Dam discussed in the original Delaware River Basin Report would be located across the northern tip of an island in the middle of the Delaware River. This island, Tocks Island, was owned by the state of New Jersey and located only six miles upstream from the Delaware River Water Gap. Previous geological studies conducted by the Corps made clear that a concrete dam at that site would not be possible due to the inconsistent patterns of bedrock and glacial rubble. On the other hand, an earth-and-rock
dam might be feasible. Thus, the Basin Report detailed a steep earth-and-rock dam spanning 3,200 feet of the narrow Minisink Valley. Its planned specifications included a height of 160 feet above the riverbed, a width varying between 400 and 900 feet and a spillway on the New Jersey side of the river. A reservoir was to be created called the Tocks Island Reservoir, which stretched thirty-seven miles up the border between Pennsylvania and New Jersey—all the way to Port Jervis at the New York border of tri-state area. This reservoir would hold back nearly 250 billion gallons of water, with a surface area of 12,300 acres and maximum depth of 140 feet. Ten gates of forty-foot length (and 30 foot width) would regulate flow releases down the river. Thus, the amount of water behind the reservoir would fluctuate seasonally, even daily at times.

With respect to hydroelectric power generation, regulated releases of water through ten twenty-two foot diameter conduits in the dam structure would provide water to the dam’s powerhouse. In theory, the plant consisted of two 33,000 horsepower turbines connected to 23,000 kilowatt generators and other necessary equipment. This actually would be larger than any existing hydropower operation in the basin, with an estimated dependable production of 281.5 million kilowatt hours.

Subsequent Corps investigations found geologic problems with the proposed site. It seems that glacial melting had destroyed the sedimentary layers of bedrock in the area, leaving instead massive and varying amounts of till, lake material, and drift material underlying the ordinary sedimentary deposits of the river throughout the valley. Retreating ice in the last glacial age created pockets of melt-lakes; those pockets collected sediment as the surface eroded. When one steps on solid ground, the last thing to come to mind is what might lie underneath. But in the business of dam building, this
question is an essential one. Given the weight of the water to be held back, the weight of the dam materials themselves, and the vicissitudes of weather cycles, suitable foundation conditions upon which to build such a massive structure are of paramount importance. In the valley along the Delaware, what seemed to the naked eye to be completely solid was in fact, a hodge-podge of boulders, rock powder, sediment laid down in deposits up to 200 ft in depth and an unpredictable mix of bedrock chunks. After taking a total of seven miles in core samples, the Corps came to the unhappy conclusion that at any one location, the mix of these elements varied tremendously.

Cost became an immediate issue as well. The original dam package was to cost $92 million. By the 1962 Congressional authorization, the cost had jumped to $95 million. This optimistic estimate quickly and frequently changed as the geologic problems surfaced and revised estimates for land acquisition, relocation of existing infrastructure and added protective works for the upper part of the reservoir added to the cost.

In the end, it was recreation more than any other element of the project that was to become the selling point of Tocks Island. Recreation would use water already in the reservoir for other purposes (the hydroelectric, the flood control etc.) therefore, it can be seen as a cheap addition to the project. On the favorable side, tremendous benefits could be calculated from incoming recreational dollars. It also had the benefit of publicity. Everyone can anticipate using a new reservoir for water sports, camping and scenic beauty more easily than (s)he can anticipate a huge wall that would prevent some potential disaster in the amorphous future. In the beginning, the National Park Service (NPS) created the recreation section of the Basin Report and as it happened a consultant
was hired who knew the scenic beauty of the area intimately, as a native of Pennsylvania, and stressed the recreational potential.

Given that most of the responsibilities of the NPS in the eastern part of the U.S. largely included looking after historical landmarks in urban settings, such as the Liberty Bell in Philadelphia or the Bunker Hill Monument in Boston, this turn provided an opening for the NPS to have a major park destination in the East. Almost all of the major NPS facilities are in the western states with sparse population. Of course, one obvious reason for this distribution lies in the combination of dense population and land tenure of the eastern states. Most of the land resides in private hands. Nobody appeared concerned about this detail in the initial planning stages of the project, however, with all the excitement that a park in the middle of the sprawling eastern seaboard generated.

And so it was that recreational opportunity became the strut that propped up what might otherwise have been considered as a shaky project. When early publicity started and pamphlets came out announcing a major new water project in the Delaware River Basin, it was not flood control, nor hydropower benefits that created the buzz, it was talk of having a veritable ‘Central Park for Megalopolis’ that boosters pushed.
Figure 2.2: Unique Location of the Delaware River Basin in the Heart of Megalopolis
1 The phrase Central Park for Megalopolis was first used by Robert Nathan & Assoc., the first consultant to examine the potential impacts of the park. They believed the DWGNRA to be analogous to Central Park. When designated, Central Park was outside the developed area but the city soon developed all around it. Nathan predicted that Megalopolis, the East Coast’s super-city, would do the same around the TI region. Albert p. 90

2 Certainly New York would win this contest, but previous to the completion of the Erie Canal, and Pennsylvania’s inability to match this economic transportation corridor, both cities vied for dominance on the Eastern seaboard.


4 Washington’s famed crossing of the Delaware still lives on in the place name for the village of Washington’s Crossing—which ironically, is now home to the Delaware River Keepers’ offices in Pennsylvania.


12 At that time, such a project was considered a very risky venture for the required capital, as it was the longest canal in the world by far. But the canal’s success repaid investors in a mere seven years, and


14 In fact, in the New York State Water Supply Commission report, the developers of this power scheme were only ever identified as ‘interested persons’ but the report intimates that the multitude of lakes would allow for development of resorts—thus increasing land values. See Commission, Annual Report (New York: New York State Water Supply Commission, 1908).

15 Albert, Damming the Delaware: The Rise and Fall of Tocks Island.

16 Weidner, Water for a City., Blake, Water for the Cities. and Albert, Damming the Delaware: The Rise and Fall of Tocks Island..

17 Before the nineteenth century, our law derived from English common law whose foundation for watercourses was predicated on one simple idea Aqua, currit et debet currere, ut currere solebat: Literally, water flows and ought to flow as it has customarily flowed, Steinberg, Nature Incorporated: Industrialization and the Waters of New England. Thus, in the eyes of the law, property owners had the right to water flow on their lands without alteration or diminution. Anyone whose flow of water was hampered in some way had full legal authority to remove any physical barriers to that flow. This idea stemmed from previous water uses, namely that of small farmers. Industrialization radically altered the usefulness of that premise as incorporated businesses began exploiting water on rivers in the New England states in order to power textile mills.


21 Blake, Water for the Cities.

22 See Albert, Damming the Delaware: The Rise and Fall of Tocks Island. pp.12-16

23 Blake, Water for the Cities.

24 Featherstone, Interstate Compacts and Cooperation in Interstate River Basins.

25 Commission, Cleaning up the Delaware River.

26 Wolman, "Symposium Proceedings: Water Pollution Abatement in the Delaware River Basin with Special Reference to the City of Philadelphia,"vol.

27 Albert, Damming the Delaware: The Rise and Fall of Tocks Island.
Albert, *Damming the Delaware: The Rise and Fall of Tocks Island.*

These piers were among the first river projects to receive federal funding and some of them predated the revolution. This was also the Corps’ first fiasco with a project estimated to take a few years and $225,000 stretching to $3,000,000 when the last stone was laid some seventy years later. See Shallat, *Structures in the Stream,* for a full accounting.

Albert, *Damming the Delaware: The Rise and Fall of Tocks Island.*


The reports came out in 1926 and were published under the House Document #308


Anderson & Nichols, as cited in Featherstone, *Interstate Compacts and Cooperation in Interstate River Basins.*

Philips as cited in Featherstone, *Interstate Compacts and Cooperation in Interstate River Basins.*


Albert, *Damming the Delaware: The Rise and Fall of Tocks Island,* p.52


Albert, *Damming the Delaware: The Rise and Fall of Tocks Island,* p.55

Albert, *Damming the Delaware: The Rise and Fall of Tocks Island,* p.56

Featherstone, *Interstate Compacts and Cooperation in Interstate River Basins.*
Featherstone, Interstate Compacts and Cooperation in Interstate River Basins.

It was enacted by concurrent legislation in the four basin states, and at a federal level. The associated legislation is as follows: (U.S.) Public Law 87-328, 75 SL 688; (Delaware) 53 Delaware Laws 71; (New Jersey) Laws of 1961, Chapter 13; (New York) Laws of 1961, chapter 148; (Pennsylvania) Acts of 1961, No. 268.

The Delaware River Interstate Compact has a unique legal history and is currently under renegotiation. More detail concerning the evolution of this document, who serves on the DRBC, and what implications for cooperation or contestation have followed in the decades since will follow in the next chapter.

Albert, *Damming the Delaware: The Rise and Fall of Tocks Island*.


Phillips as cited in Featherstone, Interstate Compacts and Cooperation in Interstate River Basins.


This comes from the 1957 preliminary report that later became part of the Delaware River Basin Study. However, more information on the subject will be provided in the next chapter.

1957 preliminary report
Chapter 3
1962: Congressional Authorization of the Tocks Island Dam Project

Introduction

Leading up to its 1962 Congressional authorization, all bureaucratic and governmental entities appeared aligned behind the public works project created for the improvement of the Delaware River basin, whose capstone achievement was to be the Tocks Island dam and reservoir. Concerns about site location and potential benefits relative to costs could be seen, but in general, conditions looked favorable for those who had already invested time, labor, energy and planning over the previous decade to see their efforts come to fruition in the form of a dam and reservoir on the main stem of the Delaware. At this point, few people anticipated just how large and complex a public policy dispute this plan would inspire. Still reeling from floods and droughts, by 1962 almost nobody seemed to think that a big dam would be anything other than useful.

Ecosystem science teaches us that change across landscapes occurs more as a matter of gradients than clearly defined boundaries. Exactly where one ecosystem ends and another begins is not easy to determine. The same can be said of dominant human values and ideas changing across the social landscape. It is difficult to determine precisely when important thresholds of change are crossed.¹ Yaffee reminds us that “historians may look back at events or social movements as key determinants of major change, but it is difficult to view them as such when they are ongoing.”² Exactly where the boundaries of one era end and the other begin may not be exact, but they can be placed within decades. Certainly with respect to the beginning or the end of what has
been referred to as the ‘big dam era’ in water policy in America, the exact moment of emergence or decline is not easy to pinpoint. Building a big dam requires the coalescence of vast storehouses of money, political cohesion and technical expertise; this can sometimes take decades to orchestrate. Its momentum does not lend to quantification, thus even the rough guide of counting the number of dams built must also include an indefinable lag time for planning and execution that is not uniform across projects. With that in mind though, one can point out that the decade of 1960-69 demarcated the completion of the most dams in this country by far, with more than 18,000 dams completed. On either side of this apex, the number of dams built grew and shrank dramatically, with roughly 10,000 completed in the 1950s and 1970s, and fewer than 5,000 dams being built in either the decade of the 1940s or the 1980s. Since the height of the dam building craze in this country, our ideas and understanding about the relative value of dams has clearly transitioned, as a more complete tally of the costs and benefits has entered into the public discussion.

In the case of the Tocks Island dam project, what swirled into a three-pronged battle fought through the media, the courts and within the government drew attention to incongruent decision-making styles and deeply entrenched, long established patterns of behavior. Because the Tocks Island dam project became Congressionally authorized in 1962 and de-authorized in 1992, its place in time is unique and occurs within the critical juncture in federal water policy in which the era of big dam building and exploitation of water resources gives way to an era of water policy centered on long-term environmental conservation and non-structural options for water management. For this reason, a detailed account of the trajectory of this project, during such a transitional time in our
national understanding of water and policy, helps to clarify and explain larger trends in the context of national movement away from large public works projects, big dams and structural solutions to the problems of water management in general. Each of the next four chapters examines at different years along the lifespan of the Tocks Island project, the role of governmental, legal and media-driven forces. Separately, no one element can be disentangled from the others in its ultimate impact on the growing environmental conflict. Clearly, the nexus of all these elements influenced the trajectory of the Tocks Island dam project and its final resolution. However, for the sake of cohesion and clarity, separate sections in each chapter will discuss each of these three factors individually.

Corps of Engineers

The origins for the controversy over Tocks Island dam project can be seen in the context of styles and objectives of water management policy as they evolved in the preceding decades, and how those policies failed to reflect societal changes during the same time period. At every planning stage for this dam project, the Corps played a key role. For this reason, an understanding of the internal culture of the Corps is key to understanding water management policies. Some of the entrenched decision-making styles and behavior patterns of the Corps include a proclivity to seek solutions for difficult choices through elaborate technical analyses and planning processes whether they were warranted or not; and the development of an organizational image and style as the tightly controlled, even militant ‘Can do’ agency of public works and water management. These and other operating styles were set down as fundamental operating principles at the Corps from its inception.
The US Army Corps of Engineers originated in 1775 with the need for engineers to build a fort at the battle of Bunker Hill. Christened with its current name in 1794 and formally established in 1802 with the mission of training America’s federal engineers at the newly established Military Academy at West Point, the Corps is the oldest water resource agency in the country. Divided into two branches, military and civil, the civil branch far outstripped its counterpart to become what we think of today as the Corps of Engineers. Organized using the French model of the Ecole Polytechnique and French trained engineers, the Corps was set apart from the mainstream of American culture from its beginning—at least insofar as American cultural values of egalitarianism, constitutional democracy and capitalism mostly arose from the British tradition. The Ecole Polytechnique trained “an elite and scientific force of government planners that modernized the kingdom [of France] through highways, waterways, aqueducts and other spectacular projects.” Thus, from the beginning the elite Corps-trained engineers competed against the self-taught field engineers in America who worked from the British ‘self-trained builder-mechanic’ tradition of freewheeling capitalism. The early Corps leadership borrowed heavily from its French training and favored a planned economy where the army guided construction and science was the methodical tool of a centralized government. This philosophy infused the Corps deeply and its elite sensibility and self-image echoed far into the twentieth century. The Corps used French textbooks; French jetties became models for American projects; French architecture dominated early Corps fortifications. The French ideal of the engineer-scholar also infused the Corps with values such as a flair for monumental construction that empowered the nation-state.
Qualities such as these made change within the bureaucracy difficult, no matter the direction of desired change.

More than Dredging Rivers

The Corps, like many large government agencies, often has an overly simplistic public image of its actual duties and the scope of its powers—either favorable, or not. It is worth outlining briefly just what the Corps duties entail, and how its power base has evolved over time to be one of history’s most successful bureaucracies. Its original mandate revolved around building fortification, but quickly expanded into the realm of water management with the landmark report of Albert Gallatin, Secretary of the Treasury, in 1808. This report to Congress stressed the need for national roads and improved waterways as part of its bold statement on what would be necessary for the cohesion of the young United States—both of which were delegated to the Corps, although the improvements to waterways became its signature duty. After the War of 1812, the Corps duties expanded to include improved waterway navigation. This was highly controversial at the time since federal government and the states vied for powers within the umbrella of the Constitutional powers not explicitly stated at the formation of the United States. A more complete discussion of this tension follows in the section on legal issues. The General Survey Act of 1824 authorized a survey of all roads and canals of national importance, and essentially established the permanent involvement of the Corps in the improvement and maintenance of inland waterways. The Corps secured authority to regulate construction activities along navigable rivers in the 1899 Rivers and Harbors
This Act, seen as one of the most important pieces of legislation ever passed by Congress, also included a provision (later to be known as the Refuse Act) which made it a crime to discharge refuse material into any navigable waterway in the country without the Corps’ permission. Nearly one hundred years later, this Act became a strong piece of environmental legislation that would alter the mission of the Corps and its direction in water management. The importance of this will evolve further into the story as the Corps’ mission takes on still more changes in direction.

The introduction of the Flood Control Acts of 1917, 1928 and 1936 again expanded expectations of the Corps and its scope of activities improving levees and channels along rivers. Not only did the Flood Control Acts declare flood control as a federal responsibility, via the actions of the Corps, but it also required the Corps to use cost-benefit analysis. In other words, if the ratio of dollar value generated from estimated benefits of a proposed project as measured against the dollar value of estimated costs for said project did not have a favorable ratio then the federal government would not provide funding. At a minimum, a project would need a 1:1 ratio so that, for every dollar spent, at least one dollar of benefits would be generated. Requiring cost-benefit analysis for federal projects highlights the level of controversy inherent in allotting increasingly large tasks and power to an arm of the federal government. The credibility of the process of cost-benefit analysis as a sure means of determining feasibility would be called into question in the coming decades, as financial and economic contortions of potential costs and benefits stretched to circus like proportions—and beyond.

All of these Acts promoted the draining and cultivation of wetlands and swamps, as did the Swamp Land Acts of 1849 and 1860. This legislation also moved the Corps
from just waterways, to water-laden land projects. Between the Swamp Land Acts, the Flood Control Acts and the Rivers and Harbors Act, there weren’t many places left, nor many water tasks, that did not fall under the purview of the Corps. Its range of activities is breathtaking: the Corps dams rivers, straightens rivers, deepens rivers, ripraps rivers, builds bridges across rivers, builds locks and dams in rivers, and builds hatcheries, breakwaters and piers along rivers and beaches.¹⁶

The most visible manifestations of the power of the Corps of Engineers exist physically on the landscape and in the virtual re-plumbing of most of the nation’s waterways. In fact, the Corps employs so many people pursuing so many divergent types of work that, by 1962, it’s various activities would sometimes cancel each other out. For instance, Corps dams control flooding while its stream-channelization and wetlands drainage programs cause floods. The cascading impacts of such massive reworking of natural systems cannot be ignored. By draining wetlands so they may then become cultivated fields, the Corps essentially subsidizes intensive agriculture which increases soil erosion that then pours into the nation’s rivers, which the Corps then must dredge more frequently than before. The Corps is probably most famous though, for the monumental inland navigation projects such as the Tennessee-Tombigbee, the Red River, and the Arkansas River—each of which cost billions of dollars build, hundreds of millions of dollars to maintain, and hydrologically connected entire watersheds that were previously independent.¹⁷
The Corps of Engineers resides within the Department of Defense. However, there is another behemoth bureaucracy devoted to water development projects in this country—the Bureau of Reclamation (also called Reclamation or BuRec)—that is housed under the Department of the Interior. Under the Department of Interior’s mandate to administer public lands, the Bureau of Reclamation has risen to become the nation’s premier water development agency since the 1900s.\textsuperscript{18} Under the Reclamation Act of 1902, BuRec was authorized to construct irrigation projects, storage reservoirs, diversion dams, and distribution canals in the western states and territories.\textsuperscript{19} Unlike the virtually unchecked power of the Corps though, BuRec came under some restricting conditions: their water projects were to be funded by the proceeds of public land sales; only tracts of land of 160 acres or less and belonging to a single landowner were eligible to use this Act; if selected to receive a water project under this provision, the users were required to repay the estimated construction costs without interest in ten annual installments.\textsuperscript{20}

With BuRec responsible for small farmers and (theoretically at least) widely distributing the benefits of governmental funds to arid, sparsely populated western states, and the Corps responsible for very large projects impacting entire river basins east of the 100\textsuperscript{th} meridian, it seems logical to conclude that these agencies might work well together—between them anticipating water needs anywhere in the country. Unfortunately, few acts have been more thoroughly prostituted than the Reclamation Act, and no interagency rivalry has done more ecological damage, cost more money, or reshaped the waterways of the country more dramatically than the persistent competition between the Corps and BuRec.
BuRec rose quickly to prominence after its beginning in the first decade of the century, with Hoover Dam and Grand Coulee Dam as jewels in its bureaucratic and organizational crown. However, BuRec politics and dubious accounting practices left such a wake of bitterness and opposition that it remains an agency mired in controversy. Under the direction of Floyd Dominy, who remains one of the most reviled names in the conservation community, BuRec built dams all over the West, subsidizing irrigation farmers who received water at scandalously below-market prices. While BuRec fed the irrigators and burgeoning cities of the West, the taxpayers paid and paid and paid—not just the few who benefited from irrigation, but all tax payers who contributed to the federal coffers. And because government support and federal funds are required to accomplish environmental re-sculpting on such a grand scale, Congress has been a recurring battleground for forces both promoting and opposing large water projects. The tools needed to manipulate water create an interesting challenge. There is almost universal agreement that nothing can be accomplished concerning a shared resource such as river water without three key ingredients: money, technological capability, and political will. In their race to justify their own existence and create work for their agencies, the Corps and BuRec competed shamelessly for Congressional monies like children competing for parental attention—often at the expense of environmental quality or even common sense.

For an extreme example of this rivalry, it is worth revisiting the King’s River Project. In 1940, Congress received two separate reports recommending construction of a multi-purpose reservoir on the Kings River in California; one report by the Corps and the other by BuRec. Originally slated as a reclamation project, BuRec had initiated
studies concerning the feasibility of building the Pine Flat dam on the King’s River for irrigation; meanwhile, the Corps,

‘…under the pretext of flood control and despite both oral and written orders to the contrary from President Roosevelt, defiantly lobbied through the Congress a bill giving it the authority to build this dam, although its real purpose was to provide irrigation water and generate power.’

The scale of this competition staggers the mind. Reisner reminded us that their interwoven successes and failures encompass more complexity than merely regional supremacy, “the Corps confined its activities to the East and Middle West until the Great Depression—it is widely and falsely regarded as the ‘eastern counterpart’ to the Bureau of Reclamation—but the temptation of the West ultimately proved too much to resist.”

In 1962, Major General William Cassidy, then director of civil works for the Corps, gave a speech, “The Future of Water Development” which exemplifies the scale of ego, power, and ecological fallout that a bureaucracy the size of the Corps could generate. In this speech, Cassidy outlined plans for the near future. He decried the need in the next twenty years for some 320-million acre-feet of new reservoir storage at a cost of about $15 billion, roughly 13,000 miles of new or improved waterways; about sixty new or improved commercial harbors; 30 million kilowatts of hydro-electric power generation capacity; and recreational facilities for perhaps 300 million visitors at Corps reservoirs.

To give proportion to the scale of these dreams, in 1962 all the water stored in all the federally built reservoirs in the entire nation combined was roughly 300 million acre-feet. As an ecological comparison, Cassidy suggested that the Corps intended to dam up an amount of water slightly less than the entire run-off of the Mississippi River each year. But where would all these glorious projects take shape? With relatively even
rainfall, densely populated river valleys, and more mild topography that includes forests and wetlands, it was hard to find a good spot to build a dam in the much of the East in 1962. Besides that, after more than one hundred years of steady dam building, channelizing, dredging, forts, levees and piers, the Corps had practically ‘improved’ itself out of business. On the other hand, the West has severely uneven precipitation, seasonal floods with extreme variation in run-off, sparse populations, and fabulously dramatic topography. Narrow canyons with steep walls, vast basins, seasonal surges in run-off are exactly the conditions that make dam builders salivate. By 1962, the Corps had aggressively pushed into the West—practically stealing away the King’s River project from BuRec, then fighting a battle of epic proportions over the Missouri River resulting in the famed Pick-Sloan compromise in which both the Corps and BuRec plans were adopted by Congress and both the Corps and BuRec retained joint jurisdiction over the entire basin, as well as control over the implementation and operation of the multiple dams and reservoirs.

In summary, by 1962, the Corps dominated water politics in the East. The Corps also controlled the fate of most navigable waterways and a large amount of wetlands east of the 100th meridian, having grown in stature as legislation continually expanded its mission and responsibilities. Through expansive public works projects, the Corps also cemented its own power base and raison d’être. At the height of its power, the Corps had an internal culture derived from elite sensibilities, militant professionalism, centralized planning, and a flare for monumental projects. And its bitterly intense rivalry with BuRec propelled both agencies into competing for water projects that might never have been built, but for the race to build before the other agency got the chance. And in 1962,
the focus of its bureaucratic ingenuity was aimed at building the Tocks Island dam, a
Central Park for Megalopolis.

Legal Arsenal

An entirely different, yet interconnected realm of governmental interaction, also
works to change the natural environment. This is the law. Change can be affected in
subtle, unexpected ways, for instance, in the mercurial shades of meaning in the word
‘equitable’ or in conflicting mandates; it can also be deliberate, planned and direct as
with the Flood Control Act. This section provides a brief overview of the legislation
pertinent to the development of resources, the posture of the federal government on
matters of natural resources, and legislation that impacted the fate of the Delaware River.
It is hoped that from this section one theme will emerge, and that is a clear understanding
that environmental issues and natural resource management don’t fall exclusively into the
realms of science, technology, policy or law, but incorporate elements of all these into an
intricate weave of social interaction. The look and feel of this weave changes with time,
and one way to detect what our changing priorities are on issues is to look at our laws.
Legislation delineates what we as a society believe we ought to be doing (or not) with
respect to the social contract that binds us in our relations to each other, our governing
bodies and the environment. Of particular interest, and as a potentially more textured
view of those relations, is to look at where those laws break down. At least, to observe
the points of contention about legal issues is also to observe the gaps, holes and cracks
through which our previously understood social contracts transform, adjust in the face of inconsistencies or new ideas, or are reversed as priorities change.

Federalism

This country came about, in part, as one answer to the debate over power relations between a central authority and smaller autonomous states. Central and regional authorities divide powers and functions, with the mutual goal of maintaining significant levels of autonomy for the regional units. Ideally, a design of this nature prevents the concentration of too much power in any one level of government, and is called federalism. Having fled a society suffering the ill effects of highly concentrated power coupled with constrained individual liberties, our forefathers recognized both the danger of abuses resulting from concentrated centralized power and the danger of fragmentation and impotence from a weakened central government unable to govern. This inherent tension still exists today and impacts how business gets done at all scales of government. The balance of power both explicit and implied has shifted over the last two centuries, and those changes partially determine how policies unfold today—especially as regards the environment and how to utilize America’s natural resources.

Early philosophical arguments in support of federalism can be found in the Federalist papers. The authors of the Federalist papers argued that the best way of preserving liberty was to divide power based on the fear that, if power is centralized in any one place, it could be used to crush individual liberty. In Federalist No. 51, Madison argued that even in a democracy there can be the tyranny of the majority and this kind of
tyranny is the worst because it is so stifling and complete. Accordingly, a division of power between the federal and state governments reduces the possibility that any single majority will be able to control all centers of governmental power. Opponents of federalism argue that it severely fragments government and decision-making, necessitating multiple levels of negotiation, bargaining, and compromise to secure program implementation. This then, leads to waste, redundancy and overlapping or competing turfs of governmental interests. As it turns out both sides are right; the government’s role in water resource management has historically alternated between practically non-existent and completely dominant.

The Commerce Clause in Article 1, Section 8 of the Constitution retains federal control over all navigable waterways in the U.S. for purposes of commerce. The Property Clause in Article 4 Section 3 of the Constitution also has significant importance in water policy, as the federal government was the first formal owner of public lands--including rivers, much of which it still owns. This clause gave Congress the power to “…dispose of and make all needful Rules and Regulations respecting the Territory or other property belonging to the United States.” This language hardly precludes individuals or corporate entities from exploiting water sources for economic gain. Until the twentieth century, the federal government while retaining this ultimate control over rivers in theory rarely exercised this right, preferring instead to encourage private development of water resources when possible.
From the colonial period on up to today, one of the defining descriptive characteristics about our country is its abundance of resources. What exactly constitutes the best use of those resources alters with each generation. But as a general trend, Americans previously saw resources strictly in terms of economic development and exploitation. With this philosophy, the landscape of America underwent vast changes and very quickly. More than mere opportunistic exploitation, the early colonists showed unparalleled ingenuity and determinism in their domination of resources. Deep religiously based philosophical values promoted exploitation of natural resources as not just a God-given right, but a moral duty. Thus, early Americans did more than simply move in; they slashed, cleared, tamed, dominated, subdued, transformed, and beat back the wild woody wilderness. Progress became synonymous with exploitation.

Such massive transformation of the natural environment as a national priority continued unabated into the 19th century and can be seen in several landmark court cases and federal statutes. After the Gallatin Report of 1808 recommended comprehensive federal involvement in waterway development, the Supreme Court cemented this right in Gibbons V. Ogden. The Court ruled that federal participation in local navigation improvement projects could be justified under the commerce clause of the Constitution. Thus, it struck down a state-sanctioned monopoly on steamboat service in New York because it conflicted with federal licensing of coastal steamboat pilots. This case, in essence, established federal authority over all navigable rivers in the U.S. as a matter of interstate commerce. That same year, Congress appropriated what was then an impressive $75,000 for improving navigation on the Ohio and Mississippi Rivers, via the Corps.
As previously mentioned, federal legislation between 1824-1856 improved navigation and propelled the draining of wetlands and swamps. The Reclamation Act of 1902 started the irrigation frenzy in the West. Then the Federal Water Power Act of 1920 that sought to establish the nation’s first comprehensive hydroelectric power policy. We already saw the expansion of Corps duties and responsibilities with the Flood Control Acts of 1917, 1928 and 1936, but this growth should also be seen in the context of the federal government actively asserting its dominance over the nation’s waterways.

From this legacy of legislation, the dominant perception of rivers as beneficial for commercial and transportation corridors, tools for irrigation and power generation cannot be overstated. Not only rivers, but also wetlands were seen as resources to be developed either directly by the Corps, or indirectly by developing infrastructure to encourage private citizens to develop the nation’s natural wealth. By 1962, the federal government had firmly established its control over the nation’s waterways. Congress had established a long and well funded relationship with the Corps. The federal government actively participated in and accelerated the exploitation of America’s water resources, all of which radically altered the geographic reality what we see today.

Conflict Resolution Options

Another intersection between geography and law resides in conflict resolution. As political boundaries do not adhere to natural resource boundaries, then governing institutions must work around this reality. This difficulty remains at all scales, from the coal seams that stretch underneath multiple county lines, to the fishing grounds multiple
countries must share off the world’s coastlines. Within the U.S., a paucity of options exists for one state to express grievance against another state, and nowhere does this become more apparent than in the realm of natural resource management.

In the eyes of the federal government, each state should be on equal footing. Thus, small states, at least in the eyes of the federal courts, have the same rights as their larger, more populous neighbors. This principle becomes paramount when transboundary disputes occur over shared resources. In actuality, very limited options exist for contentious relations between states. It boils down to lawyers, guns and money—although not necessarily in that order. If states cannot work out some agreement among themselves; then an aggrieved party must resort to suing another state (which bypasses all lower courts and jumps straight up to the Supreme Court) in the hopes of a favorable outcome in court. Alternatively, they can agree on a financial solution in which all parties feel the disadvantaged state is compensated for whatever damage or constriction the actions of the other state has imposed. If that fails and times get desperate, states have called out their militia to attend to situations more directly.

In the West, where water literally means life, seven states have called their militia out in interstate disputes—happily this option can now be seen as a more atavistic impulse related to the lawlessness of the territorial times than a serious and long-term path to solve disputes. However, there remains a long and rich history of states bringing lawsuits against other states at the Supreme Court. Two such cases concerning the Delaware River Basin have already been mentioned. Thus, the uniqueness of the Delaware River Basin Compact should be more apparent against this backdrop. Each of the states that must share the Delaware River signed a legally binding contract, also
known as an interstate compact, in which New York, New Jersey, Pennsylvania and Delaware all share power over the waters of the Delaware River with the federal government. Although Chapter 2 discusses the establishment of the Delaware River Basin Commission, the bold stroke of this plan should not be overlooked. Here, for the first time, 34 fractured governmental entities with overlapping jurisdictional authorities were brought under the one roof of the DRBC. The primary mandate of the DRBC was to orchestrate the implementation of the plans for Tocks Island dam and its associated elements. In the first comprehensive plan an outline of what was to become the recreation area comprised of lands surrounding the shoreline of the Tocks Island reservoir. The DRBC was the first agency outside the federal government to endorse the proposal.\textsuperscript{37}

Rise of Recreation

While the water agencies clearly exploited and developed water resources in previous generations for the central purpose of economic growth and expansion, the post-WWII generation may have been the first generation to seek recreation as a priority in water use. Not only did the face of the nation change rapidly during these first decades of the twentieth century, but so did the lifestyle. Mutually reinforcing trends of agricultural and industrial development transformed the economy and the culture. America’s meteoric ascent on the world scene, fueled by its explosive economy (churned in no small part by vast infrastructural and transportation improvements) produced the wealthiest generation of Americans yet by leaps and bounds as WWII ended.\textsuperscript{38} This generation ate
better, worked less, lived longer and enjoyed more free time than any previous generation.

Suburbs sprouted like fields of mushrooms all across the countryside, and car sales soared. For people who had just one generation ago lived in rural landscapes or in large cities, the suburban migration created a paradox: suburban expansion scarred the landscapes as it mowed down vast stretches of countryside; it simultaneously encouraged those same people who now lived in growing material affluence yet, disembodied from any meaningful natural environment, to seek out nature in ever larger numbers. With more free time, more financial stability and more mobility, recreation became an American passion—and a substantial portion of that took place outdoors. Demand for outdoor recreation boomed in the decades after the Second World War, and the Corps was not unaware of this national trend. “Multi-use” became the industry buzzword as the Corps expanded its efforts in response to a perceived national need. The Corps’ competitors at the National Park Service (NPS) and BuRec were seeking this new and potentially large political constituency aggressively, and this effort did not go unnoticed. The ability to repackage the image of water storage projects from that of navigation or flood control, into a venue for recreation (and those other useful purposes, too, as an added bonus) could, in one fell swoop, raise the exalted position of dam-builders from techno-wizards to deities and simultaneously help sugarcoat the exponential rise in costs of large public works projects. The huge expense in dam building lies in the effort to make the dam and reservoir; once it exists, almost no added cost or infrastructural improvements would be required to ensure recreational opportunity. At a time when “driving for pleasure” was the top-ranked recreational activity nation-wide, the new
currency of persuasion in the realm of water resources and public works projects became the word “multi-use.” The added infrastructure of the interstate highway system laying down new paths across the country seemingly opened the floodgates, and people flocked to outdoor areas.

While this new trend in recreation must have at first seemed like a gift horse to massive bureaucratic public works agencies, the new recreation lovers would bring with them different ideas about the values and purpose of water management, dams, reservoirs and for that matter all public lands. The urban populations grew dramatically following the post-War baby boom and accelerated a rural-to-urban migration that had been ongoing for over a century. By 1960, over two-thirds of the population lived in urban areas, and this trend was to continue. New recreation seekers were likely to seek opportunities to hike, camp, swim, boat, drive for pleasure, (e.g. recreational vehicle) and watch wildlife. Traditional users of water resources viewed those resources in terms of consumption: industrial development, flood control, irrigation, and hydroelectric power generation. And those who used water resources for recreation traditionally came from nearby communities, and sought fishing or hunting access. The new recreation seekers tended to view water resources as objects to view, experience, and use non-consumptively. Thus water resources became valued for aesthetics, recreational, and other values not directly related to potential for economic development. More importantly, environmental and visual impacts of water development projects increasingly came into question by this new constituency. The engine of bureaucratic institutions and the direction the Corps and other resources development and
exploitation-oriented agencies were not at all in step with this evolving view of natural resources.

It is worthwhile to consider this conundrum more deeply, as the evolving environmental ethic had its own brand of myopia to consider. An entire generation of people awakened to non-consumptive uses of water resources and the need to protect those resources at the very same time that rapidly rising water use and resource consumption per capita was made possible by the development of those same resources.\textsuperscript{42} This obvious conflict never surfaced in the public debate, and remains an unsettled question lurking at the heart of many environmental issues. Most Americans express strong values for protecting the natural environment, and yet they appear to divorce the destruction of that environment from the processes required to support our commodified, consumptive lifestyles. The vast dams and reservoirs (especially in the West) were needed to spin the washing machines and sprinkle the lawns of the sprouting suburbs that were left behind during the summer recreational migration to the quiet lakes and isolated streams people loved. But in 1962, people were only beginning down the path of suspicion that all was not quite right in the natural environment.

**Media**

At this stage, the media did not play a direct role in the rise of the Tocks Island dam project. I would like to take a moment and describe a few other things ongoing in 1962 that did have an indirect impact on the Tocks Island dam project—or perhaps more to the point, an impact on those who opposed the building of Tocks Island dam. And because sophisticated media campaigns did arise on both sides of the Tocks Island issue,
it seems appropriate to set the stage by briefly outlining some issues and writings that did get large media coverage, and therefore opened the door for the kinds of dialogue that eventually took place concerning the fate of the Tocks Island project.

Silent Spring

In 1962, Rachel Carson’s landmark exposé on the ravaging effect of Dichloro-Diphenol-Trichloro-ethylene (DDT) on our wildlife, and ultimately our human health, was published. This book deserves mention here for two reasons. First, the publication of Silent Spring has been said to be the beginning of the modern environmental movement. Secondly, a media-frenzy surrounded this particular book and author upon the book’s release. The impact of the attempt to smear Rachel Carson’s character and the ensuing media coverage that ultimately vindicated her cannot be directly measured. But it should be noted that this controversy set such a fire of backlash not just against Carson’s ill mannered foes, but also against those venues of ‘big government’ who did not take her warning seriously. Silent Spring ranks among those rare books that have almost single handedly transformed our society.

The attack on Carson has been compared to the bitter assault on Charles Darwin when Origin of the Species was published. Her credibility as a scientist was attacked as those in major chemical companies tried to suppress her book, and then financed propaganda that supposedly refuted her work. Moreover, when excerpts of Silent Spring appeared in The New Yorker, Carson’s opponents used her gender and played on stereotypes of her sex, dismissing her as a “hysterical” woman and charging that she used
Assaults from corporate industry were not that surprising, but even the American Medical Association weighed in on the chemical company’s side. The man who discovered DDT’s insecticidal properties had, after all, been awarded the Nobel Prize. Eventually, the government and the public became involved—not just those who read the book, but those who read the newspapers or watched television. CBS Reports aired an hour-long program about *Silent Spring*; President Kennedy discussed the book at a press conference and appointed a special panel to examine its conclusions; that panel’s conclusions strongly indicted corporate and bureaucratic indifference and validated Carson’s warnings about the potential dangers of pesticides. Perhaps equally as important, *Silent Spring* and Rachel Carson planted the seeds of a social activism that grew into one of the great popular forces of this century. Carson inspired grass-roots activists with her David against Goliath stand toward such an array of entrenched bureaucracies and foes.

Tennessee Valley Authority

Also ongoing during this same time period was a massive experiment in regional economic development and water management known as the Tennessee Valley Authority (TVA). Born out of Franklin Roosevelt’s New Deal progressivism, the TVA constituted the first and only working model of large-scale, multiple-use river basin management in the nation at that time, and serviced one of the poorest regions of the country. The seven-state watershed of the Tennessee Valley housed a federal dam at Muscle Shoals, Alabama coveted by developers and Progressives alike—one set for potential economic
development, the other set for regional hydroelectric power generation to compete with local monopolies. Built in 1918 to aid the war effort in WWI by providing electricity for factories this dam was not completed until two weeks after the armistice. Controversy ensued over its usefulness as a federal operation, and Henry Ford and Thomas Edison offered to buy the dam with visions of transforming the town of Muscle Shoals (with a 1923 population of only 12,000) into a metropolis all built around automotive factories that Ford claimed would employ millions of people. Progressives in Congress sought to block this effort as they foretold of monopolistic dangers on the horizon if the dam was sold for this purpose. Under the guidance of FDR, this project became a much larger federally sponsored river basin authority, managed by a public corporation that would ostensibly oversee comprehensive regional development. \(^{47}\) While highly controversial at home, the TVA became a model for integrated river basin management worldwide, and achieved results in economic and environmental development. This early success inspired other similar river basin management proposals on several other major rivers, but those were blocked by rivalries among government agencies that would have been affected. \(^{48}\)

Through the TVA, 23 mutli-purpose dams were built, creating reservoirs for economic use. Arthur Morgan, the first chair of the TVA’s three-member governing board, had strong Progressive ideas about quasi-governmental regional sub-government planning, while others saw it as pork barrel Nirvana—and at the center of it all was the government’s expert public works agency, the Corps. Over time, the TVA evolved into an institution both more limited and more controversial than originally imagined, due to fast domination by its electric power program and dubious well-funded projects that
caused serious environmental damage. Through this and other projects from 1936-1976, the Corps built over 400 multi-purpose dams in 42 states.\textsuperscript{49} Much publicity was generated as the TVA evolved; the media, and through it the nation, continued to follow every new plan with fascinated interest. As the story evolves, changes occur in the overall mood of the public concerning the TVA, but in 1962, the TVA designers were Progressive heroes.

**Conclusion**

The absolute explosion in public works projects marks a unique period in American history centered on the Depression era and leading into the 1950s and 1960s. The concomitant explosion of wealth, affluence and suburban migration post WWII and continuing up to this time were equally unique. Large bureaucratic institutions lived at the height of power, economic influence, prestige and public support during this time. New technology, new projects, new lifestyles all were seen as evidence of sure progress towards a better life. No string of success can last forever, and it is a fundamental law of nature that unabated growth cannot persist indefinitely. As we will see, other unexpected forces rise to limit what seemed in 1962 to be an unstoppable force of bureaucratic machinery.

This year also marks the beginning of Congressional authorization for the Tocks Island Reservoir project and what will later become the Delaware Water Gap National Recreation Area. At the height of its power and influence, the Corps also benefited from previous decades of massive public works projects begun as early as the 1930s. Riding
the wave of successful public works construction, there was little room for self-reflection within the Corps on the larger socio-cultural and environmental impacts of its projects. Similarly, in 1962, the cumulative impacts these large public works projects created had only begun to be tallied. It was in this atmosphere that proponents of the Tocks Island project saw only optimistic forecasts for the future of the Delaware River Basin, and its coming dam and reservoir.
Figure 3.1: Delaware Water Gap National Recreation Area boundary within the DRB

2 Yaffee, *The Wisdom of the Spotted Owl: Policy Lessons for a New Century*. Although here Yaffee refers to the spotted owl controversy in the American West, the sentiment is universal.

3 The beginning of the big dam era is generally recognized as the opening of Hoover dam and the Lake Mead reservoir. However, the end of the big dam era is not so easily pinpointed. Some mark it as the 1950s, while others, who speak of the same dams and projects, note that the plans approved in the 1950s often did not come to fruition until the 1960s. And if this seems to be a matter of semantics or calendar setting, others look internationally and suggest that the big dam era in the U.S. which spawned dam building across the globe, cannot truly said to be closed until world-wide construction of large dams has trailed off.


6 Shallat, *Structures in the Stream*, p.1

7 Shallat, *Structures in the Stream*, p.2

8 see Engineers, *The History of the Us Army Corps of Engineers*, Shallat, *Structures in the Stream*, and Thomas V. Cech, *Principles of Water Resources: History, Development, Management, Policy* (New York: Wiley & Sons, 2003), for a fuller account of the infusion of French values into the early Corps of Engineers and the ensuing cultural competition between the French and British governmental traditions. Shallat notes that competition became so entrenched that the army ordnance board rejected British equipment for inferior French designs, just because they were French.

9 Engineers, *The History of the Us Army Corps of Engineers*.


13 "Flood Control Act," P.L. 74-738 (1936), see also John M. Barry, *Rising Tide: The Great Mississippi Flood and How It Changed America* (New York: Simon & Schuster, 1997), for a richly textured historical account of the massive Mississippi flooding to which the Flood Control Act was a response, and the political implications of our perception of nature in the face of this—the worst natural disaster in American history.

14 "Flood Control Act," P.L. 74-738, see also the Flood Control Acts of 1923, 1928 and 1944. The Flood Control Act of 1936 established the tradition of requiring a cost-benefit analysis for any potential water resources project to be funded by the federal government. The Flood Control Act of 1917 gave federal protection along the lower Mississippi River and the Sacramento River in California; the Act of 1928 was in response to the great Mississippi River flood of 1927 and provided channel improvements and levee construction along that river. The Flood Control Act of 1944 provided funding for the controversial
Garrison Dam across the upper Missouri River and also came in response to massive flooding—this time along the Missouri River.

15 Cech, *Principles of Water Resources: History, Development, Management, Policy.*, pp.229-230. The Swamp Land Acts both encouraged the draining and cultivation of swamps first in Louisiana (1840) then in Oregon and Minnesota (1860) in order to create more acres of arable farmland. At that time, swamps and wetlands were considered waste lands, unless ‘improved’ by agricultural or some other commodity-based use. It would be a hundred years into the future before the ecological benefits of wetland ecosystems would be well understood.

16 Reisner, *Cadillac Desert.*

17 For a detailed account of the Tennessee-Tombigbee Waterway, considered by many to be a supreme example of bureaucracy run amok, and one of the nation’s biggest boondoggles, see Stine, *Mixing the Waters: Environment, Politics and the Building of the Tennessee-Tombigbee Waterway.* It is worth noting that the Tennessee-Tombigbee waterway, completed in 1985 at a cost of nearly $2 billion, connects 234 miles of waterway via two rivers, a chain of lakes, and locks and dams, all to create a commercial shipping canal parallel to and a mere 150 miles east of the Mississippi River—the largest commercial canal in the country. For this geographic absurdity and other reasons, this project became the most controversial waterworks project in America and has likely done more damage to the reputation of the Corps of Engineers than any other public works project.


21 It was BuRec that perfected what has come to be called the ‘cash register dam’ scenario in which a dam was lobbied for ostensibly to provide irrigation, but the real goal was hydroelectric power generation. The power generated was sold commercially, with the proceeds going to pay off the debt of the irrigators who could never hope to actually meet their payments of the dam cost because the irrigation potential alone would never have been viable enough to warrant a dam in the first place. However, BuRec made a good living for itself plugging up rivers all over the West—whether needed or not.


26 The Mississippi River drains 40% of the lower 48 states and is the 3rd largest watershed basin in the world.

27 Maas, *Muddy Waters: The Army Engineers and the Nation's Rivers.*

Featherstone, Interstate Compacts and Cooperation in Interstate River Basins.

It is also worth noting that this clause provided the strut under future regulations and laws concerning natural resources of other stripes such as national forests and parks, mineral and grazing leases etc. It also gives federal 'reserved water rights' important in the West (with a tradition of prior appropriation water law) since the federal government would be the first formal owner of the vast acreage of public lands.

See, Marsh, *Man and Nature: Or Physical Geography as Modified by Human Action*. Marsh outlines his personal observation of the almost complete clear cutting of the Green Mountains in his home state of Vermont in a mere two decades during his lifetime in this conservation classic; he also served as the Fish Commissioner of Vermont during a stint in his kaleidoscopic career, and there tallied the vast reduction of fish in Vermont’s streams due to tannery effluent and other point-source pollutants.


Dzurik, *Water Resources Planning*, p7


See Albert, *Damming the Delaware: The Rise and Fall of Tocks Island*.


Personal correspondence with NPS and Corps personnel, Summer 2003.


See Merideth’s Environmental Bookshelf where *Silent Spring* remains #2 on the list of the top 40 most influential books for the environmental books of all time. http://home.comcast.net/~netaylor1/enviroforty.html


Carson, *Silent Spring*, pxvii,


49 Armstrong, *History of Public Works in the United States 1776-1976*. See above. Not to be outdone in this rivalry for federal funding and prestige, BuRec built 300 more dams in this same time period.
Chapter 4
1966: A Gathering Storm in the Minisink Valley

Introduction

In 1966, plans for the Tocks Island continued on two tracks. While not parallel in the geometric sense, the disconnected paths between those who planned and those who lived in the region was clear from the beginning. In the upper levels of power and management, everything appeared to be business as usual. While not seamless, the state of jockeying interests and juggling budgets was not beyond the realm of the ordinary. Boosters of recreational development produced pamphlets and other materials pressing for Congressional allocation of funds for the now authorized project and the creation of a recreational area around the new reservoir. Congress appropriated funds for the Tocks Island dam; the Delaware Water Gap National Recreation Area was created via Congressional legislation. The Corps, at the height of its influence and prestige, continued its planning stages and site preparation. These preparations included the start of land acquisition for the property that would be flooded by the new reservoir. The newly formed Delaware River Basin Commission started to coordinate activities from the previously fractured governing entities that now all fell under the auspices of the DRBC.

On the ground, the first implications of the project could be felt among the people who lived in the river basin. It became clear that part of the project to build Tocks Island dam would entail the sure destruction of the small but cherished Sunfish Pond, perched high on Kittatinny ridge, which overlooks the river from the New Jersey shoreline. This potential loss inspired some of the first public protests against the coming project on the Delaware River. At the same time, property owners in the region, expected to sell their
property to the Corps, banded together to fight this action. The first widely circulated press coverage on the dam informed citizens all over the region of the new plans for Tocks Island dam. Sides were forming both in favor and in opposition to the behemoth project.

Corps of Engineers

Esprit de Corps

The size of the Corps grew over time as its responsibilities grew from the original business of naval fortifications to include a vast array of civil works projects to improve waterways, navigation—and eventually flood control, hydropower and recreation. This growth can be seen as both restricting and expansive insomuch as the essential command structure did not substantially change, nor did the cultural environment, but this structure had to expand to incorporate a growing number of civilian engineers and staff as the Corps responsibilities expanded and its mission widened. By 1950, approximately 215 Army engineers engaged in civil functions, supervising some 40,000 full-time employees.¹ The Corps has historically been divided into several Divisions, and further subordinate Districts. Today, there exist 8 Corps Divisions and 41 Corps Districts in this top-down structure. To manage these districts, approximately 650 military personnel oversee 340,600 civil employees.²

Within this large institution, a bureaucracy was in place in which a clear chain of command existed and a clear procedural process as regards project planning and the associated paths of review imbedded in the trajectory of a project from inception to
authorization, a complex algorithm had to be followed. Familiarity with this process is essential to understand the culture of decision-making within the Corps and how projects moved along a trajectory towards construction. At least four distinct phases can be distinguished in the process of project planning: inception, preliminary examination, survey, and authorization. Along this road, there are many chances for a potential project to be determined unworthy of further interest and dropped. Assuming a project makes it through the four phases of planning, the following detailed account of circumstances must occur, as prescribed by the Orders and Regulations of the Corps of Engineers.³

Planning Process

The Corps may not undertake any navigation or flood control project until Congress specifically authorizes it in a legislative enactment.⁴ Thus, the first steps in planning deal with the process preliminary to authorization. Local interests or officials first present requests for the conduct of an examination and survey of a proposed project to the Congressman or Senator representing the district in which the desired improvement is located. This happens because the right to conduct surveys is dependent on specific authorization of law. In other words, the Corps must wait for a request, rather than initiate policy itself.

Preliminary Examination

A preliminary examination is supposed to ascertain, without too much detail, the economic feasibility of a proposed improvement. When a preliminary examination
suggests a reasonable possibility that a proposed project may be economically justifiable, then a favorable recommendation for survey is warranted. The District Engineering Office conducts an examination, and as soon as possible after a preliminary report is accepted, the District Engineer is required to consult the Senator or Representative responsible for authorizing the report. After consulting the Congressman, “all persons known to be interested in the proposed project, and those whose local knowledge renders their opinion of value, should be given full opportunity to express their views” in a reasonable amount of time.

To obtain these views, the District Engineer usually arranges for public hearings. In the hearing, interest groups from any variety of origin (e.g. national, state or local) appear before the District Engineer to justify, and in some cases oppose, proposed projects. An attempt is made to develop information on the improvements desired, the local cooperation that may be expected, the interests that would be benefited and the value of those benefits.

The public hearing is followed by field reconnaissance; then a preliminary examination report is filed, which is uniformly formatted as prescribed by the regulations of the Corps of Engineers. Each report contains one of two possible conclusions: either that the data are sufficient to show that the improvement in question is not justified (and that’s the end), or that prospects are good and warrant a full-blown survey. As a last stop before Washington, the Division Engineer reviews all preliminary examination reports. If the Division Engineer does not agree with the report, it can be sent back to the District Engineer with suggestions for revision. The District Engineer’s report and the
Division Engineer’s report both accompany a proposal, and they may not completely agree with each other at this stage.

Figure 4.1: Corps Project Planning Process and Steps to Consider
Survey

The purpose of the survey is to determine more definitively the most suitable plan for improvement and whether such improvement is economically justifiable. This stage is dependent on funds from the Office of the Chief of Engineers. The process by which surveys are reviewed by Division Engineers and the Board of Engineers for Rivers and Harbors is similar to that for preliminary examinations. That is to say, the survey happens at the District level, is reviewed at the Division level and then sent on to the Bureau level. If the Division Engineer submits a negative report, he must inform interested parties. The Board grants hearings, and differences in engineering detail are ironed out. The Chief of Engineers is responsible for the final recommendation to Congress. He submits proposed reports to various interested States and Federal Agencies for comment, and clears the report with the Executive office. At this stage, if the cost-benefit analysis looks favorable, then very detailed projections such as expensive surveys of dam sites or reservoirs, geologic samples, and other field-based data acquisition are more likely to be worth the investment.

Authorization

If a proposed project passes all these hurdles, the Congress member who supported and sponsored the original request for survey seeks to have the project written into the survey authorization section of an omnibus rivers and harbors or flood control bill—this insertion happens through the Public Works Committees of the House and
Senate. Thus, after the survey, no other action can be taken without Congressional authorization for funding. While there is no statute requiring it, in general, a Committee will not consider any project for authorization that has not received a favorable survey report from the Corps of Engineers. However, occasional projects not recommended have made it onto omnibus authorization bills, via action taken on the floor of the House (essentially circumventing the Committee process altogether) without any opposition from committee leadership.\(^8\) Of course, a proposed project can be jettisoned from the system at any phase of the planning process between inception and authorization.

Once a project proposal lands in Congress, subcommittees from the House and Senate conduct public hearings on the project, at which interested parties appear. At this point, officers of the Corps defend and justify each element of the report, and members of Congress in whose district the project would be located appear to corroborate and supplement testimony given by the Corps officer. After the bill passes through the House, it is referred to the Senate Committee on Public Works, whose subcommittee holds hearings on controversial projects in the omnibus bill and on proposed additions to said bill. The Senate subcommittee usually adds projects to the House bill that were turned down by House subcommittees or adds items not considered by them—thus increasing the original version of the bill. At this point, structure gives way to political interest, as many backroom meetings determine what gets added and subtracted, which items slide in or are overlooked, and so forth. The Senate considers the bill, and if different, a conference committee of both houses presents a common bill to the entire Congress; even while on the floor, new amendments can be added to omnibus bills.
After Authorization

The planning does not stop at authorization—at least three other steps must be completed before the first shovel of dirt gets moved. Further detailed reports, called the definite project report, must be made, money appropriated, and awarding of bids must occur. The definite project report, compiled for all authorized major improvements, outlines even more detailed planning—and more studies. These reports may clarify or expand on any suggested improvements to the project proposal that were only mentioned in general terms along its trajectory to the point of authorization; they must also have specifications detailed enough to use throughout the construction phase. At this point, the plans and specifications for foundations, hydrology and other factors must be carried out far enough to avoid the necessity for any fundamental changes after this point. Public hearings could be held for important flood control or multiple purpose projects at this phase of planning. Previous to the 1970s though, this was not usually done.

There is no guarantee that an authorized project will truly come to fruition. Previous to the Second World War, the Corps did no further preparations beyond those of the survey until after money had been appropriated and allotted for that project.\(^9\) Congress specifically earmarked money to the Corps during WWII for the purpose of creating detailed reports in advance for authorized projects.\(^{10}\) Thus, a ready backlog of authorized projects with detailed plans existed, created prior to the appropriation of any funds for construction. This tradition continued in each annual appropriation since 1942, so a permanent revolving list of plans with detailed reports created prior to any appropriation must vie for priority as the Chief of Engineers creates annual budget
estimates. Therefore, the definite project report can be used as a medium through which to determine which projects actually get built.

Congressional Powerhouse

At this point, a closer look at the interactions between the Corps and Congress up to the mid-1960s should provide a clearer understanding of two important points: how business got done on water project planning, and the array of entrenched, intertwined bureaucracies that created an impenetrable complex of power at the high levels of government. This power rested with the intimate personal relations between the highest levels of the Corps and Congress, as well as the ease with which roles and jobs could be exchanged in the rarified world of high influence. Intimate access connected to the planning process for projects within the Corps of Engineers also can be seen as a proxy to direct Congressional access, as the Congress generally did not authorize the construction of a project without a favorable survey or report from the Corps. In essence, any participation of groups outside these two institutions concerning water projects had to be funneled through the planning process of the Corps instead of Congress itself.

It is clear, even as far back as 1948, that the Chief of Engineers understood the importance the planning process took on as a theoretically democratic process even before Congress took notice of a proposed project. Here is an excerpt from a Congressional Hearing from 1948 in which the Chief of Engineers, General Raymond Wheeler, discusses the planning process.

The authorization of a river and harbor or flood control project follows a definitely prescribed, democratic course of action. It is based upon the activation of the desires of local interests, who are most vitally interested. Local interests, as individuals or groups through the actions of their representatives in Congress, make request for an
item to be included in a rivers and harbors or flood control bill...The District Engineer, mindful of the need for developing all public opinion, holds an open public hearing at which not only those interests that are active in obtaining the authorization for the proposed work but also all other views are obtained and encouraged. Having thus developed the desires of the local citizens, the district engineer makes a study...\textsuperscript{11}

But the public meetings the Chief of Engineers mentioned were not quite the public meetings we think of today. These meetings were held in Washington D.C., virtually excluding anyone without the means to travel to Washington from attending the meetings. In an era before plane travel conveniently connected cities across the nation, before the interstate highway system, and before advanced telecommunications—only Washington insiders could logistically attend such meetings. Meetings were also held during the business day, when most everyone worked at other jobs—even for those interested parties who had the means and ability to travel to Washington. The ‘individuals and groups’ able to take advantage of opportunities to present their views before the Corps during its planning process in reality turned out to be a very select subset, indeed, of the public at large. Local interest groups include local or regional industries, water districts at various levels (e.g. county or local), chambers of commerce, and boards of trade. With large projects, powerful regional groups were often active in the entire planning process, which concentrated power relations in the extreme.

A look at one regional interest group related to the region of interest in this dissertation, the Atlantic Deeper Waterways Association, makes this Corps interaction more clear. Founded in 1907 with the expressed intent to further the development and expansion by the Federal government of an Intracoastal Waterway system (now used mostly for pleasure boating) along the Atlantic seaboard, this interest group lobbied the Corps for more than thirty years, following the entire project along its trajectory. The
Atlantic Intracoastal Waterway is a protected 2,000-mile water route that stretches from Florida to New England, inside the Atlantic coastline, and is divided into twelve sections.

By 1941, eleven of the twelve sections had been completed, but the interest group did not dissolve after its main goal had been accomplished, and instead found new projects of interest. For instance, expansion of the Waterway to be a 3,400 mile route to provide a shallow continuous channel from Boston, to Brownsville, Texas; but the link to connect the Gulf Waterway (Texas to Florida) with the Atlantic Waterway (Florida to Massachusetts) was the ill-fated and highly controversial Cross-Florida Barge Canal that cost the Corps’ reputation dearly, and as a planned project, it went down in flames—stopped by court order and presidential decree in 1971. This missing link to connect the two Intracoastal Waterways had gained Congressional authorization in 1945 with pressure from the Association.

The Atlantic Deeper Waterways Association, from its inception, virtually defined ‘insider influence.’ The Association’s president from 1907 until 1946 was J. Hampton Moore, who was a member of Congress from Philadelphia at the time he accepted the office, and who remained a member of Congress until 1920. Representative John W. Small from North Carolina, one-time chairman of the Rivers and Harbors Committee, served for years as vice-president-at-large of the Association after leaving the House. Senators George H. Moses of New Hampshire and Daniel Hastings of Delaware served as State vice-presidents of the Association after leaving the Senate. Representatives Eyck of New York and Houston of Delaware served as directors of the Association after leaving the House. Through this powerful lobby, representatives of the Atlantic Deeper Waterways Association kept in constant contact with the Corps. They attended hearings
conducted by the District Engineers on projects in which they were interested. And the conduit of access was open in the opposite direction too, through appearances of representatives from the Corps at Association conventions.\textsuperscript{13}

More intermingling of special interests, Congress and special access in the development and planning of water projects can be seen with analogous national-scale lobbies. One of the oldest and most effective of the water development lobbies would be the National Rivers and Harbors Congress.\textsuperscript{14} Formed in 1901, this lobbying group carried the weight of national groups within its ranks. Its members included local and state officials, the United States Congress (Representatives and Senators were honorary members), the Corps of Engineers (officers of the Corps engaged in rivers and harbors work were all ex-officio members). This lobby also boasted a constellation of Congressional stars taking post in its high ranks. In 1950, Senator John McClellan of Arkansas was the president. Senator McClellan also served as a member of the Public Works Committee, the subcommittee of the committee on Appropriations, which handles Corps Funds, and chairman of the Committee on Expenditures in the Hoover Commission. The River Congress’s vice-presidents included: Senator Kenneth Spicer Wherry of Nebraska (Republican floor leader and a member of the Appropriations subcommittee on Corps funds), Representative William M. Whittington of Mississippi (long time chairman of the House Committee on Flood Control and then chairman of the Committee on Public Works), Representative Francis Higbee Case of South Dakota (member of the House subcommittee that considers appropriations for the Corps). The chairman of the board was Senator Overton of Louisiana, long-time senior member of the Senate committee that dealt with rivers and harbors legislation).
The most interesting and influential part of the Rivers and Harbors Congress took place in its Projects Committee. Originally designed to promote a national policy of development of water resources rather than any specific project, the Rivers Congress reversed its policy in 1935 and began endorsing specific waterway improvements. This Committee consisted of twelve members—each representing generally, the area covered by a Corps Division Office. If any sponsor of a waterway improvement wanted to have the project approved by the Project Committee, that sponsor had to submit an application for endorsement in writing, then appear before the Committee to justify the promotion of the project by the whole Rivers Congress. The Projects Committee met once a year for several days preceding the River Congress’ annual convention to act upon all applications and hold hearings on each project, then vote by ballot to classify the applications by priority. After this marathon, the Projects Committee presented its recommendations to the Rivers Congress convention for formal adoption.

It would appear, at first, to be an exercise in surrealism to have a parallel Congress for a special interest group, who also had its own Committees and hearings. But in fact, it got more complicated, when the Rivers Congress would petition the Corps with projects that it endorsed. In what can only be seen as an absurd turn of events, Senators and Representatives of the United States Congress who sponsored or were interested in water projects in their districts often appeared before the Project Committee of the Rivers Congress to obtain favorable recommendations for their projects. The Rivers Congress wielded such power behind the scenes of the actual U.S. Congress that Senators and Representatives went to the annual conventions, met with the Projects Committee and requested that this interest group give approval to their projects so that these projects
might have increased chances of approval in the U.S. Congress. The annual report of
the Project Committee from 1940 has minutes that are barely distinguishable from actual
U.S. Congressional records:

Congressman John Hennings of Tennessee, urged approval of the project for the construction of
dams in the vicinity of Oakdale and Harriman, Tennessee.

Improvement of the Charleston, South Carolina harbor to enable it to accommodate a larger fleet
was urged by Congresswoman Clara G. McMillan.

Congressman Joe Hendricks of Florida presented testimony on the Cape Canaveral Harbor, which
he stated will serve the $5,000,000 citrus fruit belt, which is now without proper harbor facilities.

Representative Frank C. Osmers testified on behalf of the Hackensack River improvement project,
which is now being surveyed by the Army engineers. 27,000 acres of meadow land will be
reclaimed under the project and will be suitable for aviation fields and other defense purposes, he
said. Congressman Osmers pointed out that this area is the key to defense of Metropolitan New
York.

Congressman Harry Sheppard of California, testified on damage caused by floods in his state in
recent years and urged approval of a project calling for $15,000,000 expenditure over a period of
ten years to halt such devastating deluges.

Representative Edith Nourse Rogers of Massachusetts, asked approval of the Merrimack River
project. The project will help protect the City of Lowell, Massachusetts, from disastrous floods, as
well as the rest of the area, she said.

A closer, more intimate and intertwined relationship between the members of Congress,
the Corps, and special interest lobbies cannot be imagined. Without the privilege of
membership in one of these ultra-exclusive high-ranking circles of power, the
consideration (either pro or con) of water projects and planning proposals would hardly
be noticed. Members of Congress (many of whom controlled the fate of Corps funding
and appropriations) petitioned an interest group lobby (stacked with high ranking officers
who in fact belonged to the Corps and Congress) to endorse their proposed legislation,
because the stamp of approval from the Rivers Congress implied a stamp of approval
from the Corps, and, as a general rule, the U.S. Congress did not act on proposed
legislation that did not have a favorable nod from the Corps.
So what did this power structure mean in specific terms as the proposal for development of the Delaware River Basin made its way through the mire that was Congressional approval? Between 1962 and 1966, the improvement plan for the Delaware River Basin with its capstone project of Tocks Island Dam and reservoir received Congressional authorization; the project received its first Congressional appropriations; more detailed studies were then conducted. Among the studies were examinations of secondary impacts of the dam and reservoir on the region. The fledgling Delaware River Basin Commission (DRBC) began actions to implement the Tocks Island Dam project. At this point, many parties other than the Corps began to exert forces in favor of the Tocks Island dam project. More will be said in the following section about boosters who created a media campaign to press for recreation to be an added element of the project’s plan. For the moment, I focus only on the Corps’ portion of the growing project plans.

In 1962, the sheer size of a project like the Tocks Island project must have generated excitement among those who might build it. The organizational challenge and technical skills needed were massive enough just for the Tocks Island dam. But by 1966, the anticipation and relish of pulling together the considerable scientific and engineering expertise available from the Corps multiplied as the project itself grew. In the comprehensive report that the Corps produced after the original survey, and in the planning stages leading toward the bid for Congressional authorization, the original plan considered as many as 193 potential sites for dams. Of those, Congress recommended a
total of ten dams\textsuperscript{19} for immediate authorization, besides the capstone dam and reservoir at Tocks Island. The other projects would be built on the tributaries of the Delaware River while the centerpiece, Tocks Island dam, was the only project to be built across the main stem of the river. Tocks created the largest of these projects by far though, as its capacity alone accounted for more than the total of all ten other dams combined.

In April of 1962, the Corps submitted its comprehensive survey, the Delaware River Basin Report. By autumn, Congressional hearings were held, very briefly with only the Corps testifying.\textsuperscript{20} The entire affair was so fast that the House subcommittee took less than twenty minutes of discussion to pass the proposal. Once approved by the House and Senate Committees on Public Works, the Corps’ entire eleven-volume survey thus became incorporated into the associated omnibus bill on water projects for 1962. In October of that year, the Congress passed the Flood Control Act of 1962.\textsuperscript{21} This legislation contained nearly two hundred public works projects nationwide, and section 203 authorized the comprehensive development of the Delaware River Basin with an estimated price tag of $120 million, with fully $92 million of that earmarked for Tocks.\textsuperscript{22} As expected, the earth and rock fill dam was to be 160 feet high and create a lake that would extend up the narrow Minisink Valley 37 miles. The project’s multiple purposes included water supply, recreation, flood control and hydroelectric power. Thus, Tocks not only overshadowed all the other projects planned for the Delaware, it promised to be one of the largest dams in the East.

By 1965, Congress would create the Delaware Water Gap National Recreation Area around what was to be the shores of the Tocks Island reservoir, thus making the project even larger. More detail on how that came about is discussed in the next section.
In the original cost estimation, the aggregate broke down into $14.2 million for flood control, $58.2 million for recreation, $21.5 for power facilities and $28.5 million for water supply. The federal government was to take up all the costs except for water-supplies that were to be paid back by users through a local sponsor, the DRBC. Original schedules called for construction to begin in the fall of 1967 and eight construction seasons later, in 1975, the dam would be completed, according to the District Engineer in charge of this process. However, through most of the preconstruction planning, a worrisome technical problem appeared to be where exactly to site the Tocks Island dam.

As far back as 1942 when the New York District of the Corps had studied and rejected the Tocks Island dam site, it was known that the underlying geology from Wallpack Bend to the Delaware Water Gap had inconsistencies. But, in a 1957 study, the Philadelphia District office concluded that an earthen dam was feasible. Not to be stopped by recalcitrant geology, the Corps hired an expert Board of Consultants in 1964, in the form of two world-renowned engineers, Dr. Arthur Casagrande (earth-and-rock dam specialist) and Francis Slichter (dam design consultant) and an equally impressive geologist, Dr. S.S. Philbrick. This team advised the Corps that the dam site presented in the DRB report was not feasible, and that a dam could not be built in most of the lower Minisink Valley. Amidst continuing studies, a site for the dam had been selected near the end of 1966; instead of utilizing the northern tip of the cigar-shaped Tocks Island, the dam would span the valley about 100 feet below the southern tip of the island. While the new site was far from ideal, the Board of Consultants believed it could work. With a hefty price tag at the beginning, changes in dam design due to geologic problems added another $16 million onto the cost estimate by 1965. Decisions to alter the dam design
and the need for protective works in the upper part of the reservoir pool added another $14 million. It seemed the technical wizardry inherent in dam building was becoming mired in technical problems, studies, and ever mounting budget wrangling. It is reasonable to suggest that, to a great extent, the greased wheels of the bureaucratic machinery and the Corps’ polished, successful technocrats managed to push the project this far without substantial problems, since the cost of the project and a lack of suitable dam site should have been stumbling blocks to its success.

Land acquisition

Another phase of preparations for the dam and reservoir construction included acquiring the land in the valley to be flooded and for the adjoining recreation area. The original dam project would require approximately 23,000 acres of land.26 The process by which this land acquisition was to happen appeared straightforward. Land acquisition began in 1966 and would work according to strict guidelines.

The first step is to obtain a mapping and individual descriptions of each property to be acquired...after mapping is completed two steps take place simultaneously. They are the obtaining of title certificates and appraisals on each individual property. An appraisal is an estimate of the market value of the property. After the appraisal has been prepared, it is thoroughly reviewed by a reviewing appraiser whose job is to confirm that the appraisal does represent the highest price that the property is worth. Then we start negotiations with the owner. It is the policy of the Corps of Engineers to engage in actual, practical and realistic negotiations with owners in order to avoid litigation. If the negotiator reaches an agreement, the owner will be asked to sign an Offer To Sell. It is the policy of the Corps to allow owner occupants of residential property to reserve possession for a sufficient time to allow orderly relocation...after the transaction is signed the case is turned over to a closing attorney who will close the transaction. Every effort is made to reach a voluntary agreement with the owner. However, there may be differences of opinion as to what the property is worth and the owner has the right to have this determined by the court. In this case, the government acquires the property through condemnation proceedings.27
Acquisition was to start in the Delaware Water Gap and spread each year, up the valley until the sixth year of land acquisition when land would be acquired at the top end of the reservoir site in Milford, PA—just as the dam was filling up with water. During the selling process, the property owner could continue to live on the premises for one year after purchase, receive salvage rights to move the dwelling to another location, or if the property was not within the flood zone, take a life tenancy option which allowed living in the home for up to twenty-five years. This seemingly orderly process was to plague the Corps relentlessly throughout the entire decade, and engender some of the most bitter resentment among local residents and anti-dam activists. And to add troubles onto troubles, inadequate estimates of the cost for moving schools, highways, cemeteries, utility lines added another $12 million by July 1966. Land acquisition cost estimates increased by $15 million, and another $8 million for wildlife migration measures, for example, the setting aside of wildlife corridors and habitat replacement patches.

By July 1967, the cost would be $198 million. Congress, reeling from the $100 million increase in the price tag in a scant three years, ordered the Public Works Commission to conduct a staff study of the projects B/C ratio—to be prepared by the Federal Bureau of Investigation. The ambitiousness of plans for the Delaware River Basin becomes more apparent when one realizes how much private property was involved.
Figure 4.2: Monroe and Pike Counties in Pennsylvania and Sussex and Warren Counties in New Jersey Comprised the Region Most Affected by the Tocks Island Plans.
In the West, most dam projects have a real estate component that requires the acquisition of a few scattered pieces of property; in the densely populated East, nothing could be farther from that scenario. Within the Minisink Valley, the Corps of Engineers would ultimately need to acquire approximately 112 square miles of land which already existed in an intricate patchwork of ownership and land-use tenure; it was the first ever federal land acquisition for primarily recreation purposes, and the first involving such large amounts of predominately privately owned land.

Legal Arsenal

While the Corps concentrated on Congressional appropriations, changes in dam design and site location, and land acquisition, the newly formed Delaware River Basin Commission (DRBC) had been plunged into the middle of an interstate-federal consortium like no other ever seen in America. At the same time, property owners in the four counties most affected by the Corps’ plans for land acquisition did not want to sell their property to the government and decided to fight the action. And another separate protest sprang up over the threat to Sunfish Pond. The states of the Delaware Basin had embarked on a bold hybridized new expression of the old tensions inherent in federalism, creating new basin-wide infrastructures of power and enforcement, while stretching the legal traditions in new direction. While powers shifted and reformed at the highest levels of government, people on the ground in the DRB had other more immediate priorities to contend with concerning dams, parks and politics. Property owners in the counties slated for flooding did not want to sell out, and enthusiasts of hiking realized that a glacial pond
along the Appalachian Trail would be destroyed to make way for power generation at the
Tocks Island dam.

DRBC

Because water needs kept growing, as did tensions between the DRB states, the
Delaware River Basin Compact had been negotiated to create a unique power sharing
entity between each of the four states along the Delaware River and the federal
government. Recall that, the Compact invested the new federal interstate commission,
known as the Delaware River Basin Commission (DRBC) with unique authorities and
centralized regional power, as of 1961.30 The Commission’s primary objective was the
implementation of development plans in the basin:

Purpose and Policy: The commission shall develop and effectuate plans polices and
projects relating to water resources of the Basin. It shall adopt and promote uniform and
coordinated policies for water conservation, control, use and management in the basin. It
shall encourage the planning, development and financing of water resources projects
according to such plans and policies.31

The DRBC also had jurisdiction over out-of-basin diversions subject to the 1954
Supreme Court decision, as well as jurisdiction over flood plain zoning. The powers in
the compact were comprehensive and succinct:

No project having a substantial effect on the water resources of the Basin shall hereafter
be undertaken by any person, corporation or governmental authority unless it shall have
been first submitted to and approved by the commission.32

And so, with the new DRBC, the interstate compact and the federally approved
comprehensive basin development plan created by the Corps, the Delaware River Basin
would be breaking new ground in both state-federal cooperation and in basin-wide
management. People had high hopes for a young, untested agency. Similar power
sharing consortia between these four states tumbled into deadlock as they twice failed to ratify an interstate compact in previous decades; and now here they were again, but this time with a fifth vote coming from a representative of the federal government. In the ever-present tensions between decentralized decision-making and the central power of the federal government, the DRBC was characterized as one of the most sophisticated forms of ‘cooperative federalism’ ever attempted.  

The commission was not even five years old when forced to contend with residue of long-term water issues throughout the basin. While attempting to implement the main managerial scheme in the basin—the Tocks Island dam and reservoir—the DRBC also had to deal with the worst drought on record for the states along the Delaware River. Recall that, between 1961 and 1965, the entire northeast received 25 percent less rainfall than normal. By July of 1965, New York City ceased to meet its flow requirements at Montague, New Jersey as prescribed in the 1954 Supreme Court decree (a guarantee of 1,525 cfs) as it diverted more than its share of Delaware water to slake the thirst of New York City. Not surprisingly, this caused the river volume to significantly drop, allowing the ‘salt front’ in the Delaware Bay to inch its way up towards Camden and Philadelphia. The essence of this problem has been discussed in earlier chapters, but not its solution. While the salt front never reached those cities, public worries ran high, inflaming passions over water issues in the basin. And the DRBC, with its new power to ration and allocate water in the basin, declared a four-state water emergency.

Asserting that it was hydrologically impossible for New York to satisfy both diversion and release requirements the DRBC enacted three temporary modifications: (1) the Montague flow requirement was lowered from 1,525 to 1,200 cfs (in other words
from 1,000 to 800 mgd); (2) New York City’s diversions from the Delaware were cut from 490 to 335 mgd, and (3) New York City was directed to resume its 200 mgd releases. To boost flow levels, the Commission directed private electric power companies in Pennsylvania and New York to release up to 266 mgd from their hydropower reservoirs. These stopgap measures helped ease the crisis, but in August New York City officials announced that, if maintained, the DRBC water use policies would force the Delaware reservoirs dry by the end of November. The DRBC, aware of New York City’s precarious situation, intervened with a second juggling of the basin’s water resources—but it was fortuitous late August rains that actually alleviated the crisis.

This episode is revisited here to make two points. First, the function of the DRBC, as a new basin-wide authority, had varied expressions, and seemed successfully to juggle them. In the case of the Tocks Island dam, the DRBC clearly acted as an agency of implementation for existing policy. In the case of the 1965 drought, the DRBC acted as a conflict resolution arbiter among the individual states in the basin. Noted legal scholar Joseph Sax looks at the DRBC when discussing better alternatives for conflict resolution between states than the Supreme Court:

In the broadest sense the lesson deals with the function of law. We are used to considering the law as an institution that resolved disputes by defining relative rights and obligations upon a set of facts which are both known and static. And this, indeed, is what the Supreme Court decision did. We are not accustomed to viewing law as a device for promoting creativity; yet, this, in essence, is what the DRBC, as a law-making and law-enforcing body, did. Instead of simply dividing the water ‘available’…on the basis of an analysis of some previously existing legal rule, such as the Court’s decision or the compact terms, it changes the facts by seeking out, and inducing the parties involved seeking out additional water supplies. Instead of merely allocating a scarce resource, it resolved the conflict to a significant degree by making the resource at issue less scarce.34

Here Sax addresses one of the glaring shortcomings inherent in using the Supreme Court as a sanctioned pathway to conflict resolution in matters of natural resource allocation.
The Court (aside from having no expertise in matters of hydrology, economy, ecology, regional planning etc.) can only make statements concerning points of law. The downfall of this limitation is that what may be reasonable in legal terms may not make sense in hydrologic terms.

Secondly, while the form and scale of management differed with the rise of the DRBC, the problem remained the same. Even with interstate-federal cooperation at the watershed basin scale, the essential reality that the Delaware River had too many conflicting demands placed on it was simply avoided. This obvious fact of nature did not enter either legal or policy discussions in any real way. It made a main-stem dam very seductive for water managers in the DRB, who did not want to acknowledge the underlying incompatibility of some uses, or address the array of costs (beyond the price tag) associated with building a dam.

Class-action lawsuit

One of those costs came in the form of unhappy residents who did not wish to move. The dam and recreation projects took 112 square miles of land. And while those in favor of creating a recreation area touted the Minisink Valley as a wilderness area that needed protecting by the federal government, the region was hardly empty. The acreage, largely owned by private individuals and organizations, contained 7,344 separate tracts of land in twenty-two municipalities in three different states. Estimates and figures varied, but the ‘wilderness area’ actually contained 2,400 to 2,600 homes (including seasonal homes), 25 summer camps and sportsmen’s clubs, 100 to 125 farms, 100 to 200 non-farm
businesses and dozens of public buildings including at least seven churches and three schools. Also sprinkled throughout the valley were 5,000 graves and numerous historical buildings.\textsuperscript{35}

Nancy Shukaitis, a housewife who lived near the Tocks Island dam site, became one of the first and most vocal opponents to the entire project. Before Congress had yet to appropriate any funds for land acquisition on the project, the Corps notified 208 landholders by letter that their properties were being considered for the initial year of purchases for the Recreation Area. This information did not sit well with Shukaitis.\textsuperscript{36} She went to Washington several times to oppose the dam and recreation area at congressional hearings and pleaded for public hearings to be held in the Tocks Island region—a virtually unheard of practice in Washington.\textsuperscript{37} But in April of 1965, the House National Parks and Recreation Subcommittee descended on the small town of East Stroudsburg, Pennsylvania, to hold its hearing.

Prior to that meeting, many property owners in the area organized the Delaware Valley Conservation Association (DVCA), headed by Shukaitis, to give a united argument against land acquisition at the hearing. After the hearing, the DVCA grew to roughly a thousand members and started its own publicity campaign to counteract the pro-dam contingent; it included giving speeches, writing letters, placing ads in local newspapers, and lobbying various government officials—including President Johnson, to whom the DVCA also sent a petition with 2,000 signatures. With no hope of actually halting a major dam project, the DVCA persisted in showing their dissatisfaction with government plans in their valley by filing a class action lawsuit in the United States District Court at Scranton, Pennsylvania.
Filed in the United States District Court in Scranton, Pennsylvania, the lawsuit named the Secretary of the Army, the Secretary of the Interior, and the Corps’ Chief of Engineers individually as defendants. The sheer number of plaintiffs in the suit, 604 people joined the class action, made it one of the largest ever in the eastern United States. The suit alleged that the three officials named acted unlawfully by proceeding with land acquisition while the Corps was still unsure whether a suitable dam site could be found; that the dam itself violated federal regulations because the cost-benefit ratio was too high; that the land-acquisition process was unjust because eminent domain was being used for acquiring recreation land, and that the park would create a nuisance. The DVCA never had its day in court, as federal attorneys successfully argued that although three individuals were named, the suit was in actuality against the U.S. government and the U.S. government must consent to be sued before the case could go to trial, which the U.S. declined to do. The opinion in the case sided with the government, and the case was dismissed in January of 1967. The DVCA appealed to the Third Circuit Court of Appeals in Philadelphia (and lost) in 1968, then appealed to the U.S. Supreme Court who chose not to review the appeal. But the DVCA would continue to fight the dam pursuing other avenues. They did accomplish one thing: they made it perfectly clear that many residents of this small valley did not wish to sell (or give up) their property so that people in New York City and Philadelphia could have a park.

Media

At this point it is worth considering the influence of media on the trajectory of events in the Minisink Valley. Even before Congressional authorization of the Tocks
Island dam project, a sophisticated media campaign went on beyond the reach of the average citizen. The original intent of the Tocks Island dam project in the eyes of the Corps clearly rested with flood control and drinking water. Only a concerted and well-funded media campaign aimed at legislators pushed recreation onto the front lines of discussion about Tocks Island. After Congressional authorization, when many local citizens began expressing concerns about the project, media again played a role as a conduit of expression. A series of protest events were planned in order to encourage media attention to what was happening in the Minisink Valley.

Pamphlets and Congressional Pressure

As early as 1959, different local, regional and national interests relished the idea of a national recreation area in the East. The National Park Service (NPS) portion of the Corps’ Delaware River Basin Report first mentioned the possibility, suggesting that Tocks Island Reservoir could become the most significant non-urban recreational area in the East.\textsuperscript{38} It further recommended that the federal government should fully develop the Tocks Island Reservoir and Recreation Area.\textsuperscript{39} The Corps’ report acknowledged the need for any project to have broad national or regional significance in order to qualify for federal funds, thus the wording appeared to be an implied suggestion that Tocks Island should have a recreational area attached to it.

For those who anticipated an economic boom in the region, subtlety such as that shown in the Delaware River Basin report didn’t do enough to paint an exciting and rosy picture of opportunity. Among the private groups that began to organize behind the push
for recreation at Tocks Island was the Water Research Association of the Delaware River Basin (WRA/DRB) who lobbied for the industrial interests within the basin; it was a citizens’ group, but with very select citizens and a heavy pro-dam agenda. The WRA/DRB was the end result of a recommendation to establish a non-profit, impartial educational organization. However, its members included representatives from various power companies, chemical firms, petroleum firms, and other elements of industry. The WRA/DRB counted roughly two hundred groups represented among its ranks.

Within its first year, this organization developed a mobile exhibit that traveled to various locations, published six widely disseminated newsletters, two pamphlets, two television commercials and a filmstrip; its members spoke at various locations around the basin and testified at Senate hearings. During Congressional debates on the Delaware River Basin Compact, WRA/DRB publicity efforts promoting the Tocks Island recreation areas continued unabated; the WRA/DRB gave speeches and held conferences extolling the virtues of recreation in the region. The WRA/DRB created a series of pamphlets that highlighted the benefits of recreation in the Delaware River Basin in a determined push for recreation as a part of the Tocks Island dam and reservoir project. The pamphlets came out in 1959, 1960, and 1964. Showcasing glossy pages, bright photos and the practiced persuasion of professional production, the pamphlet looked much more enticing than the eleven volume comprehensive report from the Corps. The WRA/DRB pamphlet speaks of the potential for recreation in the basin as ‘clothed in the national interest’ and describes recreational benefits:

“...excellent for such activities as bathing, fishing and boating...” while “the banks could be developed in such a fashion as to satisfy the broadest range of outdoor recreational interest, with picnic grounds, sites for group camping, cabins and cottages, trails flanked by rare and attractive phenomena, scenic drives, and parking areas overlooking the water and surrounding formations.”
Compare the persuasive call for attention to recreation in the first WRA/DRB pamphlet, to that of the fundamental purpose of Tocks Island as a piece of a larger rational multiple-purpose plan for the entire basin.

Of prime importance is water; man can survive without food longer than without water. What is true of the individual is true of his civilization. History has proven that civilizations perish, dwindle, or migrate because of lack of water, which in most instances occurs when the demand exceeds the supply. This does not happen all at once, but is in nature a slow process; however, if the impending disaster is evaluated and provided for, the loss of growth and development can be prevented. Lest we forget—the water resources problems of the future loom large indeed.46

The Corps expresses the dire need for water, and a militant call for the control of nature, namely the control of the Delaware River. Shortages of water had to be avoided, and natural disasters had to be averted through subjugating the flow of the Delaware River to the needs of civilization. The lobby’s pamphlet speaks of a happy valley and beaches on the shores of Tocks Island Lake.

Continuing its efforts to boost the concept of recreation at Tocks Island, the next pamphlet produced by the WRA/DRB called for unified efforts to ensure Congress acted on the idea of recreation in the Delaware River Basin. Its 1964 brochure entitled Tocks Island and Outdoor Recreation for the Crowded East urged its readers to write their Congressmen in favor of recreation.47 The WRA/DRB gave speeches, sponsored conferences, fed information to the news media and even produced a documentary film, all before the DRB Interstate Compact had even been implemented. In the meantime, Representatives and Senators from the DRB states introduced legislation promoting the development of a recreation area at Tocks Island, in 1962, 1963 and 1964; all of these legislative initiatives failed.

While pressing for the expanded recreation area around the Tocks Island Lake and reservoir in the highest echelons of power, the WRA/DRB also involved itself at the local
scale. Charles Bensinger, president of WRA/DRB at the first public informational meeting in Bushkill, Pennsylvania in 1964 commented:

As Colonel Yates [District Engineer for the Corps] has explained, the Tocks Island dam and reservoir project is started and, undoubtedly, will continue on the schedule developed by the Army Corps of Engineers. As far as you the residents of this Bushkill area are concerned, this means only one thing. By the date or dates mentioned by the Colonel, you will have to move. The decision this faces you with can be very simply stated: Do you the residents of this area wish to move together to a new town, that is, do you wish to relocate as a unit? Or do you prefer to each move individually to whatever city or town or village that you choose? The decision facing Bushkill, therefore deals with the matter of relocation.48

Clearly, the impression given was that there existed no alternative, no possible compromise, and no real choice among the residents of this small community. The government had decided to build a dam, and the residents merely needed assistance in adjusting to this new reality.

In 1965, to increase pressure on Congress, the ‘Tocks Island National Recreation Area—A Proposal’ pamphlet was published by NPS, but underwritten and paid for by the WRA/DRB—who then distributed 25,000 of the 40,000 press run. This pamphlet glorified the recreation potential at Tocks Island even more blatantly than the first, and included splashy full page photos.

It’s difficult to conceive of such a large mountain and valley area overrun with developments and no longer an attractive amenity. Only Federal ownership of a large area—as recommended in this proposal—can prevent the development of this resource for a few. Only Federal intervention can reserve the natural scenic character for public recreation use.49

It appears that the underwriters saw no irony in their brochure’s claims that developers would overrun the area, unless the government stepped in to create a recreation area—that was presumably lobbied for by the WRA/DRB specifically because it would bring untold riches resulting from a massive influx of tourists, and the ability to industrially develop the area based on new sources of water. WRA/DRB pamphlets contained
nothing about conservation issues, or the preservation of local culture, history or rural economy. Underlying conflicts of interest inherent in the motives of the NPS, which clearly had a mandate to protect select pieces of land set aside for National Parks and Recreation Areas, and those of the WRA/DRB who wished very much to gain from development potential in the DRB made an unexpected and odd alliance. This carefully timed minor media blitz apparently did not filter down to the level of average citizen. Thus, it is more likely that the strategic publicity campaign aimed its sights on mobilized organizations such as hunting and fishing organizations, or the League of Women Voters for instance, who could then generate amplified interest among their memberships.

With the help of the WRA/DRB and others, area newspapers began publishing articles on the Delaware River Basin and all the changes that would occur. The aggregation of these efforts had a galvanizing effect that generated excitement, and presumably public support, for water-development in the Delaware River Basin. That same year, an initiative successfully passed through Congress, creating the Delaware Water Gap National Recreation Area (DWGNRA) in a mere two and a half pages of legislation. The legislation gave the Secretary of the Interior approximately $34 million to acquire 46,675 acres of land and another $18 million with which to build recreational facilities. Since the Corps was already acquiring land for the dam and reservoir, it was charged with acquisition of the added land that would then be turned over to the National Park Service who would run the DWGNRA.
Figure 4.3: Architect’s Development Plan for Tocks Island Dam, with Powerhouse and Intake Facilities (top of the photo), and a Visitor’s Center with Semi-circular Gardens (bottom of the photo).
Figure 4.4: WRA/DRB Pamphlet Showcasing the Potential for Recreation, and its Strategic Location Relative to the Surrounding Major Urban Areas.
Figure 4.5a: Pamphlet Produced for the Corps of Engineers, Philadelphia District Office
Figure 4.5b: Pamphlet Produced for the Corps of Engineers, Philadelphia District Office

Sunfish Pond
With the addition of the DWGNRA, the scale of the project jumped from large to
grandiose. A main-stem dam made dubious economic sense from a purely water-supply
or flood control perspective; it was the recreation element that helped create a favorable
cost-benefit ratio. The dam theoretically protected a downstream floodplain of
approximately ten thousand acres. Because of the added water-supply storage capacity,
Tocks Island reservoir flooded thirty percent more land than it protected. So, more than
any other of the multiple purpose elements, recreation made Tocks Island credible—and
eligible for federal funding. But Tocks Island had a tremendous cash flow problem
because of its size, its escalating cost estimates and the inconsistent geologic conditions
which required moving the dam site. We should not forget that external to this process,
the project vied for dollars that also had to cover the Vietnam War, the War on Poverty
and other massive federal expenditures.

The dam in the Delaware Basin Report was heavily altered by the time it emerged
from the preconstruction planning process—with a different design shape, a new
location, the reservoir’s larger size. Another change related to the reservoir releases,
which were now to be made through twin tunnels (each about 1,300 feet long) cut
through the side of Kittatinny Mountain. The potential generating capacity had also
increased 50 percent from the original plan, to a new total of 70,000 kilowatts. And
private energy companies already wanted to develop a pumped-storage facility on
Kittatinny ridge. Also, Tocks Island water was not to be owned solely by the federal
government. The Water Supply Act of 1958 allowed water-supply storage to be added to
federal reservoirs as long as non-federal sponsors repaid the associated costs. So in
1965, the DRBC became a non-federal sponsor when it agreed to buy the water in the reservoir; that made it the Corps’ partner in the Tocks Island dam project.\textsuperscript{52}

Pumped storage uses a power company’s off-peak generating capacity to pump water from a lower reservoir to a higher one. Then, during peak power demand, that same water can be returned to the lower reservoir, utilizing gravity, via turbines that harness the falling water to generate electricity. The top of Kittatinny ridge would overlook Tocks Island reservoir, thus making the top of the ridge a prime location for pumped storage. However, the consortium of electric companies\textsuperscript{53} who had contrived for nearly a decade to build such a project, underestimated the aesthetic value of their chosen location to the local residents. Sunfish Pond, the location in question, is a forty-four acre glacial lake that overlooks the Delaware valley. The Appalachian Trail also happens to skirt the western edge of the lake.\textsuperscript{54}

The state of New Jersey had owned the land as part of Worthington State Park, but quietly sold it in 1961 to the power companies. Then in 1963, the electric companies gained permits to begin the pumped-storage construction—in anticipation of the new Tocks Island dam and reservoir. The first phase had already been completed, but the DRBC hesitated to move forward on the last phases (which included destruction at Sunfish Pond) until the Tocks Island reservoir had been completed. The scheduled demise of the pond went largely unnoticed until two Warren County, New Jersey, citizens began separate efforts to save the pond. A chance meeting connected the two men, and in 1966 they formed the Lenni Lenape League (LLL) and merged their campaigns—which included letter-writing campaigns, and collecting signatures on a petition by standing at Sunfish Pond along the Appalachian Trail. With early success, the
LLL decided to plan a protest march up to the pond where they collected over 600 signatures.

Letters began raining down onto the offices of government officials at all levels, as the ‘Save Sunfish Pond’ campaign developed steam. For people who supported the dam, this campaign created a crisis of consciousness. Numbered among the dam supporters were many who didn’t care about the dam, but saw the DWGNRA as a valued addition to the region. But supporting the dam meant supporting the pumped storage advocates, thus supporting industrial development and the destruction of Sunfish Pond and perhaps marring the integrity of the Appalachian Trail, which sharply conflicted with the values of those conservationists who thought creating the DWGNRA would be deterring development. Suddenly, conservation organizations with no stated opinion on the subject began to look carefully at what was happening in the Tocks Island region.

Conclusion

The most immediate impact of all this commotion was a slowing down of the original schedule. Tocks Island was already gaining a reputation as a bottomless money pit. By 1966, the project was behind schedule. Unhappy citizens had filed a lawsuit, and now a small protest over Sunfish Pond had erupted. These setbacks did not stop the steam-roller of support for the project at the highest levels of government though, and the array of money, interest and power allied in the effort to create the Tocks Island dam and reservoir and DWGNRA could easily be characterized as stellar. Just to recap, the collection of interests pursuing an early construction start included the Corps of
Engineers, the Delaware River Basin Commission, the U.S. Congress, the individual states of New York, New Jersey, Pennsylvania, and Delaware, and the Water Resources Association of the Delaware River Basin (WRA/DRB.) In 1966, the dam project appeared largely to be considered a ‘done deal’ that people would simply have to accept, like so many other bumps on the road to progress. But the fight was not over yet.
The Cross Florida Barge Canal is the environmentalist’s touchstone in Florida, and the controversy over this project garnered nationwide attention in the late 1960s. It has been said that the 1970 presidential race, in which Dixie-crats were heavily courted by both presidential candidates, revolved around ever more glorious promises concerning the Cross Florida Barge Canal. Even now, in 2004, the issue is not settled as the project only received Congressional de-authorization in 1990, and the river that presumably had been protected by not building the canal is also currently a hot topic of debate in Florida where there is a strong grassroots environmental movement to remove the Rodman dam (built on that river by the Corps, and which is threatening the local ecosystem through heavy eutrophication).

The other dams were to be as follows:
1. Beltzville Reservoir off of the Lehigh River at Leighton, PA
2. Blue Marsh near the Schuylkill River at Reading, PA
3. Expansion of Bear Creek Reservoir in the upper Lehigh area of PA
4. Trexler dam 8 miles away from Allentown, PA
5. Expansion of the Prompton Reservoir on the Lackawaxen River in PA
6. Aquashicola dam—also in the Lehigh basin—near Palmerton, PA
7. Maiden Creek dam north of Reading, PA
8. Haw Mountain Project on the east branch of the Delaware River in NY
9. Newark dam near the PA-DE border on White Clay Creek
10. Christina Project located near the Newark Project

24 United States Army Corps of Engineers, Design Memorandum No. 1, Site Selection, Supplement No. 1, Chap1, P.2.
28 Each of these options could occur at the discretion of the federal government, not the land owner, and each option had penalties associated with it.
29 Albert, Damming the Delaware: The Rise and Fall of Tocks Island.
31 Section 3.1 "Delaware River Basin Compact,"vol 328.
32 Section 318 "Delaware River Basin Compact,"vol 328.
36 Interview data (Activist-1)
37 Interview data (Activist-1)
39 Corps of Engineers, Delaware River Basin Report.
40 According to WRA/DRB member Charles Bensinger. Statement at Senate Hearing (30 October, 1959)
See Michael Reich’s chapter in Feiveson, *Boundaries of Analysis: An Inquiry into the Tocks Island Dam Controversy*.


Interview data (DRBC-2) See also, Albert, *Damming the Delaware: The Rise and Fall of Tocks Island*.

WRA/DRB, "Water for Recreation--Today and Tomorrow," (1959)

WRA/DRB, "Water for Recreation--Today and Tomorrow"


WRA/DRB, "Tocks Island and Outdoor Recreation for the Crowded East," (1964)

Bensinger, "Remarks,"

The National Park Service, "Tocks Island National Recreation Area-a Proposal," (1965)


DRBC Resolution No.65-24


For hikers of the Appalachian Trail, Sunfish pond is often noted as one of the prettiest spots between Georgia and Maine.
By 1970, the picture of events in the Delaware River Basin surrounding the Tocks Island dam and reservoir project became much more complicated at every scale. Within the region, grassroots protests sprouted and grew in more directions. At the state scale, consideration of who would pay infrastructural costs and which state would gain the most from this multi-purpose project drove wedges between the DRB states. In the DRB region, the Tocks Island project functioned as a lightning rod--focusing the sparks generated from other social debates and amplifying existing local frustrations to generate an even more electrified atmosphere. At the scale of large government bureaucracy, the Corps of Engineers found itself fighting more than one rear-guard battle, as both internal and external forces worked to change the Corps’ culture and power-base. Nationally, scattered protests and dam fights transformed from discrete incidents to a full-fledged social movement centered on environmental dilemmas and grounded in social issues and ethical debates with complex roots.

Of course, with hindsight and the benefit of knowing what resolution ultimately came of the conflict, we can see threads pulling circumstances towards the direction we know they would follow. But in 1970, the scene must have resembled a Victorian era parlor game in which each person in the room held the description of just one event, and the goal of the game was to assemble the events in the proper order to create the story and solve the mystery of ‘whodunit.’ In the parlor game, only by working together, sharing
knowledge of events, and constantly reassessing the state of the story as each new event was added, could the story be properly reassembled to solve the mystery. In reality, the stakeholders related to Tocks Island (with few exceptions) did not work in concert; everyone underestimated the number of players in the game; and the rules kept changing as the story evolved.

Media

Growing interest from print media about events in the DRB, between 1966 and 1970, helped shape opinions on the escalating conflict over the possible destruction of Sunfish Pond, and the connected plans for Tocks Island dam. Simultaneous local and national newspaper coverage of changes in the DRB such as the Corps’ land acquisition plans, which meant the displacement of some 4,000 residents, and the circulation of a powerful underground newspaper, the Minisink *Bull*, jolted many in the basin into a new sense of urgency about the impending Corps project and plan to drastically change the condition of the Delaware River and its surrounding basin. In these years, unconventional media techniques proved very effective as a catalyst for reframing the public debate from that of displacement and taking private property to that of an environmental crusade.

Sunfish explosion

The Lenni Lenape League (hereafter LLL), which had taken its name from the Native Americans who first populated the basin before the Europeans arrived, continued
on its crusade to bring awareness about the obliteration of Sunfish Pond in association with the planned pump storage project atop Kittatinny ridge. Perhaps they felt a symbolic connection to the first residents of the valley that had been pushed out by larger, better-equipped forces. By serendipity, perseverance, and a great boost from media coverage, the campaign took on undreamed-of proportions over the four years between 1966 and 1970.

After their protest march in May of 1966 netted roughly six hundred signatures on a petition, the LLL began letter-writing campaigns in 1966 and 1967. Targets included officials throughout eastern Pennsylvania and the entire state of New Jersey, governors, senators, newspapers, and officials within the federal level of bureaucracy. In June of 1967, the LLL organized another protest hike; this one brought the unexpected appearance of Supreme Court Justice William O. Douglas. A New Jersey native who had childhood memories of the pond, Douglas made quite a splash at age 68 hiking up to Sunfish in decidedly un-judicial attire. Supreme Court justices simply did not lead public lives, nor did they participate in activist protests. The appearance of a Supreme Court justice and over a thousand other hikers made newspaper headlines throughout the valley the next day. These articles revealed Douglas’s pro-environmental judicial leanings, and the fact that he had hiked the entire Appalachian Trail in the late 1950s. Suddenly little Sunfish had a big new advocate with a public face that galvanized interest all over the basin about its fate.

In August of that same year, the DRBC held public hearings on the pumped storage power issue that marked a turning point in the debate. For the power companies, the issues concerned the delivery of additional power in the valley: identifying new
customers, allocating fees for the dam and reservoir, determining the charges for water use. For the foes of pumped storage the issue was whether Sunfish Pond would be used at all. The Sierra Club was the first national organization to join the fight by testifying against the pumped storage idea. Arguments focused on two concerns. First, if Sunfish became an upper reservoir, river water would be pumped into the lake and then released. This would destroy the pristine pond both ecologically and aesthetically with changes in water quality and dramatic fluctuations in shoreline. Secondly, it was the largest lake in New Jersey inaccessible by car, and one of the last wilderness retreats left in the increasingly urbanized northeast. The power companies said there was no other alternative to Sunfish destruction; the DRBC wanted to rent the Tocks water to the utility companies, so long as the power companies paid $500,000/yr, give the DRBC 281 million kilowatt hours of electricity annually, and share in the cost of building the dam. Emotions ran high on both sides, and longtime foes from PA and NJ traded allegations and insults. Again, papers across the region caught this fiery exchange. Negative headlines again, shortly after the massive protest march to Sunfish, did nothing to inspire confidence within the DRBC about the political viability of the Sunfish addition to the Tocks Island project. In fact, the DRBC advised the companies after this public meeting, to find an alternative to Sunfish. In response to a deluge of letters by December of 1967, Secretary of the Interior Stewart Udall declared that the federal government would do everything possible to save Sunfish and pressed for modifications of the storage design in order to avoid harm to the little glacial lake.

A third pilgrimage to Sunfish in 1968 drew at least 2000 hikers; meanwhile, the New Jersey legislature responded to calls for a public inquiry into circumstances
surrounding the sale of Sunfish to the power companies in 1954 and whether the state could buy the property back. In late May of 1968, on the eve of the planned protest hike, the *New York Times* declared its support for the two bills then under discussion in the New Jersey legislature that would repurchase Sunfish Pond, exerting still more pressure from the media concerning “a small but irreplaceable natural asset, which for that reason alone, deserves preserving.”³ With ample descriptions of the pine and hemlocks, date and time of the hike, as well as directions to the meeting place, the editorial mourned the “total desecration of this legacy from the glacial age.”⁴ Thus, with the aid of the *New York Times* and flawless weather, the 1968 pilgrimage to Sunfish Pond attracted many people who had never heard of Sunfish Pond before, new soldiers in the growing army to ‘Save Sunfish Pond.’⁵ In corridors far beyond those of the New Jersey Statehouse, the fight to save Sunfish became a *cause-celebre* as Sunfish Pond took on talismanic qualities for urban-dwellers who sensed the loss of something more than just a pond and some trees—the last tangible wilderness in an overdeveloped region.

A compromise was reached between the DRBC and the three power companies by July of 1968 that gave Sunfish Pond back to NJ in trade for 100 acres of nearby land. Use of Sunfish would be avoided by raising the height of one of the Tocks Island projects’ upper reservoirs to gain potential for power generation; in October, the DRBC officially amended its comprehensive plan concerning pumped storage facility development to include provisions for preserving Sunfish Pond.⁶ In June of 1970, a similar federal bill passed Congress.

For those in support of pumped storage, and Tocks Island, this compromise was assumed to be the end of the fight. Unexpectedly though, the fight over Sunfish worked
like a champagne cork—releasing pent-up emotions that spilled over into the public
debate and flowed in unpredictable directions. Bumper stickers, fliers, posters and lapel
pins transformed from ‘Save Sunfish’ to ‘Save the Delaware’ slogans. Suddenly worries
about the larger project of Tocks Island dam and reservoir, both real and imagined,
popped up such as the potential for mudflats (from seasonal drawdown), eutrophication
(from upstream pollutants), fear of dam failure from earthquakes (unfounded), links
between power companies and water needed for planned nuclear power plants (unclear).
Some dam opponents with heady conspiracy theories claimed that the Tocks planners
secretly agreed to give New York City water from the Tocks reservoir. Despite the
dubious credibility of the claim, once mentioned, the specter of New York City
domination re-opened complaints about that city’s famously leaky water system, and
other long standing animosities and fears of urban dominance within the affairs of the
basin. There was credence to the general concern that the upper reservoir could leak into
Sunfish Pond and destroy its naturalness. As Albert noted, an existing reservoir at Yards
Creek already leaked, so when LLL publications pictured an algae filled Sunfish Pond
with 200 ft tall dikes towering above it, the Appalachian Trail pushed off the ridge, and
other horrors, they were not viewed as merely extremist forecasts of doom.  

The New Jersey Sierra Club sponsored the LLL pilgrimage hike to Sunfish in the
Spring of 1969, and through their more sophisticated lobbying efforts, the letter writing
transformed to talk of losing a free flowing Delaware, loss of river bottom lands, the
impact on water ecology and other larger issues. This hike also attracted approximately
2000 hikers, and by 1970 the yearly event began attracting people less interested in
Sunfish than they were in stopping the Tocks Island dam. In its final hike, the 1971
pilgrimage saw 1000s jamming up the old mine road to Sunfish; the LLL, the DVCA and others were all there to capitalize on the interest of growing throngs of supporters.\textsuperscript{8}

In this particular instance, the Corps had very little to do with the Sunfish controversy as it was not a direct partner in the scheme to develop pumped storage facilities atop Kittatinny ridge. In fact, most of the Sunfish fight occurred while the Corps continued with its plans for Tocks Island dam and reservoir. Ironically, the fate of the entire Tocks Island project remained intimately connected with the fate of Sunfish Pond. But at the time of the Sunfish protests and controversy, the rhetoric of those protesting the destruction of Sunfish Pond did not center on Tocks Island. It was entirely possible to value Sunfish Pond, and still value a reservoir for recreation. Only with time would it become clear that the success of a small band of determined people who pressed forward against larger forces to save Sunfish Pond catalyzed more people to adopt the same tactic in the larger effort to resist the Tocks Island dam and reservoir project.

**Underground Press: The Minisink Bull**

Concurrent with the Sunfish protests, another sort of media force began exerting influence in the valley. An underground newspaper entitled the Minisink *Bull* began circulating out of a small village named Dingman’s Ferry on the Pennsylvania side of the Delaware. Published individually by Joan Matheson, a longtime friend of Nancy Shukaitis,\textsuperscript{9} and member of the DVCA, the paper originated as an anti-Tocks protest. Filled with crude satire, catchy cartoons, headlines riddled with double-entendres and editorials about the Tocks Island project, the *Minisink Bull* took on the establishment with fervor and wit. Through this 8-page circular, with a format of news, editorials, and
miscellaneous features, Matheson and other contributors found a voice and niche in the battle for public opinion that had no parallel. This venue also allowed for continued growth and membership in the fight against the Corps, as well as a conduit of information and upcoming events. In the back of each edition was information about how to join the fight. This paper functioned in ways that more powerful larger papers could not.

National newspapers such as the New York Times had subscription numbers, and by inference readership, in the millions. Regional giants such as the Philadelphia Inquirer and the Trenton Evening Times, each with readership over one million, catered to more legislative and industry-oriented issues. Multiple and scattered small-town and small city newspapers carried a mixture of human interest and wire stories. A few exceptions to this rule stand out such as The Pocono Record and its predecessor the Daily Record, both published out of East Stroudsburg, Pennsylvania, which consistently reported more detailed articles than either their counterparts within the region or the national newspapers. A more local news source, The Pocono Record circulation numbers include only a few counties in Pennsylvania and New Jersey.

None of these formal media compared to the homegrown anger and chutzpah of the Minisink Bull. The Minisink Bull published 23 times in the years between 1966 and 1970. With it passionate and unbridled opinions spread through the valley—and those opinions universally deplored the newly planned Tocks Island dam and reservoir, its accompanying recreation area and the upheaval thrust upon local residents. Items not reported on or not thoroughly explored by larger papers often came out in the Minisink Bull. Local knowledge combined with piercing savvy about the pit-falls of big
government (Matheson was the wife of a retired Corps Colonel) helped change the prevailing mood in the region from pro-development to anti-dam.

Legal Arsenal

It is said that timing is everything. With regard to the Tocks Island dam and reservoir project, timing could not have been more crucial. In the years that the project evolved and plans to build the dam took shape, no statute required any federal agency to consider the environmental impacts of proposed public works projects. That is not to say that environmental impacts were never considered, only that consideration of those impacts was not legally mandated. That situation abruptly changed with the passage of the National Environmental Policy Act (NEPA) in 1969. If the construction had begun on its original schedule, in the fall of 1967, then the dam would have been more than half-way built when NEPA legislation was passed, and therefore not have fallen under its jurisdiction. Because groundbreaking had not yet occurred, the designers and builders of the project did have to comply with this new environmental legislation. And this small chance of timing would play a major role in the final outcome of the project. In essence, the rules changed in the middle of the game.

NEPA and Environmental Impact Statement(s)

The National Environmental Policy Act marked the beginning of the ‘environmental era’ in the U.S., and was intended as a foundation for systematic
integration of environmental considerations into all the agencies and sectors that have important environmental impacts. To see the full scope of the debate, issues and implications, we must digress slightly to the issues simmering in the decade prior to 1969. Coming out of the New Deal years of the mid 1940s, the federal government comprised far more agencies and responsibilities than it had in the previous generation, but with no ongoing technical staff or coordination nor any mechanism for coordinated executive branch management. The Roosevelt administration proposed fundamental changes in environmental policy-making institutions in order to achieve greater policy integration. If nothing else, as the post-war era began the New Deal administration left a new and distinctive environmental policy vision--the idea that the natural environment could be developed and managed in an integrated fashion. Mission-oriented agencies and their entrenched beneficiary interests strongly resisted this, and by the late 1940s the general pattern of government was not efficiently managed programs run by a coordinated state envisioned by New Dealers. Instead, fragmented administrative agencies tended to jealously guard their narrowly defined interests and conflicting visions, all chaffing under the ever-larger range of activities the government took into its stated public interest. Andrews outlines this process specifically for water management:

The history of the water resource development agencies, for instance, reflects a cumulative broadening of the range of purposes that the agencies were directed to consider in planning the development and management of water resources: navigation and flood control, irrigation and hydropower, drainage, beach erosion control, water quality improvement. To these were gradually added fish and wildlife protection and recreation development. Despite this broadening of statutory authority, however, the agencies remained focused on specific and limited sets of missions, explicitly or implicitly disregarding other important public values—even the missions of other agencies—that were impacted by their actions.
In the face of entrenched opposition to integrated presidential policy planning, the main substitute that emerged was statutory requirements for increasingly comprehensive coordination of planning—a trend that began with the Fish & Wildlife Coordination Acts of 1934 and 1946, and culminated with the Environmental Policy Act of 1969.16

NEPA has been referred to repeatedly as an attempt at federal ‘reform’ because, in the 1950s and 1960s, federally sponsored domestic and military construction programs were accompanied by widespread land degradation, air and water pollution, habitat destruction, and all around aesthetic blight (e.g. explosive suburban growth, flight from decaying cities etc.).17 Also, federal licensing and regulatory authorities were accused of being administered without regard to environmental consequences of proposed actions. Beyond federal spending programs, environmental neglect was charged in the administration of diverse federal licensing/regulatory activities such as pesticide usage, offshore petroleum leasing, fuel power plant design and site permits (fossil and nuclear) effluent discharges into the nation’s waters, and management of federal lands.18 For a more specific shopping list of issues during this time, here is Rutherford Platt’s inventory of land/water use and the legal-geographic issues at that time:

1. The proposal to dam portions of the Grand Canyon (BuRec)
2. A proposed 39-square-mile jetport to be built just outside of the Everglades National Park (Miami Metro Authority but linked to Corps hydrology plans)
3. The Cross-Florida Barge Canal (Corps)
4. The 1969 oil spill disaster in Santa Barbara Channel
5. Innumerable conflicts over the site location and design of the Interstate Highways—e.g. San Francisco, Boston, New Orleans, Seattle
6. The North American Water and Power Alliance (NAWAPA) proposal to impound massive quantities of water from Canada for diversion to arid regions of the West
7. Rampart dam proposal for the Yukon River in Alaska (Corps) (Platt), pp.404-405
It was in response to this kind of concern about the environmental impacts of actions springing from the federal agencies themselves in alliance with powerful special economic interests, and to environmental issues NOT being addressed by the federal government, that the climate seemed ripe for the passage of a bill like NEPA. Issues that jumped scale from local to national interest during this time, many of which centered on resource exploitation or degradation of the environment, provided the individual frictions which were to meld into a more comprehensive environmental movement during the height of the Tocks Island fracas in the DRB.

Congressional Debate

Set against this background, and just four months before the first Earth Day teach-in, voting for a very short ambiguous bill such as NEPA must have been like voting for Motherhood or Apple Pie. Its text and legislative history suggest that NEPA may have easily been misread as a largely symbolic enactment, expressing the new mood of environmental concern, but without establishing any substantive bite. Title I of the Act reads more like an environmental Declaration of Fundamental Rights than a traditional regulatory statute. Only the most callous and hard-hearted Congressional member would not want to “create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social economic and other requirements of present and future generations of Americans,” as stated in Title I section 101(a). And still feeling the immediate impact of Rachel Carson’s devastating critique of government credibility in the realm of public health and the environment, *Silent Spring*, a statement
like NEPA would surely attract any and all gelatinous-of-will or ethically double-jointed Congressional delegates who might be in need of ‘good press.’ And the new agency established in Title II, the Council on Environmental Quality (CEQ), was given the relatively uncontroversial task of preparing an annual report on the state of the environment, assisting other agencies in implementing the statute, and monitoring environmental trends. 21

The Congressional debate included shockingly polite and agreeable acceptance of the proposed House and Senate bills related to NEPA. The brevity of debate and universal disinterest suggests that Congress failed to examine the consequences of NEPA; it simply flew under everyone’s radar. 22 Perhaps the most significant aspect of the hearings on the legislation was the degree of almost total unanimity in the Congressional and interested community that such a council as the CEQ was, if anything, long overdue. Dr. David M. Gates, a professor at Washington University had this to say at the hearings on the complicated problems that the council would have to deal with:

It is a question of quality—for how many—for how long? Presumably an environmental quality council will help to assure certain goals. There are two types of issues. There are the brushfire crises: the Santa Barbaras, the Rhine Rivers, the Great Lakes; and then there are the long-term methodical concerns about the environment. Today we are manipulating an extremely complex system: the ecosystems of the earth, the units of the landscape, and we do not know the consequences of our actions until it is too late. We need to study ecosystems in advance and work out the strategies of living with the landscape. (Legislative History p.2756)

Comments from the Subcommittee on Fisheries and Wildlife Conservation suggested no doubt about the need for such scrutiny:

There may be controversy over how close to the brink we stand, but there is none that we are in serious trouble. (Legislative History p.2754)
In its final form, NEPA contains two Titles each with a few sections, the entire law taking up only three and a half pages. Section 101-a states that, “The Congress, recognizing the profound impact of man’s activity on the Interrelations of all components of the natural environment, and particularly the profound influences of population growth, high-density urbanization, industrial expansion, resource exploitation, and new and expanding technological advances…declares that it is the policy of the Federal Government …to use all practicable means, consistent with other policy considerations,”

(PL 91-190 Title I, section 102(2)-c)

(“National Environmental Policy Act”)

The statement is then circulated among several government agencies for comment, and accompanies the proposal through the originating agency’s review process.

Section 102’s impact statement provisions developed from the realization that most of the adverse environmental impacts of the growth processes mentioned in section 101 were by-products of actions that had been taken without consideration of their...
environmental residues. Liroff (1976) acknowledges that this failing was particularly true of public works agencies:

Roads and dams were built and mineral exploration rights granted, often with little concern for their environmental impact. While some of the responsible agencies had statutory environmental obligations to which they gave little weight, many other agencies had no obligation whatsoever to consider their actions’ environmental consequences. 24

The final version of Title II establishes the Council on Environmental Quality and details its responsibilities. These include:

(1) Assist and advising the President…
(2) Gather timely and authoritative information concerning conditions and trends of the environment,…
(3) Review and appraise various federal programs in the light of the policy set forth in Title I,…
(4) Develop and recommend to the President policies to foster and promote improvements to the environment,…
(5) Document and define changes to the environment…
(6) To report at least once each year to the President on the state and condition of the environment; and
(7) Conduct investigations, studies, surveys, research, and analyses relating to ecological systems and environmental quality (PL 91-190 Title II, section 204) (“National Environmental Policy Act”) 

Impact of NEPA in the Courts

NEPA seemed relatively benign during its Congressional passage. It also reflected a growing perception that the federal government should get its own house in order, before seeking to improve nonfederal activities affecting the government. The first Annual Report of the U.S. Council on Environmental Quality did not spare the federal government from blame in environmental damage. It stated that harmful impacts arise from:

…a myriad of federal loans, grants, projects, and other programs enacted for specific public purposes…The most significant federal activities include the highway, airport, and mass transit programs, the sewer and water grant programs, …the location of Federal facilities, and water resource projects. (CEQ), p.191)
But immediately, NEPA became a testing ground for multiple environmental controversies and provided an unanticipated venue for judicial review. Environmentalists sought redress of environmental grievances or injunctions against proposed actions that would degrade the environment in the courtroom with large success in the wake of NEPA. After being locked out of the decision-making process for decades, this was an open door for public concerns. Courtrooms were also regarded as more impartial forums than administrative hearing rooms. So for those who believed environmental quality had been given insufficient consideration by federal agencies and the developmental clienteles and congressional committees to which the agencies were primarily responsive, here was a golden opportunity to gain a voice.

Previously, legal standing in the court had been a major obstacle to the use of the court as a venue for conservation and environmental concerns. Standing in this sense means that without a direct interest in the conflict, a party cannot participate in the legal process. For instance, if one person files suit against another, then unaffected third parties may not join in the proceeding just because they may be interested in the outcome. Those hypothetical third parties have no standing in the eyes of the court. There is also the tradition of amicus curiae briefs. Amicus curiae, or friend of the court, is defined in Black’s Law dictionary as: “A person who is not a party to a lawsuit but who petitions the court or is requested by the court to file a brief in the action because that person has a strong interest in the subject matter.” The purpose of amicus curiae is to supplement the court records providing information that may be of use to the justices that may not be included in the briefs filed by litigants. This tradition did not provide wide scale access to the judicial process, however, due to procedural constraints. However, in 1970, in two
major cases decided on the same day, the Supreme Court left the judicial door wide open for environmental groups to participate in the legal process. In Organizations Inc v. Camp and Barlow v. Collins, the Court pronounced two criteria that a plaintiff had to satisfy to obtain standing. First, the plaintiff had to show that the challenged action injured him in some fashion, economic or otherwise. Also, the plaintiff must show that the interest he sought to protect was arguably within the zone of interests to be regulated or protected by the statute or constitutional guarantee in question.

The courts tended to be very responsive to NEPA because the statute’s legislative history—particularly the floor remarks of Senators Henry M. “Scoop” Jackson and Edmund Muskie which declared in strident language that the time had come to establish a new basis for decision-making. NEPA was an exceptionally broad law with strong substantive messages but no developed procedures by which to attain those stated goals. The main areas of ambiguity the courts addressed with respect to NEPA’s decision-making message were: which actions require environmental impact statements (EIS), what analyses should an EIS contain, when should an EIS be prepared, how should the public be involved and how should an EIS be reviewed?

Liroff encapsulated early round NEPA cases in 1970: “Injunctions were obtained against the trans-Alaskan pipeline, the Gila River Clearing, and a Farmers Home Administration loan for the construction of a golf course in Texas.” On the subject of compliance with NEPA, in the case of the opposition to a nuclear power plant at Calvert Cliffs, Maryland, the judge held that the courts had a duty to see that Congressional policy directives were “not lost in the hallways of bureaucracy,” that the Atomic Energy Commission had given a “crabbed interpretation” to an act which Congress “did not
intend to be a paper tiger,” and that agency compliance with NEPA had to be strict and would be closely reviewed by the courts. Calvert Cliffs has been the most widely cited NEPA opinion.

The courts often scrutinized an agency EIS for adequacy. As more and more opinions were written for projects of a particular type, such as water resource development projects, additional factors requiring detailed evaluation were mentioned. The courts demanded rigor, but not perfection, in the EIS. This difference is seen in the challenge to the proposed Gilliam Dam in Arkansas, “It is not necessary to dot all the I’s and cross all the T’s in an impact statement” (Edf V. Corps of Engineers (Gilliam I)). It is also echoed in the much-litigated Tennessee-Tombigbee waterway project. This quotation is from the second lawsuit in which the EDF sued the Corps for non-compliance with NEPA:

We do not fathom the phrase “to the fullest extent possible” to be an absolute term requiring perfection…the phrase clearly imposes a standard…requiring nothing less than comprehensive objective treatment by the responsible agency…Thus, an agency’s consideration of environmental matters that is merely partial or performed in a superficial manner does not satisfy the requisite standard. (Edf V. Corps of Engineers (Tenn-Tom)) pp.20536-20540

A proliferation of this kind of case came about due to many flimsy attempts to comply with NEPA in 1970 and 1971. The Department of Interior prepared an EIS for a project involving off shore oil and gas leases in the Gulf of Mexico in 1971 consonant with its interpretation of NEPA requirements. The EIS contained limited discussion of policy alternatives to those lying within departmental jurisdiction; this discussion filled only two and a half typewritten pages. NRDC brought suit, alleging departmental noncompliance with NEPA for failure to discuss adequately alternatives to the proposed leasing programs lying outside its jurisdiction. Similarly, in 1970, the first EIS prepared by the
Corps in preparation for the Tocks Island Dam project consisted of only seven pages, and precipitated the EDF to threaten a law suit against the Corps for failure to comply with NEPA.

NEPA, Tocks and the Council on Environmental Quality

Since its enactment in 1970, the National Environmental Policy Act (NEPA) has been the focus of considerable controversy. Never before had Congress passed any act that declared a sweeping national environmental policy, provided a statutory mandate for all federal agencies to consider the environmental impacts of their actions, and established a coordinating body in the office of the president to review environmental policy. The Tocks Island project got swept up in the turmoil and suffered more setbacks to the original construction time table and plans, and created great headaches for the Corps that would plague the agency throughout the entire decade of the 1970s.

At this point the scales of agitation collided and the Tocks Island project happened to be sitting in the middle of the road. National interest in protecting the environment had been gathering steam over the previous decade. The passage of NEPA, rather than stemming this tide seemed to give it a burst of energy. Locally, concerns about the imminent destruction of Sunfish Pond galvanized scattered citizen groups across the valley, who now scrutinized every aspect of the Tocks Island project with a new vision of saving the entire watershed. Decades of rankling over big government and big corporations created natural enmity within the valley when individuals found the fate of their future tied to far away legislators and large utility corporations with no public
face. And the seemingly unstoppable Corps of Engineers now had to answer to a higher
council on its plans in the Delaware Basin.

To be fair, in 1970, with new legislation and very sketchy guidelines about what
exactly fell under the scope of the law, it would be hard for any government agency to
know exactly what to prepare. Nevertheless, the Corps was tasked with preparing one of
the first Environmental Impact Statements (EIS) ever written to comply with the newly
enacted NEPA. Because the project already enjoyed the support of the individual states,
the Congress, the Corps and the DRBC, the Corps thought that this task was a
perfunctory obligation. After all, more than a decade had already been spent on plans,
site design, dam design, and land acquisition—not to mention $25 million. The project
was just about to break ground and had already received every possible green light in the
process. Who could conceive at this late date that the project would be seriously
scrutinized under the new EIS regulation? Corps officials prepared a preliminary report
in the form of a seven-page statement that was distributed for comments in late 1970 then
submitted to the CEQ in early 1971. It was meant to be a preliminary report only, as
work on a more thorough report had already begun.

It seems the Corps did not understand what serious erosion of its public image had
already taken place, and how hated the name was becoming within certain sectors of the
population affected by the Tocks Island project; they clearly did not anticipate the
immediate and vociferous reaction the first EIS aroused. In such a cursory report, it was
impossible to thoroughly summarize the project itself, which now included three major
projects rolled into one with the Tocks Island Dam and reservoir, the DWGNRA to
surround the new reservoir and the Kittatinny Mountain pumped storage facility to
generate electricity. Nor could the report seriously address any impacts associated with such a vast plan. Such cursory treatment of environmental impacts as could be squeezed onto a seven-page report engendered suspicions about the Corps’ sincerity to say the least.

In response to this EIS, the CEQ had much to say. They made clear guidelines about what the Corps should address; clearly stated their concern about a lack of depth in analysis and pointedly suggested that an independent agency might be better suited to prepare a statement for the Corps (such as the National Academy of Sciences), insinuating that a report on environmental impacts associated with a proposed Corps project would be made, and that if the Corps didn’t take the task seriously, the CEQ certainly could find a disinterested party that would do so. They sent the report back to the Corps with specific requests that the following be addressed:

1. Water quality in the reservoir, particularly with respect to potential for eutrophication
2. Alternatives to the dam—not justifications for its construction
3. Fisheries; particularly passage of shad and effects on habitats downstream from the dam.
4. Economic and social trade-offs including secondary costs and benefits, land-use control, and the trade-offs between free-flowing and impounded water.
5. Impacts of seasonal fluctuations in reservoir levels
6. Loss of wildlife habitat due to reservoir flooding
7. Effects of siltation both on the life-span of the reservoir and on fish habitat.32

In essence, the CEQ sent the Corps back to the drawing board to produce a credible consideration of the environmental impacts associated with this mammoth project. The CEQ suggested that until these fundamental questions were addressed, the Corps should postpone the start of dam construction. Such a serious rebuke of an old and powerful government agency by a newly established council turned heads in many quarters. The Corps seemed dismayed and contemptuous. The pro-dam contingent within the valley, within the Corps and within Congress all presumed this to be a temporary bureaucratic glitch—as the Corps was already working to prepare a more thorough report. To the anti-
dam voices, which now included a strong environmentalist contingent, anything that stymied the reviled Corps of Engineers came as a bonus, but they too viewed this CEQ request as only a temporary setback for the big players. With the dam construction on hold, the anti-dam stakeholders had more time to organize their own coalitions and produce a more coordinated attack on the Tocks Island project. What had taken on shades of David and Goliath now looked more like Gulliver snagged by multiple Lilliputians. With new regulations, new monitors of said new regulations, new protest voices and those pesky back-packers continually returning to Sunfish Pond, the project stayed mired in the small details, but those details would not go away, nor would they go unattended.

Corps of Engineers

The Corps had plenty to keep it occupied as the project evolved leading up to 1970—even without direct participation in the Sunfish Pond episode. Land acquisition became a major undertaking and created tension in the valley. As delays came, more budgetary estimates had to be reworked, and the price tag for the project shifted each time this happened. The true scope of infrastructural adjustments that would be required to accommodate recreational users in this very rural area became painfully apparent. Investigations into fine details of the Corps’ managerial competence on this project hounded the process. The cumulative effect of these setbacks might well have proved to be greater than the sum of its parts, as none of the setbacks alone would be considered
unusual or life-threatening to such a massive project. But in total, these setbacks spelled
trouble for the Tocks Island project.

Trouble from the Outside

None of these setbacks in itself would be considered unusual or even life-
threatening to the project. Similar circumstances surrounded other Corps projects that
came through in the end. Cost became a big issue. With original cost estimates at $90
million when the project gained Congressional Authorization in 1962, immediate
increases in the Corps’ estimates created sticker-shock of an unprecedented caliber.

Additions to Cost Estimate: Tocks Island Project

<table>
<thead>
<tr>
<th>Year</th>
<th>Cost Estimate</th>
<th>Reason for Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original</td>
<td>$90 million</td>
<td></td>
</tr>
<tr>
<td>1964</td>
<td>Add $5 million</td>
<td>Inflation</td>
</tr>
<tr>
<td>1965</td>
<td>Add $16 million</td>
<td>Geologic problems</td>
</tr>
<tr>
<td>1966</td>
<td>Add $14 million</td>
<td>Protective works for upper part of reservoir pool</td>
</tr>
<tr>
<td></td>
<td>Add $12 million</td>
<td>Inadequate estimates: cemeteries, school relocation</td>
</tr>
<tr>
<td>1967</td>
<td>Add $15 million</td>
<td>Increased land acquisition costs</td>
</tr>
<tr>
<td></td>
<td>Add $8 million</td>
<td>Land-related costs$^{33}$</td>
</tr>
<tr>
<td>1967</td>
<td>$190 million</td>
<td>Revised estimate by Corps of Engineers</td>
</tr>
</tbody>
</table>

Table 5.1: Escalating Cost Estimates for Tocks Island
The price tag for Tocks Island catapulted from $90 million to $190 million in less than three years, between the first appropriations in 1964 and the 1967 estimates. This prompted the House Public Works Committee to order a study of the entire project’s Cost-Benefit-Analysis. Remember that the ratio of benefits compared to costs as measured in dollars had to be greater than one for the project to be deemed feasible. Oddly, the Federal Bureau of Investigation (FBI) was tasked with conducting the study. While not publicly released, its contents did leak to the media and the news was not good.

President Lyndon Johnson, whose expenditures for the war on poverty and the war in Vietnam already raised hackles for fiscal conservatives, deflected calls for budget cutting on the entire federal budget. But of special note were the public works expenditures of $4.6 billion in 1968. In the midst of a project that had yet to move one shovel of soil, the Corps suddenly had much recalculating and explaining to do. In early 1968, *Time* magazine published an editorial on escalating costs of public works projects, and among the easiest prescriptions that followed from the title “How to Cut the U.S. Budget” came in the form of a hit-list of nonessential pork; topping that list was the Delaware River and Tocks Island Park. In that same article, House investigators were alleged to believe that the CB ratio would rise from the Corps’ estimate of less than 1.0 to more than 1.4 when the investigation was completed. Between the FBI report, the House and Senate Public Works, national ridicule in *Time* magazine, the heat on Tocks Island cranked up considerably. And to make matters worse, the U.S. Fish and Wildlife Service claimed that the dam’s operations could destroy as much as two thirds of the
Delaware Bay oyster industry—presumably because of the potentially dramatic changes in water flow through releases related to hydroelectric power generation.\textsuperscript{39}

By 1969, the cost estimates rose to $215 million and members of the Public Works Committees of the House and Senate—who usually loved massive pork-barrel projects such as this—were openly criticizing Tocks. Senators John S. Cooper (R-KY) and Allen J. Ellender (D-LA) became particularly harsh critics, which spelled trouble since both Senators served on the Public Works Committee. And so, amidst mounting pressures, confusion and spiraling costs, funding for the Tocks Island Dam project was delayed for the first time in 1969. This delay came at the request of Senator Ellender who also demanded a GAO investigation of the cost allocations and the Corps’ land-acquisition process. This report triggered debate on fundamental issues about how costs and benefits were allocated in the Corps’ calculations, as well as more fundamental questions about the value of large public works projects in general and the need to build large dams specifically in an era when so many dams already existed. While cost estimates and feasibility seemed to spur early criticism, environmental concerns would soon take center stage after the passage of NEPA and the resulting environmental impacts statements.

Within the Corps, engineers soldiered on as though all troubles would eventually work themselves out. In stark contrast to the picture of fast-rising costs, protests and political upheaval in Congress, the Corps pamphlet, which came out during this time describes immense tranquility and beauty in this technological achievement

The 37 mile stretch of the Delaware River upstream from Tocks Island will be transformed from a pastoral valley landscape into a mountain lake nestled between the Poconos bluff and Kittatinny Mountain. Deep, rocky gorges with picturesque waterfalls and mature hemlock forests will mark the perimeter of the lake. Approximately seventy-five percent of the Delaware Water Gap National Recreation Area is forested, with
second growth hardwoods predominating….Tocks Island Dam will stand as a strong physical demarcation between the mountain lake landscape upstream and the pastoral landscape downstream. In the proposed plan for its architecture and development, TI Dam will serve as a transition buffer between the two landscapes, the intent being to make the dam an intrinsic element of the new natural scene, just as the farmhouse, silo, barn, and other works of man became part of the valley’s agricultural scene. This intent will be realized in a naturalistic park through architectural designs that deemphasize the purely mechanical functions of the dam structures, bringing them into scale and harmony with the natural setting.  

Something was amiss. A great disconnect between the moods outside the Corps and within the Corps continued unabated. In these years, unconventional media techniques proved very effective as a catalyst for reframing the public debate from that of displacement and taking private property to that of an environmental crusade. And the Corps proved ineffective at maintaining a façade that all was on schedule and problem free, try as it might.

**Trouble Inside the Corps**

Land acquisition created a major headache for the Corps. With the seemingly straightforward process outlined in the previous chapter, the Corps would either acquire land through purchase or, with no agreement, by condemnation and monetary compensation. Condemnation would only establish a purchase price; the government still took possession of the property. From the beginning, suspicions arose about the fairness of the process. With the original 23,000 acres for the dam project now expanded to include the surrounding 47,000 acres for the park to become the DWGNRA, land acquisition became crucial. The park boundary lines zigzagged considerably and excluded some influential citizens and businesses. Many property owners did not want to sell at any price.
But for those who did, great suspicions abounded that the Corps did not pay fair
market price for their property; the fear amounted to concerns that equivalent
property outside the park boundary could not be purchased with the compensation
offered by the government. Complaints were registered that ranged from
intimidation tactics being used, to strange discrepancies in appraisal values and
unequal compensation for similar lands, to age and income bracket
discrimination. On the other hand, property owners attempting to cooperate
with the government were often financially ruined when scheduled purchase of
their property was delayed. Thus, farm stock was sold and savings invested in
new homes, while the government delayed recompense on the promised sale.

With a wide variety of circumstances among property owners, the Corps
applied a rigid and inflexible policy. Some citizens owned land in the valley that
had not been bought or sold in two centuries; thus owners had no idea what their
property was worth. Many of the citizens in this last rural outpost of the New
Jersey-Pennsylvania border were elderly and traveling to and from court
proceedings did not present a viable option. While many negotiators treated
people well, many reports surfaced of harassment, duplicity, high-pressure sales
tactics, premature stress-related deaths of elderly people; even factual errors such
as the suggestion that poor road conditions leading onto a property would reduce
the compensation owed the property holder.

At the other extreme, land speculators swarmed into the valley attempting
to buy land cheap, and re-sell to the Corps at sizeable profits. The ensuing
confusion created such ill will and bad publicity for the Corps that the agency has
not recovered its reputation in some parts of what is now the DWGNRA to this day. The Corps, while not prepared to deal with so many unique circumstances, was even less prepared to deal with a more amorphous resentment throughout the valley that local people who had lived in the same place for generations were being asked—often told—to sell their homes so that city folks could have a park to visit on the weekends and holidays. Resentment that had been merely festering boiled over when Park Service families moved into the newly acquired houses; watching an entire village empty of its former residents only to be re-populated by a group of commercial artists—as in the case of Peters Craft Village—poured salt in the wounds of local residents, so much so that the DVCA organized press bus tours of the forced removal, and much sympathetic press for the plight of the local communities was generated.

The coincident timing of troubles outside the Corps and troubles inside the Corps certainly created a tense situation. But what must surely be seen as the most surreal turn of events in the Tocks Island fracas over land acquisition and land tenure, originated from within the Corps itself. With the Corps accumulating a stockpile of empty houses and buildings in the lower end of the valley and pressure rising from outside to cut costs, the Corps offered these buildings for rent, on short-term lease, through classified ads in regional newspapers—including the widely read New York City paper, the Village Voice. Presumably, the rental income would offset the loss of local tax revenue, thereby salvaging some goodwill within the local communities. Instead, what resulted was a multifarious collection of rent-paying tenants and squatters that occupied former
farmhouses and village buildings. Via word of mouth, and largely unknown to the Corps, more and more hippies streamed into the Minisink Valley. The most prominent of the new residents in the valley, the Cloud Farmers commune, started in New Jersey in Sussex and Warren Counties, and eventually moved across the Delaware River to settle on the Pennsylvania side of the border. To understand the magnitude of the confusion the Corps unwittingly unleashed on itself, here is Albert’s description of the scene:

In 1970, the Corps allowed the leases on the New Jersey properties to expire. Many of the houses, however, had no lease, and rent was rarely paid on those that did. The Cloud Farmers and other New Jersey hippies were then evicted by the New Jersey State Police, and the dwellings were demolished. Meanwhile, squatters had completely taken over the lower Minisink Valley in Pennsylvania between Shawnee-on-the-Delaware and running five miles down to Wallpack Bend. About two dozen houses and the historic Zion Lutheran Church, located on a hill overlooking the valley, was renamed the “Church of Ecology,” and marijuana grew in its cemetery. Scattered among the houses were tent camps, Indian teepees, homemade structures, and a variety of innovative homes, including one geodesic dome built on a raft in the Delaware River.

The situation with the squatters would not be easily resolved. Once settled, many pursued a dream of environmental agrarian utopia with no technology, no draft, no government intervention, and no intention of leaving this beautiful bit of countryside, tucked away in the backyard of the Eastern seaboard. One could imagine nothing more foreign to the entrenched culture of militaristic engineering structural bureaucracy in the Corps than hippie squatters. What fiction writer could create a more complete mirror of America’s split-cultural-personality of the late 1960s? A perfect distinction in archetypes could be drawn: the Corps represented the establishment, order, the taming of resources through technological dominance, big government, bureaucratic unity and the elegant expression of man’s power through civil engineering; the environmentalists
represented complex, changing political and social values, the flight from urban
decay, the wholesale rejection of big government, and an awakening concern for
environmental sustainability. If the rigidity of the Corps and its highly evolved
operating procedures did not accommodate the variety of local citizens and
circumstances previously in the valley, it had no contingency plans whatsoever
for squatters and hippies.

Conclusion

By 1970, many forces pulled at the fabric of the coalition that had come
together to create the Tocks Island dam and reservoir and its accompanying
recreational area. And like plush that when held up to the light reveals alarming
holes and gaps, the Tocks Island project when closely examined, proved to have
more than a few gaps and inconsistencies. And yet, the Corps bureaucracy was so
large and slow moving that it appeared to be unaware yet of just how far awry
things were going. Most of the Corps’ decision-makers worked in offices in
Philadelphia, Trenton, and Washington D.C., where life was calm.

Meanwhile, in the Minisink valley things were changing and changing
fast. Since 1966, many people had sold their land, or had it condemned by the
government. Protests and a coalition of activists managed to save Sunfish Pond
from obliteration as a pumped-storage facility for power companies. The project
had been delayed, but the land acquisition process had not. Other people had
moved into the valley. The eyes of the region were now focused on the DRB and
many people who had taken no notice of the impending dam and reservoir were
suddenly looking at every detail of planning and implementation—some with
anticipation, others with resentment.

In Washington things were changing fast as well. Not only was the Tocks
Island project becoming unwieldy and outmoded, but in many senses, so was the
Corps of Engineers. The greased grooves of political machinery that had carried
the project of Tocks Island dam and reservoir to the eve of its creation had now
been slowed, almost to a halt, and suddenly every aspect of the project was laid
open to inspection. This close attention to every detail of its planning and
execution was unfamiliar territory for the generation of decision-makers and
engineers within the Corps whose careers had been rooted in the culture of the
expert. For more than a hundred years, projects had gone through elaborate
incubation, planning and execution stages with virtually no outside intrusion.

Between 1966 and 1970 though, one of the Corps’ strongest allies in
Washington, the Congress, was reacting to changing values in the rest of society,
and those changes would make the rarified atmosphere in which the Corp
operated ever harder to maintain. Tocks survived the protests at Sunfish Pond,
the FBI study, the GAO investigation, and eroding Congressional support, but it
now seemed even more vulnerable to criticism; more people than ever imagined
had joined the fray that would ultimately decide the fate of the Delaware River as
the new decade approached.
Michael Reich interview with LLL director as reprinted in Feiveson, *Boundaries of Analysis: An Inquiry into the Tocks Island Dam Controversy*.

Former governor from New Jersey, Robert Meyner, and Pennsylvania State senator Warren Dumont Jr. clashed as Dumont alleged that the sale of Sunfish was highly secretive and suspect and state officials had been too cooperative with the power companies, while Meyner took exception to the allegations, and spit a few others back at Dumont. See Albert, *Damming the Delaware: The Rise and Fall of Tocks Island*.


“Editorial.”

Unpublished manuscript Winnifred Mulligan p. 74

DRBC Resolution No. 68-12

Albert, p.100

Interview data (reporter-1) and conversations with Richard Albert (spring 2003)

Shukaitis spearheaded the class action lawsuit of property owners who did not want to sell their land in the valley. She was also the first leader and spokesperson for the DVCA which came out of the failed lawsuit effort by local land owners.

Environmental considerations of planned public works projects certainly had been encouraged in the Principles for Planning of Water and Related Land Resources of the U.S. Water Resources Council. However, passage of the National Environmental Protection Act forced those considerations to be incorporated into the law.


Andrews.

FDR’s Secretary of the Interior proposed a plan to unite all the major federal soil, water, and forest conservation programs under one heading. This essentially would consolidate ninety-seven administrative agencies into twelve departments. Consolidation of agencies though, would mean consolidation of powers. Interests opposed to this blocked the proposal, however, as they did similar initiatives by later presidents. The Natural Resources Planning Board did exist, though, from 1936-1943, which produced a large body of information as assessments on both natural and socioeconomic conditions; these reports provided the foundation for policy improvements. Also, the Executive Office of the President was created to unify presidential advisory and oversight staffs. See, Otis L. Graham, *Toward a Planned Society: From Roosevelt to Nixon* (New York: Oxford University Press, 1976), Andrews, *Managing the Environment, Managing Ourselves: A History of American Environmental Policy*.

Graham.

Andrews, 176.

Andrews.

Platt.

Andrews; Platt; Liroff; Reisner; Nye; Carson.
In fact, NEPA did not even garner a roll call vote on its final passage. National Environmental Policy Act (1976). Failure to recognize the importance of the law was not unique to Congress. Resource developers, environmental groups, even the press paid little attention to the Act. Richard A. Liroff, A National Policy for the Environment (Bloomington: Indiana University Press, 1976). However, this inauspicious beginning was soon to change, and the debates concerning this act and the larger realm of environmental politics have not subsided to this day.


Amicus briefs can be either discretionary or invited. When the court invites informational briefs from knowledgeable outside parties, these briefs carry more weight than briefs submitted on a discretionary basis (which have been widely used as tactical levers to impact policy outcomes associated with court rulings) and tend to be requested from the Solicitor General, or other federal entity, not individual citizens who feel they will be impacted by a ruling. Also, a brief of an amicus curiae may be filed only if accompanied by written consent of all parties, or by leave of court granted on motion or at the request of the court, except that consent or leave shall not be required when the brief is presented by the United States an officer or agency thereof, or by a state, territory or commonwealth. See Rule 29 of the Federal Rules for Appellate Procedure.


As will be discussed in later chapters with more detail, any federal agency involved in public works for water resources needed to justify its budget for the project via an analysis of the benefits compared to the costs. During the life-span of the Tocks Island project, planning leadership in water resources came through the Water Resources Council (WRC), an off shoot of the Water Resources Planning Act, and the WRC adopted guidelines and requirements for planning in the form of a set of Principles and Standards also known as the Green Book. For a more detailed explanation, see Margaret S. Petersen, Water Resource Planning and Development (Englewood Cliffs: Prentice-Hall, 1984).

Ironically, due to the drought conditions of the mid-sixties, Congress appropriated enough funds to speed up the construction schedule, which made delays even more incomprehensible to those in Congress. See Albert, Damming the Delaware: The Rise and Fall of Tocks Island.


See Albert, Damming the Delaware: The Rise and Fall of Tocks Island.

Repuano, Clarke, "Tocks Island Dam, a Plan for Its Architecture"


For more detailed accounts of alleged injustices, see Pierce, "Gov't Used 'Eminent Domain' to Acquire Land.", Haefele, "Summary of Statement: House and Senate Subcommittee on Public Works," vol.

This represents a composite opinion based on several interviews within the DRB. Interview data: (Corps-2, DRBC-1, Citizen-1)

Albert, Damming the Delaware: The Rise and Fall of Tocks Island.
Chapter 6
1975

Introduction

Tocks Island transformed from a large-scale public works project in 1962 to a seemingly intractable environmental conflict by 1975. Lines were drawn, sides taken, studies conducted, and campaigns waged in the war of public opinion. In the early years, the plans for Tocks Island saw only local and sporadic resistance. But throughout the latter part of the 1960s, more players entered the fray, and plans for building a dam at Tocks became a regional issue. Between 1970 and 1975, Tocks Island spawned larger and larger waves of interest outside the DRB, and resulted in an intense struggle over the fate of the Delaware River as a small fight in a larger battle over governance and the environment. As it turned out, 1975 would be a major milestone in the conflict, although neither side saw it as such at the time. Scales of activity blurred as the national environmental movement spurred on local protests, and local protests impeded the regional scale of management. Players even changed sides, as some previous dam supporters withdrew their support, and some previous dam opponents sought compromise. The discrete sections of previous chapters detailing the Corps, media and legal events also break down at this point, as all directions of force converged in an intertwined web of influence, in which nobody was certain of the outcome.

In the fractious years between 1970 and 1975, the situation continued to spin in a chaotic web of coalitions, alliances, promises and threats, protests and evictions, doubts and decisions. A first, then a second Environmental Impact Statement was produced by the Corps. These documents brought potential environmental impacts from the Tocks
Island Dam and Reservoir to the fore of the public debate. This debate, in turn, brought scrutiny to the role and responsibility of each basin state in the project as a whole. Sharp, sustained criticism of the Corps itself, its operating procedures and its very credibility also hampered any short-term solution to the mire of Tocks Island. Concurrent with these new developments directly related to Tocks Island, significant changes in national environmental legislation, in the form of the Clean Water Amendments of 1972 and the Endangered Species Act in 1973, changed the rules of the game again. By 1975, not only did the Delaware valley have to contend with deep rifts between worldviews of citizens and government officials, changing values concerning how best to treat the natural environment, and deep resentment about the relatively closed process by which decisions concerning natural resources were made; so did the nation as a whole. The national scale changes taking place began to exert pressure on the Corps from the top-down.

Meanwhile, chaos on the ground due to the land acquisition process, the squatters, and the growing resentment of the Corps’ handling of the entire Tocks Island project exerted a bottom-up pressure on this behemoth bureaucracy. Eventually pressures from the top-down and those from the bottom-up would collide, and 1975 happened to be that fateful year.

NEPA-CEQ—More Studies

The Council for Environmental Quality skewered the Corps with its response to the first EIS. In positing the suggestion that an outside interagency group compile a report on Tocks, it implied that the Corps could not be trusted with the job at hand. The
Corps originally suggested this dam as a part of the basin-wide survey of developable waterways in the ‘308’ study during the depression years; they then spent decades planning and conducting studies on every aspect of the job at hand from dam design to geology and site location. The Corps had worked with the DRBC since its inception in 1961 with no other goal in mind, no other alternative, than to implement the water management plans for the entire four-state watershed basin to address flood control, hydroelectric power generation, water supply, drought control, with the added opportunities for a recreation area and pumped water storage. Both agencies had worked toward the single focus of building Tocks Island Dam and Reservoir as the indispensable keystone in a system of smaller interwoven projects throughout the basin. Now, at the eve of groundbreaking on the project, after ten consecutive years of Congressional appropriations of funds for the construction of Tocks Island, to be told that more studies were needed did nothing to sustain the image of the Corps as the elite cadre of experts and professionals in civil engineering.¹

In detailing a specific list of items that must be addressed, the CEQ also opened the door for the introduction of information on secondary impacts of the construction project to the region; on the previously ignored negative environmental impacts that dam and reservoir might create; on the economic and social flaws in the Cost-Benefit Analysis process; and on alternatives to the dam, which had not yet been seriously considered. Many of these items were more thoroughly considered in the second EIS, but that did not arrive until October of 1971, and with it the Corps also included two other documents: the multi-agency report that had been suggested by the CEQ and what became known as the McCormick report.² This second addendum report was a study prepared for the
Corps on the potential for eutrophication in the soon-to-be Tocks Island Lake. This document was only the beginning, however, as at least ten more studies came out between 1970 and 1974 on a variety of sticking points. Here is a listing of the major studies:

<table>
<thead>
<tr>
<th>Year</th>
<th>Title of Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>1971</td>
<td>National Park Service Natural Systems Plan for the DWGNRA</td>
</tr>
<tr>
<td>1971</td>
<td>Freeman, Mills, Kinsmen on high flow skimming</td>
</tr>
<tr>
<td>1971</td>
<td>Corps of Engineers: Flood Damages and Tocks Protection</td>
</tr>
<tr>
<td>1971</td>
<td>Delaware River Basin Commission: Water Demands in the Delaware River Basin as Related to Tocks Island Reservoir</td>
</tr>
<tr>
<td>1972</td>
<td>Environmental Defense Fund critique of Corps’ Cost-Benefit-Analysis</td>
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<td>1973</td>
<td>Environmental Defense Fund-NJ water supply-alternatives to Tocks Island</td>
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<tr>
<td>1972</td>
<td>Environmental Defense Fund: Flood Control and Field Investigation</td>
</tr>
<tr>
<td>1973</td>
<td>Environmental Defense Fund: Flood Control and the Delaware River</td>
</tr>
<tr>
<td>1974</td>
<td>Save the Delaware Coalition: A Concept Plan for the Delaware River Park</td>
</tr>
</tbody>
</table>

Table 6.1: Studies and Reports from 1971-1974 Associated with the Tocks Island Dam and Reservoir Project.
The NPS study was not made public, but Save the Delaware Coalition (who are described in detail in the next section) and the Sierra Club acquired the report and leaked copies to the press—the report essentially considered the favorable aspects of a river-based recreation system with emphasis on canoeing/kayaking, winter sports and environmental education. For the environmentalists, it was a field day. Here was a report showing that the national agency directed with managing the upcoming recreational area considered that this could be done without a dam. On the downside, the very fact that this same agency created the report but then did not use it indicated that most decision-makers within that agency strongly approved of a large scale lake-based recreation plan.

The 1971 report on water demands had been generated by the Delaware River Basin Commission and showed rapidly increasing water supply needs throughout the valley until the year 2020, which was the credible limit of projections based on current growth and water consumption rates. It also gave a boost to those supporting the dam project. When assessing the water demands of the Delaware, the study reiterated one of the driving motivations for building the dam in its conclusion that “there is no dependable alternative to Tocks Island reservoir for meeting the projected demands for water consumption and export from the Delaware River Basin.”

Both of the flood control reports were designed to determine what the effects of a flood like that of 1955 would be if it occurred in the 1970s. This became a crucial point in the argumentation over the cost-benefit analysis; if flood plain development was less than that of 1955, then the flood control benefits of the Tocks Island dam were overstated. And that is what the reports showed: the number of structures in the flood...
plain had drastically declined. Old buildings had been demolished; riverfront parks had been established; any new buildings had been built to withstand floods. The Save the Delaware Coalition (SDC) compiled the 1973 report which in actuality was a 190-page book that contained multiple essays finding fault with details of the plans for the dam, the DWGNRA and the pumped storage project. The coalition did not stop with this however, and in 1974 produced a report that included two alternative plans for the region—alternatives without the Tocks Island dam and reservoir.5

Cost-Benefit-Analysis Under Fire

The concept of weighing costs and benefits of projects in order to assure that more benefits result than costs accrued for the spending of government funds has had a contentious life of its own. As a set of guidelines, the CBA can be seen as a tool for ensuring fiscal soundness in federal spending, in other words a guide by which both Congress and federal agencies could agree upon the merits of proposed projects. Historically, CBA also performed the dual function of filtering out projects those projects with shaky or dubious economic justification; perhaps more importantly, the process of comparing costs and benefits to determine a ratio (C/B) imposed some fiscal discipline on federal agencies that Congress historically had great difficulty in controlling at all.6 It became in the decades of the 1960s and 1970s, however, the sliding fulcrum around which opposing sides of water projects such as dams and reservoirs leveraged the basic strength of their argumentation. This process had not been questioned in its validity or application seriously until the beginnings of the environmental movement. But it became
clear, when the same process could be molded to produce contradictory results based on how one determined what exactly should be included as a cost or a benefit that the underlying viewpoints and biases of those who conducted the CBA were of paramount importance. With this realization, the culture of the Corps, and the divergent cultural values of those who opposed the building of dams and reservoirs rose to the level of mutual antagonism. Each side could use the same process to produce the results it wanted, thus the credibility (and human fallibility) of the CBA itself was called into question— a system for analysis presumed to be coldly objective and driven by solely by economic principles.

When the Corps created its budgets, it had prescriptive guidelines to follow such as the cost benefit analysis, which most of the public and Congress knew little if anything about, and did not understand. There also existed the Green Book, which presented a set of principles and standards for federal agencies to apply in planning water resource projects. This document provided a guide for the nuts and bolts of determining costs, determining benefits, and developing a stylized balance sheet for these two categories. It should be noted here that agencies were directed to list the intangible factors not readily quantifiable, or at least not easily associated with dollar amount. But the heart of the process was the bottom line, the ratio of (C/B), and this had to be a number greater than one for a project to go from the drawing board to bulldozer stage.

This process had had little attention paid to it previously, but that was to change as those who had traditionally been excluded from the decision-making process sought ways through the cracks of bureaucratic machinery, in an effort to express opposition to proposed projects—especially as concerns the building of dams. One cannot discuss the
end of the big-dam era without attention to the weaknesses in the process that allowed for
the excesses that ultimately fueled such intense backlash. The CBA must surely be seen
as one pressure point. And once pried open, it continued to be a sore spot to those
agencies that consistently relied on CBA in their own calculations, who incorporated it
into their own lobbying efforts and justifications, and who felt they understood it
implicitly. Cost-benefit analysis was the primary weapon that each federal agency used
in defending its projects to other agencies and to Congress and occasionally to the public;
it framed the argumentation over the worthiness of projects.

Tocks Island had been planned as a project and authorized under guidelines such
as specified planning parameters, including the discount rate to be applied to water
projects (3-1/8 percent at that time), and the average recreational value to be attributed to
swimming, fishing etc. formulated by Congress in the late 1950s. And while those
parameters seemed outdated by the 1960s, and guidelines had changed throughout the
years, the Tocks Island project had so far remained subject to the earlier guidelines
operable at the time of the project authorization. It had been given a grandfather clause
of sorts. At first this worked for the Corps, as changes in principles and guidelines did
not impact the project, once the project gained Congressional authorization. In the end,
though, it also worked against the Corps as critics of the project could continually
recalculate estimated costs and benefits as new information came to light, but this
grandfather clause limited the discretion of the Corps in several crucial respects such as
the choice of discount rates which were set to the vintage when the project was planned.
Thus, using the discount rate for calculation of construction costs in 1962 (3 1/8 percent)
generated estimated costs of $13.1 million, while recalculating using the Congressional standard discount rate of 1975 (5 5/8 percent) generated a cost estimate of $22.3 million.  

Several weaknesses in the calculating of costs and benefits came to light with the fight over Tocks Island and other water fights in the same crucial period between 1965 and 1975 during the height of the environmental activism against federally sponsored large-scale water projects. Those weaknesses such as how to distribute costs and benefits over time, space, or people, what is considered a cost or a benefit, and who is involved in making those choices gave just cause for outside criticism. Practitioners of the CBA system framed their arguments on what was previously considered an objective process. There existed a culture both in Congress and within the Corps that relied on the CBA, and the CBA relied on a series of seemingly objective calculations, formulas, and facts. The implicit assumption was that scientists created and interpreted the data; that all calculations were replicable and objective; and that the system propelled projects forward based on sound decisions made by disinterested experts who operated in a rigorous and unbiased manner. Confidence in the facts, confidence in the system, and confidence in the experts who created reports had never been questioned. That was all about to change.

Upon close examination, the seemingly objective system of calculating costs and benefits turned out to depend strongly on who did the calculation and which factors were considered as costs and benefits. In practice, an accurate estimate of costs is extremely hard to determine. For instance, neither benefits nor costs of a project accrue at one point in time, but happen over the lifetime of a project. But since the actual life of a project is uncertain, the Corps simply chose either 50 or 100 years as the life of its projects. It may have been useful for computational purposes, but it was nevertheless arbitrary. Once this
time scale had been set, still the matter of calculating the costs and benefits remained problematic. It is complex enough to quantify all the factors that amount to costs in a specified year, but forecasting for 50 or 100 years in the future proves increasingly unreliable the further into the future one calculates. Without certainty in data, the Corps relied on the most current rates of growth and development in the region of a project then assumed a non-changing rate over the next 50 and 100 years. A reasonable approach, given anyone’s inability to predict the future, this method still compounds uncertainty on top of uncertainty.

Similar problems arise when seeking to compare the economic benefits accruing from a project in the present with the benefits that might accrue in the next 50 or 100 years. Comparison is done by choosing a rate of interest by which future benefits can be discounted relative to current benefits, but at what rate? This decision is crucial, since using a lower interest rate to evaluate future benefits of a project (here I discuss Corps projects but all major federal agencies had similar calculations for their projects) the higher the long-term benefits will be in present value. This point should be reasonable to anyone who wants a car or house loan; lower interest rates translate to paying less in the long run.

And if that uncertainty weren’t enough, there is the very real yet more abstract problem of considering what a benefit is and what a cost is in order to be included in the calculus. Traditional costs primarily include land acquisition, brick and mortar construction costs, labor estimates. But during very contentious fights over water projects in the Delaware and elsewhere, one of the themes that emerged to define the environmental era centers on what was not included in the calculations of costs and
benefits. Such things as unimpeded views of nature, the aesthetic of free flowing rivers, or the chance to see natural cycles undisturbed by the hand of man. Because these things cannot be easily quantified they had simply been left out of the discourses—until environmentalists forced them to the surface.

When agreement exists on the goals and values, the method of calculation is trivial; when values clash so severely that first principles do not coincide, methods of calculation can come down to a clash in cultural values. This observation begs the question of what the cultural values of the Corps might be. Built-in biases toward large structural solutions inherent in the Corps’ economic calculations became evident when one realized that structural solutions could be easily quantified and non-structural solutions eluded such easy answers. The realization that CBA is not objective as it once appeared convinced the cynical generation of Corps opponents during the late 1950s and 1960s that they were witnessing nothing more than the Corps’ ability to transform its political priorities into a bureaucratic rationale dressed neatly in packages of numbers, equations and charts.

What about secondary impacts?

Not until after Tocks Island achieved Congressional authorization did serious examination of the secondary impacts begin. Everyone clearly understood the primary impacts of this project. The dam would stop the river’s flow; the valley would then flood creating a long, thin reservoir that backed up nearly forty miles. Of this there could be no question. Any infrastructure needed in conjunction with planned activities associated
with the dam and reservoir, such as the pumped storage facilities and the hydroelectric power generating turbines, also created immediate primary impacts on the area in which they would be built. It did not need mention that either a pumped storage facility would sit atop Kittatinny Ridge in New Jersey, or Sunfish Pond would sit atop Kittatinny Ridge, but that the primary impact of building the former was to destroy the latter. These primary impacts dramatically and easily grasped captivated the attention of both planners and protesters. But simultaneous to this clash, an entire set of less clearly understood secondary impacts also had to be considered.

During a ten-year period between 1962 and 1972 planning studies abounded and every player in the coalition set up to build the dam and reservoir did its own study on secondary impacts. The individual states of New York, Pennsylvania, and New Jersey had secondary impact studies. The DRBC conducted its own study. A seven-county agency organized by the WRA/DRB, named Tocks Island Regional Advisory Council, came into existence specifically to address the impacts of the dam and reservoir on the region. And when all the myriad studies came out, predicted secondary impacts to the region looked staggering. These potential secondary impacts would become a major issue in the debate during the 1970s, as just who would benefit through the anticipated economic growth, tourism, and development, and who would pay through inconvenience, infrastructural costs and social upheaval, stayed mired in debate.

As to concerns about access to the reservoir and recreation area, it became clear that the rural counties on both the Pennsylvania and New Jersey sides of the river had no capacity to absorb the expected traffic. Most roads in the Tocks Island region were designed for rural traffic loads and consisted of sinuous two-lane byways. Thousands of
visitors flooding into the area would bottle-neck these small roads with miles of traffic jams—and even the interstates leading out of Philadelphia and New York City were predicted to overflow during peak travel periods. The combined recommendations consisted of building several new four and six-lane freeways as well as relocating a stretch of U.S. route 209 that would be in the flooded zone. For Pennsylvania, the 1967 estimated cost for highway expansion would be $50 million, even without adding in the cost of relocating U.S. route 209 or a freeway coming out of Philadelphia. For New Jersey, 183 miles of new highway would be needed at an estimated cost of $685 million.

What to do with the waste that millions of visitors to the park per year would generate? Solid waste volumes in the region were predicted to rise from roughly 50 tons per day to nearly 4,000, with the normal development and the expected frenzy of new development, not even counting the 2,500 tons per year from the park visitors. This would require over ten square miles of landfills. Sewage also presented problems. In such rural counties, few waste treatment plants existed. Thus, the recommendations for sewage disposal was to pipe it to treatments plants (some as far as 50 miles away) and this job would require 565 miles of trunk lines, 275 pumping stations and five trunk lines that would cross the Delaware River itself—all at the estimated cost of $190 million.

And then there were the needed hospitals, doctors, nurses, ambulances; more police who would need more police cars, more fire stations, more jails, more courtrooms, more traffic lights. The problems of encouraging millions of visitors a year to swarm down on this region, when the four most impacted counties had among them barely 20,000 residents—and not enough infrastructure to serve those people except in the most
rudimentary way—suddenly became a real and expensive headache of regional planners in each of the DRB states. Thus, if the Central Park for Megalopolis came to fruition, the reality of what that meant came glaringly to light with the distribution of the secondary impact studies: the region would need immediate development of massive infrastructure to accommodate a traffic load of millions, and this development would bring Megalopolis to the back door of the DWGNRA. Was this last bastion of rural inaccessibility ready for such transformation? Transformation on such a scale brought questions about development-as-progress versus development-as-destruction into what was already a complex debate over natural resource management. The residents of the counties to be flooded would most definitely be pushed out, but some might count that as the price of progress and note that it happens as a growth pain associated with all development. But with the release of the planning studies, a whole new level of debate had to be addressed. Was the frenzy of development that the Tocks Island dam, reservoir and accompanying DWGNRA so extreme that it could destroy the very qualities that made the area so attractive in the first place? This glaring choice crystallized the ongoing debates concerning the costs versus the price of development that consumed much of the country during this time.

Challenges for the Corps and BuRec

Challenges came from many directions and in rapid fire succession relative to the measured pace of bureaucratic planning. The battle over the Echo Park dam, in Colorado, has been discussed as the beginning of the bio-centric environmental
movement. Better known by some as the Dinosaur battle, the Upper Colorado Storage Project proposed in the early 1950s was to create water supplies for the five upper-basin states of the Colorado watershed via the construction of a series of dams. However, the plan would also impinge on over a dozen units of the national park system, including the Dinosaur National Monument. This prospect galvanized a massive publicity campaign by preservationists to save the Dinosaur National Monument. In the end, the preservationists could be said to have won the battle but lost the war; the Dinosaur National Monument remained in tact, but the rest of the Upper Colorado Storage dams were built and other canyons such as the beautiful Glen Canyon were flooded. This particular fight became so critical to the evolution of an environmental consciousness partly due to the tactics used to fight the dam proponents, which included challenging the validity of the cost-benefit analysis by which it was determined that the Echo Park dam would be economically feasible, challenging the statistics used, and using the very same numbers to perform a CBA in which the outcome was the reverse of the original BuRec calculation.

The lingering bitterness of this battle helped catapult water issues to the national debate practically overnight. David Brower, head of the Sierra Club, famously remarked, “You have to stop dams from being built over and over, you only have to put them up once and they stay there forever.” This attitude captured a previously untapped spring of sentiment that the natural environment was being developed, dammed, paved over and destroyed at an ever-faster rate. Like a pox, similar fights broke out over a dam at Marble Canyon along the Colorado, the Tellico Dam within the construction project of the Tennessee Valley Authority, two Corps dams near the TVA on the Mississippi and
Cumberland Rivers, the series of dams and locks planned for the massive re-plumbing project to connect the Tennessee and Tombigbee watersheds, and Hells Canyon on the Idaho-Oregon border along the Snake River. All of these disputes occurred during the fracas in the Delaware Valley over Tocks, leaving no doubt that the debate over water resources would now be reframed in more complex terms and with much more attention paid to the environmental aspects of these public works projects.

Modeled after Brower’s fighting strategy, critiques of the cost-benefit analysis became a new weapon in the arsenal of water project opponents. In the case of Hell’s Canyon, private utility companies applied for a permit from the Federal Power commission to build dams in Hells Canyon and were challenged by a group of public power firms located in the state of Washington. The case went to the Supreme Court, where Justice William O. Douglas (who would later partake of the Sunfish protest hike) shocked both parties in his 1967 ruling by stating “the Commission must hold more hearings on the subject of whether any dams should be built at all, not just which dam which party will build.”¹⁷ This decision gave preservationists and conservationists a new precedent in the legal system, and a testimonial of a changing environmental consciousness. At that time, this ruling was a bold statement and a philosophical challenge to the mission of large government bureaucracies such as the Corps.

Similar criticisms of cost-benefit analysis procedures and credibility arose in the Delaware Valley over the Tocks Island project. These quarrels included the cost of land allocation—since so many residents didn’t want to sell at any cost, what could be said to be a reasonable estimate? The number of estimated visitors also came under question, especially as no infrastructure existed to transport those recreational visitors into and out
of the valley. In other words, the construction of the dam had been assumed in the
calculations, thus there had been no comparison of recreational costs and benefits to those
of a natural system. The major claim of the GAO investigation was that the Corps did
not have the authority to include calculations of benefits for the entire DWGNRA in its
own cost-benefit analysis. The Corps in its calculation of benefits should not claim
benefits related only to the recreation area and not directly to the construction of the
reservoir. To do so would mean that the Corps used benefits from an as yet non-existent
recreational area to be operated by another government agency entirely (NPS) in its
estimates of the benefits associated with the Corps dam and reservoir—recreational
benefits that could exist with or without a reservoir. It should be no surprise now that the
C/B ratio for the Tocks Island project turned out to be rather flexible:
Table 6.2: Variations in the Benefits to Costs ratio for Tocks Island.

Of all the other water fights happening simultaneous to that over Tocks Island, the one that caused more national media attention than any other was that over the Tellico Dam in Tennessee. This had more to do with the tiny fish called a Snail Darter and the Endangered Species Act which will be discussed in more detail as the chapter progresses. But with or without the bad press emanating from the Tellico project, to say that the Corps had an image problem would be an understatement. This problem especially hampered Corps operations with respect to the situation in the Delaware Valley. The Corps presented the cost-benefit analysis first. But the weight of the criticisms in other analogous situations that also involved Corps projects eroded the credibility of the CBA for Tocks Island. Opponents presented an opposite conclusion drawn from their own
data. Because every move the Corps made now fell under scrutiny, Congress finally authorized a third study about Tocks Island—3,600 pages in six volumes, weighing sixteen pounds and costing $1.5 million.¹⁸

Most of the various reports made their way to consideration by the DRBC, the Corps, and the Interior Department—possibly to find flaws in the arguments and thus better inform them about the opposition, possibly with open minds that sought compromise solutions—anecdotal evidence could support either interpretation. Most dam proponents scrutinized then dismissed all alternatives to the big dam on the Delaware. Belief that the Corps’ massive River Basin Report had already considered and rejected all reasonable alternatives propelled the sensibility that no further analyses were needed and ‘those environmentalists’ needed merely to recognize the truth of the situation. Those who did not favor the dam appeared determined to find alternatives, and recognized the power of press coverage, well-produced propaganda, and well-funded studies as the struts of credibility on which opinions swayed. For the dam opponents, the prevailing common sense inferred that ‘those bureaucrats’ in big government lived far away and worked in big offices from which decisions were made that toyed with the lives and welfare of people in the Delaware valley.

With the logic of beating the government at their own game, the Save the Delaware Coalition used the same tactics that the WRA/DRB had so successfully used to maneuver the public discussion away from merely building a dam and towards the more amorphous, yet pleasant, vision of ‘recreation.’ Under the direction of an attorney from Philadelphia, Harold Lockwood, the Save the Delaware Coalition provided a strong link between the local resistance within the rural counties of Pennsylvania and New Jersey,
and larger regional and national environmental groups. With the strong commitment provided to the DVCA by the leadership of a series of strong women, the DVCA comprised the soul of the Save the Delaware Coalition. Beginning with Nancy Shukaitis, who founded the DVCA and organized the class action law suit of property owners, then passed to Joan Matheson (*Minisink Bull* producer) and finally to Mina Haefele, who lived as a tenant in her family’s old farmhouse overlooking the Delaware River, for years after the house had been purchased by the Corps, the DVCA through the larger umbrella of the Save the Delaware Coalition exerted sustained resistance to the Tocks Island project. Between the DVCA and the coordinating of multiple environmental groups all under the banner organization of the Save the Delaware Coalition, protestors in the valley had finally found a very powerful voice.

And so it went, round and round, during the period from 1970-1975. One side (the anti-dam activists) spent its time, labor and money nurturing reports, slick pamphlets and sympathetic press for alternatives to this vast public works project that would forever alter both the physical landscape and the cultural community along the Delaware River. Simultaneously, the other side (the pro-dam activists) spent its time, labor and money finding flaws in the logic of each proposed alternative. Each side became entrenched in its own beliefs and those beliefs, rather than facts, came to exemplify the situation. The momentum shifted continually in those years but one thing was clear, the Tocks issue had little if any middle ground. Either one believed that a dam-reservoir-recreation area package would be the generational solution to water needs the Delaware River valley, or one believed that was a boondoggle in which the small guys got pushed out in favor of
big government and special interests—there was no middle way. Neither side would be swayed by new science, or new facts; it came down to deep ideological conflicts.

Clean Water Act Amendments

Amendments to the 1948 Clean Water Act addressed the need to consider water quality (not just quantity or navigation) and wetlands protection. These considerations later became codified in the Clean Water Act in 1977. The Clean Water Act (CWA) again transformed the powers and expanse of the Corps as the government agency directly involved in water management issues. Much more than additions to existing programs, the amendments revealed entirely new approaches by Congress to environmental problems in the realm of water management.

Remember that Swamp Land Acts of 1840, 1849, 1850, and 1860 mentioned in previous chapters, encouraged the draining and cultivation of wetlands around the nation. In 1972, Congress dramatically reversed a hundred year policy on wetlands. Previously, swamps and wetlands had been considered wasted land unless drained, cultivated, or put to some economically beneficial use. With a new awakening of environmental values, and the understanding that wetlands provide a vital role in functioning ecosystems, the CWA instituted nationwide protection measures to “restore and maintain the chemical, physical and biological integrity of the Nation’s waters.” Section 404 of the CWA pertains most specifically to the Corps of Engineers and is perhaps the most far-reaching provision of the entire CWA. This section requires any property owners to obtain a
permit from the Corps before dredging and/or filling in any navigable waters of the United States.  

This section provided the Corps even greater jurisdiction over the nation’s waterways than the Rivers and Harbors Act of 1899, and later amendments expanded the jurisdiction still further to include isolated wetlands, and waters that are or could be used as habitat by endangered species or migratory birds protected by the Migratory Birds Treaty. The implications of section 404 extended beyond any previous mission of the Corps and perhaps even more importantly, folded other environmental laws into the permit process. Any applicant for a Corps 404 permit must assure the Corps that the project is in compliance with other environmental laws as a condition of receiving a Corps 404 permit, with provisions for civil and criminal penalties for permit violators. The EPA resides as the oversight organization and can veto any issuance of a Corps 404 permit; thus more than one federal agency now provides a check on water projects now.

To understand the far-ranging implications of this new process on water projects, briefly consider the proposed Two Forks Dam and Reservoir in Colorado. As an answer to chronic water shortages in the fast-multiplying suburbs of Denver, the Two Forks Dam was proposed in the 1970s to be sited on the South Platte River whose headwaters begin in Colorado, southwest of Denver. However, the South Platte River runs beyond Colorado and across Nebraska and Missouri before joining with the Mississippi River. Not surprisingly, the Two Forks Dam proposal sparked great controversy and fear among Colorado’s downstream neighbors in Nebraska who depend on the same water for irrigated farming. The project came to a crashing halt when the EPA denied a 404 permit for the project, an action upheld by the Supreme Court. It did so, not based on
environmental impacts for the immediate area of the proposed dam, but because of impacts on the habitat of the whooping crane, an endangered species of migratory bird that uses a stretch of the South Platte River 250 miles downstream of the proposed dam site, along the Nebraska portion of the river. Had the backers of this water project made their proposal even ten years earlier, then neither these considerations, nor any environmental impact statement, would have been needed as part of the decision-making process.

Endangered Species Act

Passed by Congress in 1973, the Endangered Species Act (ESA) set the standard for conservation in America. This landmark legislation also set the stage for some of the most contentious battles this country has ever fought over natural resource use and the value that is or should be placed on protection of endangered species. According to section 7(a)(2) of the ESA, all federal agencies must ensure that no federal action authorized, funded or carried out will jeopardize the existence of a listed species, or destroy or adversely modify habitat needed by the species. This mandate particularly impacted the Corps whose mission included the creation, operation and maintenance of waterways that shared human use with that of natural systems that had been altered in just about every imaginable way. Where then, did this leave the Corps, in light of the new Congressional mandate not to spend federal money on projects that would in any way harm endangered species?
How did the Corps, or for that matter any other government agency, address this new directive? Nobody knew for certain in 1973; they only knew that the climate of Washington D.C. and the way business used to be done had changed. In the Delaware Valley, this change translated into multiple environmental issues that came to plague the Corps as it sought to break ground on construction of Tocks Island dam and reservoir. The sudden need to examine whether endangered species or habitats thereof would be impacted by the coming dam only added to a growing list of new concerns. Anti-Tocks environmental issues popped up everywhere, so many weeds through the cracks of plans laid in cement: eutrophication, mud-flats, loss of fish, wildlife habitat, free flowing water, river pollution. Almost anybody could find something in the dam project to be concerned about: scare issues abound like rumors of dam safety issues, New York City taking over the valley, utility companies taking over the valley, water would be used for nuclear power plants. Most fears did not amount to anything in the end. Most of the environmental issues did. The new ESA helped clarify some concerns, but brought out others in the process. For environmentalists, the ESA provided another foot in the door very much like NEPA to the halls of power and decision-making that had previously gone on without public input or participation. With the unexpected discovery of the snail darter, a small fish found only in the Little Tennessee River and its addition to the endangered species list, which created havoc in the plans to build the Tellico Dam, average citizens everywhere became keenly interested in what might be living in the backyard, neighborhood, or parks and rivers. Most especially though, environmentalists recognized the ESA as a chance to really address damage done to nature by human
development projects, the largest of which were government sponsored and highly visible.

This legislation gave more psychological than tactical advantage to those who opposed the construction of a dam and reservoir at Tocks Island. It should be remembered that NEPA in no way forces any agency to behave in a more environmentally sensitive manner. The EIS only forces agencies to acknowledge what the expected environmental impacts are for a potential project. It does not direct any agency to make better decisions based on that knowledge. NEPA includes no directive to disapprove actions deemed likely to produce unavoidable adverse consequences. Rather its impact has been indirect, through the political process of decision-making and the courts. The ESA went one major step further than NEPA in forcing government agencies to behave in ways that impact the environment less dramatically, or at the very least less destructively with respect to natural systems that contain endangered species, or on which endangered species depend for food, or habitat.

During these tumultuous years between 1970 and 1975, the Corps came under attack from every direction. Its own internal methods of cost accounting came under fire. New legislation concerning clean water and endangered species and the National Environmental Policy Act would in essence require this massive bureaucracy to re-invent itself, although it was unclear how to do so, or what consequences change of this magnitude might mean for the Corps. Several other ongoing Corps projects came under fire in a short time span. And to make matters worse, things were not going well in the Delaware River Basin either.
Between 1970 and 1974 a rather cohesive community of artisans, musicians, and others who subscribed to hippie philosophy made the valley their home. Needless to say, they were vehemently opposed to the dam. Some people had leases to rent the now abandoned houses and farmsteads; others came down to this secluded country get-away without a lease—and stayed. Squatter activity on the Pennsylvania side of the Delaware River centered on a five-mile section of River Road south of Wallpack Bend and north of Shawnee-on-the-Delaware, in the lower Minisink Valley. They would not be easily dislodged either. Squatters became so settled that they added to the local economy, and grew enough food for large barns of winter food-stocks. Interestingly, here was yet another competing vision of how to use natural resources in an already crowded kaleidoscope of competing viewpoints. Hippies in the valley created much more than real estate problems—it created a full-on cultural clash, the likes of which the conservative farming communities of rural PA and NJ had never seen. Slightly behind the national urban cultural trends, this isolated region retained small farming communities in which land had remained in the same families for several generations. Then in 1970, this quiet pastoral region came face to face with the modern world in a cultural millisecond. In Pike or Monroe counties, an elderly farmer was just as likely to see bikers with bandanas and women with long free flowing hair and beads on a trip to town as a neighbor. Even the wildest visions of the valley as recreation area did not include this.
Figure 6.1: Photo of commune in the DRB from the Sunday Magazine of the New York Times, October 1971.
The reaction to this new element of valley culture remained mixed. Some people in the area embraced the squatters as the new Americana, while others reacted with strong fear—already vulnerable from the chaotic land acquisition process and a decade of lingering uncertainty about their own fates. Some local residents began traveling with arms, while some were afraid to leave their houses. Each group feared the other, as reports surfaced of locals causing trouble by riding through squatter camps taking pot shots at pets and houses. Petty crime increased; confrontations between hippies and hunters, fishermen and locals occurred. In 1971, two squatters wounded by sniper fire petitioned Monroe County for police protection. During the summers of 1971, 1972, 1973 permanent year-round establishments of squatters were joined by hundreds of others who were looking for fun and escape in the Delaware River countryside. This influx created seasonal troubles and in the summer of 1972 the Pocono Record ran several articles detailing mishaps, incidents and negative publicity for the swelling ‘scene’ in the valley. Between June 1970 and June 1972, nearly three dozen building were burned in separate arson incidents throughout the valley. Trespassing also increased, as it was no longer possible to tell government land from private land.

This cultural clash in the rural reaches of the Delaware River Basin resonated strongly with national cultural trends and tensions. Adding a temporal context to the happenings in the valley, the Woodstock music festival that drew crowds topping 500,000 in Sullivan County, New York, occurred in 1969 in a pasture, a mere two hour drive from the DRB. That same year, the film Easy Rider captivated the nation with its apocalyptic tale of two non-conformist friends who meet increasing hatred, violence and bigotry from local residents as they cruise through America on a motorcycle tour. The
iconic diatribe about small town disputes between authority figures and hippies, Alice’s Restaurant, dominated the airwaves of America for years after its 1969 release by Arlo Guthrie, and remains to this day a symbolic protest song. On the other side of the cultural fence, the film Dirty Harry also debuted in 1971. In this film, also a cultural signpost for an entire generation, Clint Eastwood indelibly portrayed vigilante justice as a culturally acceptable means to achieve law and order. Several signposts for this generation happened within a short span of time. While the Corps of Engineers struggle with how to handle this upheaval in the midst of its project site, the nation struggled with similar questions at a larger scale.

As early as 1971, the federal government realized that something needed to be done. Leases were allowed to expire, then trespass notices were served. The Corps convinced a local judge to order federal marshals to raid one of the squatter communities. One autumn morning in 1971, squatters were awakened to federal marshals with eviction notices and a waiting phalanx of bulldozers. Six houses were flattened immediately as the federal marshals rousted the squatters, but the community soon strategically climbed on the rooftops of the remaining houses with their children to prevent any more demolition. In reaction to the aborted raid, the squatters’ Parent Association declared that the squatters would vacate the valley when President Nixon and Congress approved the construction of Tocks Island dam. It seems that these new residents were as enchanted with the valley as the previous ones who had just been forced out. Such a statement also echoes a perceptual connection between resisting the government at a local scale and resisting the government and its national bureaucracy. At that moment after all, it was
technically the Corps of Engineers who were for all intents and purposes the proper landlords of the valley.

Summonses for evictions were served throughout 1971; each squatter demanded a jury trial. The Corps persuaded the public utilities to cut off service to squatter homes. This move apparently backfired and strengthened the resolve of the squatters both as a community and in their determination to stay. Eventually, in November 1972 the Justice Dept filed suit in the U.S. District Court to evict 171 squatters. National Park Service rangers, armed federal marshals, state troopers, and county sheriffs descended into the valley armed with a court order to vacate the federal land within twenty days and a permanent injunction to prevent them from returning; it started peacefully, but tensions rose, and the rest of the eviction notices were served by state police in riot gear.

With no money for attorneys, the squatters appointed a committee to represent themselves. To nobody’s surprise, the case dragged its way through the federal court system, with various maneuvers tried by both sides. The squatters held on through the fall of 1973, getting closer to eviction at every step in the legal process. A ten-week long standoff at Wounded Knee, South Dakota also occurred in 1973 at the Pine Ridge reservation in which buildings were burned, and two people killed. This incident added fear on both sides that the squatter eviction would end in violence. Appeals continued through to the 3rd Circuit Court in Philadelphia, but the squatters had no legal basis to stay in the valley. That judge temporarily stopped the eviction process, and the squatters assumed they had another reprieve. However, the judge did eventually sign the papers allowing for eviction, and with tensions running high, the Corps and the federal marshals felt the need to act fast.
At dawn on 24 February 1974 federal marshals armed with riot gear including pistols, bulletproof vests, and tear gas swooped into the valley paramilitary-style. They evicted everyone, including a newborn, four pregnant women and dozens of children, into the cold winter morning. Highly organized and efficient, the entire affair ended in less than an hour; the raid also had been under a media black out. So when word got out, people were shocked. The case was still under appeal as far as anyone knew. With a final dramatic show of power, federal bulldozers immediately flattened all the buildings so the squatters could never return. Robbed of their chance to cover the eviction, the media swarmed into the valley, to catalog every detail of the aftermath and displacement of the squatters.

The eviction of squatters created a storm of negative publicity for the Corps. Throughout the valley, many people believed the eviction to be illegal since it was still under appeal as far as the public knew. The Corps described the situation as ‘deteriorating’ in a 1973 Pocono Record interview, a statement that could be seen as merely a phlegmatic understatement, or as a reflection of a profound lack of understanding about what was happening on a daily basis in the valley. Adding to their sinking reputation, in its accelerated bulldozing to prevent the squatters’ return, the Corps made some irretrievable mistakes. One house was destroyed accidentally, old buildings on the National Historic Register were demolished, and the two hundred year old Zion church was gutted. After the church incident, the DVCA, the Sierra Club and the New Jersey Public Interest Research Group (NJPIRG) obtained a restraining order to stop all further demolition. The Minisink Valley and vicariously all of the Delaware Valley had become a battle zone.
Figure 6.2: Photo of Evicted Squatters as the Struggle in the DRB Became a Regional News Item—Again.
The major public relations nightmare due to extended press coverage of squatter activities, court fights and eviction, as well as the mistaken flattening of buildings worked strongly against the Corps’ credibility; it all amounted to raising very large doubts about the Corps’ operations as a whole. If a large bureaucracy like the Corps of Engineers could not handle the land acquisition process and a band of ‘flower children’ then how could it be trusted with the complex calculations of the Cost-Benefit Analysis, or complex environmental problems? Even dam proponents were left scratching their collective heads at the chaos and anguish in the valley, with not even a bucket of dirt yet moved.

Between a Rock and a Hard Place

Intense backlash from large public water works projects left no doubt in the minds of many in Congress and in the public sector that things needed to change. Multiple examples of excesses in alterations of waterways; gratuitous building of dams and other infrastructure; cost overruns; dubious management decisions; a closed decision-making process; and the destruction or capture of natural resources can be listed. But to see only a behemoth government bureaucracy run amok, to say that the Corps was single-handedly the major force for environmental destruction and exploitation of water resources in this country due to a culture of elitism, influence peddling and professional arrogance provides too easy an answer to very complex processes of change and governance.

The Corps of Engineers started out a rather simplistic mission of building fortresses and maintaining and improving harbors. That mission changed drastically with
time, and came to include just about every activity one could imagine with respect to water, waterways and water projects, except the maintenance of bathtubs. With this ever changing mission eventually came increased expectations, but not necessarily increased understanding (by anyone) about how to meet the inherently conflicting goals thrust at the Corps. Congress explicitly directed the Corps to use structural methods to solve problems: build a dam, channelize a river, or dredge a harbor. But as one agency observer noted,

A grant planning responsibility to an agency authorized to implement only a limited range of solutions suffers an inherent institutional limitation. Congress requires the Corps to examine such needs as water supply, water quality, and outdoor recreation facilities, but rarely authorizes the Corps to alleviate these needs except by means of multiple-purpose reservoirs whose purposes include flood control. Even with respect to its supposedly primary role of restricting flood losses, the corps has been restricted largely to building structures for flood water retention…The self-interest inherent in a continuation of its construction program causes difficulty for the agency in weighing objectively other means of achieving desired ends.35

Other than the obvious need to stay in business, the Corps came to be narrowly entrenched in one way of approaching all problems. And the old adage ‘when all you have is a hammer, every problem looks like a nail’ certainly applies here. In the case of Tocks Island, one Corps official said later, “We all knew we weren’t there to find ways not to build dams.”36

This myopia existed elsewhere too, not just within the Corps. Local interests also operated under a skewed set of economic incentives through cost-sharing formulas that encouraged them to see structural solutions to the problems of flooding, and then request those solutions of the Corps. Congress has legislated specific cost-sharing formulas into law which provide that the federal government will pay (1) up to 100 percent of the costs of construction, land rights, relocation and alteration of utilities, as well as operating and maintenance costs for reservoirs and water quality projects; (2) up to 100 percent of the

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costs of construction, maintenance, operation and replacement of navigation projects; (3) up to 100 percent of the construction costs of local flood protection projects; and (4) from 50 to 100 percent of the costs for recreation and fish/wildlife enhancements. Until 1974, almost none of these cost-sharing schemes applied to non-structural flood control alternatives. If some far thinking local interests wished to flood-proof buildings, create floodplain zoning, acquire flood plains for public use, these projects did not fall under the generous cost-sharing subsidizations that would be available for a structural solution. The Water Resources Development Act of 1974 (section 73) attempted to address that inequity, but before then, and most especially in the heyday of the big dam era, the laws themselves constrained not only the Corps, but the imagination, options and economic incentives of local interests as well.

If this legal situation were not sufficient to lock the Corps into perceiving every possible water problem as requiring a dam or other structure, the evolution of its symbiotic relations with Congress and special interests served to encourage myopia and nearly ensured that dams would be built. By acquiescing to projects of dubious value in other Congressional districts, in order to garner a pet project in a home district, Congressmen for generations helped evenly spread the pork. Using the amorphous criteria of ‘aiding regional development’ to judge the merits of proposed projects, both Congress and the Corps came out ahead. In the eyes of Congress, projects would be spread across many districts; in the eyes of the Corps it provided a rationale for spreading them around. Again, scale and scalar problems plagued the entire process of water management. The scale of costs involved in building structures such as dams and reservoir practically precluded any competing or alternative process for achieving those
goals. And the scale of the bureaucracy within which the Corps operated served to provide it with undue power to operate without explanation or accountability.

DRBC, Chickens, and a ‘No-confidence’ Vote

Fears over eutrophication caused great alarm. Eutrophication is the process in which a body of water goes from having either low or average levels of essential nutrients such as nitrogen, phosphorous and potassium, to containing very high levels of these nutrients. High levels of nutrients cause excess algae to grow (an algal bloom), the decay of which places a high demand on dissolved oxygen in the water. With a healthy balance of nutrients and dissolved oxygen, water bodies should contain an abundance and diversity of aquatic life, but when eutrophication occurs that balance is upset. Decay of excess algae reduces the amount of dissolved oxygen, which then leads to a vast reduction in the amount of aquatic life that can be supported. A leading cause of human enhanced eutrophication is run-off of fertilizers, pesticides and animal waste from commercial farm operations, all of which sends excess nitrates and phosphates into water bodies. Aside from the ecological damage this causes, potential recreation users would not want to swim in, picnic near, or view a slime-ridden lake overgrown with weeds and algae. In other words, clear healthy water would be essential for recreational users. And the realization emerged that building a dam on the Delaware might actually block a river that ordinarily flushed large amounts of organic waste; if Tocks Island reservoir could become eutrophic, it would defeat the purpose of creating a dam for recreation.
Moreover, eutrophication presented a vivid symbol of ecological hazard. This was nature’s backlash. For those environmentalists who did not live in the valley and in all likelihood would not be in the group of potential recreation visitors for the Tocks Island reservoir, this matter spoke to larger issues of environmental destruction. The threat of eutrophication, while bad in its own right, symbolized indirectly many societal ills related to rapid growth, over-development, pollution, and the ruination of nature. The threat of a Silent Spring in the heavily urbanized industrial corridor of the northeast had great resonance as people didn’t have to look far to see these ill effects on their environment. Comparison of the still undeveloped, still green, valley with clear water in the Delaware River to the intense overcrowding and pollution of the cities just an hour or two away could hardly be escaped.

Corps headaches increased in 1972—the chairman of the CEQ wrote to Governor Nelson Rockefeller, of New York, specifically asking for promises that the chicken and dairy waste would be addressed. The effluent caused no problems in the free-flowing Delaware, but concern over eutrophication in a dammed Delaware River deemed this clean up to be essential. Rockefeller’s reply: with so few benefits from Tocks, it would be unfair to ask NY to pay for nutrient controls. Rockefeller promised only to weigh the problem with other pollution-control problems in the state. Given the New York’s famous traffic pollution problems and thelegendarily foul East River right in the heart of New York City, this answer implied that, in fact, the chicken and dairy industry effluents would sink to the bottom of a very long list of other pollution concerns.

This lack of assurance about non-point source farm pollution caused trouble for Tocks in the Appropriations Committee. In June of 1972, $14.8 million was approved for
construction, but with the stipulation that funds could only be used for land acquisition until assurances on upper-basin pollution in the form of nutrient control could be garnered. Now Congress officially delayed construction of Tocks. This decision was a serious blow to the pro-dam contingent. As pro-dam supporters held their collective breath over the summer of 1972, New Jersey governor William T. Cahill, received continuous pressure in the form of pro-dam lobbying. Pro-dam boosters predicted that Cahill’s list of conditions would be easily addressed; they would be proven wrong.

DRBC cohesion waned as well. The DRBC met (governors of each state and the Secretary of the Interior as the federal representative) amidst growing public opposition. At this meeting, Cahill voiced concerns about the mounting potential for negative environmental impacts—although he still supported the need for water supply, flood control, recreation, hydropower and other benefits. Cahill refused to support the dam’s construction until NJ re-evaluated its longstanding support for the project and promised the state would do so within the year.

In the meantime, NJ tried to determine what the impacts of Tocks would be specifically on NJ. This question created more headaches as most of the material produced thus far projected only regional impacts, broadly painted or biased presentations of costs and benefits with few specific sources or numbers divided among the four states. Cahill visited the region in person via helicopter tour and came away with one very distinct impression. The local officials were worried about being overwhelmed by the costs associated with accommodating outside tourism. He came back to the DRBC summit in the fall not opposing the dam project, but also not supporting it unless or until a checklist of seven items was addressed.
New Jersey Governor Cahill’s List of Conditions to be Satisfied:

1. Pennsylvania and New Jersey enact legislation giving each the authority to regulate land use on the floodplain

2. New Jersey to be excluded from regional sewage treatment plan for the DRBC and Tocks Island region

3. Plan must be developed to control nutrient run-off upstream from Tocks in order to prevent eutrophication in TI reservoir

4. Legislation must be enacted giving New Jersey authority to regulate land use in its portion of the Tocks Island region

5. Substantial federal funding for new highway projects to provide access to the park

6. Reduce park visitor load from 10.5 million to 4 million per year

7. Federal payments made to local governments to offset local tax losses caused by federal land acquisition process

Table 6.3: Conditions that New Jersey governor Needed for Continued Support of the Tocks Island Project.

Reactions to this ranged from ‘statesmanlike and farsighted’ (NY and DE governors) to muddleheaded and wishy-washy (various pro-dam advocates).

In the spring of 1975, a five-part study (ordered by Congress in 1974 as a pre-condition for regaining federal allocation of funds) was released. While this study captured headlines, the long awaited and comprehensive 450-page supplement to the Corps second EIS was released. But by this time, people already developed strong and divisive opinions on the subject and new studies did not alter the situation.
Environmentalists pointed out the weaknesses of the studies; proponents thought the studies unnecessary. In the June of 1975 the DRBC held public hearings on the studies in which both sides tore each other apart. The public meeting mattered little, since everything had already been said. The decision to build a dam had moved from the realm of the bureaucratic and technical, through to the political and cultural.

Congress, in 1975, would not go forward with more funding for Tocks until the DRBC reaffirmed support for the project with a commission vote, and they wanted a decision by the summer. In July, the DRBC gathered in Trenton for a summit meeting. Three governors attended, Shapp of Pennsylvania, Byrne of New Jersey, and Tribbitt of Delaware, as well as Ogden Reid to represent Governor Carey of New York and Thomas Schweigert, the United States Commissioner and federal representative on the DRBC.

Three of four states voted not to continue with Tocks Island dam and reservoir at that time, with Pennsylvania as the lone state in favor of construction. Delaware would get nothing from the dam, and was not strongly pro or con in the matter. New Jersey still wanted the dam, but felt that it could put off building it for at least a decade or two and suggested revisiting the plan later. New York did not want to pay for pollution clean up, and the federal voter abstained on the grounds that the federal government was the project’s sponsor. Governor Shapp and his chief advisor, Maurice Goddard, remained convinced that the dam was the answer to water supply and flood-control problems. Goddard was the state’s Secretary of Environmental Resources and was one of the few basin experts whose professional life-history had included the 1954 Supreme Court decree, the 1955 flood and the drought of the mid-1960s.
Conclusion

In 1962, the coming dam on the Delaware River was all but a certainty, with the combined weight of state, interstate, federal and commercial interests pushing for its completion. In 1966, with problems sprouting like weeds on the seamless landscape of planning, the dam still appeared to be a fact not yet formed, but a fact nonetheless. It was only a matter of time before the engines of government kicked into place and the project began. In fact, at this point, the Tocks Island project probably had the highest expectations and strongest contingent of support. So many different players rushed to get involved with the project that it swelled to a public works extravaganza, with its associated 37-mile long reservoir, surrounding recreation area, and pumped storage unit above the reservoir. And don’t forget the ten tertiary dams and reservoirs; the Tocks Island dam and reservoir far surpassed all the smaller dams combined in size and capacity, but the scale of planned action was, indeed, basin-wide.

By 1970, the land acquisition process created headaches for the Corps and havoc within the valley to be flooded. Rapidly escalating costs created Congressional friction; the Sunfish Pond location for pumped storage had to be reconsidered. And by 1975, with more players involved, and seemingly more at stake for everyone, the situation escalated to crisis proportions for the builders of Tocks Island dam, and ultimately a no-confidence vote by some of its most fervent early supporters.

Relative to the entire process of change gripping the Delaware Valley, the eviction of a few hundred squatters from two counties in Pennsylvania truly was fairly minor, only impacting a small area of the 66,000 acre, 40 mile swath of valley. However, it took on great symbolism as a microcosmic analogy to what was simultaneously
happening all over the valley. Squatters may not have been the messenger that local citizens wanted, but their very presence and then dislodging galvanized disparate sectors of social activists around one central truth, the government in whatever form was violently uprooting citizens in the valley and that felt wrong. The sentiments tapped by press coverage of people being evicted to make way for yet another big dam to be built went straight to the core of emotions already frayed by several simultaneous events at the national and regional scale.

Without a dam on the main-stem of the Delaware the states appeared to be lurching towards another round with the Supreme Court, since the dam at Tocks Island would have provided a solution to many of the conflicting water needs in the basin that had brought the Delaware River States to the Supreme Court earlier. Aside from the water supply quandary, there was the question of the legality of the Delaware Water Gap National Recreation Area in the absence of the Tocks Island dam. More than fifty studies of the dam were done between 1962 and 1975. But none had addressed what the fate of the DWGNRA would be if there were no dam and no reservoir. The two projects had linked Congressional approval, so if the dam was not to be built, was the recreation area still technically congressionally authorized? One of the original purposes of the dam came out of the 1954 Supreme Court decree. At that time, the Court agreed that both New York City and the state of New Jersey diverted more than their fair allocation of Delaware River water. As part of the decree, these parties were to help pay for a dam that would increase the amount of available water for all the states. If the dam did not get built, was this a violation of the Supreme Court decree? After half a century of planning and a decade of controversy, it had come down to this. If the vote was not to build, then
de-authorization was the next and final nail in the coffin of the project. However, Tocks Island proved as hard to kill as it was to build. And all the problems in the four states still existed.

![Figure 6.3: The DRB, and its Proximity to Regional Media Coverage.](image)

Figure 6.3: The DRB, and its Proximity to Regional Media Coverage.
While it looked at this point as if the CEQ would become a new force to be reckoned with in government, such was not to be its fate. The CEQ though, inherently depended on personal support of the President. This weakened the overall effect of the CEQ, as changing administrations would bring dramatically different philosophies on resource management. President Reagan decided, in the 1990s, that he had no interest in an executive-level environmental policy, through OMB director David Stockman, he deliberately destroyed the Council in all but name, firing its entire staff, drastically reducing its budget, and staffing it only with political loyalists. For a more complete understanding of the Council for Environmental Quality, see Robert Bartlett, "The Budgetary Process in Environmental Policy," *Environmental Policy in the 1980s: Reagan's New Agenda*, ed. Norman Vic (Washington DC: Congressional Quarterly, 1984).

For more on the myriad reports and counter-studies developed during the hiatus on dam construction during these years of the early 1970s, see Feiveson, *Boundaries of Analysis*.

The standards in the Federal Register came from the Water Resources Council (WRC) and ultimately approved by Congress. In its turn, the WRC was an independent executive agency formed in 1965 and tasked with the responsibility of coordinating all water resource planning and development in the United States. The body of the WRC contained secretaries of the Interior, Agriculture, Health, Army, Education and Welfare, Transportation as well as the participation of several other executive agencies such as the EPA and CEQ. This listing was found in the Federal Register Vol. 38, no. 174 from September, 1973 which is the most relevant version for the controversy concerning the Tocks Island CBA.

See Feiveson, *Boundaries of Analysis*.


The New Jersey costs far outranged the Pennsylvania costs because they included every expressway, and did not write any construction costs off as part of the Tocks project. See Approach Road Study, Tocks Island Region, Part II as cited in Albert, *Damming the Delaware: The Rise and Fall of Tocks Island*.


Weston, *Tocks Island Region Environmental Study Vol.1*.

The Bureau of Reclamation claimed that the Echo Park dam would conserve 165,000 acre-feet of water; Brower demonstrated convincingly that it would in fact conserve at most 19,000 acre-feet. BuRec promoted the dam as adding to the water supply, but Brower argued that the basin might actually lose water using figures on evaporation to support his argument. See Reisner, Cadillac Desert, Harvey, A Symbol of Wilderness: Echo Park and the American Conservation Movement, Petulla, American Environmentalism: Values, Tactics, Priorities.

Brower as quoted in Petulla, American Environmentalism: Values, Tactics, Priorities.


See Feiveson, Boundaries of Analysis, Petulla, American Environmentalism: Values, Tactics, Priorities.


"Clean Water Act," vol. 1251


"Clean Water Act Sec. 404," vol. 1251

Fines range up to 10,000/day, with willful and negligent violations punishable with $25,000/day and a jail term for repeat offenders. It should also be mentioned that this includes discharge of pollutants into waterways as well as dredge and fill permit violations as stated in section (c) of the Act.

The Corps had completed an EIS for the Two Forks Dam (550 ft. tall) and was ready to issue the permit, but the needed EPA signature turned instead into a veto. After years of litigation over whether the EPA had overstepped its authority, the EPA decision was upheld by a district court judge in 1996. See Ed Marston, "Water Pressure," High Country News 20 November 2000.


A few squatters were said to be former landowners squatting on their old homesteads. Most of this paragraph is a composite from several interviews: (Squatter 1) (Reporter 1) (NPS 2)

Files and notes of Richard Albert, located at the DWGNRA Archive Annex (Old School House)

Sutherlin, "Squatters Blamed for Many Incidents."

Ibid.

James Markham, New York Times 1971, Markham.

Markham, Markham.


36 Interview data (Corps 1)


39 This idea sprang out of separate conversations with Martin Reuss and Richard Albert.
Tocks Island dam was not yet dead. It remained on the books as a congressionally authorized project, albeit without further appropriations, until 1992. In the intervening years, several Congressional attempts to de-authorize the project failed—drowned in Congressional debate. Similarly, the underlying issues of allocation, water supply, flood control and drought control that the Tocks Island Dam and Reservoir was to have ameliorated had not been solved, and when those issues heated up, the debate over Tocks Island also heated up again. After five decades of planning, most of the land in the valley already acquired by the Corps and sitting empty, and the expenditure of more than $200,000,000 of tax payer’s money, it seemed inconceivable that project supporters could scrap this plan and go back to the proverbial drawing board.

The construction of Tocks Island dam remained the capstone component of an entire basin-wide management plan, the seventh largest public works project the Corps had ever attempted, and the major reason for the existence of the DRBC. Tocks Island remained divisive within the bureaucratic infrastructure; it had dominated the public policy arena in the DRB region for so long that it became a mindset as much as a project or plan. For many high-level public servants in Pennsylvania, New Jersey and New York, the Corps, Congress, and the DRBC, entire careers had been spent working in the shadow of this plan as the key to future water resources needs of the Delaware River Basin. These people would not easily let go of the project. But Tocks had also been in the planning stages so long that a new generation of lower level people was rising up through
the ranks that had no emotional, professional, or intellectual investment in a dam and reservoir at Tocks Island as the only option in water management for the region.

The vote among DRBC member states in 1975 not to move forward with the construction of the Tocks Island Dam and Reservoir at that time created more questions than answers. It remained unclear whether this was yet another delay in what would ultimately be a rocky road to completion of this over-budget, behind-schedule public works project, or truly the end of the project. Neither dam proponents nor dam opponents could be sure of the final outcome. So many starts and stops, studies and commissions, meetings and protests, delays and false-starts had already occurred that reason suggested that more was to come—from both sides. Thus, jockeying continued as both sides reacted to this newest wrinkle in the fight. Had the project merely been shelved until the public outcry died down? The project had been delayed several times now, on the precipice of groundbreaking for construction at the dam site. Did the no-vote merely mean that more studies and more delays would follow? What would the Corps do next, in light of the no-vote?

The 1975 “No-Vote” Implications

The public tide had definitively turned away from the originally unchallenged plans for Tocks Island and towards full-on confrontation over the fate of the Delaware River. By 1975, the national environmental movement had firmly established itself and had sent rippling impacts across society. As of the 1975 “no-vote” at the DRBC, seven of the eight senators whose states were affected by the Tocks Island project publicly
opposed the dam, as did Russell Peterson, former governor of Delaware and current head of the EPA, and Russell Train, Chairman of the CEQ. Almost everyone could find something in the dam project to be concerned about, and the collection of issues that had haunted the project from the beginning had not been resolved. To summarize: issues existed concerning the Corps’ trampling on the rights of citizens in the valley, Congressional sticker-shock at escalating budget projections, the Corps’ assessment of the ratio of benefits to costs for the project, land acquisition problems, squatters in abandoned farmhouses already purchased by the Corps, the destruction of Sunfish Pond in order to create a pumped storage facility, and the Environmental Impact Statement in compliance with the National Environmental Protection Act.

And once the second EIS came out, a series of environmental issues that had not previously been acknowledged such as the secondary impacts to the surrounding area once the dam, reservoir and recreation area were in place, the possibility of eutrophication in the reservoir, the potential for mud-flats due to the regular raising and lowering of the lake level for the production of hydro-electric power, worries of poultry-based pollution in the reservoir from non-point sources based in New York’s portion of the upper Delaware Basin, and the loss of the free-flowing river itself all created sustained controversy. These relatively new issues—that is to say new to the realm of public awareness and debate, merely compounded the still unresolved debates from previous concerns.

The Save the Delaware Coalition had grown by this time to include dozens of groups and had become the strongest unified voice of political opposition to the dam. At least unity existed in that all the groups agreed that the Delaware River should be
preserved—but no consensus existed on exactly what form that preservation should take. That was not too surprising considering that the coalition represented thousands of people and a diverse alliance of organizations including the DVCA, various sportsman’s clubs, thirteen local chapters of the Sierra Club, the Lenni Lenape League, the Essex County Young Republicans, and the more powerful national elements of the Daughters of the American Revolution (DAR), Trout Unlimited (TU), the National Wildlife Federation (NWF), the Sierra Club, and the Wilderness Society, and the Environmental Defense Fund (EDF). While the EDF jumped into the fray on the basis of questioning the first EIS and challenging the Corps’ CBA figures, the DAR worried about the drowning or bulldozing of historical sites, the LLL centered on the preservation of Sunfish Pond, and so on. With the unexpected triumph of a “no-vote” in 1975, these various stakeholders busied themselves with sorting out what that might mean for their interests. The next order of business centered on getting Tocks Island Congressionally de-authorized.

Attempted Congressional De-authorizations

With the governors of New York and Delaware voting not to build Tocks, the governor of New Jersey (with the logic that his state could get by without Tocks Island water for the next twenty years) voting not to build the dam until the year 2000, and only Pennsylvania voting to build the dam, Pennsylvania’s list of allies was growing thin. Brigadier General James Kelley, head of the North Atlantic Division of the Corps had stated on the eve of the DRBC vote that if the vote went yes dam construction should begin immediately; if the vote went no, he planned to recommend that Tocks be de-
authorized. Kelley stated, “The project should best be deferred, but rather should be
deauthorized so that alternative plans to meet the needs of the region may be
developed.”

Presumably sensing the sea change in public opinion, and with the no vote from the basin states, the Corps joined in September of 1975 the EPA, the CEQ, the OMB, and the NPS all of whom were now calling for the de-authorization of Tocks Island dam.

Senator Clifford Case of New Jersey introduced the first attempt to kill Tocks. His legislation, Senate Bill S.3106, had three items: de-authorize the dam, transfer the Corps’ acquired lands in the valley to the National Park Service, and finally allow the NPS to relocate U.S. Route 209 outside of park boundaries. When the bill reached the public-hearing stage in July of 1976, it met with opposition, despite the fact that six other DRB senators had joined Senator Case in introducing the bill. The Senate Public Works Committee’s Subcommittee on Water Resources held open hearings on July 23rd and 26th with all of the usual line-up of pro and anti-dam interests in attendance. But this time, the power balance had shifted with the Corps and the NPS joining the environmentalists in their call for de-authorization and the long time Tocks supporter DRBC totally absent from the hearings. Among the four basin states, only New York favored de-authorization, with Delaware and New Jersey against it. Not surprisingly, Maurice Goddard, Pennsylvania’s representative to the DRBC and chief advisor to Governor Milton Shapp was opposed to de-authorization, and called for immediate construction of the dam. Also among those who opposed de-authorization was Representative Frank Thompson from New Jersey, Chairman of the House Administration Committee, who
vowed to use all his influence to kill the House version of the bill—which he did. Soon after, the Senate version died too.

As a measure of how far hostilities went over the extremely controversial role and reputation of the Corps, and just how mired in contention the entire Congress had become over this issue, opposition to the Senate bill centered on the highway relocation plan. Sentiment in the Senate favored throwing the Corps completely out of the valley, even if it confounded this highway relocation project; thus, in an incredible pretzel twist of logic, the possibility that the Corps would get the job of relocating Route 209 caused opposition to the de-authorization as a whole. In order to deny the Corps this small highway relocation, Senate opposition was ready to quash the de-authorization of the entire dam project. While previously de-authorization of Tocks would have been a great loss to the Corps, the project had stretched on for decades, cost so much money, tarnished so many reputations and resulted in so much chaotic anguish that de-authorization now looked as if it would somehow help the Corps to rid itself of a large mess—and there was a contingent in the Senate who would vote against anything that might help the Corps. But the power base of the Corps in Congress stemmed from its historic relations with the Public Works committees. In 1977, twin de-authorization bills were again introduced in the House and Senate without highway relocation mentioned anywhere. Neither the House nor Senate Public Works committees were concerned with environmental issues. Nor were the committees interested in killing dam projects—which would run completely counter to their historic missions of encouraging public works projects. Both bills died in the Public Works committees, as might be expected.
For those in the opposition camp, it became painfully clear that some other way would have to be found to kill the Tocks Island dam project. Many environmentalists recognized the dangerous ambiguity of leaving Tocks as a congressionally authorized project; if the project wasn’t stopped completely, all of the protest energy would die, and people would forget—and then the Corps could come back and start all over again. Or worse! The fight to stop a dam being built on the Green River at Echo Park in the northwest corner of Colorado at the Dinosaur National Monument brought the Sierra Club and its president, Dave Brower to into the national spotlight. But while the preservationists centered their effort on saving this river that runs through the Dinosaur National Monument, their success in doing so turned to horror as they discovered that dams were then planned for two alternate sites on the Colorado River just upstream from the Grand Canyon, at Bridge Canyon and Marble Canyon. The Sierra Club and a small group of dedicated activists then launched efforts to stop dams inside the Grand Canyon National Park utilizing tactics such as challenging the statistics generated in cost-benefit analyses by the Bureau of Reclamation, and taking out full-page ads in national newspapers with attention grabbing headlines such as the now famous “SHOULD WE ALSO FLOOD THE SISTINE CHAPEL SO TOURISTS CAN GET NEARER TO THE CEILING?” that appeared in the New York Times, Washington Post and San Francisco Chronicle. Ultimately, the Sierra Club-backed preservationists saved one remote spot at Echo Park only to see another, Glen Canyon, flooded anyway. This bitter lesson left many preservationists enraged and many previously unconcerned citizens newly baptized into the growing environmental movement. The lengthy fight over Tocks Island and the Delaware River was not happening in a vacuum; lessons from one fight transferred to
other environmental battles. Leaving the Tocks Island dam project as a congressionally authorized project was simply unacceptable.

It was actually the fight over dams in the Grand Canyon National Park and the subsequent flooding of Glen Canyon that lead to the passage of the Wild and Scenic Rivers Act in 1968.\(^7\) This act was administered by the Secretary of the Interior through the National Park Service, it was written in order to preserve, in a free-flowing condition, certain waters possessing outstanding “scenic, recreational, geologic, fish and wildlife, historic, cultural and other similar values.”\(^8\) States may recommend rivers, or parts of rivers, to Congress for designation as “wild and scenic” subject to the approval of the Secretary of the Interior. For those rivers designated as wild and scenic, the Federal Energy Regulatory Commission is prohibited from granting a permit for water projects “on or directly” affecting said river, and prohibits federal licensing of development that would be incompatible with the protection of a designated river.\(^9\) Interim protection is guaranteed for those rivers being studied for designation.\(^10\)

**Wild and Scenic Designation for the Delaware**

In a quirk of fate and timing, the portion of the Delaware River upstream from Port Jervis, at the intersection of the Pennsylvania, New Jersey and New York borders, had been included in the original Wild and Scenic Rivers Act of 1968. The act designated eight rivers with its passage and included twenty-seven more possible candidates for designation—one of those was the upper Delaware River. Almost a decade later, studies had been completed, and the designation of the Upper Delaware
Wild and Scenic River was wending its way through the legislative system on back-log. For those aligned in an effort to kill Tocks Island dam, this appeared to be a way around the long arm of the Public Works committees. If the middle part of the Delaware could somehow be included in the designation ‘Wild and Scenic’ this would create a major impediment to any future efforts to put a dam across the river. The fact that the DWGNRA had now been confirmed as a legally independent entity, and all that property rested in federal ownership, added strength to the logic of its inclusion.

Hopeful environmentalists found their patron in the form of freshman congressman Peter Kostmayer from Bucks County, Pennsylvania. In May of 1977, Kostmayer introduced legislation in the House to include both the upper and middle sections of the non-tidal Delaware River into National Wild and Scenic Rivers System. Clifford Case in New Jersey introduced companion legislation in the Senate. The House National Parks and Insular Affairs Committee held hearings on the Kostmayer bill in New Hope, Pennsylvania (in Kostmayer’s district), later that year, presided over by Representative Philip Burton (D-Cal.) the committee chairman. Approximately 350 people attended the hearing and spoke in favor of including the middle Delaware with the upper Delaware in the designation process. Mina Haefele led a group who bicycled to the hearing from the Tocks region and delivered a petition with 3,000 signatures supporting wild and scenic designation. The totality of support impressed Burton (who held great influence in the House) who agreed steadfastly to support the bill. Kostmayer’s bill was thus included in an omnibus parks and rivers bill entitled the National Parks and Recreation Act of 1978. To its critics, it was known as the “Park
Barrel Bill” as it provided parks and recreation projects in forty-four states, three territories and nearly half of all congressional districts in the nation.

During debates in the House, dozens of amendments were offered to the bill, including one to strike two sections from the bill—the sections that would hand over the Corps’ purchased land for the DWGNRA to the NPS and the section providing inclusion of the middle Delaware into the Wild and Scenic designation. Frank Thompson proposed the amendment—the same Frank Thompson from New Jersey (House Administration Committee) who vowed to stop any de-authorization attempts. Lines were drawn for debate on the Thompson amendment, and the debate would drag out. On one side was the freshman Kostmayer who had studied well and came armed with facts, rebuttals, the appeal of youth to the newer generation of Congressmen more inclined towards environmental agendas than those representatives with long ties to water projects and the Corps, and an influential ally in Burton. On the other side was the highly influential Thompson—contributing architect of the original Tocks Island Dam Project, the expanded DWGNRA and the DRBC—who had a long history in Congress and plenty of supporters. It didn’t take long to heat up, with Thompson painting a picture of massive flood damage and millions without drinking water in the next drought. Following this was a lengthy reiteration of the water shortages in the basin and the unmet needs that Tocks would satisfy. He dismissed the Kostmayer bill as “a back door process” to deauthorize Tocks. Kostmayer slammed back with an equally overdramatic picture of recreation for “millions upon millions of people living like stacked cordwood” in the cities of Megalopolis. Debates waged about whether this was a de-facto de-authorization or not. The cost estimates came into the fray, and a contingent of fiscal conservatives
said they would not support a billion-dollar dam. Thompson assured that current cost estimates were a mere $400 to 450 million.

Congresswoman Helen Meyner, also from New Jersey came on the scene as an unexpected and well-prepared boost to Kostmayer. She was the wife of former governor Robert Meyner, who had been skewered in the press a decade earlier for selling Sunfish Pond to the utility companies, and she proved to be a tenacious ally of Kostmayer and Burton. She came armed with maps and photos of the DRB and ran through a list of governmental officials at the local, state, and Congressional level that were unanimous in their opposition to Tocks. She also suggested that “political support for the project has dissolved” and the whole idea should be put to rest, noting that there had “been more ink spilled over this issue than would fill any lake created by the dam.” Mrs. Meyner suggested that it would be a dead issue anyway as the candidates from both parties who were running to replace Shapp as governor of Pennsylvania had both voiced their opposition to Tocks Island. As one last punch, she articulated the message that a large mistake on the Delaware would be hard to live down. “Let us work together to find solutions that will unite rather than divide our region, will meet the needs of our residents and will preserve that natural beauty…of this last free-flowing river in the Northeast. Generations may not remember us if we do, but they will most surely remember us if we do not.” After lengthy debate, the House defeated the Thompson amendment by a 275 to 110 vote. Soon after, the final version of the bill passed the House with 341 votes for, and 61 against. The Senate version passed as well, and as of 1978, both the upper and middle portions of the Delaware River were included in the Wild and Scenic Rivers system.
Figure 7.1: The Upper and Middle Delaware River Basins Both Achieved Wild and Scenic Designation in 1978.
Litigation or Negotiation?

Like Frank Thompson, Maurice Goddard, chief advisor to Pennsylvania’s governor, Milton Shapp, was a person who had had an entire career molded by the force of expectation that the Tocks Island Dam and Reservoir would become reality. Goddard served as a cabinet officer under six Governors, headed the Pennsylvania Department of Environmental Resources, and was one of the few individuals in the fight over Tocks Island to have spanned several decades of planning. Goddard outlived the 1954 Supreme Court decree, the 1955 flood, the drought of the mid-1960s. He saw Tropical Storm Agnes pound the DRB and leave $63 million of damage in its wake, including damage to 63 of 92 state parks in Pennsylvania. When Goddard served as director of the State Department of Parks and Forests, he tirelessly raised money to acquire new lands for new parks and during a statewide fundraising tour had this to say concerning the acquisition of private land for the state:

> Acquiring parks and open spaces for parks in and around our urban centers must be regarded as a ‘now or never’ proposition…Such a program simply cannot be postponed until sometime in the remote and hazy future, because land costs in these areas, high as they are now, will be too high for government purchase in another ten years. – M.K. Goddard

This statement pertaining to Pennsylvania mirrors Goddard’s vehement support for the Tocks Island project. Thus, when the land acquisition process began to go awry, Goddard’s desire to quickly move forward with the project rather than risk more delays was likely born out of his own experiences in Pennsylvania land acquisition for parks. When the upper and middle stretches of the Delaware River became designated Wild and
Scenic, Goddard was livid. At that time, Governor Shapp also blew his top, and instructed Pennsylvania, in conjunction with the City of Philadelphia, to file suit in the U.S. Eastern District Court against President Carter, Secretary of the Interior Cecil B. Andrus and other Interior officials, in order to prevent the executive branch from implementing any legislation that would replace the Tocks Island dam with a Wild and Scenic River designation. The thrust of the argument contended that any such designation had to be approved by the Delaware River Basin Commission, as stated in the Delaware River Basin Interstate Compact. (The DRBC had already voiced its opinion that the two segments of the Delaware River should not be combined under one Wild and Scenic designation.) The suit further contended that any such designation would also circumvent the National Environmental Protection Act as well as the provisions of the Wild and Scenic Rivers Act.

Nobody wanted to go back to the Supreme Court—and risk losing any of their previous water rights under some unpredictable new allocation scheme—so this threat proved to be a good one. On short order, Goddard presented a draft resolution to the DRBC, suggesting that the Wild and Scenic status of the middle Delaware would substantially impair the equitable apportionment of the Delaware set forth in the 1954 decree, and that the DRBC should invite all parties to the decree to enter into ‘good faith negotiations.’ The terms of the 1954 Supreme Court decree had acknowledged that both New York City and New Jersey diverted more than an equitable share of the Delaware River water, and to remedy that situation, had stipulated that both of those parties help finance a dam on the main-stem of the river in order to offset their over-consumption. This would allow Pennsylvania to increase the amount of its diversions
without penalty to New York City or New Jersey users. According to Goddard, Pennsylvania needed 300 to 600 mgd, and this could not be achieved without an impoundment on the main stem of the Delaware. So without a reservoir, the terms of New Jersey and New York City allocations should be renegotiated in good faith. Within six months, the talks were underway, and included not just the previous parties of the last Supreme Court battle, but all the major water players--New York City, all four of the DRBC states, and the federal representative on the DRBC.

Although the good-faith negotiations were conducted in private, the DRBC had recently received a grant from the Water Resources Council\(^9\) to re-evaluate its comprehensive plan as part of a review of its fifteen years in operation, as well as the DRBC’s internal study of non-structural plans, and the states of Pennsylvania and New Jersey also had begun state water-supply plans. Everyone was still searching for alternatives to Tocks Island dam. Through these studies, extensive opportunities existed for public involvement and expression of opinion through workshops and committees. While the good faith talks continued, yet more studies, this round looking at alternatives to Tocks, took place. These were wider in scope and incorporated groundwater, salinity issues in the lower Delaware, and conservation practices. The most prominent study was the WRC-funded DRBC study, called a level B study, and it was also the most comprehensive—as it incorporated other water resource issues besides Tocks Island. After filing their report on the comprehensive study of the DRB in 1979, the task group formed for the DRBC level-B study began serving as consultants to the good-faith negotiators.
Thus, the level B study became integrated into the negotiations. The study recommended a variety of smaller projects to meet everyone’s needs including: conservation, new water storage facilities in the form of enlargements to two existing dams on Delaware tributaries, two other possible dam projects to be built, policies promoting non-structural flood-control measures, and that the Tocks Island Dam be retained in the DRBC comprehensive plan until the year 2000, at which time the DRBC should decide with finality whether it should be built.

These new arrangements were immediately put to the test as drought came to the region in 1979-1980. New York City and New Jersey reduced their diversions from 800 to 600 mgd, and 100 to 65 mgd respectively. But the drought lingered, and by early 1981 water levels all through out the valley reached a crisis. According to Albert, “Eighty communities in Pennsylvania were within a month of running out of water, and an estimated four thousand domestic wells had gone dry. Higher than normal salinity levels were creeping up the Delaware; some smaller communities in Pennsylvania were pumping water from abandoned mines for home use.” In 1981, the DRBC conducted its first summit meeting since the 1975 vote on Tocks, but this time invited the mayors of Philadelphia and New York City, and again Tocks Island was debated. Before some very hard choices had to be made, the drought eased, and so did tensions. By 1983, the good faith negations had produced a finalized document with 14 recommendations that were adopted by the DRBC.
Good Faith Recommendations of 1983:

1. Changes to DRBC’s 1967 salinity standards—a new reference point for the standards was recommended to protect the Camden, N.J. well fields. (Camden lies directly across the Delaware River from Philadelphia in the lower DRB.)

2. Using a drought equal in magnitude to the drought of the 1960s as the underlying assumption for all water-supply planning in the basin.

3. Adopting the formula devised to reduce reservoir releases and water diversions during the 1980-1981 drought. This would mean that out-of-basin water diversions would be reduced by as much as 32 percent; the amount of water flowing down the Delaware would be reduced in times of drought by reducing the flow requirements at Montague and at Trenton.21

4. Development of a coordinated plan of operation between New York City reservoirs and the other reservoirs in the basin—thus centralizing under jurisdiction of the DRBC, during times of drought, federal, state and private (power company) reservoirs.

5. Acquiring more available water resources—in the form of dam projects. The recommendation was to enlarge two existing reservoirs (F.E. Walter and Prompton) and build another (Merril Creek) to increase the overall amount of water by 620 cfs of new flow.

6. Enlarge the Cannonsville Reservoir in New York State.

7. Develop a plan to reduce South New Jersey’s reliance aquifer water, and implement it by 1990.

8. Examine the potential for pumping groundwater from the upper basin into the river to augment flow during times of emergency after the year 2000.22

9. Keep Tocks Island dam, in modified form, as an option to be considered in the year 2000 if water supply needs continued to escalate.

10. Establishment of criteria for recommendation #3 based on the water level of New York City’s DRB reservoir water levels, in order to declare or suspend drought emergencies.

11. Reduce depletive water use throughout the basin by 15% (as recommended in the level-b study from the DRBC task group).

12. Each state must develop drought contingency plans that would describe how they intended to meet recommendation #11.

13. Develop a program, through the DRBC, to regulate depletive water uses.23

14. Make the experimental conservation releases from the New York City reservoirs a permanent program.

Figure 7.2: Recommendations Agreed upon in the ‘Good-Faith’ Negotiations.
These became the newest iteration of comprehensive basin-wide efforts to find ways of allocating this severely overtaxed, shared resource between all the competing users of the Delaware River Basin. Since the Good Faith agreements, none of the parties that share the Delaware River have threatened to return to the Supreme Court. Significantly, the Good Faith agreements have also not been tested by the extreme drought or flood events that history has shown can and do occur within the DRB.

Changes in the Corps

The fate of the Delaware River and the Tocks Island project certainly has more drama, eye-popping suspense, and anticipation than most Corps endeavors, and certainly more suspense than the slow-moving evolution of bureaucracy itself. However, while criticism from outside forces took center stage during the years of the Tocks Island project, behind the scenes the massive bureaucracy of the Corps of Engineers went through its own tumultuous internal growing pains and identity crisis. Confronted by forces for change in several venues, and from multiple directions, the Corps scrambled to maintain a balancing act between: assimilating a changing mission, changing operational style, changing goals and its own massive established bureaucratic operating procedure—all the while under ever greater public scrutiny and opposition. After 150 years in the business of civil works, the Corps had come to epitomize the essence of large, powerful bureaucracy. In 1975, the Corps had completed over 3,000 projects and project modifications, with 280 projects still under construction and expected completion costs estimated at $22 billion (1974 dollars).²⁴ This figure did not even include the backlog of
some 330 projects that would require an estimated $12 billion more to complete; nor did
it include the 600 projects classified as either deferred or inactive. How could such a
massive institution even contemplate real change?

New environmental legislation such as the National Environmental Protection
Act, the Clean Water Amendments and the Endangered Species Act provided strong
external pressure for the Corps to substantially change its projects. It would no longer be
acceptable for the Corps to construct a project with federal money, if the project damaged
either an endangered species or its habitat. A clear assessment of potentially harmful
environmental impacts that a project generates must now be made, before a project
begins, rather than as an afterthought. And the Corps learned the hard way, in the case of
Tocks Island, that mere lip service to compiling environmental impacts statements could
have immediate and unpleasant consequences. The Clean Water Amendments
permanently altered the mission of the Corps, whose tradition rested firmly with building
and construction. When the Corps began, its mission was to build and to move things:
dredge and channelize waterways and harbors for increased or sustained navigation, build
dams for flood protection or water supply. Now, with the Clean Water Amendments, the
very heart of the Corps’ mission would be expanded into the realm of protector of
waterways. Public opposition and criticism also produced pressure for the Corps to
change its operational style. Hostility to the traditionally closed or inaccessible process
by which decisions were made worked like dripping water on the stone exterior of the
bureaucratic process. Ultimately, the Corps would make substantial efforts to create a
more open planning process and include many more viewpoints than in its traditional
operating style, and even change to cope with new expanded missions that included
protecting the environment. This shift in procedure would be the most complicated change to establish since the traditional mission of the Corps revolved around growth and progress, as defined by massive civil works projects that in fact damaged the environment on a large scale.

In practice, directing large bureaucracies of any sort is a daunting task, as institutions tend to take on organic lives of their own. Thus, the thought of re-directing any such large bureaucracy might be purely an exercise in optimism. The Corps specifically had an entrenched culture of elite experts working in a rigid structure. The world outside and the pervading social values were changing at break-neck speed relative to the staid and orderly standard operation procedure of the Corps. The culture of the Corps came from certain knowledge that they did not have to trouble themselves with the ambiguities of social trade-offs and policy conundrums; they were simply the construction end of the government and built what Congress asked them to build, with the methods they were directed to use. However, during the life cycle of the Tocks Island Dam project, the Corps began making changes within its bureaucratic infrastructure to adapt to these external pressures and conflicts. One internal change came from the personnel department.

In 1969, the Corps employed approximately 75 “environmentalists” or people without engineering backgrounds; by 1977, there were about 575.25 No statistics were available for the number of employees with engineering backgrounds for those years, but it can easily be inferred that the leap in employment was not across the board since the actual workload was shrinking during this time.26 After 1970, all Corps offices had definable units whose primary function was to provide environmental input during the
planning process. Also post-NEPA, the Corps began using advisory boards composed of a variety of stakeholder viewpoints including planning professionals, environmental professionals and interest group representatives. Thus, changes within the formal structure of both the personnel and the offices can be seen as adaptive measures to encourage a more open planning process. It should be noted though, that the internal conflict inherent in the Corps’ process remained. In the same way that creating an environmental impact statement that details all potentially harmful environmental impacts of a project in no way assures a more environmentally sensitive decision will be made merely opening the planning process up to a wider venue of diverging viewpoints does not, in and of itself, necessitate that those wider view points will impact the ultimate outcome of the planning process. While the likelihood of a broader spectrum of opinions generating a broader spectrum of solutions seems plausible, it is not guaranteed. The Corps ultimately retained the position of power, and the weight of its own expertise and experience in the planning process. However, the planning process was considerably more transparent by the end of the 1970s than it had been in previous decades.

Water Policy in the Reagan years

Just when the Corps appeared to have begun adapting to a new set of circumstances and a new way of operating, the rules changed yet again. National political trends changed again when, after a decade of strong environmental legislation and an active environmental movement, the pendulum swung back towards a more politically conservative tone in Washington. This oscillation created dramatic changes
within the Corps. In 1981, incoming president Reagan worked to undo the regulations that had been established in the environmental era of the 1970s, both from political conservatism and recognition of the need to make the water resources planning process more economical and efficient. This adjustment amounted to a major shift in the national direction of water policy and planning. In 1981, Reagan cut funding to the CEQ, essentially crippling the advisory council.

In a similar move, the Water Resources Council and six associated river basin commissions were abolished in September of that same year, to be replaced with a council established via executive order. These actions radically reduced federal leadership role in water planning and water policy. Without the CEQ functioning as an actively critical body of advisors on environmental issues, there would be the tendency to see the EIS as merely paper pushing. But even more devastating to any sense of national cohesion in water policy, the stripping of the WRC took away the only national body of water policy—a body that was established through the Water Resources Planning Act of 1965. The WRC also identified two national objectives in water resources planning: to protect and enhance national economic development (NED) and to protect and enhance the quality of the environment (EQ) when it formally established the “Principles and Standards for Planning Water and Related Land Resources.” I say formally established the Principles and Standards because guides already existed in various forms, the most famous being the ‘Green Book’ that had risen out of a report on Proposed Practices for Economic Analysis of River Basin Projects in 1950. The Green Book, and its later incarnation of Principles and Standards (P&S) via the WRC comprised the industry standard for economic assessment of the benefits and costs associated with water
resources planning projects. Since the WRC was directed to establish principles and standards to guide agencies in the justification of federal water projects, the P&S established four accounts against which projects developed by the Corps, BuRec, the TVA or any water planning agency could be evaluated: the previous NED and EQ as well as regional economic development and social well-being.\textsuperscript{31}

Federal agencies had been required to use benefit-cost analysis as directed in the 1936 Flood Control Act, but the art of economic analysis had advanced considerably in complexity and intent since that time. For example, following the completion of many large-scale, multiple-purpose dams and reservoirs post-WWII, recreation became an important issue and by extension an established purpose in planning future projects. But how did one add the intangible benefit of recreation to the calculus of the costs and benefits? The theoretical basis for recreational benefits in national economic efficiency terms was willingness-to-pay or WTP; numerically this might take the form of a range of unit-day recreation values.\textsuperscript{32} In other words, WTP attempts to capture intangible concepts of aesthetics and existence-value for a resource (e.g. clean water) or place (e.g. unimpeded view of a forest) via the proxy value of the amount of money one is willing-to-pay to either go to the place, or keep it in existence. One may not necessarily need to see the Grand Canyon, for instance, but could still be willing-to-pay for its continued existence. As another part of the Reagan administration’s move toward a smaller federal role in water management, the P&S were repealed on the basis that they were “too complicated, too rigid, and too cumbersome” to be effective as legally binding formal rules.\textsuperscript{33} After extensive review a much-simplified version of principles and procedures
was approved in 1983. These principles however, had been reduced to NED and EQ. The P&G has remained the key planning guide for federal water projects despite criticism of creating a narrow focus, and failing to adequately incorporate non-quantifiable environmental and social impacts into its planning steps.\textsuperscript{34}

The Reagan administration turned to cost-sharing and pricing policy as a means of establishing its priority for curbing federal investments in water resources. Since the mid-1980s, Congress has provided considerable legislative direction to the Corps concerning environmental issues in its biennial Water Resources Development Acts (WRDA). The most significant for the Corps was the WRDA of 1986, which shifted the bulk of costs for projects away from the federal government and onto the states.\textsuperscript{35} As mentioned previously, the federal government had carried the bulk of the cost for water projects, but some forms of cost sharing did exist. But in 1986, the Reagan administration pressed for radical changes to the existing cost-share formulas, believing that local and state governments should play a larger role in financing water development. What resulted was the WRDA 1986 with the following cost-sharing formulas for the Corps (Table 7.1):

The stringent new cost-sharing requirements without doubt encouraged much stronger voices from local sponsors, as much of the funding now came from local sources. In the end, this set of requirements became another venue for opening the planning process, but it simultaneously created tension between local sponsors who would naturally have different priorities than the Corps, which is charged with upholding a national public interest. One Corps official responded when asked how much the cost-
sharing changes had impacted his regional office, “Around here, we divide time into two eras, BC and AC for before cost-share and after cost-share.”

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**Project Cost-Sharing Formulas for Corps of Engineers Projects**

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Non-federal Share</th>
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<tbody>
<tr>
<td>Navigation, harbors</td>
<td>20%; depth &lt; 20 ft.</td>
</tr>
<tr>
<td></td>
<td>35%; depth 21-40 ft.</td>
</tr>
<tr>
<td></td>
<td>60%; depth &gt; 45 ft.</td>
</tr>
<tr>
<td>Navigation, inland</td>
<td>50% from fuel tax</td>
</tr>
<tr>
<td>Flood control</td>
<td></td>
</tr>
<tr>
<td>Structural</td>
<td>min. 35% - max. 50%</td>
</tr>
<tr>
<td>Nonstructural</td>
<td>25%</td>
</tr>
<tr>
<td>Hydroelectric power</td>
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<tr>
<td>Municipal &amp;Industrial water supply</td>
<td>100%</td>
</tr>
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<td>35%</td>
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<td>Recreation</td>
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</tr>
<tr>
<td>Navigation</td>
<td>50%</td>
</tr>
<tr>
<td>Other</td>
<td>50% of separable cost</td>
</tr>
<tr>
<td>Hurricane and storm damage</td>
<td>35%</td>
</tr>
<tr>
<td>Aquatic plant control</td>
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Source: Adapted from USACE (2002)

Table 7.1: Project Cost Sharing Formulas for Corps Projects

The severe restraints in WRDA 1986 may be seen with the perspective of time as the legislative marker that signified the end of the big-dam era. Clearly, after 1986, no local interests could ever raise the vast sums of money needed for large water projects such as large dams. Without doubt, a multi-purpose, extravaganza the size and scale of the Tocks
Island dam project, with its accompanying recreation area, pumped storage facilities and hydroelectric generation capacity would never be a possibility.

All of these changes have created a much different Corps of Engineers than existed when the original plans for the Delaware River Basin came into being. The Corps in 1992 was a much different Corps even than that of 1975. Huge changes had taken place both external to the agency and within its own infrastructure that would impact the way future generations viewed both the agency and water resources planning in general. This massive bureaucracy now scrambled in fast changing times to re-form its identity and adapt to changes in society as well. If the era of big dams was over, then what was the new era to be? And what was to be the role of the Corps in this new era? With fewer projects, less business and more hostility to its previous mission, this was no easy task. The Corps had shrinking budgets and a serious downturn in growth between 1978 and 1992 as Table 7.2 shows. Precipitous drops in the number of projects and studies, drops in total budget and average dollars spent all signaled tough times at the Corps. This soul searching, and the generational turnover in employees truly has created a Corps with sharp changes from the Corps of Engineers that originally conceived of, designed and attempted to build the Tocks Island Dam and reservoir.

In the age of environmental legislation and the rise of non-structural options for water resources management, the Corps has found a new mission in ecological preservation projects and dam deconstruction. In the fullest manifestation of this ironic situation, the Corps has a new mission to protect water resources; thus it could (and likely will) find itself as the agency of expertise in removing or dismantling some of the very same large water projects that its own experts created in previous generations. How it
will reconcile this new mission and bio-centric ethic with its previous missions remains to be seen.

Table 7.2: Severe Drop in Numbers of Studies and Projects from 1978 to 1992

Conclusion

The Tocks Island project quietly slid off the books, with the very anti-climactic congressional de-authorization in 1992. In actual fact, the project that had caused such upheaval, friction and attention during the previous decades finally came to an uninspired end as part of a larger group of dead and dying projects that were all Congressionally de-authorized at one time. Essentially, housekeeping measures finally swept away the project, and that was it. Bureaucratic and funding restructuring had already altered so significantly that the Tocks Island Dam and Reservoir, at least in its original incarnation, would be all-but-impossible to build. And the Wild and Scenic River designation for the
Upper and Middle portions of the river killed any further discussion on the subject. Congressional de-authorization merely completed the death certificate. The Tocks Island as an idea, as a mindset, as the most divisive issue in the Delaware River Basin, died without funeral, without much acknowledgement of any kind.

Residual echoes of the project remain on the landscape in the form of the DWGNRA. And throughout the 1980s, the NPS quietly took over the mantle of the DWGNRA and consolidated its land holdings. The size of the park increased in size by a few thousand acres, but at a more leisurely pace, and through property attrition within the prescribed boundaries of the park, for the most part. With respect to changes in infrastructure and bureaucracies, echoes continue in the form of the DRBC. Its mission has considerably changed over the last decade to include environmental education, water conservation projects, groundwater preservation schemes and more modest water projects.38 Having lost almost all federal budgetary support in the mid-1990s, the DRBC now must find ways to stay afloat itself. It does have a very limited ability to raise funds through taxation of water users in the valley—but only those users who post-date the existence of the DRBC, which means only those few users who came into the valley after 1961. This downscaled presence could change though, as droughts or floods will most certainly grip the region again in the future.

Unanswered questions concerning drinking water needs for New York City and Philadelphia still lurk in the background, and much bitterness remains throughout the valley towards the Corps of Engineers—a bitter taste that remains to this day in a place where no satisfactory closure on the subject ever came to pass. Near the boundaries of the park, many of the previously dislocated people remain, having moved no more than a
few miles across an arbitrary border.\textsuperscript{39} Ironically, those people can now enter the park as visitors to the land that had previously been their own homes, farms and property. In this vacuum of power and cohesion, the NPS has quietly grown in its stature and respect through a series of good-will efforts and cultural restoration projects within the DWGNRA.\textsuperscript{40}

What seemed in 1975 to be an intractable water battle and regional environmental fault line, in the end, faded away without reaching the point of explosion, or the point of resolution. The social and political upheaval that split apart the valley and its residents slowly fizzled as the 1975 ‘no-vote’ stretched on to more uncertainty and waiting… to see what would happen next. The final inclusion of the middle Delaware with the upper Delaware in the Wild and Scenic Rivers system put to rest lingering fears that a dam would be built across the Delaware River. But this was, as Frank Thompson had claimed in the House debate on his amendment, a back-door solution that did not resolve any of the underlying issues that brought the project about in the first place. The participation of all 1954 decree parties in a new round of semi-voluntary good-faith negotiations staved off another round of legal maneuvering at the Supreme Court. However, the precarious balance of users and water in the basin still remains, and the next drought or flood could knock that balance out of equilibrium again.
Chapter 13, Albert, *Damming the Delaware: The Rise and Fall of Tocks Island*.

3 U.S. Route 209 would have been flooded between Milford and Bushkill Pennsylvania, and thus was to be relocated as part of the original dam project. Even without the dam, it would be problematic for any new recreation area due to its location and the projected increases in traffic flow and highway noise.

4 For a more complete look at this groundbreaking dam fight that is said to have launched the environmental consciousness of the 1950s that lead to the Wilderness Act and the beginning of environmental legislation, see Harvey, *A Symbol of Wilderness: Echo Park and the American Conservation Movement*. Also, for a view of the Dinosaur Battle from the perspective of tactics and strategies used in the environmental movement, see Petulla, *American Environmentalism: Values, Tactics, Priorities*. Chapter 3.


6 Glen Canyon is now the sight of Lake Powell which is still controversial. Brower was one of the last people to tour the canyon before its flooding, and he filmed his journey, thus keeping alive the beauty of the canyon—and the fiery resentment of its loss.


8 "Wild and Scenic Rivers Act," vol.1271

9 "Wild and Scenic Rivers Act," vol.1271


11 H.R. 12536


13 "House Debate 10 July 1978."

14 "House Debate 10 July 1978."

15 Undated quote from press release for Project 70, which was passed by the Pennsylvania legislature in 1963.

16 Interview data (Attorney-2); this attorney represented the state of Pennsylvania in its bid to sue the federal government, and had worked under Goddard at the time of the lawsuit.

17 Interview data (Attorney-2)

18 DRBC, Minutes of 25 October 1978 Meeting as cited by Albert, *Damming the Delaware: The Rise and Fall of Tocks Island*.

19 The Water Resources Council grant of $1.1 million allowed the DRBC to provide the public venue that the good faith negotiations could not.

20 Albert, *Damming the Delaware: The Rise and Fall of Tocks Island*. 

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This recommendation clearly spelled out drought management criteria that favored in-basin water usage and should be noted as a major concession of New York City, which relies heavily on out-of-basin water diversions from the DRB to slake the thirst of NYC.

This recommendation was not well received in the upper basin, as it essentially privileged downstream users.

This recommendation signaled a major shift in the thinking of water managers. Acknowledgement that increased storage capacity would not improve the situation if uses increased at equal or greater rates shows the first real understanding of the finiteness of the hydrologic system, and the finite ability of people to use the waters of the Delaware.


Mazmanian, *Can Organizations Change? Environmental Protection, Citizen Participation, and the Corps of Engineers*.


The now classic Green Book came out of an interagency subcommittee on benefits and costs. The Federal Inter Agency River Basin Commission or (FIARBC) represented all the major federal water resources agencies: the Corps, the Departments of the Agriculture, Commerce and the Interior, and the Federal Power Commission. FIARBC established a subcommittee who generated its report in the form of the Green Book. While widely used throughout the decade of the 1950s, it was never formally adopted by any federal agency as strict rule. In 1958 a revised Green Book came out with only minor revisions. The Green Book has existed as the de-facto bible for water planners for the generation of the 1950s and 1960s. With its inclusion into the WRC’s Principles and Standards it finally became part of the established protocol for water planning and projects. For a complete history, see Otto Eckstein, *Water Resources Development: The Economics of Project Evaluation*. (Cambridge: Harvard University Press, 1958).


Hufschmidt, "Benefit-Cost Analysis: 1933-1985"

Board, *Analytical Methods and Approaches for Water Resources Project Planning*.


Interview data (Corps-3)


David Pierce revisited many local residents and found most still in the region during his efforts to determine what had happened to residents, after twenty years had gone by, in the Tocks Island region of the DRB. Much of the bitterness remained for those people, and much of the bitterness was still centered on the actions and attitudes of the Corps. David Pierce, "Torn Apart and Pushed Too Far," Pocono Record 12 August 2001, David Pierce, "Legacy of the Land: After Dam Died, Park Was Born," Pocono Record 14 August 2001, David Pierce, "New Lease on Life for Properties," Pocono Record 14 August 2001.

Chapter 8
1992: On Borrowed Time

Introduction

From the beginning, this investigation has attempted a balancing act. In essence, the story has jumped between two lenses. The first lens focused on the details, players, events and outcomes. The first research questions concerning how the plan to build a dam at Tocks Island arose and what factors derailed that process were addressed through this lens. Simultaneously, a second lens focused on how the events in the Delaware valley and the stakeholders in this dam-fight got swept around by larger forces in the context of social change, changes in the law and changes in the bureaucracy of government with respect to water resources during the crucial decades between 1962-1992. Because this fight coincided in time with the rise of the environmental movement and the end of the big-dam era, it held special interest as a temporal hinge that exposes those changes more clearly and allows a detailed examination of the implications of that change. The location of the Delaware River Basin, within reach of the metropolitan corridor of the eastern seaboard also made it a compelling and extreme case in seeking the balance of human-nature interactions. Now that the story has unfolded, some of the original questions can be answered; I attempt to do so in the sections that follow.

Politics, Law and Geography Collide

The central question of interest was two-fold: 1) what role did unexpected non-governmental forces such as media and grassroots protestors have in altering the
trajectory of entrenched decision-making in environmental policy with respect to Tocks Island? 2) How have governmental institutions adapted to the changes brought about by the upheaval of environmental laws and regulations of the 1970s? It seems clear with hindsight that the media and the different forms of grassroots protest altered the trajectory of the dam project in ways nobody expected. The geographic proximity of the DRB to the news outlets of New York City and Philadelphia created an unusual opportunity for coverage that might never have existed had the DRB been located in a more remote, less populated area.

Early attempts to protest within the sanctioned pathways of the legal system, via the class action lawsuit filed by property owners within the valley, did not appear to be successful. I would argue that, while the lawsuit itself did not produce any legal satisfaction for the landowners in the valley, the very existence of such organized and sustained protestation throughout the three year legal process did slow down the progress of the Corps enough for others to scrutinize the Corps and its plans. The lawsuit also generated a network of actors who, through their own geographic proximity, were able to alter opinions within the communities in the region most at risk from the project—the four county region that spans the Delaware River between Pennsylvania and New Jersey that encompassed Pike, Monroe, Warren and Sussex counties.

The New York Times provided sustained coverage on the subject of Tocks Island, the DWGNRA and Sunfish Pond, with over three hundred articles on the subject between the years of 1962-1977. The effects of this coverage can only be inferred, and only subjectively at that. However, the powerful images of happenings in the DRB were broadcast to those in the seats of power in Washington, as well as the state capitals of
New Jersey, New York and Pennsylvania. This sort of coverage provided people within the region with first hand accounts of the political fallout of decisions made outside the DRB. Thus, geography indeed provided the opportunity for the press to shine a spotlight on what would otherwise be the unnoticed actions of the Corps in its daily routine of water management activities. Under that scrutiny, flaws in the system became gaping holes as things began to go awry with the original plans.

Given that the New York Times provided the dates, times, locations and even directions to the Lenni Lenapi League protest hikes, it left this researcher wondering whether the protest hikes of 1967, 1968, 1969 and 1970 truly reflected a rapidly awakening sense of political protest within the valley; or whether prior news coverage, geographic placement in a conveniently accessible location, might have precipitated much more of an event than otherwise would have occurred. The role of the media, while difficult to quantify, clearly can be inferred—especially since both pro- and anti-dam coalitions worked assiduously through the media to impact public opinion. In the case of the New York Times, coverage tilted slightly towards the anti-dam contingent, but numbers alone do not easily suggest the sum total of media impact. Extremely powerful images of commune hippies both before and after their forced eviction from the valley (as seen in previous chapters) stir passions and inspire debates in ways that less sensational fact-based reporting rarely illicit.
Table 8.1: Content Analysis of National Regional and Local Newspapers

<table>
<thead>
<tr>
<th>PAPER</th>
<th>ANTI-DAM</th>
<th>PRO-DAM</th>
<th>NEUTRAL</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York Times</td>
<td>125</td>
<td>112</td>
<td>96</td>
<td>343</td>
</tr>
<tr>
<td>Philadelphia Inquirer</td>
<td>34</td>
<td>46</td>
<td>21</td>
<td>101</td>
</tr>
<tr>
<td>Trenton Evening Times</td>
<td>22</td>
<td>39</td>
<td>15</td>
<td>76</td>
</tr>
<tr>
<td>Pocono Record</td>
<td>61</td>
<td>32</td>
<td>40</td>
<td>133</td>
</tr>
<tr>
<td>Cherry Hill Currier Post</td>
<td>14</td>
<td>18</td>
<td>15</td>
<td>47</td>
</tr>
</tbody>
</table>

One unexpected result of the content analysis conveys the sharp difference in local coverage. The *Pocono Record*, based in Stroudsburg, Pennsylvania, produced continued and detailed coverage on the controversy. For reasons not understood, the Cherry Hill *Currier Post*, from Cherry Hill, New Jersey, had much less coverage. Geography alone cannot explain the sharp differences in coverage, as all of the regional and national newspapers gave the issue more coverage. After visiting the areas, this author believes that the Pocono Record retains a large readership that use the Pocono Record as their primary source of news more so than the readership of the Cherry Hill Currier Post. Adding to the differences between news outlets, the readership of the Pocono Record consists of very rural counties including those most heavily impacted by the plans for the Tocks Island Dam, while the Cherry Hill Currier Post has a heavily suburban and urban clientele based around the Philadelphia metro area.

The *Minisink Bull* deserves its own place in the annals of eccentric opportunism. With a press run of only 400, and an eight-page format, one would not expect such a paper to have a measurable impact. However, the publisher, Joan Matheson, whose
husband, remember, was a retired Corps of Engineers Colonel, had two powerful weapons—humor and friends. Through cutting satire, wit, catchy headlines and a strong interconnection with others in the valley that opposed the dam, both the circulation of the paper itself and the circulation of its ideas carried much farther and wider than one might have expected a garage-printed ‘scandal rag’ to reach. The paper’s anti-establishment message, relentlessly hammered home in cartoons and editorials, came through loud and clear—big government created big abuse and those in power did not pay the cost alone, the citizens in the path of big government did. The Minisink Bull also had unduly large circulation through the environmental community as Matheson also served a term as president of the DVCA. The paper raised awareness of potential environmental impacts before NEPA was even passed, helped catapult the protests at Sunfish Pond to a wider audience and helped change the pervasive mood in the valley from pro-dam to that of suspicion of the Corps and determined resistance to the dam at Tocks Island.

As for governmental institutions and adaptation, the Corps of Engineers remains a thoroughly complex and interesting example of promoting both conflicting agendas, and positive change in the face of new environmental laws and regulations. During the time period of this study, the Corps’ mission drastically altered, as did its internal culture. This one project, if seen from beginning to end, encompassed almost every phase of changing water policy in America over the last century. The Tocks Island Project began (with the 308 report of 1934) during the height of a national policy framed with the certainty that dams meant clear and unmistakable control of nature. In the intervening time, as water policy changed and recreation took on a more central role, the negative impacts of other completed dams grew. The coming generation would be much less
certain that the building of dams symbolized progress and safety. During the unraveling of the Tocks Island Project, the water management policy nation-wide also reinvented itself, as first the size of dams (large versus small) then their very existence generated great controversy as more recreation-minded and bio-centric generations of citizen actively voiced concern about the multiple social and ecologic costs of building dams. Finally, as the likelihood of a dam on the Delaware River shrank, the Corps thoroughly re-invented its mission and identity in response to new environmental laws and regulations. And how will the Corps of Engineers weave a new bio-centric water policy around its existing conflicting missions? This agency and the Bureau of Reclamation have probably more directly impacted the geography of this country than any other part of the government. There is no doubt about the flaws of bureaucracies this large, but can they change? As one Corps respondent acknowledged during an interview, the Corps moves with the speed and strength of glaciers. But it does move. As this century dawns, will the Corps of Engineers expect to live on another hundred years--and, if so, in what incarnation? Perhaps the Corps’ mission constantly shifts only as a reflection of our own societal ambivalence concerning how best to manage natural resources. While the new bio-centric and eco-friendly abounds in the Corps’ literature, this massive organization must still contend with its past projects, many of which exist and are maintained in complete contradiction to the new talk of wetland reconstruction, preservation, and dam removal that most water managers now see as vital to the health of riverine environments.
The Wildcard of Citizen Action

The vociferous determination of the group of landowners who filed suit against government officials and the local protest hikers at Sunfish Pond must have baffled policy makers in higher arenas of power. At the time plans to build a dam across the Delaware took shape, little if any public input breeched the lines of planning and policy already entrenched with government operations. Without a public component in the decision-making process, citizens and the public remain an unpredictable element in the process of water management. Indeed, historically most decisions about water resources and the Corps of Engineers had been made with only a select and favorable element of public opinion. This tradition may have created a false sense of uniform support for the dam in the Delaware valley. It certainly contributed to a lack of imagination within the culture of the Corps concerning alternative plans that might be more suitable to the citizens who would be uprooted and relocated to make way for the dam.

The wildcard of citizen action against the Tocks Island dam certainly upset the greased grooves of bureaucratic tradition that the Corps usually enjoyed. Most public water works projects of the size of Tocks Island impact very few people directly, but the DRB posed a unique situation—with a variety of citizen actions that the Corps had never experienced. The list of actors became quite extensive: property owners, protest hikers, the underground newspaper, squatters, and those concerned with preserving historical preservation all added to the cacophony of anti-dam voices. Ultimately, citizen actions of various sorts became a public relations nightmare for the Corps.
One of the lasting impacts of the social changes that took place with the rise of the environmental movement has been citizen input into the decision-making process. Public accessibility to the process of decision-making in the realm of resource management is a new and often under-appreciated attribute of current environmental politics. We are so accustomed to this access that we often take it for granted. The protestors in the Delaware valley lived in a time when access to public officials, and public presence at planning meetings simply did not happen. Now that public access to the decision-making process has been codified through environmental legislation, this in no way predicts the tenor of that opinion once gauged. Thus, the public still remains a wildcard in the entire planning process. It certainly gives one pause to wonder how different the outcome of the Tocks Island project might have been, had the Delaware valley been more isolated, more removed from the catalyst of public opinion, and less populated.

Bad Blood and Regional Identity

Not only was the Delaware valley populated with some 4,000 residents, those residents had long and strong ties to the DRB region. Unlike the West, where much of the kernel of protest comes from a sense of concern for destroying nature, this fight did not center on that theme until national scale environmental groups joined the fray—which happened only after widespread news coverage of the squatters and saving of Sunfish Pond. For the first decade of this fight, both pro and anti-dam factions vied for whose vision for the region of the DRB should take precedence. Generational vacationers and people from all the surrounding cities already came to fishing spots, hunting cabins and
weekend second homes in the valley and thus its fate impacted far more people than those who lived there year-round. It had also retained a very rural character despite the explosive urban sprawl all around the valley. With cultural roots going back to the 1700s, this stretch of the original colonies enjoyed a much stronger regional identity than planners of water management realized. It also provided a lucrative new market for those from Philadelphia, Trenton, and New York City with interests in economic development.

Many people in the valley favored a dam because of the economic opportunities it would bring to a poor and rural area. Others saw it as a Faustian bargain that would, without doubt, transform the valley into another Atlantic City or Borscht Belt atrocity. Even without the Corps and the Tocks Island dam project, tensions about development trajectories and regional identity existed. The Tocks Island project exacerbated this tension because of the irretrievable consequences that dams create. There is no compromise in which only half a dam gets built. And once built, the surrounding geography and ecology are permanently altered. While there may be smart-growth or pockets of rural or urban character, no such option exists for the building of dams. This certain knowledge merely hardened both pro and anti-dam coalitions into extreme positions such as those of the squatters who refused to leave, and the Corps who routed not only squatters but also property owners—many of whom were unwilling sellers.

The heavy-handed tactics of the Corps during the land acquisition process revealed the arrogance that can infuse an isolated culture of ‘the expert’ and inherent friction between regional affiliation and national affiliation. The Corps did not have an interest in preserving or even acknowledging a regional identity; its power-base resided in Washington, not in the DRB. The lack of regard for local citizens, local history and
culture, and local interests ultimately had the unintended effect of catalyzing a stronger sense of regional loyalty and identity than might otherwise have existed.

Effective Policy: The End of the Big-Dam Era

Regional identity and tensions over the course of development, new environmental legislation and the end of the big-dam era all circumnavigate the same deeply troubling paradox of natural-resource management. What is effective policy at one scale does not necessarily work well at another scale. Thus, national policies on resource management remain either elusive or only partially effective. Regional growth and development solutions may not be equally effective in all regions. Certainly no two regions can be more dichotomous than the Eastern and the Western U.S. But even within a large geographically homogenous area, cultural and ecological variations abound.

In the case of Tocks Island the environmental legislation of the early 1970s helped turn the tide of the controversy concerning the dam on the Delaware. The National Environmental Protection Act required the Corps to produce an Environmental Impact Statement detailing all potentially negative impacts on the environment. The Clean Water Amendment created a bureaucratic check and balance whereby permits will now be required for those who wish to dredge or fill parts of the river. Perhaps most importantly, there is now provision for Wild and Scenic rivers and their preservation. This legislation severely reduces the likelihood that a dam will be built on the Delaware River in the near future. But what will become of all the water dilemmas that still exist in the basin?
Is the regional scale of the federal-state run DRBC a more appealing option for the future management needs of the DRB? One reason the coalition to build this dam fell apart resides in the inherently divergent interests of the states. New York State already uses more water than any other of the basin states, and will likely be able to continue to do so, as New York City provides such a strong base of political power due to its population. New York found no self-interested benefit in curbing its own state’s pollution of the upper basin water from poultry farms in the region, even though this policy would have eased tensions with downstream states. New Jersey did not see an advantage in paying for much of the needed highway infrastructure that flooding the valley would require. And it decided that present water sources would suffice for the next few decades. Delaware, the most downstream state geographically, saw no value whatsoever in damming up water for upstream users to take more than they already do—and part of Delaware’s economy is based on oysters and shad, both of which would be threatened by the ecological disruption of Tocks Island dam. Only Pennsylvania found that the dam would be of direct benefit to that state—but this position may have been more of a dogmatic belief than a reasoned argument since the turnover in state leadership also turned over Pennsylvania’s stance on the benefits of the dam and reservoir. The likelihood of the states’ interests converging in the future is small at this point. But without national intervention in some form or other, be it the Supreme Court or the Corps of Engineers, local unevenness in population centers would likely long ago have diverted even more of the Delaware River water than already happens now. What is the recourse for those who, by happenstance, find themselves on the downstream side of a power
struggle over water use? How do local interests compete with overriding regional and national powers?

All of these constraints that worked against the building of Tocks Island dam also work against the building of dams elsewhere. Thus, if one connects the trajectory of Tocks Island dam project with larger trends in water management, the end of the big-dam era can ultimately be seen as a series of smaller legislative and bureaucratic impediments that, in total, have amounted to a de facto fizzling of a previous policy that is no longer practicable. The end of the big-dam era seems to be codified now in this environmental legislation, in combination with the 1986 cost-share revolution in funding of public works projects. If it is now clear what will not be a tenable policy for water management in the coming decades, then what will be the new era in water management? The arc of life for the Tocks Island dam and reservoir project transects all the major eras in water management: exploitation; flood control; flood and drought control; multi-purpose dams; non-structural water management.

Concerning the various players in this dam controversy, one interesting finding lies in the sheer unexpectedness of it all. Nobody predicted the defeat of the dam project. Right up to the last legislative tug-of-war over Wild and Scenic designation for the middle basin of the Delaware River in 1978, nobody appeared to believe with certainty that a dam would not be built. Both pro and anti-dam alliances, while they carried strong opinions, ultimately believed that the inertia of federally orchestrated water management policies would overpower the various objections and protests. At every turn along the twisted road of events leading up to its final Congressional de-authorization, the money already spent, power of the bureaucratic engines, time invested, and weight of national
policy, all seemed to suggest that the dam would eventually be built. Pesky environmentalists, recalcitrant squatters, or fiscal strains might all delay the project, but in the end the dam would likely be built. Thus, the Delaware River remains the last major river in the East without a main-stem dam, but ultimately because of a tenuous string of connected events that nobody could have predicted. At any one point along this trajectory, the string could have snapped, and this would be the story would have a very different ending. That this story ends as it does merely underscores the unpredictable nature of the complex and changing process of water policy.

Future Research

This investigation began by addressing questions that fell in the overlap between geography, law and the realm of water-resources management. This intersection is an area not well covered by geographers, and this study contributes to the sparse literature on legal conundrums and conflict resolution options that interact with geographic processes as humans use their environment. Within the realm of methodology, this investigation also utilizes a novel approach in mixed qualitative methods: the specific triangulation of news media, legal research, archival research and semi-structured interviews to highlight the contours of an intractable natural-resource conflict.

One useful product of this study has been to provide a case study in the unique setting of a water dispute in a heavily urbanized watershed, in the East. This study can be used for contrast with water conflicts in the West—as a counter-example of how water conflicts in the East do not easily map onto the repertoire of solutions to similar conflicts
in the arid American West. This study provides one of the few examinations of large
government bureaucracies and their adaptive tactics to navigate the vastly changed world
of public works and water resources management since the environmental legislation of
the 1970s. In future research, a comparative analysis of the Bureau of Reclamation in the
West and the Corps of Engineers in the East deserves attention.
At a larger scale, future research ought to aim at a comparative case study of
governmental structure and how that impacts the geography of water management in
Canada, the U.S. and Mexico—essentially taking a longitudinal transect across North
America to compare governmental institutions, the decision-making process and how
natural resource policy elucidates deeper fissures in each of these countries’ cultural
perceptions about how humans should use the environment.

On a further note, one need not leave the region of the East to examine more
thoroughly the underlying power alliances that impact resource management as in the
swing from liberal to conservative tenures and back again, within the federal government.
The presumed wisdom has always been that conservative lawmakers care more for
commerce and capitalism than conserving natural resources, while liberal lawmakers
favor environmental protection over commercial expansion. Given the regional growth
patterns, entangled power alliances and backroom dealing that I have found in this study
concerning how one specific project came together, then fell apart, leads one to question
this popular wisdom. Following the health of one specific resource and its changes in
health over decades as different parties come in and leave office would begin to
illuminate the contours of power that work irrespective of political preference either to
conserve or depreciate a natural resource.
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