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MANAGING THE NATION'S WATERS WITHOUT WASHINGTON:

THE INTERSTATE COMPACT EXPERIENCE

By

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ABSTRACT

MANAGING THE NATION'S WATERS WITHOUT WASHINGTON:
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The growing regional imbalance in water supplies has raised political tensions between water "surplus" states and water "shortage" states over control of surface and groundwater supplies. The result has been a growing fear among water surplus regions like the Great Lakes that pressure on Congress from politically powerful water storage states may result in eventual federal preemption of this traditional state management function.

In light of the regional character of most water resources and the collective action problems this fact raises, numerous regional efforts have been attempted by states. The most powerful device available from a legal standpoint to ensure that water resources policy or policies reflect regional variation while avoiding wholesale federal preemption is the interstate compact. However, studies of interstate compact commissions are dated and largely descriptive.

Accordingly, a new theoretical effectiveness model is developed in this dissertation. Then, the model is applied to the entire population of interstate water compact commissions, utilizing a nationwide survey of all interstate

water compact commissions as well as objective data obtained from legal and historical documents associated with each compact.

Seven general hypotheses of what constitutes an effective interstate compact commission, drawn from the compact literature, are tested to determine whether or not they conform with the findings of the new effectiveness model. The model's explanatory power is further tested by applying it to three comprehensive interstate water compact case studies.

The dissertation concludes that the interstate compact commission can be an effective mechanism for regional water management and potentially for other regional resources as well.

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FEDERALISM AND WATER POLICY IN THE U.S.

Introduction

In a decade when the United States went to war over the issue of control over the world's strategic Middle East oil supply, it would seem to make little economic sense that national concern anywhere near approaching that of oil would occur over control of the nation's supplies of water, one of the world's cheapest commodities (Anderson, 1991). Indeed, in light of the relative per capita water surplus of water in the U.S. compared to countries in the Middle East (See Table 1), it would seem on the surface that water policy would be an unlikely candidate for a divisive national debate.

Yet, U.S. journals continue to use the words "crisis" and "water wars"[1] to describe the problems associated with the nation's supply of fresh water, a commodity that Anderson (1991:10) refers to as the new "white oil". Tubbs (1983:920) predicts that the water crisis of the 1990's will

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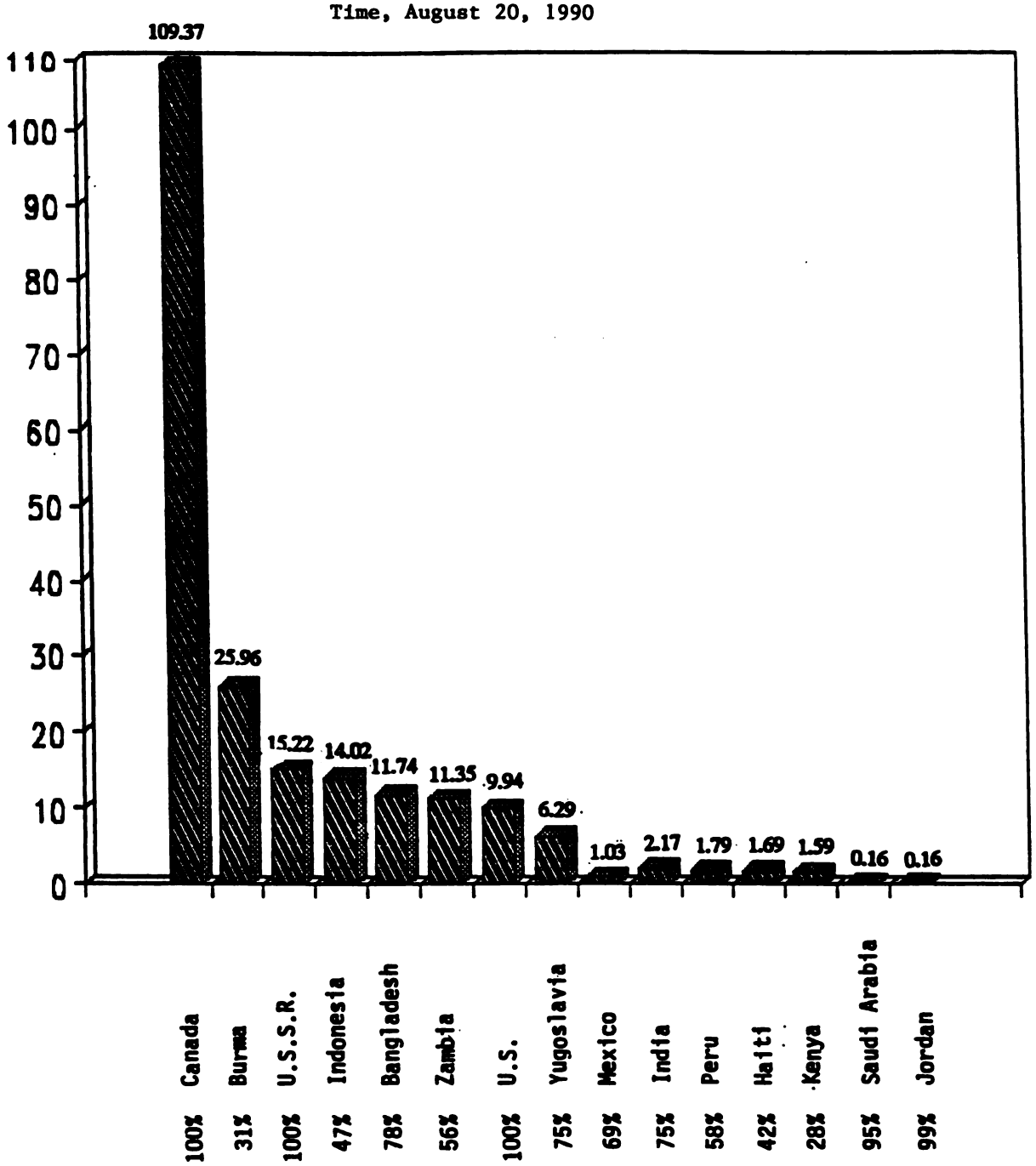
[1] See "Water Crisis in the 90's". The National Journal, August 17, 1985; p. 28 and "First Volleys of New Water Wars" U.S. News and World Report, May 30, 1998; p. 20).

TABLE 1

UNEQUAL ACCESS

Per capita availability of water annually, in thousands of cubic meters

Time, August 20, 1990



% of population that can get safe drinking water

rival the oil crisis the U.S. experienced in the 1970's. Perhaps, U.S. Senator David Durenberger put into perspective this seeming contradiction in the U.S. between the economics and the reality of water resource management when he observed: "Water is a political, not an economic, commodity." (Griffin, 1987:277)

The uniqueness of U.S. "hydropolitics" is attributable in part to several factors: (1) there are three sovereigns asserting authority over water supplies[2]; (2) there has never been an affirmative U.S. national water policy to ensure equity and uniformity in the use and control of the nation's water, a fact which has led to excessive watershed parochialism and extraordinary federal subsidies of regional water projects; and (3) there is a tremendous regional imbalance in the fresh water supply among the various regions of the U.S., a situation aggravated by a declining quality in the existing fresh water resources.

These factors, coupled with the fact that water is not bound by political boundaries and is a classic public good subject to collective action problems, have resulted in what Jamail, McCain, and Ullery (1978:53) have described as a U.S. water policy arena that is:

> "extremely fragmented, with a multitude of diffuse interests pressing their demands from within as well as

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[2] See A. Dan Tarlock (1987) where he argues that federal, state and Indian reserved rights create three sovereigns who must be consulted in interstate water rights decisions.

without the decision-making system."

This fragmentation of water resources control has created a confusing and highly conflictual situation that Congress has been unwilling to rectify by national legislation. The result has been a growing imbalance in the water quality and quantity of U.S. water supplies, for all intents and purposes leaving the states to their own devices to fend off water diversion. Individual state attempts to protect their water supplies have only exacerbated regional water imbalances, and diversion threats to water surplus regions such as the Great Lakes basin have further heightened water supply tensions. As Cole-Misch (1986:87) summarized the situation:

> "The need in the future for water throughout the U.S. portends a conflict both national in scope and horrific in intensity. The groundwork has been laid for a fierce, divisive battle between the "haves" and the "have-nots", and history shows that it is the "have-nots" who are likely to win. If the decision is left up to the federal government and the courts, those who have the water in this country will lose their exclusive right to that resource -- and the cost of diverting water to drier climates will not be an effective obstacle."

What options are available to water "surplus" regions such as the Great Lakes basin in order to avoid Cole-Misch's dire prediction? Stewart (in Price,1982) argues that there is a reluctance by Congress to resolve such water conflicts, and the federal courts more recently have retreated from their active involvement in equitably apportioning water. However, Tubbs (1983:942) warns that as the supply of

western water continues to decline, the federal government will be forced to develop some kind of national water policy unless a nonfederal alternative can be developed.

States in water surplus regions such as the Great Lakes which are facing declining populations and consequently diminishing political power cannot expect a favorable water policy in a U.S. Congress increasingly dominated by water shortage states of the South and West. Nor is reliance on the uncertainty of court decisions a desirable alternative.

In the first three chapters that follow, this study will explore the various nonfederal options available for equitably and effectively filling this need for a more equitable U.S, water policy, options Elazar (1962:162) terms "federalism without Washington". Subsequent chapters will develop a model for evaluating the effectiveness of a constitutionally-recognized interstate compact commission in handling the unique regional water supply issues in the U.S. federal system.

More specifically, this study will begin with a brief background of U.S. water policies, exploring the specific problems and barriers that now exist in modifying existing water policies. A discussion of the peculiar hydropolitics associated with U.S. water issues and the accompanying political tensions that have arisen under our federal system will serve as a backdrop for this focus on nonfederal solutions.

Chapter II of this study will explore the various sub-national alternatives to the development of a uniform federal water policy, analyzing the strengths and weaknesses of each option as a viable alternative to a federally imposed water policy. Then, attention will be focused upon the interstate compact as the premier binding legal instrument for developing a regional water policy based upon watershed rather than state political boundaries. Chapter III will provide an extensive exploration of the practical and theoretical strengths and weaknesses of the interstate compact commission as a nonfederal, institutional alternative for developing an effective water policy in the United States.

Utilizing the principles of organizational theory relevant to the study of regional public organizations, Chapter IV will then review the relevant theoretical literature and examine various theories as to what constitutes an effective organization from the perspectives of various schools of organizational theory. In light of the controversy surrounding what constitutes an effective organization from an organizational theory standpoint, this study then will define and construct a theoretically justifiable methodology for identifying what is an effective interstate commission.

Chapter V will include an analysis of common structural, legal, and political variables associated with the existing interstate water compact commissions deemed

"effective". These variables were isolated and defined utilizing historical accounts, legal studies and the legislative histories of each of the compacts (objective effectiveness measures), as well utilizing the responses from a 1991 nationwide survey of interstate compact commissions developed for this study (a subjective effectiveness measure).

Three case studies of interstate water compacts then will be used in Chapter VI as a further test of the validity of the variables identified in this study. The compact commissions examined were chosen because of the varying geographical location, their differing size, and their relative effectiveness ranking. Thus, the Delaware River Basin Compact Commission (DRBC) (deemed a relatively effective commission in this study), the Great Lakes Commission (also deemed a relatively ineffective commission in this study, although more marginal than the DRBC), and the California-Nevada Commission (deemed as ineffective because of its failure to achieve Congressional approval) were selected for this study.

Chapter VII summarizes the findings and significance of this study. It also attempts to frame this issue of interstate water compact effectiveness into the larger context of the need for future research into the effectiveness of regional governance.

The study of interstate water compacts per se may seem to be a specialized and relatively small part of the

political reality of the U.S. federal system. However, the potential for these commissions to effectively resolve impending water wars while preserving some semblance of state authority warrants this attention. Furthermore, if this study also can help in the identification of guidelines for the development of effective regional organizations in general in a federal system that formally provides no room for a regional sovereign, then this study will have made a significant contribution to the study of cooperative federalism as well.

Historical Overview of U.S. Water Policy

In light of growing regional imbalances in water supplies, the current focus of U.S. government attention on water resource issues has shifted from one of water development to one of better management of existing supplies, including environmental quality issues.[3] (see generally Schmandt, Smerdon, and Clarkson, 1988). Indeed, shifts in emphases of government attention towards significant policy issues have been a hallmark of the U.S. federal system.[4] Richard Stewart (Price, 1982) describes

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[3] Environmental protection issues have become the focus of more and more federal involvement, with the states largely relegated to an implementation role in such areas as air and water quality. The issue of water quantity, however, is still an area of considerable state involvement and hence the focus of this study.

[4] See generally Downs, "The Life Cycle of Bureaus" in Inside Bureaucracy (1967), pp. 5-23. Down's theory in part discusses the effects of age upon bureaus in terms of their

the historic operation of the federal system as a dialectical process, alternating between surges of centralization and decentralization.

However, to truly appreciate the obstacles facing attempts to better manage the nation's water resources of the U.S, a basic understanding of the historical and legal bases for state and federal involvement in the water arena is provided. This background will highlight the subsequent political constraints that limit water policy options.

Pre-1900 Water Policy in the U.S.

With the exception of overriding federal navigational rights, U.S. water policy in general prior to the twentieth century vested primary responsibility for control of water resources to the individual states. This state dominance resulted more from federal deference to state water laws than to any specific legal doctrine, for in theory the federal government has the power to apportion interstate streams subject only to limitations of the Fifth and Fourteenth Amendments to the U.S. Constitution (Tarlock, 1987::637). Individual states, in turn, relied upon either English riparian rights or prior appropriation doctrines as the primary methods for allocating surface water resources while groundwater was assumed to be owned by the individual

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attention to policy issues and overall agency performance.

states.[5] The doctrine of riparian rights, whereby only owners of tracts of land contiguous with the water's edge are entitled to use of the water, has evolved mainly in the Eastern U.S. Today, a riparian's use of the water is subject to numerous statutory and court case exceptions, including the requirement of "reasonable use" of the water to protect against abuse of water resources by upstream riparians to other downstream riparians. However, riparian rights doctrine is based upon protecting the water rights of all landowners abutting a body of water.

The doctrine of prior appropriation, on the other hand, places no legal significance on the users proximity to a water course. It is based on the assumption that first in time (in terms of water usage) is first in right, without concern for other water users (Stephenson, 1982:655) and is primarily a Western U.S. phenomenon. While this doctrine has been modified in many states through a permit system to review beneficial uses as well as to determine priority uses, it is a much harsher doctrine than the riparian rights system.

A third system, called a hybrid doctrine, developed in states like California, Kansas, and Nebraska. As Getches (1990) explains, this doctrine initially recognized riparian rights but later converted to a system of appropriation while still preserving existing riparian rights.

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[5] See Goldfarb (1990) and Tarlock (1987) for more detailed descriptions of these two doctrines.

As a result of these divergent state water doctrines, the U.S. has in essence evolved into three distinct geographical water regions (See Figure 1), This factor alone is a significant barrier and disincentive for developing a uniform national water policy, although it could be a unifying factor in many regional solutions As long as water supplies did not outstrip demand, this patchwork quilt of individual state water policies was sufficient for the U.S.

Post-1900 Water Policy in the U.S.

After the turn of the century, however, federal involvement in water quantity issues began to change, especially in the Western U.S. The reason for this change can be traced to at least three factors: (1) increased state demands upon a fixed and limited supply of fresh water as a result of growing state populations[6]; (2) an increase in the number of conflicting state claims on interstate waters in the West (Murray, 1984:500) in a region where the federal government also owns a significant portion of the land[7] and has a significant interest the resolution of

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[6] It is estimated that 40% of U.S. territory (primarily the Western states) receives only 13% of its rain (Elliot, 1991:30).

[7] The federal government owns 79% of Nevada, 61% of Idaho, 60% of Utah, 52% of Oregon, 47% of Wyoming, 45% of California, 45% of Arizona, 33% of New Mexico, 30% of Colorado, and 30% of Montana (Will, 1991).

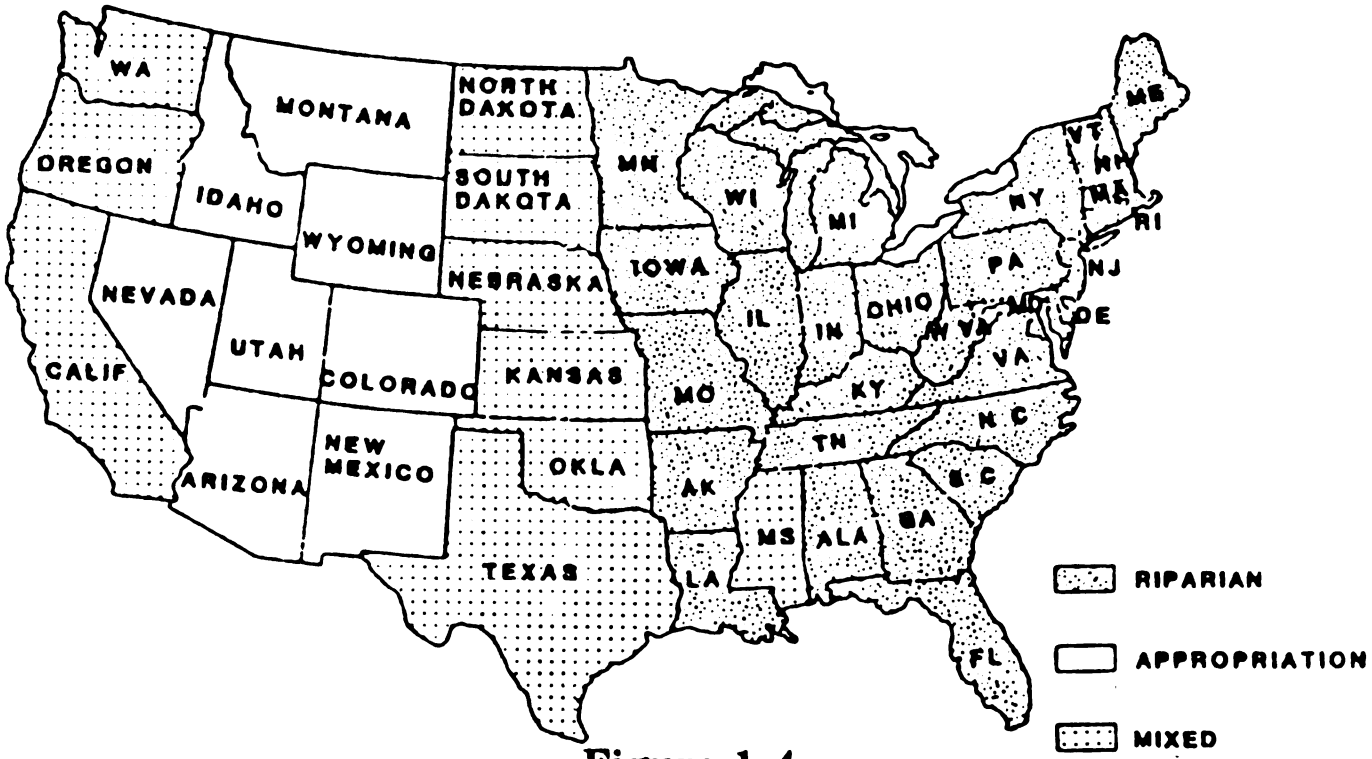

Figure 1–4
Legal Doctrines for Surface Waters

Source: L. Rice & M. White, Engineering Aspects of Water Law (1987).

interstate water supply issues[8] and (3) Congressional willingness to actively participate in and finance large scale water development projects, in part because of confidence by many in Congress in the ability of federal technical experts to answer water resource questions (Light and Wodraska, 1990:597) and in part because of the favorable political pork barrel benefits it provided individual Congressmen.

However, then as today, the appropriate role in terms of federal involvement in water policy issues has been puzzling, with the federal government described by Light and Wodraska (1990:597) as "floundering to define its mission and role." In the pre-New Deal era, beginning with the unsuccessful efforts of President Theodore Roosevelt to coordinate federal and state water policies for river basins through an Inland Waterways Commission (Light and Wodraska, 1990:594), the federal government sought piecemeal participation in water policy development.[9] Federal court decisions involving these efforts in general seemed to suggest that this limited foray into water allocation was a prudent course for the federal government. However, the New

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[8] Absent U.S. involvement, water issues were generally handled by the federal courts on an ad hoc and increasingly unsatisfactory manner. (See Stephenson, 1982:656)

[9] For example, Congress passed the Reclamation Act of 1902, 43 USC sec. 371 et seq., the Rivers and Harbors Act of 1909, 35 Stat. 815, and the Flood Control Act of 1917, 33 USC sec. 702 et seq. See Caldwell (1947) for a concise overview of federal historical involvement in water issues.

Deal brought a new and increased federal involvement, both in the creation of the TVA and a new federal commitment to the conservation era and the idea of multiple purpose river basin development (Tarlock, 1987:637). Executive branch efforts in the 1930's established a National Resource Committee and a National Resource Planning Board (Light and Wodraska, 1990:594). Meanwhile, Congressional efforts began with the passage of the Flood Control Act of 1936 (Rhodes, 1981:2). Thus, legislative and executive branches pursued parallel yet uncoordinated efforts that significantly increased federal intervention in the water arena.

However, growing public dissatisfaction with federal efforts in water resources development led to attempts by Congress beginning in the late 1940's to develop a more cooperative water resources policy with the states in order to improve management and coordinate federal and state efforts in this area (Caldwell, 1948:238). Attempts to develop a cooperative federal-state water resources policy culminated in the passage of the Water Resource Planning Act of 1965. Outside of federal efforts in the pollution control arena[10], this Act represented the high watermark in

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[10] Federal water pollution efforts attained dominant status in terms of federal regulation and expenditures in the 1970's with the passage of the Clean Air Act of 1970 and Clean Water Act Amendments of 1972. Federal involvement in water resource development, especially in the West, declined as federal resources were diverted to other areas of the economy. The decline of the federal pork barrel for water resources was vividly demonstrated by President Carter's veto of a number of federal water resource projects, which until then had been seen as the sacred cows of their

federal water policy participation, creating five federal river basin commissions to encourage intergovernmental coordination in federal water policies.[11]

The Federal Withdrawal

The declining fiscal state of the nation's economy in the late 1970's and early 1980's brought to a head the issue of federal intervention in water policy issues, confronting Presidents and Congress with the new reality of federal water policy. It had become increasingly apparent that the federal government was unable to continue to fund expensive water development projects in the West, a prime source of political pork barrel politics for Western Congressman. Thus, Congressional enthusiasm for federal water policy intervention in state water issues waned. As Schmant, Smerdon, and Clarkson (1988:28) noted:

> "In contrast to its former active participation in water development projects, the federal government is leaving it up to the states to develop their own plans and provide most of the necessary financial support."

In addition, the federal government was deterred from new dam building because there were few suitable rivers left

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powerful Senators and Congressmen sponsors.

[11] The Commissions established under the Water Resources Planning Act of 1965 (42 USC sec. 1962 et. seq.) were abolished by executive order in 1981. It should be noted that these commissions were not created by compact but rather by federal legislation. Furthermore, their purpose to coordinate water resources planning was accomplished by federal funding rather than by regulation.

and "a phalanx of environmentalists guards those that are." (U.S. News and World Report, 1988:20). Thus, recent efforts by Congress and the Bush Administration to push for regional solutions that give states more flexibility to find solutions to water issues represent a retreat from the national focus of New Deal water policy but not a solution to the overall regional imbalance problem.

However, today there is still considerable Western state reliance on federal water development projects. According to a Report to the Great Lakes Governors (1983:4), 30% of the population of Western states depend upon a water supply that is over a hundred miles away and involves over 150 separate interbasin transfers. As Tarlock 1987:637) observed, a lack of federal involvement in a water allocation problem of this increasing magnitude forces the states to fight among themselves over how shared streams are to be divided, leaving them with the options of informal agreements, equitable apportionment by the courts, interstate compacts, or in some instances abiding by the terms of international treaties with Canada and Mexico.

As several writers have noted, "with the federal government withdrawing from water resource management, the question is how effective are the states in taking the initiative and addressing this issue?" (Schmandt, Smerdon, and Clarkson, 1988:13). If the solutions chosen by the states are not satisfactory, political pressure will increase to return to and even increase federal intervention

in the water policy arena with the accompanying impact that this policy change will have on federal-state relations.

Tension and Gridlock in U.S. Water Policy: Congress, The Courts, and The States

While the history of Congressional intervention in water policy has been an uneven one, Congressional involvement in the area of interstate water allocation has not. With few exceptions[12], Congress has been reluctant to become involved in interstate water allocation disputes between states.

The reasons for this Congressional hesitancy to intervene are both political and structural. From a political standpoint, with the decreasing federal ability to fund politically popular water development projects, there is little political incentive for members to take a leadership role in this controversial arena (Light and Wodraska, 1990). Any water policy proposal reaching a deficit-ridden Congress is likely to generate only unpopular federal regulations and unfunded mandates.

Furthermore, interstate diversions are far more likely to foster politically balanced, state versus state opposition. As Abrams (1983:622) summarizes the political situation, "Rough parity of power exists between rival

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[12] The Supreme Court in Arizona v. California 373 U.S. 546 (1963) ruled that Congress had in effect apportioned the Colorado River waters when it authorized the Boulder Canyon Project Act (43 USC sec.617).

states, a parity that has no parallel in the intrastate context." Members of Congress not directly affected by the interstate water conflict have little to gain in terms of political capital by attempting to resolve these extremely divisive state against state conflicts.

A structural perspective would also explain the Congressional reluctance to intervene. The federal-state water management structure is as uncoordinated as it is large. There are 18 federal agencies in 7 departments and seven independent agencies with some type of water management responsibilities. In addition, there are 25 separate water programs with 70 separate appropriation accounts, 23 committees and subcommittees in Congress with water policy responsibilities, 200 federal rules and regulations concerning water management issues, and over 100,000 entities engaged in some aspect of water management at the state and local level (Light and Wodraska, 1990:479).

According to a recent study by the Interstate Conference on water policy (1990:1) this sprawling and uncoordinated structure has created a "water decision gridlock" problem in the U.S. Symptomatic of this gridlock are (1) turf battles among the various bureaucrats involved in water management issues, (2) agency inertia and strict adherence to agency missions accompanied by an unwillingness to change standard operating procedures in order to reflect a problemshed perspective to water issues, (3) redundancy in hierarchical reviews, and (4) a lack of finality in

decision-making (Interstate Conference on Water Policy, 1990:1).

Furthermore, there would be little political capital in being a champion of economy, efficiency, and even-handedness by attempting to break this gridlock (Light and Wodraska, 1990:478), and philosophically at this time there would not be much support for a federally dominated water policy in this multiple interest arena.

With all of the fiscal, political, and structural barriers to effective water policy and the political risks that federal intervention in interstate water policy raises, it would appear that the Congressional preference would be for new regulations to be implemented by the states (Murray, 1984:514). Recent executive branch decisions would also seem to support this idea of decentralizing federal water policy. Both the Reagan and Bush Administrations have embraced a watershed rather than political boundary model for a federally supported national water policy program.[13]

However, a number of events in the courts and Congress in recent years have raised fears among states that U.S. federalism may be entering another era of centralization with a decided impact on water policy. Signs of this new centralization tendency can be found in recent decisions handed down by the U.S. Supreme Court striking down hundreds

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[13] See Davis (1991:739) on the Bush Administration's plans to seek regional solutions to handle entire ecosystems and Moore (1986:4) on the Reagan Administration's emphasis on watershed planning.

of state and local laws, which have strengthened overall national authority in general. Congress also has been active in recent years in asserting its authority over states and local governments, enacting 190 statutes preempting state and local authority between 1969 and 1989.[14]

Recent U.S. Supreme Court decisions enhancing the power of Congress over otherwise traditional state functions have only served to heighten tensions between the states and the federal government. Gage (1990:163) argues that after the Garcia and Baker cases[15], states will now be treated "like special interest groups just like any other special interest and must seek redress in the political process."

In particular there is a growing concern about the timing of the Court's decisions strengthening the hand of Congress at the very time Congress may be forced to unilaterally intervene politically to resolve increasingly divisive water policy disputes (Gage, 1990:163). Unless the states undertake effective approaches to handle growing regional water supply problems, federal intervention may

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[14] Over our nation's 200 year history, Congress has enacted a total of 354 statues explicitly preempting state and local authority. Thus the 190 statutes enacted between 1969-1989 represent over half of all the preemptive statutes enacted in our nation's history but represent only 10% of our constitutional history (Hawkins, 1990:10).

[15] See Garcia v. San Antonio Metropolitan Transit and South Carolina v. Baker, where the court ruled that Congress itself, not the Tenth Amendment, is the only check on utilizing the federal commerce clause power to regulate the states.

indeed be required. Specific concern over federal intervention in water allocation and policy issues has arisen because of a series of recent federal court cases that have held that water is an item of interstate commerce and thus subject to Congressional regulation whether it is surface water[16] or groundwater[17]. Thus, Murray (1984:510) concludes that as an article of commerce, water would be subject to Congress' commerce clause power whether it is transferred in intrastate or interstate commerce, a major shift in power away from traditional views of water as primarily a state issue.

With the Court's decision in Sporhase signalling a decline of the theory of state ownership of water resources (Wilder, 1984:473) and the evolution of the Court's earlier declared Winter's doctrine[18] that has given Native American tribes the ability to asset claims to vast quantities of diminishing Western water sources (Tarlock, 1987:633), the stage appears to be set for water shortage states to press their water allocation beyond state boundaries. The Courts are not the ideal institution to resolve these matters.

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[16] Carr v. City of Altus 385 U.S. 35 (1966) per curiam, aff'g 255 F. Supp. 828 (W.D. Tex 1966)

[17] Sporhase v. Nebraska 458 U.S. 941 (1982), where the court found a significant federal interest in conservation as well as in fair allocation of diminishing water resources.

[18] In Winter's v. U.S. 207 U.S. 564 (1908), the Court recognized a new source of water rights for Indian tribes, creating federal reserved rights for the benefit of Indian reservations.

They traditionally have been uneasy and reluctant to adjudicate interstate water controversies for two basic reasons: (1) because of the vague standards available to the court to resolve these controversies (Peck, 1982:198), and (2) because allocation of water is a political and social as well as a legal issue, one which they are ill-equipped to address (Tader, 1986:278).

However, Hawkins (1990:11) argues that the Court's decisions in Garcia and Baker have converted the primary limits on national power with respect to state and local authority from constitutional limits to political ones. The result, Hawkins (1990:12) concludes, is that Congressional actions will be "checked only by voters and the political muscle of state and local government in the national political process". His conclusion is not a very comforting one for a water "surplus" region like the Great Lakes Basin, which is facing declining political strength in a Congress increasingly dominated by the fast-growing water shortage states of the South and West.

Federalism Under Fire: The Regional Solution

The current fiscal constraints on the national government, due to ballooning federal deficits, present a mixed blessing for states concerned about increased federal intervention in state water policies.

On one hand, federal fiscal difficulties present new opportunities for states to retain a significant amount of

control over the state water supply and allocation matters. With the demise in 1981 of the Water Resources Council and the River Basin Commissions formed under the Water Resources Act of 1965, Light and Wodraska (1990:594) observed that "no alternative mechanism has emerged for overseeing intergovernmental and interagency issues dealing with national water policy". Indeed, fiscal constraints are nudging state and federal agencies closer together as they become more dependent upon each other for support. The new fiscal realities of U.S. federalism means a new role for the federal government, at least for the time being.

Stanfield (1985:1885) describes this new role as follows:

> While the federal government is integrally involved in the new institutional relationships, its role is changing from the holder of the purse strings and dictator of all the rules to influential participant in the joint decision-making.

On the other hand these fiscal constraints have fueled Western demands for alternative water sources to replace declining federally-funded water development projects. As Lindsey (1985:10) concluded,

> As a result of Congress' unwillingness to finance ambitious reclamation projects, many water specialists expect water-rich states, mostly in the northwestern tier, to come under growing pressure to share their water with other states that need it for urbanization and agriculture.

The fear is not that there will be a dramatic federal take-over of intrastate and interstate water policy. As Lawrence Tribe (in Heron, 1985:24) noted:

> Of course, no one expects Congress to obliterate the states, at least in one fell swoop. If there is any danger, it lies in the tyranny of small decisions -- in the prospect that Congress will nibble away state sovereignty, bit by bit, until someday essentially nothing is left but a gutted shell.

However, this concern over a continuing decline in state authority is a very real one if the states are to remain active participants in water policy issues. The solution seems to lie in the states finding regional mechanisms to handle water issues beyond individual state political boundaries.

Indeed, such a course would be consistent with the earlier mentioned interest of Congress and the Bush Administration to find solutions encompassing the entire watershed, rather than individual state water policy. It is the issue of analyzing effective regional alternatives to which this study will focus its attention in Chapter II.

CHAPTER II

REGIONAL APPROACHES TO U.S. WATER POLICY

Introduction

Over sixty years ago, two eminent legal scholars argued that regional thinking was not only theoretically valuable but also politically invaluable for realizing national goals. Frankfurter and Landis (1925:729) concluded:

> We must not deny ourselves new or unfamiliar modes in realizing our national ideals. Our regions are realities. Political thinking must respond to these realities. Instead of leading to parochialism, it will bring a fresh ferment of political thought whereby national aims may be achieved through various forms of political adjustments.

Today, the need for some form of regional governance is even more apparent, spurred by international interest in transboundary frontiers, a rise in ecological understanding and awareness, a decline in the federal presence in water issues, and a growing need for states to address their problems in their natural context (Foster, 1987:36). Accordingly, this chapter will explore the various regional alternatives to federal action, focusing on those aspects of regionalism dealing with interstate relations.

The chapter will first explore the basic problem of defining a region. Then, regional options and their suitability for handling interstate water resource issues are analyzed. Finally the chapter will examine the usefulness of these alternatives as compared to the interstate compact.

Regionalism in a Federal System

David Nice (1984:494) once described interstate relations as "something of a twilight zone in the field of intergovernmental relations", and the regional organizations that developed in the U.S. were described disparagingly by Martha Derthick (1974:20) as "excrescences on the Constitutional system."

Oran Young (1989:4), analogizing from an international perspective, provides the additional criticism of regional organizations; namely that "...simply introducing organizational arrangements in the absence of social conditions required to sustain cooperation is not sufficient to solve collective action problems in any human society." Although many natural resource problems including water do not fit neatly within the political boundaries of a state, to assume that any regional organization would be better than the federal alternative would be a serious error.

Studies have shown that regional agencies that are centrally planned by the federal government and dependent

upon the government carrot are unlikely to succeed.[19] Similarly, a regional organization administering an arbitrary boundary that obscures the true dimensions of a region is also fraught with difficulties (Foster, 1987:28).

Yet, despite these criticisms, there has been a significant resurgence of regionalism in recent years[20] that requires further examination.

This regional resurgence is particularly noteworthy because of the rather formidable barriers that the U.S. federal system has erected to such "new" units of governance:

1. The U.S. Constitution formally recognizes only two units of government -- the federal government and state governments. Attempts by the federal government to create new regional organizations raise the problem of diminishing individual state power over resources within their respective jurisdictions. Furthermore, attempts by states to create interstate arrangements raise the potential problem of Congressional preemption (Bradshaw, 1988:124).

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[19] See generally the conclusions of Derthick (1974) on centralization leading to weak and ineffectual regional organizations and Foster (1987) on the perils of federal funding dependency.

[20] See generally Keon Chi's 1990 article entitled "Interstate Cooperation: Resurgence of Multi-state Regionalism".

2. Regional organizations have in the past been perceived unfavorably both by political actors in the federal system and by the public as a whole. The Advisory Commission on Intergovernmental Relations (1972:163) noted that state and federal bureaucracies perceive these organizations as potential competitors, legislators see them as another new mouth to feed, and the public sees them as another layer of regulatory burden whose costs oftentimes seem to outweigh their benefits.

3. Regional or decentralized management of a collective good such as water in a multi-state system presents an additional classic collective action problem. Traditional federal theory presupposes that a centralized coercive authority is required to overcome such a collective action problem.[21]

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[21] However, contemporary game theory suggests decentralized cooperation is possible under certain circumstances. (See generally, "to Form a More Perfect Union? Federalism and Informal Interstate Cooperation" Harvard Law Review (1989) for a more thorough discussion of the game theory issue. For example, Chi (1990:59) points to several positive incentives for state cooperation, including the gradual devolution of federal responsibilities due to a decline in federal funding in the water arena, the developing mutual interest of states in better planning and communication over diminishing common water resources, and the general desire to improve state management and programs in light of U.S. Supreme Court equitable apportionment decisions. Chi (1990:62) also points to several advantages of state cooperation, including pooling the states' expertise, experiences, and resources as well as raising policy issues more effectively and enhancing state visibility in Washington and overseas.

The federal barrier problem is exacerbated by difficulties in defining the appropriate scope of a regional organization in the U.S. federal system. It is this problem of region definition that is the topic of the next section of this chapter, followed by an analysis of the appropriateness of various categories of interstate cooperation for handling regional water policy management.

Defining the Region

Bradshaw (1988:29), noting historically the various ways regions have been defined,[22] succinctly presents the basic problem of defining a region: "there is no agreement on a set of accepted regional divisions within the nation's borders". In fact he further notes that regions have come to be defined in such a variety and combination of different criteria that regions "defy precise and consistent definition" (1988:29).

For example, different combinations of criteria (watershed, local and state boundaries, etc.) in the past been used to define the physical boundaries of a particular region, making use of comparative data analysis which are based upon differing definitions of regional difficulty.

The initial problem of this study is how best to define a region for purposes of water resource management. To

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[22] For example, regions have been defined by the natural environment, cultural background, geographical regions, economic-political systems and different combinations of the above criteria.

overcome the problems of defining a region previously outlined this task, it is useful not only to examine current regional arrangements but also to explore on a broader basis what theoretically and historically precipitates regional action. Bradshaw (1988:8), using the Confederacy, federal regional commissions, and Frostbelt regional efforts as examples, notes that in each of those cases "a regional consciousness led to the organization of interests and to coordinated political action in a variety of ways".

Thus, we begin defining a region by first defining the general philosophical foundations of an ideology called regionalism. Bradshaw (1988:8) provides a clear exposition of the regionalism ideology:

> (Regionalism) involves the belief that a regional solution may be found for social, economic, or political problems, and often results from a community of interest or embattled position in time of economic hardship or political stress.

Foster (1987:19) argues that symbolic politics plays an important role in the development of regional consciousness, and that "a program built around (the political symbol of) a prominent resource or issue is often the essence of successful regional action". Obviously, a river or lake basis provides such a political symbol and also coincides with what bioregionalists would call a natural region or watershed. Watersheds, argues one geographer (Berg, 1985:2), provide a solid operational basis for organizing

and managing relations between humans and their local environment.

In addition, the growing threat of federal intervention in state water policy issues provides the catalyst for embattled states to develop a regional consciousness towards a clearly defined watershed as a response to this federal threat. King (1957:355) further argues that most water basins of any consequence normally encompass several states, but states have a common interest in opposing a federal solution because:

> Since the various watersheds of the country have varied problems, each somewhat peculiar to the region, the paramount responsibility for regulating the proper use of water rests with the states of the respective regions.

Although there may be some physical basin overlap from an adjacent watershed when using drainage basin or watershed as the basis for defining an effective regional water resource management, many writers concerned about the issue of regionalism agree that the drainage basin of a lake or river is the ideal vehicle for handling the peculiar regional issues inherent in water resource planning (see generally Martin, 1960; Derthick, 1974; and Wilkinson, 1988). Furthermore, past and current federal legislation such as the Clean Water Act encouraged such "problemshed" management (Reinumagi, 1986), as has the growth of regional-based interest groups who have pressed for the formal

institutionalism of public policy on a regional basis (Bradshaw, 1988:3).

Thus, the basin would appear to be the best geographical unit for water management and for developing the necessary regional consciousness for handling the problems raised by the interstate nature of most major water resources in the U.S. How best to convert this regional unit into a politically viable entity capable of approaching water problems in a comprehensive, coordinated and regional matter (see Ingram, 1973:10) is the subject of the next section of this chapter.

Alternative Forms of Regional Action

Martha Derthick (1974) argues in general that no specific approach to regional coordination is superior to the others and that the best results that have been achieved regionally are those that are ad hoc in nature. Derthick (1974:226) further argues that pragmatism is the best policy in forming a regional organization, claiming its creation to be a:

> fortuitous coming together of opportunity, leadership, and political backing so that it becomes possible to go against the institutional grain and create a genuinely new form.

However, Derthick's general assessment of regional cooperation and organizational development is not necessarily applicable to the matter of interstate water

resources management for several reasons. First, although no two river basins or lakes are physically alike and generally do not share the same stages of political and economic development on a state by state basis, such geographical regions do share comparable pollution and diversion problems within the regions. They also have access to similar organization and administrative machinery within the federal system to resolve them. Thus, despite Derthick's uniqueness argument, this common problem base presents the opportunity for developing a common regional mechanism applicable (with some variations, depending upon the function addressed) to most major water basins.

Second, U.S. water basins, though founded under different state legal schemes (riparian rights, for example) all share similar historical roots in terms of state control of water resources and a shared fear of federal preemption of these rights. Thus, a common fear of federal intervention provides the basis for unified rather than ad hoc attempts by the states to preserve state control over water resources by improving the effectiveness of the regional mechanisms chosen, contrary to Derthick's ad hoc action assumption.

The U.S. Supreme Court decision in Sporhase v. Nebraska[23] has put a premium on efficient state water

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[23] The Sporhase decision declared groundwater an article of interstate commerce and therefore subject to Congressional regulation under the Interstate Commerce Clause of the U.S. Constitution. Thus, for states to

management practices. It also highlighted the need for states to discover and replicate water management practices that pass Court scrutiny and thus do not violate the Commerce Clause of the U.S. Constitution. This decision thus makes it likely that future regional efforts will become more uniform rather than ad hoc in nature.

Third, the nature of interstate conflict makes it more likely that intensive state cooperative efforts rather than fortuitous events will result in the creation of regional water institutions and policies. As Leach and Redding note,

> No interstate issue has been more productive of prolonged quarrels and bitter hostility than the use of the water of interstate streams, especially among the arid western state, where water is so precious a commodity.

Thus, there is growing recognition among states within well-defined regional river and lake basins that unilateral water management efforts are both politically and practically unwise[24]. What regional forms of cooperation and organization are available to improve regional water management without Washington? A partial but representative

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continue to regulate their water resources, the Court provided guidelines for acceptable state restrictions to limit the interstate transfer of water. Accordingly, adherence to these general guidelines rather than ad hoc state economic parochialism is likely to be the result of this decision.

[24] The growing political power of the water shortage states makes it increasingly unlikely that upstream water surplus states would be able to hoard unused water indefinitely.

list of the various regional options available for interstate cooperation is provided on Table 2. An examination of these regional options from a private, state, and federal focus is the thrust of the remainder of this chapter.

Private Party Focus

As states and the federal government (not regions) are the entities recognized by law, it would seem that any regional structural solution would have to involve at least one of these governmental entities (Ingram,1973:12) for purposes of legal and/or political legitimacy.[25] Thus, options listed in Table 2 that have a private party focus would suffer from this infirmity, along with the problem that private associations, committees, and conferences are generally neither comprehensive in terms of regional representation nor do they have the legal ability to induce action.

Similarly, private party options that focus on individual party mediation, arbitration, or litigation lack the comprehensive coverage and the degree of participation generally necessary for developing a regional consensus. In addition, the resulting ad hoc nature of such mechanisms

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[25] For example, the Council of Great Lakes Governors, despite its high political profile, needs the involvement of the respective state legislatures of the basin in order to implement legislation and of the Great Lakes Commission for technical support in order to realize the Council's publicly announced goals.

Table 2

ALTERNATIVE FORMS OF REGIONAL COOPERATION

PRIVATE PARTY FOCUS:

1. Interlocking structure of institutions and professional associations (e.g. National Governors' Association, Council of State Governments.

2. Participation and membership in national and international conferences and seminars.

3. Private negotiations and mediation.

4. Private lawsuit by citizens of two or more different states.

5. Ad hoc private committees on regional matters.

STATE GOVERNMENT FOCUS:

1. Uniform state laws and legislation.

2. Reciprocal state legislation.

3. Uniform administrative agency policies, rules and regulations.

4. Mutual recognition and acceptance of findings of fact by state agencies on issues of common interest.

5. Exchange of state reports, regulations, and rules.

6. Fusion of various state administrative agencies through cooperative joint sessions and action to deal with the legally separable parts of a single common interest.

7. Uniform and harmonious state court decisions.

FEDERAL AND FEDERAL-STATE FOCUS:

1. Interstate compact

2. Basin federal-state interagency committees

3. Federally created and funded planning commissions (e.g. river basin commissions)

4. Federal grants in aid stimulating regional organizational development.

5. Federal public corporation (e.g. TVA)

Oftentimes leads neither to long-term stability nor to flexibility in meeting changing conditions.

State Government Focus

If private party options are often too limited for handling the divisive regional nature of interstate water disputes, an individual state focus also has difficulties, especially from the standpoint of disregarding a broad regional consciousness approach in favor of a more parochial state emphasis. Thursby (1953:142) argues that efforts by states to utilize uniform laws, regulations, and judicial policies (See Table II.I) will not work in controversial fields such as water policy. The reason, King (1957:376) explains, is that because of the unique nature of different watersheds, efforts are needed to promote a diversity of approach. Uniform laws and policies treat such diversity as an evil.

Thursby (1953:142) further points to the fact that there is no guarantee that a state will adhere to these laws/policies for any given period of time if its own self-interest lies in pursuing state instead of regional objectives. Similarly uniform rules do not guarantee uniformity of enforcement by all the states, nor is there any certainty that all the affected states in the region (watershed or basin) will adopt such laws/policies. There also is no one institution in the state government focus alternative whose self-interest would lie in a regional or

national perspective that would override more parochial state perspectives.

Furthermore, even the concept of fusion of state agencies through joint sessions on regional matters still falls short of basic need for a unified administrative body to carry out regional actions (King, 1957:376). A distinct regional organization structure is generally needed to ensure continuing cooperative and administrative action by the states and to induce action by all the states. Without federal or regional agency inducement or some legal obligation, it is expected that regional cooperation, either by uniformity, reciprocity, or informal joint cooperation will end as soon as state self-interests are threatened. As Martin (1960:3) concludes, an overwhelming majority of existing state government are unequal to the tasks of water resource administration on more than a limited local basis.

Federal and Federal-State Efforts

The third approach, federal and joint federal-state efforts, can ensure a broader perspective and increased capabilities by the tapping of federal resources. However, not all of the options in this category are positive from a state perspective. For example, the public corporation option (e.g. the TVA) effectively excludes state participation and thus is contrary to the concept of shared sovereignty. It is interesting to note that, although the TVA is often referred to as an abstract organizational model

to be replicated, it has never been copied (Barton, 1961:121). Furthermore, state government advocates argue that it is more efficient for state control than federal control since states have a greater interest in the outcome and are more sensitive to regional rather than national needs.

Similarly, the option of using federal grants administered by federal river basin commissions or federal-state interagency committees has resulted in an overdependence on the federal government for its existence. Not only can regional efforts wither away when federal funds dry up, but the regional organizations themselves can be eliminated swiftly by Congress or even by executive order (like the federal river basin commissions in 1981).

In short, all of the federal - state focus options in Table 2 except the interstate compact suffer from an overreliance on federal government political and/or resource support. According to the Advisory Commission on Intergovernmental Relations (1972:8), federally created and dominated organizations other than compacts are particularly disadvantaged. They exist in a federal bureaucracy environment hostile to regional entities which do not fit in a political system organized on political rather than regional lines. Their existence is thus perilous and not one that is within the control of the states in a region. Edwin H. Clark, senior associate of the Conservation

Foundation (Stanfield, 1985:1878) succinctly summarized the U.S. water resources problem:

> The nation's water problems to a large extent are institutional and political. To solve them we will need to develop better institutions because we are not going to get more water.

Scholars (such as Frankfurter and Landis) and organizational studies (such as the U.S. General Accounting Office, 1981, and the Federal Water Resources Council, 1967) reach the same conclusion. They point to the interstate compact is the most effective legal institution to handle water resources. As Zimmerman and Wendell (1976:123) described the interstate compact:

> It is the only legal tool we have to create a single joint instrumentality of several jurisdictions, operating under a common delegation of powers and governed by common law.

If indeed the interstate compact administered by a commission is the preferred regional approach to handle water issues, why has it not received more recognition as a viable regional entity? One reason is that there is a considerable diversity of opinion in the literature as to the relative effectiveness of the over 170 interstate compacts in existence. Perhaps the various structural and functional differences in interstate compacts has led to this confusing picture of what these commissions are. Chapter III will explore formal studies of interstate compact commissions in general and the views of various

scholars on their effectiveness as regional institutions. The purpose of this chapter is to identify the compact's past, present, and future usefulness in handling the divisive issue of regional water resources management.

CHAPTER III

THE INTERSTATE COMPACT AND REGIONAL MANAGEMENT IN THE U.S. AN HISTORICAL, LEGAL AND POLITICAL ANALYSIS

Introduction

Kevin Heron (1985) summarized the case for using an interstate compact commission rather than other regional options for managing divisive interstate issues. Heron argued (1985:68) that despite the existence of other interstate cooperative devices (reciprocal laws, administrative agreements, and state-federal commissions), the interstate compact has the advantage of being both a contract and a statute, making it "the most forceful and binding method for states to resolve concerns and controversies among themselves." The compact commission, utilized to administer the compact agreement, has simultaneously emerged in management oriented compacts in order to "make available the necessary governance structure for true regional resource management" (Sax and Abrams, 1991:733).[26] Although today there are numerous compacts

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[26] Before 1920, there were no interstate commissions established by compact; and, in light of the limited use to which the compacts have been put, there was no need as well

without separate commissions, including some in the area of water resources, it is the unique compact commission structure that emerges from a compact agreement that offers new possibilities for regional management. The compacts with interstate commissions tend to be more elaborate (Leach and Sugg, 1969:15) and thus are the ones that are of special interest in this study.

The positive endorsement of federal-interstate compacts by the National Water Commission (1973:13) as the "preferred institutional arrangement for water resources planning and management of multi-state regions" as well as by the U.S. General Accounting Office (1981) in the area of river basin management makes it a promising new structure to explore. An additional advantage of this new compact commission structure is that it makes it less likely that the Congress will pass subsequent preemptive legislation in the compact's

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(Hardy, 1982:49). Instead, the heads of the state agencies of each of the compacting states were used to handle the administrative details of the compact.

However, the compact instrument was expanded in later years to include broader, functional fields with increased duties that required continuous monitoring and administration. More and more parties became involved in water resources issues (e.g. Indian tribes, the federal government, international agencies, and large numbers of states). Natural resource issues also became more divisive and technologically complex.

It became apparent that use of individual state agencies was insufficient in many cases for promoting regional approaches. For example, in the water arena, the Colorado River Compact in the early 1920's was formed without the benefit of a separate commission and has been mired in controversy and litigation. But the Upper Colorado River Compact formed almost three decades later created a compact commission that has stayed relatively free of litigation and controversy.

jurisdiction (Briggett, 1991:763), and has, in the words of the Advisory Commission on Intergovernmental Relations (1972:156) "the potential to produce a much closer coordination of federal and state law and administration than any other formal legal device."

To avoid the pitfalls of past descriptive compact literature, this study will not attempt to assess the overall effectiveness of a "generic" interstate compact by lumping together interstate compacts covering a myriad of problems. Such an approach in the aggregate would be like mixing apples and oranges. Instead, the focus will be on how well the interstate compact has performed in one specific area and arena -- regional water resources management.

Furthermore, it would make little sense to compare a compact with only an informal commission established to study an issue of national implication like education with a more sophisticated compact commission focused upon a specific issue such as river management. The focus of this study is not how a generic compact commission operates in the vaguely defined arena of intergovernmental relations, but rather how effective a specific type of compact commission is in handling a particular regional issue such as water resources. Even at this level, the focus will later be refined in terms of looking at the various functional types of water compacts, including water allocation compacts, single purpose water pollution control

compacts, and planning and flood control compacts (Chapman 1985:27).

This study, while initially examining interstate compacts with and without commission organizational structures, will focus in this and subsequent chapters on the utility of the compact commission as an effective regional institutional alternative to federal preemption in the area of water resource management.[27]

Chapter III will begin by defining the legal and political nature of the interstate compact in its historical context. Then a review of the literature assessing its appropriateness for regional administration will be undertaken. After this review, there will be a section analyzing the political and theoretical advantages and disadvantages of the compact, followed by a section analyzing the compact commission itself and the types of commission structure that have been utilized.

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[27] This focus on compact commissions as administrative bodies with multi-state responsibilities is particularly significant because they are indeed a unique entity in the field of public administration. They are, as Carver (1982:n-13) indicates sui generis in that they are not agencies of the federal government within the meaning of the Administrative Procedures Act, and are perceived by the courts to be regional legislators. Thus, Leach and Sugg (1969:3) conclude that compact commissions "constitute an identifiable species of public administration within the federal system".

Compacts to be excluded are those that do not create specific commissions because the problem meant to be resolved required a one-time decision (e.g. state boundaries), and those whose responsibilities are only periodic joint meetings of state agency heads who oversee a budget or merely monitor actions (e.g. the Belle Fourche and Snake River compacts).

Finally, after an overview of the interstate compact experience in managing water resources, this chapter will present the thesis that an interstate compact commission can be an effective regional method for regional water management and the development of a regional consciousness in water resource decisions. In Chapter IV, a theoretical effectiveness model will be devised from an organizational theory perspective in order to operationalize the dependent variable loosely defined as "effectivness". Then national survey data and individual and general interstate compact studies will be used to identify which compacts are considered to be effective according to model specifications.

Defining an Interstate Compact

Paul Hardy (1982:2) defines an interstate compact as "an agreement between two or more states, entered into for the purpose of dealing with a problem that transcends state lines." He concludes that, of all interstate cooperative options, the interstate compact is "the most binding legal arrangement possible between two or more states". The compact is specifically provided for in the U.S. Constitution[28], which requires that an interstate compact

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[28] U.S. Constitution Art. I, sec. 10, cl. 3 provides that "No State shall, without the consent of Congress... enter into any Agreement or Compact with another State, or with a foreign Power....". It is also protected by the Contract Clause (Art. I, sec. 10, cl. 1) from impairment; and, if a dispute between two States over the compact

receive Congressional consent. Ladd (1981:257) considers the compact to be a treaty between two sovereigns, with Congressional consent of the compact restoring to the states the power to enact this treaty-like arrangement.

The interstate compact is a strange relic in terms of its Constitutional status. On the one hand, it is noteworthy currently as the only provision in the U.S. Constitution that provides for formal cooperation among states (Hardy, 1982:2). Indeed, Elazar (1986:xi) notes that the root word "federal" in the U.S. system of federalism comes from the Latin word for covenant, implying that federalism is best conceived as the end product of a compact or covenant that unites separate parties in a partnership for common endeavors without merging them.

On the other hand, Robert Steinbaum (1975:110) describes the interstate compact as a "centaur" of legislation -- half state and half federal law -- making placement of the compact within the federal system difficult but not impossible. Although there is general agreement of what are the classic indicia of a compact[29], the variety of uses and forms which interstate compacts have assumed have made the compact commissions "administrative orphans" in the

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arises, original jurisdiction to resolve the dispute rests with the U.S. Supreme Court (Art. III, Sec. 2, cl. 1).

[29] Schoolman (1986:819) indicates that the classic indicia of a compact agreement are (1) a joint agreement (2) state statutes conditioned on action by the other states (3) an absence of ability to unilaterally modify or repeal the agreement, and (4) a reciprocal regional limitation.

national and state administrative structure. (Curlin, 1972:339)

To better understand the twentieth century emergence and growth of the compact "relic" as a powerful force in regional issues (particularly in the area of water resources), an understanding of its historical development is required. The early history of the interstate compact has been a long and uneventful political and legal event in U.S. history. Marion Ridgeway (1971:vii) describes its emergence in the modern U.S. system of federalism as follows:

> Modelling it on the long-held principle of international law that sovereign states should have the means to resolve joint matters of mutual concern administratively, without engaging the full government in its full operations if not absolutely needed, the Founding Fathers included the Compact Clause (in the U.S. Constitution) almost as a matter of course, with little discussion and almost no debate.

Indeed, its roots pre-date the U.S. Constitution, previously having been included in the Articles of Confederation. According to the Advisory Commission on Intergovernmental Relations (1972:207), it is the oldest form of multi-state cooperation in the U.S., with the first compact pre-dating the U.S. Constitution by six years.

Yet, the early use of interstate compact was only for settling matters of limited controversy and not to shape and administer complicated and intricate problems that had a far-reaching impact in terms of state social and economic

issues (Ridgeway, 1971:vii). Congressional consent was required to prevent conspiracies by a few states against the rest of the nation, actions that might endanger the Union.

From 1787 to 1920, a total of 36 interstate compacts were created. Almost all of them were used exclusively for settling boundary disputes between states (Hardy, 1982:4). Advancing technology and a growing population brought problems that demanded more sophisticated governmental action. A need arose to handle issues that transcended state boundaries. The 1920's brought the creation of the first interstate government agency (the Port Authority of New York and New Jersey) and the first use of a compact to settle a regional problem (the Colorado River Compact).

The Depression and New Deal programs in the 1930's brought new changes in the use of the interstate compact. At the same time that the U.S. Supreme Court was repeatedly declaring unconstitutional a variety of New Deal measures that attempted to cope with the depression, it was recommending the use of the interstate compact as a substitute for federal action (Leach and Redding, 1969:10). Accordingly, the period of 1920-1940 saw the creation of 20 new compacts, some of which focused on national issues open to all states and not just those geographically contiguous states (Hardy 1982:4).

The period between 1940 and the early 1970's saw a tremendous burst of interstate compact activity. The compact was trumpeted by the states as a device with an

almost unlimited number of uses and as an effective alternative to federal action. Over 100 compacts were formed (almost twice as many as had been established in the first 167 years of U.S. history). The average state belongs to about 20 different compacts (Nice, 1987:70).[30]

However, the pace of new compact creation began to slacken in the late 1970's. Regional enthusiasts such as Hardy (1982) and Heron (1985) argue that the decline was merely a shift in focus from developing new compacts to additional states joining existing compacts and making needed revisions in existing compact arrangements. However, others such as Nice (1984:505) suggest a more negative reason for the decline; namely, that it was a response to the "disappointment hypothesis". This hypothesis suggests that the decline reflected public and state disappointment with the results of existing interstate compacts as well as an unsettled intergovernmental relations environment in the 1970's.

Whatever the reason for the decrease in compact creation, it should be noted that the number of new compacts formed in the 1970's still exceeded the pre-1930's era numbers, and in 1980 Congress legislatively encouraged the creation of a number of new interstate compacts to handle the issue of low-level radioactive waste disposal. Thus,

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[30] It should be noted that water pollution compacts were formed primarily in the East while water allocation compacts were generally found in the West in terms of regional variations of water compacts.

the growth in compact formation, according to Ridgeway (1971:293), "needs closer observation by students of American Government and the public at large" in this "somewhat legally undefined and politically uncharted area of our constitutional system." So while the continued existence of the compact as a means of regional management is not in doubt[31], questions remain about how effective the interstate compact and commissions created by the compact have been in handling such a wide variety of issues with so many different combinations of state interests. Thus, our attention will now turn to the legal and political strengths of the interstate compact commission, in order to begin an assessment of how well suited they are for regional management functions.

The Legal and Political Nature of the Interstate Compact

Marion Ridgeway (1971:6) argues that the key legal advantage of an interstate compact, is that it is "essential to any nonfederal interstate undertaking of a formal and binding nature". Herbert Naujoks (1952:231) points to its political nature, indicating that the federal constitution forbids states from making treaties but permits compacts. It is Congress that decides whether a state agreement is a permissible compact or an impermissible treaty when it

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[31] According to Heron (1985:1), there were 176 interstate compacts in existence as of 1980, not counting the new low-level radioactive waste compacts formed in the mid-1980's.

consents or withholds consent. Thus, both the political and legal aspects of the compact require examination.

Interstate compacts approved by Congress, according to the law of the union doctrine, are given the force and effect of federal law and questions about the compact raise a federal question for federal court resolution (Briggett,1991:761). The U.S. Supreme Court has original jurisdiction over disputes between two or more states and is the final arbiter in interstate compact cases (Ladd, 1981:279). Thus, by moving interpretation of the compact to the federal level, the compact transcends parochial state interpretations.

Furthermore, according to the Advisory Commission on Intergovernmental Relations (1972:207), its existence binds every branch of state government involved in the compact, and the Contract Clause of the U.S. Constitution protects the compact from state impairment. If the federal government not only consents to but also joins the compact (creating a federal-interstate compact that will be discussed later in this chapter), the compact binds the federal executive agencies as well, although overall federal supremacy is retained.

The interstate compact always takes precedence over subsequent and prior state statutory law, preventing states from unilaterally amending or repealing the compact. It thus provides a permanence and stability that state uniformity and reciprocal laws cannot provide and creates

what Hardy (1982:3) calls "the most binding and effective means of achieving legal cooperation between the states."

It should be noted that the legal advantages of the interstate compact should not be overstated. There are political limits to what states may agree to (determined by whether or not Congress consents to the proposed compact) and constitutional limits as well. Clyde (1982:542) notes that by ratifying an interstate compact, Congress has not surrendered any of its federal interests. The Constitution, for example, prohibits Congress from delegating its supreme authority to regulate commerce. Similarly, the U.S. Supreme Court has ruled that Congressional consent does not prevent Congress from undercutting a compact through ordinary legislation (Yale:1966:8), although Congress cannot substantively change the language of the compact itself without danger of negating the agreement among the states (Zimmermann and Wendell, 1976:26).

The politics of Congressional consent also affects the nature of the compact. The compact must meet the political tests outlined by past U.S. Supreme Court cases[32] The need for Congressional consent is determined by whether or not in the eyes of the Court the compact impermissibly enhances

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[32] For example in U.S. Steel Corporation v. Multi-state Tax Commission (1978) the court developed a two part test for determining whether or not the compact impermissibly enhanced state power: (1) did it authorize states to act in areas where they could not exercise authority in the absence of the compact and (2) was any delegation of sovereign power of the states delegated to the compact commission. (See Hardy, 1982:14)

state power. The compact can also be affected by the kinds of restrictions Congress places on its consent.[33]

In summary, there are a number of political and legal advantages to having state cooperation formalized into a binding compact. However, there are conflicting views in the interstate compact literature as to whether or not the legally binding nature of the compact is enough to ensure its effectivness, a subject to which we shall now turn.

Critical Analysis of the Interstate Compact

A number of descriptive studies of interstate compacts have been developed since 1937. These studies can be divided into two categories: Category 1 studies which generally focus upon the interstate compact as a legal and political instrument, and Category 2 studies which focus upon case studies of particular compacts either by geographic region or an analysis of a single compact.

The most notable studies in Category 1 have been compiled by such authors as Hardy (1982), Zimmermann and Wendell (1976), Muys (1976), Derthick (1974), Leach and Sugg (1969), Barton (1961), King (1958), Vawter (1954), Thursby (1953), Dimock and Benson (1937). In addition, numerous law review articles by such scholars as Frankfurter and Landis (1925) and political science articles by such writers as

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[33] For example, Congress waited 13 years before approving the Great Lakes Compact, forcing the states to modify their agreement to exclude Canadian provinces as members of the Great Lakes Commission.

Nice (1987) and Welch and Clark (1973) have focused the general usefulness and political impact of the compact in the U.S. federal system.

Interstate compact studies with a more case study focus (Category 2) were written by Ridgeway (1971), Voight (1972), Martin (1960), Leach (1957), and Jackson and Pisoni (1973). A review of the case study literature in the area of interstate compacts also indicates a considerable number of law review and political science articles which focus upon the enactment process and problems associated with specific interstate compacts. A comprehensive compilation of those articles relating to interstate water compacts can be found in the bibliography of the present study.

A common problem associated with both categories of compact studies is the lack of a systematic evaluation as to how well the interstate compact is working. For example, Category 1 studies such as those by Hardy (1982) and Zimmermann and Wendell (1976), while important in terms of a comprehensive overview of interstate compacts, basically are historical summaries of arguments and problems raised by previous scholars. Studies by Barton, (1961), Vawter (1954), Thursby (1953), Dimock and Benson (1937) focus upon the political issues that compacts of all kinds raise without specifying particular criteria for evaluating current compacts or developing model compacts. They are also dated and not reflective of the more recent experiences and new developments in interstate compact operation. The

Muys (1973) study with its legal focus has similar deficiencies.

The Category 1 studies by Derthick (1974), Leach and Sugg (1969), and King (1954) are somewhat more useful studies of the interstate compact for several reasons. For example, Derthick (1974) provides a methodical examination of the political problems inherent in attempting to impose a compact solution in a federal system. Her criticisms of the viability of a compact are formidable but equally applicable to almost any regional entity that has been proposed rather than being a specific evaluation of the necessary conditions or variables associated with effective and ineffective compacts. The study of the administration of interstate compacts by Leach and Sugg (1969) also is a useful descriptive summary of the problems associated with administering an interstate compact. However, it is not only dated and also does not attempt to assess systematically either the theoretical or empirical variables associated with an effective compact.

The King (1958) study is a descriptive assessment of the Department of Interior's legal and historical compilation of materials on interstate water compacts in the U.S. though 1956. In attempting to describe common characteristics of interstate water compact based upon government compiled legal and historical data, King's study provides a useful starting point in attempts to assess variables affecting compact effectiveness. Unfortunately,

his study did not attempt to go beyond describing some of the common objective characteristics of interstate water compacts.

Category 2 studies are useful complements to the general compact studies previously reviewed. They add compact specificity to the broad generalizations about a variety of types of compact covering a broad range of subject matters made in many Category 1 studies. Yet these studies generally have been composed in isolation and not linked to the general issue of what makes a compact effective.

Thus, while the literature on interstate compact studies is fairly extensive, it is not particularly useful in determining whether or not and under what conditions an interstate compact can be an effective alternative to an otherwise national solution. A representative sample of views of a variety of interstate compact scholars provided in the proceeding paragraph demonstrates the diversity of opinion over its relative usefulness in handling regional problems.

Dimock and Benson (1937) in one of the earliest studies of the interstate compact completed, described the interstate compact in political terms:

> As a matter of political theory... the compact is an ideal compromise with the doctrinal pattern of the Constitution. It offers a technique for satisfying certain generally shared social ambitions without distorting the federal structure of multiple sovereignty.

Zimmermann and Wendell (1976) were equally supportive of the compact, arguing that:

> No other device known to our federal experience can provide the single legal pattern effective on all levels and for all types of government that is possible under the interstate compact.

The interstate compact has been advocated as " a major device for smoothing the rough edges of the federal system in practice..." (Martin, 1961:139), " ... a very versatile and desirable instrument in the settlement of controversies between states, and as a means of securing cooperation among states" (Naujoks, 1952:246), an instrument that should be actively exploited to solve mutual interstate problems (Ridgeway, 1971:16), and as a means of breaking through jurisdictional and program barriers in order to integrate programs on a federal interstate basis without the need to amend the Constitution or strain its interpretation.[34]

Findings by U.S. Government agencies and regional organizations in general also have been supportive of the interstate compact, including the U.S. General Accounting Office (1981) and the U.S. Environmental Protection Agency (1971)[35]. The Advisory Commission on Intergovernmental

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[34] See generally the Book of the States articles on the interstate compact found in the annual edition beginning in 1950-51. Numerous writers including Zimmermann and Wendell (1976) have presented these arguments.

[35] The EPA recognized that interstate compacts for water pollution purposes "have already demonstrated their usefulness, and ... have the potential for playing a more

Relations (1972:217) found the compact to be "a most useful device in the solution of problems shared by more than one state", and the Domestic Policy Council (1986:68) also encouraged interstate compact formation.

However, not all the reviews of the interstate compact have been positive. Marion Ridgeway (1971:viii) raised a question about the impact of the compact on federalism that was shared by a number of individuals during the heyday of compact formation; namely,

> Is it a tool to subvert established government or is it a constitutional doorway to the modern federalism of an adaptable kind which so many have been seeking?

A number of the earlier federalist writers feared it might become a subversive tool. However, this fear has dissipated in light of what Edward Hamilton (see Weissert, 1981:125) termed "the abysmal history of interstate compacts." Carver (1982:N-2), a compact critic declared that the compact has had "its day in the sun" and will survive only "as a gesture of goodwill by a dominating federal government."

Certainly the previously mentioned decline since the mid-1970's in the number of compacts formed gives some initial credibility to the criticisms of Hamilton and Carver. In addition, the rosy predictions of Leach

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important role" (Muys, 1971:316) although it was concerned about dilatory actions or inadequate resource commitment to the compact commissions.

(1973:236) that in the near future compacts will become a major device "for the administration of multi-state functions and activities" do not seem to have been borne out, especially when one looks not only at the growth of the number of federal agencies in comparison to compact formation (see Figure 2) but also the number of federal regulations adopted in the 1970's (see Figure 3).

Proponents of the interstate compact continue to stress the theoretical potential for interstate compacts to become interstitial bridges in the U.S. federal system and, as Leach and Sugg note:

> They (compacts) permit the states to take continuing cooperative action in fields where they cannot act effectively or do not wish to act alone, fields which might fall by default to the federal power if not occupied through the initiative of the states.

Yet the continued growth of federal agencies and regulations noted in Figures 2 and 3 raises some doubts. So too do the problems that have arisen in the administration of some existing compacts, most notably the new low level radioactive waste compacts formed in the early 1980's.[36] The overriding question is whether or not the interstate compact can be anything more than a quaint relic to be used

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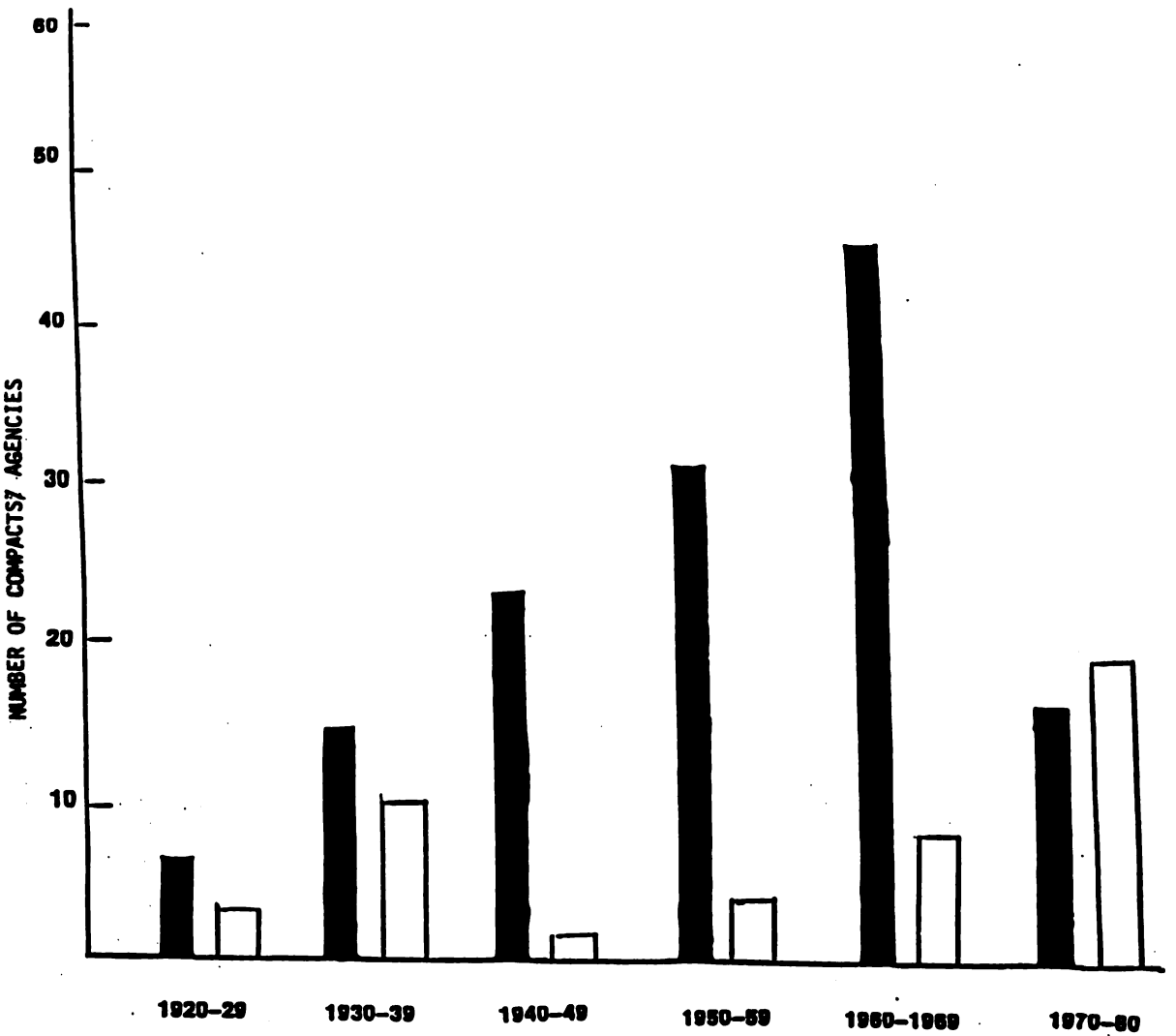
[36] For example, Michigan's reluctance to comply with the regional compact commission's decision to establish a Michigan site for depositing regional low-level radioactive waste has resulted in action by the compact to expel Michigan and a court case by Michigan challenging the validity of the federal law authorizing the creation of regional waste sites.

GROWTH IN COMPACTS AND FEDERAL REGULATORY AGENCIES



Sources: Council of State Governments, Directory of Federal Agencies, and GPO data base Silerplatter.

Note: Darkened bars indicate new compacts and white bars indicate new regulatory agencies.

FIGURE 2

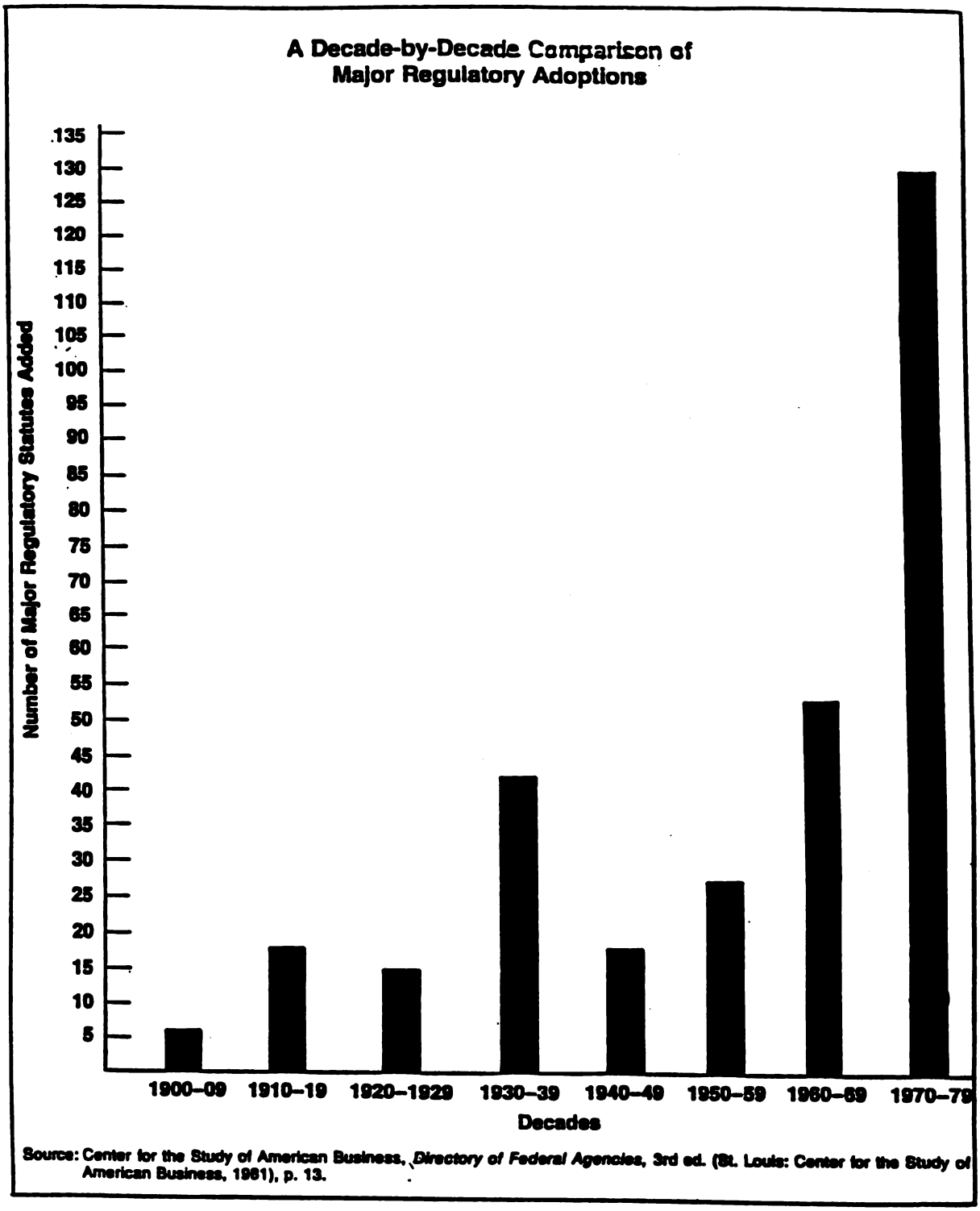

A Decade-by-Decade Comparison of
Major Regulatory Adoptions
Number of Major Regulatory Statutes Added
135
130
125
120
115
110
105
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
1900–09
1910–19
1920–1929
1930–39
1940–49
1950–59
1960–69
1970–79
Decades
Source: Center for the Study of American Business, Directory of Federal Agencies, 3rd ed. (St. Louis: Center for the Study of American Business, 1981), p. 13.

FIGURE 3

only for the limited purposes to which it historically served prior to 1920?

To answer this question, the specific criticisms of the interstate compact as a regional irrelevancy and the responses to these criticisms are presented in the next part of this chapter. As the reader will discover, just as proponents of interstate compacts have been criticized for their unsystematic approach to the role and impact of compacts in the U.S. federal system, compact critics have also been guilty of engaging in either (1) the overstatement of the negative aspects of compacts in general without adequate documentation or (2) blanket criticism of compacts on the basis of a very small number of negative compact cases. Indeed, there is some question as to whether or not compact critics have been systematic in their criticisms as well.

To Compact or Not to Compact: The Pros and Cons

1. Criticism: The interstate compact's usefulness is limited primarily to those problems that require permanent solutions and require little or no administration (Thursby, 1953:147).

This criticism suggests that permanent actions such as boundary disputes and a contractual (as opposed to a commission administered) allocation of water resources are more likely to be handled successfully than those regional actions that require continuous monitoring and/or are

characterized by conflict. The basis for this criticism is the long and relatively noncontroversial history of compacts used for making permanent settlements between states compared to the relatively short experience of using compact commissions to administer continuing conflicts. The inability of the Colorado and the Pecos River compacts to stem continued litigation over these rivers and the inability of the controversial California-Nevada compact to obtain Congressional consent are pointed to by critics as the types of problems that compacts cannot handle.

Response: Of all the regional options available to the states, the interstate compact is the most binding legal instrument and therefore best suited as an alternative to federal or court intervention for resolving divisive regional disputes (Zimmermann and Wendell, 1976:14). The advent of administrative bodies such as the compact commission[37] and in the 1960's the federal-interstate compact commission changed this picture. The commissions in some compacts were granted the authority to perform more sophisticated administrative functions (e.g. the Port Authority of New York which is widely hailed as a successful regional compact commission), unlike earlier compacts which

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[37] The federal interstate compact was a compact that included the federal government as a voting member and participant in the compact. Previously, the federal government served only as an advisory role and did not sign the compact agreement.

were more contract overseers rather than regulatory policy makers.

The most elaborate form of compact, the federal interstate compact in which the federal government is a signatory and an active participant, is still relatively new. Thus, it is difficult to make historical comparisons to older boundary dispute compacts. However, a 1981 U.S. General Accounting Office report indicated that these commissions in the Delaware and Susquehanna River Basins were performing reasonably well. Sax and Abrams (1991:734) cite the establishment of the Delaware River Basin Compact Commission as a leading example of how the commissions "...make available the necessary governance structure for true regional resource management".

The compact also blocks the federal government from directly altering the text of the compact by legislation (Vawter, 1954:8); and in the area of water resources, there has not been a situation where Congress has modified an equitable apportionment of water established by compact (Carver, 1982:n-22). Thus the compact offers stability unattainable by other state initiated regional efforts, a stability necessary to handle divisive regional issues.

Analysis: Overall the criticism of the compact as a device not suitable for conflictual or multi-purpose regional management is overstated. The Delaware River Basin Commission and the Port Authority of New York are examples

of compact commissions that have performed well according to objective observers.

In addition, the lack of long term institutional experience with compact commissions and the formal membership of the federal government into some compacts indicate that caution must be exercised in a broad-brushed criticism of compact in general. Indeed, there appear to be some regional issues where some types of compacts may be more effective than others. Thus a general assessment of compacts may overlook their usefulness in particular areas such as natural resource management.

2. Criticism: Another weakness of the interstate compact is that, in areas such as pollution control, it is often tailored to meet the lowest common denominator acceptable to the negotiating states (Moss, 1968:263); thus, preventing more effective direct federal intervention (Zimmermann and Wendell, 1976:103). In turn, state interests are a product of private interests. Thus, a compact is perceived as a "contrivance of economic groups with special interests in the resources involved" which they seek to protect and advance in a compact (Barton, 1961:174).

The crux of this criticism rests upon the argument that compacts are not responsive to the general regional population they are designed to serve but rather are "highly responsive to select, specialized interests of an exceedingly narrow kind" (Ridgeway, 1971:296). Barton

(1961:57) argues further that the compact is merely a "compromise between national action and inaction" and acceptance of a compact "may provide a tool for groups subject to regulation to play the nation and the states against each other in order to retain control in their own hands" In short, the concern is that the compact eventually will be captured by private interests with a strong, vested interest in the resource to the detriment of the region as a whole.

Response: Proponents argue that the capture concern is more of a theoretical concern than an actual problem. Briggett (1991:753) argues that a compact can actually be more responsive to the community than federal actions since state commissioners in many compacts are appointed by the governor and thus make decisions more narrowly tailored to regional needs than generalized federal policy decisions.

Contrary to the parochial interest argument, Thursby (1953:149) argues that aside from federal or federal-state action, compacts are "the only element which is subjected to scrutiny in light of broad public policy by a representative body of the whole nation" (through the Congressional consent process).

In response to the point that private interests will unduly intrude upon compact policy-making, Briggett (1991:767) responds that the compact actually excludes from compact decisions those unproductive peripheral interests

that exist on the national level that otherwise would hinder effective regional action. Accordingly, Briggett argues that the compact correctly gives a proportionately larger voice to those states with special concerns about a regional issue they would have if there were national controls.

Analysis: Whether or not capture is a concern in a operation of a compact seems likely to be a function of the overall degree of public interest or consciousness in the regional issue or resource for which the compact was developed. Thus, it is very likely that the most directly affected private interests will play an active role in a compact, but their respective influences would seem to depend upon the extent of the countervailing interests of other public individuals and organizations. Thus, some compacts lacking this regional consciousness may indeed become "captured", but this is a criticism that is equally applicable to almost any level of government regulatory activity.

3. Criticism: A number of writers including King (1958), Hardy (1982), Vawter (1955), and Thursby (1953) point to the problem that compacts are too inflexible to adjust to changing conditions, and thus have limited utility.

Thursby (1953:136) called the compact a "clumsy and futile substitute for effective national action". Legislation is seen as a more flexible and timely alternative in light of a rapidly changing environment.

Compact provisions limiting commission authority to specific areas and cumbersome rules for amending a charter including unanimity voting requirements all point to a rigid and status quo oriented approach to new regional issues that emerge after the compact is approved.

Response: Contrary to the argument of inflexibility[38], the Advisory Commission on Intergovernmental Relations (1972:137) points to the fact that a compact can adjust the inflexibilities of political and administrative boundaries so that regional tasks can be performed on a functional basis. Furthermore, as there are no set rules for how a compact should operate or a compact commission can perform, it is up to the compacting parties to determine how flexible they want the compact instrument or commission to be. As will be demonstrated in Chapter V, there are a variety of functions that compacts can perform.

As to the criticism that legislation would be more efficient and timely in response to change, it should be noted that a compact is like a contract, based on mutual consent, while legislation operates on the basis of a simple majority. While legislation may be easier to enact than compact changes, there is a real question as to whether or not it is desirable for a majority to force its will on the

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[38] There are advantages to inflexibility as well, as they provide a sense of stability and finality to issues that otherwise might be continually subject to attack by either party.

minority when dealing with an issue of mutual regional concern (Vawter, 1954:2).

Analysis: Certainly there are disadvantages to having a detailed, inflexible compact agreement when major changes in a regional issue require more contemporary reaction. However, the flexibility of a compact depends upon the wishes of the compacting parties. It may be desirable in some instances to leave no discretion to a compact commission because of the extremely divisive nature of the regional issue which is the subject of the compact. However, it is the parties' decision in each compact setting to establish how much flexibility or discretion they want to include in the compact. It would therefore be premature to brand the compact device in general as inflexible, although a number of earlier compacts do indeed suffer from this self-inflicted malady.

4. Criticism: Compacts take too long to ratify. By the time a compact is approved by the member states of the compact and consented to by Congress, it can take an average of 4 to 8 years (Hardy, 1982:20).

Recognizing that it took 13 years before the Great Lakes Basin Compact was finally consented to by Congress and the fact that Congress acts on a two year cycle instead of the 4 to 8 year average cycle for a compact, delay is certainly a valid criticism if the compact is to handle a variety of pressing issues such as pollution control. This

time delay problem, if it is representative of how long it takes to approve all compacts, makes a strong case for the proposition that the compact is too cumbersome a process for handling divisive regional issues which demand more immediate pubic attention.

Response: The basis of this argument rests upon the historical delay that occurred at the state level when compacts were first negotiated by pre-compact negotiating commissions prior to legislative and executive approval. Since that time, this inner layer of state bureaucracy has been eliminated, reducing the time needed for state ratification. In addition, Congressional consent has been interpreted by the Court as being given by implied consent in some compact situations, and the relatively rapid Congressional approval of low-level radioactive waste compact in the 1980's indicates that timely Congressional approval is not an insurmountable barrier.

As to the general reason for delay in ratifying controversial compacts, Muys (1973:317) explains:

> Most delays appear to have been caused by specific policy controversies which are not unique to the use of the compact mechanism, but also plague efforts at problem-solving through interagency committees, river basin planning commissions, and Congressional legislation.

Furthermore, Maloney (1975:33) argues that regional planning should move more slowly if the thinking of the

people is to change and advance, thus assuring greater permanence in the decision itself.

Analysis: Overall, the delay argument seems to be more a function of past historical practices that have since been modified and the divisive nature of the issue proposed to be handled by each compact. Since legislation and litigation are also delayed by the controversial nature of the regional issue and since there is some benefit to be derived from approaching resolution of the regional issue in a more deliberate manner to ensure that solution is acceptable (at least for the moment), the delay argument does not appear to disqualify the compact as a useful regional management device.

5. Criticism: Compacts and compact commissions lack the enforcement powers and administrative structure necessary to resolve the collective action nature of regional decisions (King, 1958 and Martin, Birkhead, Burkhead, and Munger, 1960).

It is often argued that collective action problems can only be resolved by adequate enforcement powers, something that many interstate compact commissions lack. Just as the states fear the federal government and its bureaucracy, they are leery of creating a regional body with similar authority to intervene. Thus, compact commissions do little or nothing to promote regional actions that are not favored by

all of the compacting states, and very little is done that changes the status quo based on individual state interests.

Response: The argument that compact commissions cannot be effective unless they are vested with strong enforcement powers is a common assumption among compact critics, but it overlooks the peculiar political nature of compact and the benefits of regional cooperation that the compact facilitates which are unrelated to presence or absence of a compact's command and control power.

As a general rule, states seeking to avoid the diminution of their sovereign powers to the national government would be just as reluctant to create a regional entity with similar preemptive powers. The reason for this reluctance, argues Barton (1961:163) is that states want joint state action, not regional action. Thus, as Gross (1990:162) concludes, the compact commission must remain subordinate instrument of the authorizing states or it will cease to exist. Cooperation, not coercion, is the key to compact action.

In terms of the usefulness of interstate compacts without strong enforcement powers for handling the collective action problems associated with regional decision-making, a Harvard Law review note (1989:849) suggests that the compact commission reduces informational and transaction costs in order to facilitate better interstate cooperation. The repetitive interactions are

important for strengthening informal cooperative federalism through decentralized reciprocity.

Furthermore, Welch and Clark (1973:483-484) argue that the compact, as one component of a broader span of suprastate political action and interstate cooperation, is significant beyond the surface impact that critics cite. They argue that compacts (even those without formal enforcement powers) promote increased regional and national linkages, an influx of new ideas and modes of behavior from outside the state, and may encourage later cooperative attempts on an even broader national scale.

Thus, although much can be made about the lack of enforcement powers in many (but not all) compact commissions, the new cooperative state linkages a compact creates on regional issues may in the long run be more advantageous than attempting to coerce a state into a regional plan that is contrary to the state's perceived self-interest. A routinized regional relationship over time may be as influential over time as an enforcement power. Similarly, the existence of a regional compact commission can also create a new forum for handling regional issues and thus affect individual state actions.

Other Criticisms: There are other criticism of the compact. External criticisms include the fact that states, not the real geographic region, are the reality of the compact and thus state peculiarism and self-interest

remains. However, until states are eliminated from our federal system by court decisions or constitutional amendment, they are indeed the political reality of subnational governance and by necessity are an integral part of any regional solution. Internal criticisms relate to compact resource constraints (mediocre staff or insufficient budget resources), regional overlap (a possibility in some natural resource areas but not an insurmountable problem), and the inability of a compact to handle divisive regional issues without resort to litigation (a problem in some cases like the Colorado River but not in others such as the Delaware River).

Despite its shortcomings, however, the interstate compact seems to offer some compelling reasons for use in regional management. The major reasons include:

1. Helping to preserve the vitality and potency of the states and avoiding the transfer of more state functions to an already overburdened federal government (Thursby, 1953:143).

2. Maximizing state cooperation by bridging jurisdictional barriers and promoting intergovernmental relations (Vawter, 1955:4), thus providing the necessary interstitional bridges to permit states to develop regional administration perspectives (Zimmermann and Wendell, 1976:108).

3. Permitting the development of a single pattern of law with national consent, although still allowing states to vary their enabling laws to fit their particular situations (unlike uniform and reciprocal laws that may become inflexible and contrary to an individual state's interests).

4. Permitting the evolution of consensual state solutions; thus, allowing a gradual change in

> otherwise state-oriented thinking of decision-makers in order to effect a long-lasting regional solution (Vawter, 1955:1705).

The long-lasting advantage of the compact, which includes the ability to create a commission to handle the administrative aspects of more complicated compacts, is the subject of the next section of this chapter.

Compact Commissions and Regional Water Management

From the preceding discussion and a review of the literature, there is considerable support among regional and water resources experts for the proposition that the interstate compact is the preferred instrument for managing regional water resources issues. To reiterate Zimmermann and Wendell's (1976:50) conclusion, " no other device known to our federal experience can provide the single legal pattern effective on all levels and for all types of government that is possible under the interstate compact." Furthermore, as Vawter (1955), Zimmermann (1951), and Muys (1976) have pointed out, the compact is particularly well-suited to water resource management such as rivers because it allows the tailoring of governance to fit the distinctive aspects of each river system. As Jerome Muys (1976:318) summarized the findings of his thorough legal study of mechanisms to handle interstate waters:

> With respect to interstate water, the search has also been for a mechanism to provide a regional perspective to the development and implementation of a

> comprehensive plan. The interstate compact always has provided a theoretical means for achieving those two objectives...

It further appears that some form of compact commission is a necessary ingredient of a compact if the administration of anything but the most simple water allocation decision is required. Certainly the issue of water allocation in water scarce regions is a difficult, controversial, and time-consuming process no matter what instrument is used (Zimmermann and Wendell, 1976:54), and compact commissions are useful devices for encouraging a continuing dialogue leading to cooperation and mutually beneficial results rather than conflictual litigation or divisive coerced results by federal intervention. As Muys 1976:315) points out:

> the more successful the states have been in hobbling compact agencies in order to protect their sovereign prerogatives, the more likely it has become that regional water problems will be dealt with by federal programs wholly superseding state and local authority.

Dirck (1978), Muys, (1976) and others concur that there are really only two other options for handling divisive interstate water disputes: equitable apportionment by the U.S. Supreme Court[39] and Congressional apportionment[40].

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[39] Equitable apportionment was first employed by the Court in Arizona v. California 259 U.S. 419 (1922).

[40] Congressional apportionment was interpreted by the U. S. Supreme Court to have occurred when Congress enacted the Boulder Canyon Project Act 45 Stat 1057 (1928). The court decided that Congress had created its own scheme of

Neither of these options offers much hope for preserving a state role in regional water resources issues. As noted earlier in this study, the federal courts have not been kind to state regulation of water (e.g. the Sporhase case), making such regulation vulnerable to dormant Commerce Clause scrutiny. Similarly, as we have noted previously, a Congressional decision favors the politically powerful have-not states, only promoting more conflict and reducing the likelihood of more equitable state cooperative solutions.

However, it should be noted that the U.S. Supreme Court has shown its distaste for interstate water disputes that are heard under the Court's original jurisdictional authority (Simms, Rolfs, and Spronk, 1988:23-3) and frequently has cited the superiority of the interstate compact method over judicial resolution (Zimmermann, 1976:54 and Ladd, 1981:274).[41] Nelson (1984:323) goes so far to say that "both the Court and commentators are apparently unanimous in their preference for the use of interstate compacts to allocate interstate waters." Furthermore, considering the static and sporadic nature of Court equitable apportionment decision, Brooks and Fogleman (1985:959) conclude that the solutions achieved by compact negotiations "have surpassed those attained by litigation."

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apportioning water by the act.

[41] The Supreme Court as recently as 1983 reiterated that the compact would be a more useful device for handling such disputes in Texas v. New Mexico 462 U.S. 554 (1983).

In essence when a compact is approved by Congress, a more cooperative and consensual form of equitable apportionment of water can occur without the uncertainty and problems inherent in Court decisions (Carver, 1982:N-1). The compact also "authorizes the states to retain the compacted water in perpetuity and Sporhase is inapplicable" (Rodgers, 1986:373). Furthermore, when a compact approved by Congress has been challenged on Constitutional grounds, unlike in state regulation cases, the courts have upheld the compacts (Murray, 1984:506). Frankfurter and Landis (1925:701) note however that a compact commission is also necessary, indicating that for river issues an:

> "agreement among the affected States and the United States, with an administrative agency for continuous study and continuing action, is the legal institution alone adequate and adapted to the task."

In terms of Congressional water apportionment, although it has only occurred once in U.S. history (see footnote 40), the threat of Congressional preemption of state laws continues to grow as water shortages increase and the political power of water surplus state in the Northeast and Midwest decline. The solution to this threat, says Nelson (1984:328) is:

> If states properly regulate the nation's water resources, Congress will not be compelled to alter its long standing tradition of deference to state water resource management.

Besides, federal agencies feel a moral obligation to stay within the limits of an interstate river compact which Congress has approved, even if it is not one in which the federal government is a signatory and funding agent, i.e. a federal-interstate compact (Goslin (1976:432). Thus compacts provide the same stability as federal statutes but, again, in a manner that is both more consensual and likely more equitable among the affected states.

In the following two paragraphs, Muys (1976:310) aptly summarizes the Congressional and Court alternatives to the interstate compact:

> It would seem preferable for the affected states to determine their own water destiny by agreement, rather than to have it decided by a Congressional majority which may have little interest in the problems peculiar to a region, or whose votes may be influenced by political considerations wholly unrelated to the merits of a particular basin's water problems.
>
> It is apparent that the determination of a state's equitable share in the waters of an interstate basin is fraught with complex factual, legal, policy, and political consideration, and the Supreme Court has pointedly commented on several occasions that the difficulty of the task makes it one peculiarly appropriate for resolution by interstate agreement if at all possible.

Volkman (1987:836), citing the Court's approval of the Northwest Power Act in the Seattle Master Builders case[42], notes that the opinion "makes clear that federal dominance is not constitutionally ordained, and new forms of river

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[42] 786 F.2d. 1359 (1987)

basin governance are possible in which regional agencies set strategic policies for federal agencies."

Certainly, the opportunity exists for the interstate compact commission to play a major role in regional water resource management. As Goslin (1976:438) concludes:

> As the ultimate limit of the use of available water resources is approaching, it is hoped that interstate water compacts may prove to be effective devices in aiding members of society to live together and make the most of what remains.

Goslin states both the hope and the difficulty of using interstate water compact commissions to "effectively" manage diminishing water resources. It is the thesis of this study that some form of interstate compact can indeed be an effective alternative to federal intervention. However, there has been no systematic evaluation of what makes an interstate compact effective and therefore no definitive means of knowing whether or not the compact commission will ever achieve this recognition.

Part of the problem with trying to determine the effectiveness of an interstate water compact is defining what is meant by effectiveness. Chapter IV will address the issue of defining from an organizational theory perspective how effectiveness can be measured for an interstate compact, constructing a model specifically designed for this "sui generis" form of public administration. Chapter V will then

attempt to identify the distinguishing variables associated with these "effective" compacts from which a compact effectiveness ranking can be derived.

CHAPTER IV

ORGANIZATIONAL EFFECTIVENESS AS A CONSTRUCT FOR ASSESSING REGIONAL ORGANIZATIONS

Introduction

A major drawback to embracing the interstate compact as an effective regional alternative to federal intervention is the general lack of consensus as to an evaluative framework for measuring organizational effectiveness (OE), a problem common in most organizational theory-based research. Although there is almost no theory-based effectiveness research in the interstate compact literature, some descriptive effectivness studies from works by Derthick, Leach, Vawter, King and others previously reviewed have been cited both in support of and in opposition to the general feeling that the compact is an effective instrument of regional governance.

Unfortunately, most of the conclusions reached in these studies suffer from such deficiencies as (1) being based upon isolated case studies (e.g. Leach), (2) essentially unsupported ad hoc generalizations drawn from the study of a few successful or unsuccessful activities of small number of

compacts (e.g. Derthick), or (3) being overly broad and relatively simplistic descriptive evaluations which lump together compacts of all types regardless of the varying and diverse amounts of regional activity and compact resources and structure (e.g. Vawter and Weldon).

This study will undertake an approach to interstate compact effectiveness that differs significantly from the above mentioned studies and from sampling techniques used in political science studies. Rather than randomly sampling a wide range of the over 170 interstate compacts in the U.S. and treating all such compacts as similar in nature and structure (a fallacy described in the previous chapter), this study will focus on the entire population of interstate compacts used to handle interstate water problems and seek to determine how effective they have been in handling regional water resources issues.

Utilizing a theoretical approach to the study of interstate water compacts which incorporates relevant aspects of organizational theory studies of effectiveness, this chapter will develop a general model that will be used to identify "effective" interstate water compact commissions. In Chapter V, this approach will be used to identify specific " effective" interstate water compact commissions through the use of a nationwide survey of all of the U.S. interstate water compact directors and state water compact commissioners. Specific descriptive "theories" and assumptions of effective interstate water compacts from

compact literature also will be explored to determine their congruence with the theoretical approach of compact effectivness developed in this chapter.

Thus, this chapter is intended to serve two important functions. First, it will begin with a review of the history and problems associated with using organizational effectiveness as a dependent variable in measuring organizational performance. It will highlight the inherent difficulties in organizational effectiveness research and thus the likely reason for a lack of systematic evaluation of interstate compact commission effectiveness in the compact literature.

Secondly, a theoretically-based organizational effectiveness model based upon the most recent research in the effectiveness field will be developed specifically for evaluating all of the interstate water compact commissions in the U.S. This model will be constructed not only with an eye towards a theoretically defensible method of assessing the usefulness of water compacts for regional management purposes, but also for possible future use in evaluating numerous other forms of interstate compacts.

Problems in Utilizing Organizational Effectiveness as a Dependent Variable

Kim Cameron (1986:540) placed the construct of organizational effectiveness (OE) at center stage in organizational science by declaring, "Empirically,

effectiveness is generally the ultimate dependent variable in research on organizations." The problem, as Paul Goodman (1977:3) notes, is that in the current organizational theory literature there is a lack of knowledge as to the construct validity of the concept of organizational effectiveness.

More specific problems in organizational effectiveness literature are highlighted by Hitt (1988:29) and Goodman and Pennings (1977:3), who review the progression of organizational theorists who have been unable to reach a consensus on the definition of OE. Warren Beemis (in Goodman and Pennings, 1977:237) describes effectiveness in an organizational context as a portmanteau word: that is, it carries a great many things in no particular order and does so in a way that conceals them from view.

Cameron and Whetten (1983:1,275) also point out the lack of agreement as to how to assess organizational effectiveness properly, describing past attempts to define and measure OE as "fragmented" and "isomorphic" leading to "conceptual disarray" and "methodological ambiguity" in the OE field.

The root of the problem in developing a consensual construct, definition, and measurement of OE in organizational theory literature seems to be a failure to develop a coherent theory of OE. Is there a theoretical objective to describing an organization as effective or is it a deliberately undefinable term used loosely to express a

writer's personal preferences in organizational models? This study assumes there is such a theoretical objective.

Certainly the search for definition and measurement of organizational effectiveness has been a source of considerable interest in the organizational theory field. Lewin and Minton (1986) provide a good review of the twentieth century search for OE, which is presented on Table 3. From the one best model of thinking by scientific management to the population ecology model, the search for OE has been both wide-ranging and intensive. However, as Lewin and Minton (1986:515) point out, no strong, general theories of organizational effectiveness have emerged. This vacuum in OE theory has "nurtured ad-hoc, atheoretical, and noncumulative empirical studies of organizational effectivness".

Another problem in the OE field is the failure by many theorists and practitioners to recognize the unique sociopolitical nature of OE studies. As Richard Scott (1987,337) notes, the criteria used for evaluating organizational effectiveness cannot be created by some objective, apolitical process but rather from normative models that are as varied as they are controversial. Many OE models are based on the preferences and values of the evaluator without specifying construct boundaries, a much different basis than that used in other social science constructs (Cameron and Whetten, 1983,269).

TABLE 3

The Historical Search for Organizational Effectiveness

Mangement Orientation & Representative Thinker(s)	Effectiveness Philosophy Highlights	Typical Effectivness Attributes
Scientific Management Frederick Taylor (1911)	Time and motion studies; importance of standards, planning, control, and cooperation; functional organization; "one best way".	Production maximization, cost minimization technical excellence; optimal utilization of resources; task specialization.
Principles Of Management Henri Fayol (1916/1625)	First "complete"inductive management theory; based on rules or "principle's; views management as a teachable skill.	Division of work; clear authority and discipline; unity of command and direction; order, equity, stability, and initiative; esprit de corps.
Human Relations Elton Mayo (1933)	Importance of emotional factors; sociological concept of group endeavor; satisfied workers are productive workers; need for managerial diagnostic and interpersonal skills	Productivity through employee satisfaction; satisfaction through attention to workers' physical and emotional needs.
Decision Making & Information Management Herbert Simon (1947)	Effectiveness subject to bounded retionality; input/output efficiency criterion; functionalization based on subsidiary objectives.	Resource savings through rational development of goals; efficiency of information processing.
Socio-technical E.L. Trist and K.W. Bamforth (1951)	Joint resolution of social and technical organizational demands; social systems view of organizations; enterprise as open systems.	Degree of social/technological "fit" congruence of internal processes.

TABLE 3 (cont'd)

Strategic Management and Design Alfred Chandler (1962)	Structure follows strategy; vertical and horizontal integration, and rationalization of resource utilization.	Structure/strategy congruence, manifested as organizational growth, competitive attainment, environmental control and flexibility/adaptation.
Human Resources Douglas McGregor Rensis Likert (1961, 1967)	Importance of organizational needs vs. organizational demands; power equalization; participative management concurrent satisfaction of competing demands; "productive workers are satisfied workers".	Employee satisfaction, productivity; cohesion, loyalty, open communication.
Contingency Theory P.R. Lawrence and J.W. Lorsch (1967)	Organization design based on environmental factors; "best way" contingent on a variety of conditions and situations.	Differention error, integration error organization/environment "fit", ability to implement change in a timely manner, leadership/contingency "fit".
Population Ecology M.T. Hannan and J. Freeman (1977)	Relative unimportance of management; environmental determinism; survival a function of life cycle, luck, strategy, and structure.	Survival.

TABLE 3 (cont'd)

Practitioner Contributions		
Chester Barnard (1938)	Organizations as Cooperative systems.	Internal equilibrium and adjustments to external conditions; executive action and example (managerial leadership).
Alfred P. Sloan (1963)	Decentralized administration, centralized review and control; multidivisional structure.	Efficiency through economy of scale; divisional return on investment (ROI); attainment of objectives (original MBO).
Robert Townsend (1970)	Debureaucratization, support for local entrepreneurship.	Profitability; staff accessibility; simple structure, simple rules; lack of meaningless (non productive). "peaks".
Thomas Peters and Robert Waterman (1983)	Performance on structure, strategy, systems, skills, style, and shared values (7"-S Framework").	Bias for action, closeness to the customer; autonomy and entrepreneurship; hands-on, value-driven philosophy; stick to the knitting; simple form, jean staff; simultaneous loose-tight properties.

Source: Arie Y. Lewin and John Minton, "Determining Organizational Effectiveness: Another Look, and an Agenda for Research". 32 Management Science 514 (May, 1986).

Thus, before one can begin identifying which interstate water compacts are effective, resolution of the problems identified in the organizational effectiveness must be attempted. In terms of developing a specific approach for measuring OE for use in this study, it first must be made clear how to define OE. Stephen Robbins (1990:77) provides a broad but useful definition of OE that will be utilized in this study:

> "the degree to which an organization attains its short-(ends) and long-term (means) goals, the selection of which reflects strategic constituencies, the self-interest of the evaluator, and the life stage of the organization.

The theoretical objective of this study of OE, as Robbins has defined it (with perhaps the deletion of the life stage aspect), is to identify variables associated with various theoretical approaches to OE that enhance a regional organization's effectiveness in carrying out its goals. Furthermore, it is hypothesized that these variables (when utilized in the effectiveness model developed for compact effectiveness studies) are useful in identifying effective organizations in the general area of regional organizations as well as for specific evaluations of interstate water compact commissions, if the construct space of OE is carefully defined. It is this issue of carefully defining the construct space of OE that is the next step in this study.

Because of the ambiguity surrounding the assessment of the interstate compact, a sui generis form of regional governance, the organizational effectiveness construct boundaries will be circumscribed utilizing the seven guidelines devised by Cameron (1986:93). Using these guidelines to define more specifically the construct space of effectiveness in this study will also provide a standard guide for the development of comparative assessments of other regional organizations in the future. The guidelines and the responses in terms of this study are provided as follows:

1. From whose perspective is effectiveness being judged? Response: Traditionally, state water resources were primarily a matter of state concern. This study examines the ability of states to solve their regional water resources problems without wholesale federal intervention by use of interstate water compacts. Thus, effectiveness is being judged from the perspective of the states rather than a federal or national public opinion perspective. From a state political perspective, it is assumed that states are able to manage regional water resources more effectively through interstate compacts than they could individually or through federal management.

2. On what domains of activity is the judgment focused? Response: This study is focused upon how well interstate compacts have handled interstate water quantity and quality

issues, primarily water allocation issues since federal involvement in the pollution area has increased dramatically since 1940. Particularly, the study will focus upon how well the water resource allocation decisions have been handled by water compacts with formal commission structures.

3. What level of analysis is used?

Response: The organizational level rather than the intraorganizational (internal component) level of analysis was the focus of this study (Goodman and Pennings, 1983:247) in terms of comparing the varying degrees of effectiveness as defined in the forthcoming model among the various types of interstate water compact commissions. In some respects the level of analysis is also extraorganizational (broader than a single organization) in nature because there is also an analysis of how the compact contributes to regional well-being overall.

4. What is the purpose of the assessment?

Response: This study is intended to provide the first theoretically defined effectiveness evaluation of interstate water compacts to identify which compacts are effectively managing regional water resources and what characteristics seem to be associated only with the effective interstate water compacts identified by this approach. It is hypothesized that some form of interstate water compact commission may be an effective alternative to individual state or federal preemptive alternatives. A methodologi-

cally sound organizational effectiveness approach of identifying such compacts provided by this study will reduce confusion in terms of OE evaluation and contribute to the improvement and/or additional growth of the interstate compact commission as a device for regional water management and potentially other problems that transcend state political boundaries.

5. What is the time frame employed?

Response: The time frame for this study begins with the advent of the first water compact in 1922. However, since most compacts are of more recent origin, much of the focus of the national survey utilized in this study and historical, legal and political research will be on more recent changes that have occurred in the compact, particularly since the 1980's when the number of new compacts dramatically declined (See Figure 2).

6. What type of data are sought?

Response: Generally, subjective evaluations of compact performance by compact members and directors as well as more objective indicators drawn from political, legal, and historical research into interstate water compacts will be used to determine what variables are indicative of an effective interstate water compact.

7. What is the referent against which effectiveness is being judged?

Response: This study will utilize a comparative referent, utilizing the entire population of interstate water compact commissions as the basis for determining which among them have been more effective in managing regional water resources to the satisfaction of the compacting states and their respective interest groups.

Common effectiveness evaluation problems related to the development of an OE model which are applicable to evaluating interstate water compacts have been summarized by Cameron (1986,87) and include:

1. Overgeneralization to dissimilar organizations or subunits.
2. Overreliance on single indicators and ignoring relationships among multiple indicators.
3. Underspecified models and ignoring the time frame of criterion variables.
4. Inadequate identification of indicators of effectiveness.

To avoid the overgeneralization problem, this study is not only limited to interstate compact organizations but even further limited to a subunit of those organizations related to water resources management. As has been indicated in the previous chapter, there is such a variety of interstate water compact commissions that an attempt to combine them with the wide variety of other interstate compact organizations would unnecessarily blur the distinctive features of these compact subunits. Indeed,

these water compacts will be further defined according to function in Chapter V.

To avoid the overreliance on single indicators problem, this study will utilize a number of indicators representing several applicable organizational theory approaches to effectiveness[43], such as goal attainment, systems and strategic constituencies approaches (Cameron, 1986, 542 and Robbins, 1990, 77). This multiple effectiveness models approach is necessary in order to reflect the distinct aspects of public administration associated with interstate compact commissions (Carver, 1982:n-13). It also is useful in understanding and further mapping a more specific construct space for organizational effectiveness. (Cameron and Whetten, 1983:269).

The underspecified OE model problem is addressed by including regionally oriented variables in addition to those associated with each of the organizational theory approaches previously listed. As Cameron and Whetten (1983:262) conclude, a measuring device must be as complex as the phenomenon it is seeking to measure, so multiple indicators of effectiveness are essential. The time factor is somewhat controlled from the standpoint of the relative contemporaneousness of the compacts (all have been formed since 1922): the fact that all the compacts have had at

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[43] As Lewin and Minton (1986:523) point out, "No one approach to effectiveness is inherently superior to another due to multiple conceptions of organizations, unbounded construct space, and an absence of consensual criteria."

least a decade of experience so that there is a track record to examine, and that the survey of all of the commissions was conducted over a recent and a relatively short (4 month) period of time.

The final concern was the inadequacy in identifying indicators of effectiveness. The general indicators of effectiveness identified in this chapter are more specifically explored in the following chapter, which draws upon the works of general organizational effectiveness theorists as well as testing the hypotheses of political and legal scholars of the interstate compact in order to define specific indicators of an effective compact. In addition, data from government reports and evaluations of interstate compacts, subjective evaluations of interstate compact commissioners and directors by recent nationwide survey instruments, and compact litigation analysis have been utilized to identify more thoroughly the nature of these indicators and to assess their usefulness as likely indicators of commission effectivness. The results of this indicator analysis are provided in Chapter V.

An Effectiveness Approach for Evaluating Interstate Compact Water Commissions

This section of the study will define a theoretical approach for evaluating the effectiveness of an interstate compact in managing regional water resources. (Van deVen and Ferry, 1980:300). It will be followed in the next chapter

by a section which will utilize this theoretical effectivness approach to identify "effective" interstate water compacts from an organizational theory perspective.

Because of the multidimensional nature of the effectiveness construct for interstate water compacts, no one single approach to measuring compact effectiveness is satisfactory. Instead, there must be a multiple theoretical approach to an interstate water compact's effectiveness. A list of the most commonly used models of organizational effectiveness is presented in Table 4. Among these models or approaches, three seem most applicable for studying interstate water compact commission effectiveness[44]:

1. The goal model
2. The system-resource model
3. The strategic constituencies model

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[44] The other five models of OE were not chosen for the following reasons:

1.Internal processes model: this model focuses on the internal harmony of the compact rather than its external comity, the focus of this study. Furthermore, many compacts are administratively well run internally but have no impact on the more important issues of regional decision-making or policy-making which an effective regional institution must be able to address.
2. Competing values model: this model is difficult to quantify in light of the variety of compacts and constituency interests, though it would be useful for an indepth focus of a particular compact case study.
3. Legitimacy model: Survival of a compact is not necessarily effectiveness in the case of some compacts, as there are dormant compacts that have merely survived on paper.
4. Fault-driven and high-performing systems model: As there are faults or flaws in all varieties of compacts, it is better to define criteria and determine relative effectiveness rather than make model compact comparisons.

TABLE 4

Commonly Used Models of Organizational Effectiveness

Model	Definition	When Useful
	An Organization is effective to the extent that ...	The model is most preferred when...
Goal Model	It accomplishes its stated goals.	Goals are clear, consensual, time-bound, measurable.
System-Resource	It acquires needed resources.	A clear connection exists between inputs and performance.
Internal Processes Model	It has an absence of internal strain with smooth internal functioning.	A clear connection exists between organizational process and performance.
Strategic Constituencies Model	All strategic constituencies are at least minimally satisfied.	Constituencies have powerful influence on the organization, and it has to respond to demands.
Competing Values Model	The emphasis on criteria in the four different quadrants meets constituency preferences.	The organization is unclear about its own criteria, or change in criteria over time are of interest.
Legitimacy Model	It survives as a result of engaging in legitimate activity.	The survival or decline and demise among organizations is of interest.
Fault-Driven Model	It has an absence of faults or traits of ineffectiveness.	Criteria of effectiveness are unclear, or strategies for improvement are needed.
High Performing Systems Model	It is judged excellent relative to other similar organizations.	Comparisons among similar organizations are desired.

Adapted From: K. S. Cameron, "The effectiveness of ineffectiveness," In B. M. Staw and L. Cummings, *Research in Organizational Behavior*, Vol. 6, JAI Press, Greenwich, CT., 1984, 276.

A brief discussion of these models and their application to the compact effectiveness approach being developed in this study is provided in the paragraphs below.

Goal Model

The goal model or more specifically the goal attainment model is the most widely used criterion for measuring effectiveness. Its focus is appraising organizations in terms of accomplishment of ends rather than the means of attaining them. It assumes that organizations are deliberate, rational, goal-seeking entities. It also requires that the ultimate goals be identified and well defined, not be too numerous as to be unmanageable, there is a general consensus on the goals, and there is measurable progress towards these goals (Robbins,1990:53).

In many respects, the goal model is one useful approach for measuring compact effectiveness, as the compacts have a finite number of legally defined goals in the compact instrument developed by a consensus among the compacting states. All of the interstate water compacts have been operation for over a decade so there is an historical basis for assessing how well the compact commissions have performed their statutory goals.

Systems-Resource Model

However, the goal model's emphasis on ends overlooks the need of a compact to acquire the means to accomplish there goals, and that is why the systems resource model and its indicator(s) are needed to reflect the effectiveness of a state-dependent compact commission. Without the independent means of raising revenues, the compact commission is totally dependent upon state and sometimes federal funding. Thus, the sufficiency of funding of a compact commission will have a significant impact on how well it performs its statutory goals. State support of a compact is also a good indicator of the compacting states' assessments of the commission's effectivness in terms of doing what the states cannot do for themselves.

In this system resource model, effective organizations are "those that receive greater resource inputs from their environment" (Molnar and Rogers, 1976:403). In public agencies this criteria also is useful if output is vague or tough to define by allowing the substitution of input for output measures.

Strategic Constituencies Model

Both of these approaches do not seem to adequately take into account the preferences of relevant external constituents, and in interstate compacts the constituents' judgements (i.e the individual states and the interests they

represent) are at the heart of an organization's legitimacy (Zammuto, 1982:17). As Lorsch and Morse (in Lewin and Minton, 1986:516) concluded, an effective organization is one that has a high degree of congruence between its internal and external environments.

Thus, a third model utilized in this compact effectiveness approach will be the strategic constituencies model. Pfeffer and Salancik (1978:524) define this model as an external measure of how well an organization is meeting the varying demands of various interest groups, as well as the usefulness of what is being done and the resources that are being consumed. This model assumes that an organization is a political arena where vested interests compete for control over resources, and the organization responds to the demands of those constituents upon whom it depends for its continued existence (Robbins, 1990:63). It expands the scope of evaluation of an organization to include the goals of those powerful external constituencies (Scott, 1987:322) and thus differs from the ends and means approaches of the first two models by expanding the evaluation scope of an organization.

In a sense, the theoretical approach devised in this study for measuring compact commission effectivness is a type of contingent organization design (see Cameron, 1986:515). Rather than seeking a universal, overarching theory of effectiveness, this study seeks to develop a model for determining the relative effectiveness of similar

interstate water compact commissions. Nonetheless, the approach of this study incorporates the assumptions of the three different OE models just identified in order to better reflect the multiple criteria by which a compact commission must be measured. In addition, in this chapter we will also identify theoretical indices appropriate for defining this multi-model approach. Operationalizing these indices in order to assess the effectiveness of each of these models is an even more difficult yet essential aspect of this approach that we will explore in Chapter V.

For purposes of continuity and comparability, indices to be used for this compact effectiveness approach were derived from the most commonly used indicators in past organizational effectiveness studies. A list of 30 such indices summarized by John Campbell (1974) is listed on Table 5. From this list, four indices were deemed appropriate for measuring compact effectiveness from the perspective of the three models previously identified. Those indices were:

1. Overall effectiveness
2. Goal consensus
3. Utilization of Environment
4. Evaluations by External Entities

Two additional indicators of effectiveness aimed at focusing this study on uniquely regional policy[45] actions

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[45] Policy actions (attaining final objectives) are not to be confused with routine administrative actions (timely reporting) upon which some effectiveness evaluations

TABLE 5

INDICES OF ORGANIZATIONAL EFFECTIVENESS

John P. Campbell (1974)

1. *Overall Effectiveness.* The general evaluation that takes into account as many criteria facets as possible. It is visually measured by combining archival performance records or by obtaining overall ratings or judgments from persons thought to be knowledgeable about the organization.
2. *Productivity.* Usually defined as the quantity or volume of the major product or service that the organization provides. It can be measured at three levels: individual, group, and total organization via either archival records or ratings, or both.
3. *Efficiency.* A ratio that reflects a comparison of some aspect of unit performance to the costs incurred for that performance.
4. *Profit.* The amount of revenue from sales left after all costs and obligations are met. Percent return on investment or percent return on total sales are sometimes used as alternative definitions.
5. *Quality.* The quality of the primary service or product provided by the organization may take many operational forms, which are largely determined by the kind of product or service provided by the organization. They are too numerous to mention here.
6. *Accidents.* The frequency of on-the-job accidents resulting in lost time. Campbell and others (1974) found only two examples of accident rates being used as a measure of organizational effectiveness.
7. *Growth.* Represented by an increase in such variables as total manpower, plant capacity, assets, sales, profits, market share, and number of innovations. It implies a comparison of an organization's present state with its own past state.
8. *Absenteeism.* The usual definition stipulates unexcused absences, but even within this constraint there are a number of alternative definitions (for example, total time absence versus frequency of occurrence).
9. *Turnover.* Some measure of the relative number of voluntary terminations, which is almost always assessed via archival records. They yield a surprising number of variations and few studies use directly comparable measures.
10. *Job Satisfaction.* Has been conceptualized in many ways (for example, see Wanous and Lawler, 1972) but the modal view might define it as the individual's satisfaction with the amount of various job outcomes he or she is receiving. Whether a particular amount of some outcome (for example, promotional opportunities) is "satisfying" is in time a function of the importance of that outcome to the individual and the equity comparisons the individual makes with others.
11. *Motivation.* In general, the strength of the predisposition of an individual to engage in goal-directed action or activity on the job. It is not a feeling of relative satisfaction with various job outcomes but is more akin to a readiness or willingness to work at accomplishing the job's goals. As an organizational index, it must be summed across people.
12. *Morale.* It is often difficult to define or even understand how organizational theorists and researchers are using this concept. The modal definition seems to view morale as a group phenomenon involving extra effort, goal communality, commitment, and feelings of belonging. Groups have some degree of morale, whereas individuals have some degree of motivation (and satisfaction).
13. *Control.* The degree of, and distribution of, management control that exists within an organization for influencing and directing the behavior of organization members.
14. *Conflict/Cohesion.* Defined at the cohesion end by an organization in which the members like one another, work well together, communicate fully and openly, and coordinate their work efforts. At the other end lies the organization with verbal and physical clashes, poor coordination, and ineffective communication.
15. *Flexibility/Adaptation* (Adaptation/Innovation). Refers to the ability of an organization to change its standard operating procedures in response to environmental changes. Many people have written about this dimension, but relatively few have made attempts to measure it.
16. *Planning and Goal Setting.* The degree to which an organization systematically plans its future steps and engages in explicit goal-setting behavior.
17. *Goal Consensus.* Distinct from actual commitment to the organization's goals, consensus refers to the degree to which all individuals perceive the same goals for the organization.

TABLE 5 (cont'd)

18. *Internalization of Organizational Goals.* Refers to the acceptance of the organization's goals. It includes their belief that the organization's goals are right and proper. It is *not* the extent to which goals are clear or agreed upon by the organization members (goal clarity and goal consensus respectively).
19. *Role and Norm Congruence.* The degree to which the members of an organization are in agreement on such things as desirable supervisory attitudes, performance expectations, morale, role requirements, and so on.
20. *Managerial Interpersonal Skills.* The level of skill with which managers deal with superiors, subordinates, and peers in terms of giving support, facilitating constructive interaction, and generating enthusiasm for meeting goals and achieving excellent performance. It includes such things as consideration, employee centeredness, and so on.
21. *Managerial Task Skills.* The overall level of skills with which the organization's managers, commanding officers, or group leaders perform work-centered tasks, tasks centered on work to be done, and not the skills employed when interacting with other organizational members.
22. *Information Management and Communication.* Completeness, efficiency, and accuracy in analysis and distribution of information critical to organizational effectiveness.
23. *Readiness.* An overall judgment concerning the probability that the organization could successfully perform some specified task if asked to do so. Work on measuring this variable has been largely confined to military settings.
24. *Utilization of Environment.* The extent to which the organization successfully interacts with its environment and acquires scarce and valued resources necessary to its effective operation.
25. *Evaluations by External Entities.* Evaluations of the organization, or unit, by the individuals and organizations in its environment with which it interacts. Loyalty to, confidence in, and support given the organization by such groups as suppliers, customers, stockholders, enforcement agencies, and the general public would fall under this label.
26. *Stability.* The maintenance of structure, function, and resources through time, and more particularly, through periods of stress.
27. *Value of Human Resources.* A composite criterion that refers to the total value or total worth of the individual members, in an accounting or balance sheet sense, to the organization.
28. *Participation and Shared Influence.* The degree to which individuals in the organization participate in making the decisions that directly affect them.
29. *Training and Development Emphasis.* The amount of effort the organization devotes to developing its human resources.
30. *Achievement Emphasis.* An analog to the individual need for achievement referring to the degree to which the organization appears to place a high value on achieving major new goals.

rather than private organizational or (state or federal) governmental actions were also added. Their inclusion forces a serious, specific appraisal of what Martha Derthick (1974:188) termed the ultimate goal of a regional organization: development of a regional consciousness in a federal system.

5. State assessments of the actual regional impact of commission actions by the compacting states.

6. Identification of specific actions taken by the compacting states to implement regional commission goals.

Overall Effectiveness

Overall effectiveness is a very general subjective indicator for assessing the effectiveness of an organization. The problems in assessing organizations according to this portmanteau use of the word effectiveness limit the value of assessing individual aspects of an organization's effectiveness. Overall effectiveness collectively measures the goals achieved (goals model) and the usefulness of the goals (system-resource model). For a multidimensional organization such as a compact commission, such an overall measure can be a useful preliminary subjective assessment on how a compact is performing. However, this broad assessment does not adequately distinguish the more specific domains of interest involved

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mistakenly rely. See Carter (1988:372) on administrative versus policy effectivness.

in compact activity. Thus, more specific indices also will be necessary. For this study, the overall effectiveness indicator will be addressed from both the compact director (internal) and state commissioner (external) perspectives. (See State Actions and Regional Impact section for an explanation of the state external perspective classification.)

Goal Consensus

The use of goal consensus is a particularly useful indicator of the goal attainment model in multi-member regional organizations such as interstate compacts. Robbins (1990:56) argues that consensus is impossible unless there is something tangible around which it can occur. A common watershed makes such a consensus a possibility.

However, one of the greatest obstacles to goal attainment is the lack of consensus, a common problem within many compacts which were initially formed by state consensus and operate on the same basis. A lack of goal consensus can be a factor that hinders compact effectiveness. Thus, this indicator will compare (1) how effective the state compact commissioners believe the commission had been in terms of achieving its legislative goals and (2) how effective the compact director/chair believes the commission has been in terms of meetings the commission's goal, and (3) the degree of consensus among state commissioners as to the legislative goals of the compact. National survey data of these goal

priorities will be used for goal model assessments of compact effectiveness.

Utilization of Environment

Utilization of environment is a third general indicator of compact effectiveness. From a systems-resource model perspective, it measures the success of an organization in acquiring scarce resources for operation. From a more specific compact perspective, the amount and rate of state resources committed to a compact over time is important not only for helping a compact perform regional functions but also as an indication of the significance and relative effectiveness of a compact in performing activities that individual states cannot duplicate. Thus, resource acquisition data will be used as the indicator of the systems-resource model assessment of a compact commission's effectiveness.

Evaluation of External Entities

The fourth indicator, evaluations by external entities, is useful from the strategic constituencies model perspective. Lawrence and Lorsch (in Michelman, 1978:42) argue that having large numbers of knowledgeable outsiders rate the performance of an organization with which they have close, day to day interactions provides a useful reputational effectiveness measure.

Yet, as useful as these four general indicators are in terms of providing a common organization theory based method of measuring organizational effectiveness, they do not fully measure the effectiveness of an interstate compact and its regional focus. The effectiveness of an interstate compact commission is to be measured not only by the quantity and quality of its actions, but also by whether or not these actions have concretely contributed to a regional approach for resolving interstate water problems facing the compacting states. Thus, the fifth and sixth indicators need to be considered.

State Actions and Regional Impact

The fact that the more elaborate compact commissions are operated by an independent director and staff makes the effectiveness evaluations of the individual state representatives in terms of compact goals and accomplishments an important indicator of how effective the commission has been in meeting each state's interstate water resource needs. State commissioners' primary interests and responsibilities rest within their respective states rather than with the interests of the compact commission. Thus, their effectiveness assessments of the compact commission and identification of state actions taken consistent with compact goals provide a valuable external perspective and will be drawn from national survey data that assess state

commissioner goal priorities and overall state effectiveness assessments of the compact.[46]

Martha Derthick (1974:188) suggested that an effective regional organization should be judged by how successful it has been in maintaining a regional orientation towards water resources, fostering a regional consciousness among the states involved, and in aggregating interests and articulating distinctive regional goals. Indeed, seeking a regional orientation towards water resources in a federal system that recognizes only state and federal government political units is the difficult but nonetheless ultimate task of all effective interstate water compacts.

As Muys (1976:318) points out, in terms of seeking a mechanism to provide a regional perspective for interstate water issues, "The interstate compact always has provided a theoretical means for achieving (this purpose)."

To summarize, the compact effectiveness approach we have developed for use in this study has its roots in the extensive writings of organizational theorists in the area of organizational effectiveness. It is a multidimensional

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[46] The state of New York, for example, rather than seeing its compact membership from a regional perspective, has had conflicting state interests in at least two major compacts. It has voted to block any water diversions as a member of the Great Lakes compact (concern that their hydroelectric power needs will be hurt by any diversion of water) and has refused to pay its full share of compact costs of the Delaware River Basin Compact in part because of its desire to divert more water from the Delaware than the U.S. Supreme Court currently allows.(See Appendix E for the DRBC budget history).

approach that draws upon three separate organizational effectiveness models in order to reflect the unique external dependencies of compact commission as well as its distinctive legal and political internal mandates and resource needs. A compact commission's effectiveness will be measured through the eyes of these three models by the use of four generally well-recognized organizational theory based indices: overall effectiveness, goal consensus, utilization of environment, and evaluation by external entities. Furthermore, because of the regional orientation of water compact commissions, two additional specific indices have been devised to assess compact effectiveness: (5) identifiable state actions taken in accordance with compact goals and (6) regional impact assessments of the compact by the states.

A major controversy in the development of a theoretical approach for assessing effectivness of any organization including an interstate compacts is determining the usefulness of a multivariate approach to OE. Campbell (in Goodman and Pennings, 1977:45) argues that on the basis of previous research, such an approach is counterproductive. He argues that it is neither physically nor economically possible to use a multivariate approach that will yield useful information because of degrees of freedom problems as well as the uneven definitions used in archival or objective measures, resulting in "strange looking correlations between variables".

However, the unique nature of interstate compact organizations makes use of multiple criteria imperative. After all, interstate compacts have multiple constituents and multiple domains[47] (See Hitt, 1988:32,35) and thus require a multiple set of effectiveness measures.

The approach of this study will be to construct an OE model, utilizing the six indicators previously identified as appropriate for this compact effectiveness study in order to develop a comparative ranking of the effectiveness of U.S water compact commissions.

In the following chapter, this compact effectiveness approach is further operationalized into specific variables, utilizing data drawn from a national survey conducted exclusively for use in this study, The purpose of the first section of Chapter V will be to identify specifically the most effective and least effective compact commissions on the basis of the aforementioned criteria. Then, after identification of the commissions assessed as effective according to the approach devised in this chapter, the latter sections of Chapter V will explore specific hypotheses of compact effectivness utilizing this more carefully defined compact effectiveness model.

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[47] Domain is used in this situation to indicate a major sphere of importance to an organization.

CHAPTER V

EFFECTIVE INTERSTATE WATER COMPACTS: MODEL APPLICATION AND VARIABLE IDENTIFICATION

Introduction

The thesis of Chapter IV was that due to the unique regional character of interstate compacts, compact effectiveness measurement requires the combined use of three organizational effectivness (OE) models. Subsequently, six organizational effectiveness indices associated with these three models were identified, defined, and incorporated into a broader theoretical model that more completely assesses the effectiveness of interstate compact commissions. Thus, a distinct OE model reflecting all three models was developed for evaluating interstate compacts.

The purpose of this chapter is to operationalize and apply this new OE model to the entire population of U.S interstate water compact commissions and identify the relative effectiveness of each of these commissions. To do so, hypotheses of what constitutes an effective interstate water compact drawn from the literature and from the findings of the national survey will be tested utilizing

this model. The specific objectives of the two sections of this chapter are as follows:

Section one will operationalize the six indices associated with this new OE model and then apply the model to the 19 interstate water compact commissions which are the focus of this study. The result of this section will be the development of a rank ordered effectiveness list of those compacts with a separate commission structure, the first time such a ranking and comprehensive comparison of these compacts has been undertaken.

Section two will then initially test the external validity of the compact effectiveness measures and further classify the water compacts studied according to their specific functions. Then, major hypotheses that legal and political scholars have advanced as characteristic of effective interstate water compacts are identified and analyzed utilizing the OE model developed in this study. It is the first time that these hypotheses have been tested from a comparative theoretical perspective.

Seven compact effectiveness hypotheses from the field have been identified for the purposes of this study:

1. An effective interstate compact must have coercive authority to force state compliance with compact goals. (Not supported by this study.)

2. The origins of an effective compact can be traced to either a federal initiative or a crisis that precipitated the development of a compact. (Not supported by this study.)

3. Formal participation of the federal government in the administration of an interstate compact is essential for an effective compact. (Supported for pollution compacts only.)

4. Compact commissions with one state veto voting powers are ineffective. (Not supported by this study.)

5. Effective compacts have a high degree of communication among its member states. (Some support in this study.)

6. Compacts with elite constituencies are more likely to have a high degree of effectiveness than those without such groups. (Some support in this study.)

7. The size or flexibility of a compact affects its effectiveness. (No support for geographical size, number of states, or flexibility criteria utilized in this study.)

The data upon which section one of this chapter is primarily based are drawn from a national survey instrument developed specifically for this study. The survey was sent to the compact directors/chairs and state commissioners of all 27 interstate water compacts which had an identifiable commission structure.[48]

The compact commission list was developed from information obtained from the Council of State Governments,

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[48] Because of their lack of a formal commission structure, the following interstate water compacts were not included in this study: Belle Fourche River Compact (1943), the Colorado River Compact (1922), the Snake River Compact (1949), the Upper Niobrara Basin Compact (1969), and the Merrimack River Compact. In addition, due to the extremely limited commission structure of the La Plata, South Platte, Republican, Costilla Creek, Red River and Big Blue compacts plus the incomplete director responses from the Rio Grande and Wheeling Creek compacts, these responses were not tabulated in the text tables though survey responses are provided in Appendix D.

and was updated and corrected to represent the current state commissioners with the assistance of the commission directors/chairs of the surveyed compacts (See Appendix A for complete description of compact population). A copy of each survey instrument sent to the directors (See Appendix B for list of directors/chairs) and to the state commissioners is included in Appendix C of this study. A summary of the survey responses is provided in Appendix D.

The response rates to this survey were 100% of all compact commissions with existing directors/chairs and 65% of the 232 state commissioners. A summary the respondents who were surveyed is included in Table 6. The high rate of participation in both the director and commissioner phases of this survey makes it a valuable tool from which to discern the effectiveness of the compact from both the external (state commissioners' views) and internal (compact director) perspectives.

Section two, which describes and analyzes compact effectiveness hypotheses, will also utilize historical, political, and legislative data; court cases; and data from the previously mentioned survey to test these hypotheses. Following an external validity test of the section's findings, the ranking of effective interstate water compacts provided in section one will be the primary basis for determining what interstate compact theories are consistent with the findings of the OE model operationalized.

TABLE 6

Interstate Water Compact Survey Participation

COMPACT	Director/Chair	State Total	State Responses	% of State Participation
Arkansas River	Chair	6	4	66%
Ark-Okla-Ark River	Chair	8	5	63%
Bear River	Manager	10	8	80%
Canadian River	Chair	5	3	60%
Connecticut River	Chair	10	6	60%
Costilla Creek	None	2	2	100%
Delaware River	Director	9	8	89%
Great Lakes	Director	31	17	55%
Interstate San.	Director	14	5	36%
Kan-Okla Ark River	Chair	7	3	43%
Big Blue River	None	2	2	100%
Klamath River	Chair	3	2	67%
La Plata	None	2	2	100%
NEIWPCC	Director	29	17	59%
Ohio River	Director	25	16	64%
Pecos River	Chair	2	2	100%
Potomac River	Director	16	7	44%
Red River	None	8	6	75%
Republican River	None	3	3	100%
Rio Grande	Chair	4	3	75%
Sabine River	Chair/Sec	5	4	80%
S. Platte	None	2	2	100%
Susquehanna River	Director	10	5	50%
Thames	Chair	5	2	40%
Upper Colorado Riv	Director	5	4	80%
Wheeling Creek	Chair	8	6	75%
Yellowstone River	Chair	3	2	67%
Totals		232	151	65%

Chapter VI will apply the general effectiveness findings of Chapter V in the more specific context of three comprehensive case studies of existing and failed interstate water compacts. This chapter will thus provide an additional test of the findings of the OE model from a contextual perspective.

SECTION 1

A Theoretical Model for Identifying Effective Interstate Water Compact

It is time to put the compact effectiveness model generally described in Chapter IV into a formula. The OE model proposed in this study can be described symbolically as follows:

$$OE = G + SR + SC$$

where:

OE = organizational effectiveness of an interstate compact
G = the goal model
SR = the system-resource model
SC = the strategic constituencies model

The Goal Model

The goal model (G) aspect of this OE theory is measured by two internal variables: overall effectiveness (OVE_D) and regional impact (RI_D) assessments by the commission directors, or

$$G = OVE_D + RI_D$$

The internal indicator of overall effectiveness (OVE) is operationalized into a variable that measures the compact director/chair's overall assessment according to survey responses as to how effectively the commission is meeting its official goals (OVE_D).

The regional impact (RI) of a commission is operationalized into a variable that measures the ability of the director (RI_D) to identify actions that the commission has taken that further its regional goals defined in the compact (an internal measure used for the goal model).

The Systems-Resource Model

The systems-resource model (SR) aspect of this OE model is measured by two resource variables: overall level of funding assessment by the director (F_D) and individual state contributions as identified the state commissioners (F_S)[49], or

$$SR = F_D + F_S$$

Thus, the utilization of the environment indicator is operationalized into two variables that measure the director's assessment as to the adequacy of funding of the compact (F_D) and the degree of burden sharing in terms of

[49] Exact budget figures were not available for all compacts so the survey respondents' perceptions of state resource commitments were used in lieu of these figures.

funding the commission priorities among the state commission members (F_S).

The Strategic Constituencies Model

The strategic constituencies model (SR) aspect of this OE theory is measured by four external variables: the overall effectiveness assessment by state commissioners (OE_S), the regional impact assessment by the state commissioners (RI_S), the state actions identified by state commissioners (SA_S) and goal consensus in terms of the extent of agreement of commission goal priorities among state commissioners (GC_S), or

$$SC = OVE_S + RI_S + SA_S + GC_S$$

1. The evaluations by external entities indicator is operationalized into a variable that measures the overall assessment of the compact from a state commissioner perspective (OVE_S)[50].

2. The state actions taken to further the commission's regional goals indicator is operationalized into a variable that measures the extent to which state commissioners are able to identify specific state laws

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[50] See footnote 46 on page 110 in Chapter IV for a discussion as to why state commissioners who primarily represent their own state's political interests are properly considered external to the compact commission because of their state accountability status.

or regulations that implement commission regional policy (SA_S).

3. The goal consensus indicator is operationalized into a variable that measures the degree of consensus among state commissioners as to the number one priority of the compact according to the goals identified in the compact instrument (GC_S).

4. The regional impact indicator is operationalized into the state commissioners' (RI_S) external assessment of the commission's impact on regional water policy in their respective states.

As explained in Chapter IV, since all three of these organizational effectiveness models measure a distinct yet essential dimension of the interstate compact commission (internal, resource, and external), each model is weighted equally for purposes of this study.

Substituting these variables for the three goal models and their indicators which were included in the OE theory presented at the beginning of the chapter and averaging the variables representing each of the models to ensure equal weight, the theory is represented symbolically as follows:

$$OE = \frac{OVE_D + RI_D}{2} + \frac{F_D + F_S}{2} + \frac{OVE_S + RI_S + SA_S + GC_S}{4}$$

Goal model: Using the goal model equation aspect of this general formula, this equation would now symbolically be represented as:

$$G = \frac{OVE_D + RI_D}{2}$$

The responses of the commission directors/chairs to the following question were used to quantify the OVE_D variable:

> "How effective has the commission been in achieving the purposes you have identified and ranked in Question 10?" (Question 10 asked for a ranking of the official goals of the compact).

The responses provided in the question were weighted as follows:

> Very effective = 1
> Somewhat effective = 2
> Somewhat ineffective = 3
> Very ineffective = 4

Thus, the lower the score, the more effective the compact was perceived by the director/chair. A summary of the responses and ratings are included in column 1 of Table 7.

The responses of the directors/chairs to the following question were used to quantify the RI_D variable:

> "What are the two or three most important actions the commission has taken in the last ten years in furtherance of these purposes?" (Referring again to the ranking of official compact purposes in Question 10)

TABLE 7

GOAL MODEL
Interstate Water Compact Effectiveness

COMPACT	Overall Effectiveness (OED)	Regional Impact (RID)	Raw Score	Average Score
Arkansas River	1	3	4	2
Ark-Okla-Ark River	2	2	4	2
Bear River	2	1	3	1.5
Canadian River	2	4	6	3
Connecticut River	2	1	3	1.5
Costilla Creek	(N/A)	(N/A)	(N/A)	(N/A)
Delaware River	1	1	2	1
Great Lakes	1	2	3	1.5
Interstate San.	1	1	2	1
Kan-Okla Ark River	1	3	4	2
Big Blue River	(N/A)	(N/A)	(N/A)	(N/A)
Klamath River	1	2	3	1.5
La Plata	(N/A)	(N/A)	(N/A)	(N/A)
NEIWPCC	2	1	3	1.5
Ohio River	1	1	2	1
Pecos River	4	3	7	3.5
Potomac River	1	1	2	1
Red River	No director/chr	No director/chr	No director	
Republican River	(N/A)	(N/A)	(N/A)	(N/A)
Rio Grande **	1	4	5	2.5
Sabine River	1.5*	2	3.5	1.75
S. Platte	(N/A)	(N/A)	(N/A)	(N/A)
Susquehanna River	2	1	3	1.5
Thames	1	3	4	2
Upper Colorado Riv	2	2	4	2
Wheeling Creek **	1	2	3	1.5
Yellowstone River	2	1	3	1.5
Average	1.61	1.84	3.45	1.72

*Rated as "effective" ** Not in computed averages --incomplete responses.

Since this response is an internal evaluation of overall goal attainment question, it is included in the goal model and is quantified as follows:

1 = provided more than one policy[51] action taken by the commission which is associated with the commission's ranked goals.

2 = provided one policy action taken by the commission associated with the commission's ranked goals.

3 = provided only administrative actions associated with the commission's ranked goals.

4 = provided neither an administrative nor a policy action associated with the commission's ranked goals.

Column 2 of Table 7 summarizes the regional impact variable and column three provides an average score for each of these two variables associated with the goal model. The average or mean score for the goal model was 1.72. Eight compact commissions scored below this mean score:

Upper Colorado River compact
Kansas-Oklahoma Arkansas River compact
Sabine River compact
Pecos River compact
Arkansas-Oklahoma Arkansas River compact
Thames River compact
Arkansas River compact
Canadian River compact

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[51] Refer to note 45 by Neil Carter on the significance of an administrative versus a policy action taken by an organization. Carter argues that there is a significant difference between administrative efficiency (error rates and timeliness) and policy efficiency (obtaining the organization's final objective). The difference between a policy action and an administrative one in this study is whether or not the action related to internal management (administrative) or required or resulted in external (state) action.

System Resource Model: Using the systems-resource model equation of the general theory of OE, the equation would now be represented as:

$$SR = \frac{F_D + F_S}{2}$$

The responses of the commission directors/chairs to the following question were used to quantify the F_D variable:

> "Over the past ten years, describe the level of state contributions to the commission's budget (in actual dollars)"

The summary responses (exact wording of the responses choices are provided in the appendix) provided from this question were weighted as follows:

1 = funding increased significantly or slightly[52]
2 = funding did not change
3 = funding decreased slightly, decreases by one state not offset by other state contributions
4 = funding decreased significantly, decreases in contributions by more than one state not offset by other state contributions.

Thus, the lower the score, the more adequately funded the compact commission was from the overall perspective of

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[52] The reason for combining these two categories is to obtain an indication of whether or not the state has increased resources. The expectation is that an net increase in resources is a positive indication regardless of the size. Besides, a large increase in funding may be due to only one state's contribution, which does not necessarily indicate approval among all compact members.

the director/chair. A summary of the response and rankings are included in column 1 of Table 8.

The responses of the state commissioners to the following question were used to quantify the F_s variable:

> "Over the past ten years, describe the approximate level of your state's contributions to this commission's budget (in dollars)."

This funding variable from the state commissioner's perspective is included so that a better picture of individual state funding burdens is provided. It is conceivable that a compact commission may be adequately funded from an overall perspective but that state support may be declining among one or more states, indicating perhaps a lack of interest or support for the regional nature of the commission's actions by some state commission members.[53] It is thus a useful individual indicator of external resource support among the compact members.

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[53] The overall responses by the directors may not reflect situations where the funding level of the compact has increased yet the relative burdens in financing the commission are unequally borne by only a few of the states in the compact. For example, New York is a member of almost 40 compacts, yet it has reduced its contributions to some commissions like the Delaware River Basin Commission (DRBC) because of its concern over the actions of that commission. Since other members of the DRBC the commission have significantly increased their contributions, this regional division would not be reflected in the director's overall funding assessment. Thus, individual state contribution assessments by the state commissioners provide an important additional measure of the external resource support of a commission. (See Appendix E for the DRBC budget breakdown on a state contributions).

TABLE 8

Systems-Resource Model
Interstate Water Compact Resources

COMPACT	Overall Funding Adequacy	Individual State Funding	Raw Score	Average Score
Arkansas River	1	3	4	2.0
Ark-Okla-Ark River	2	4	6	3.0
Bear River	3	2	5	2.5
Canadian River	2	2	4	2.0
Connecticut River	2	2	4	2.0
Costilla Creek	(N/A)	1	--	--
Delaware River	1	3	4	2.0
Great Lakes	1	3	4	2.0
Interstate San.	4	4	8	4.0
Kan-Okla Ark River	2	1	3	1.5
Big Blue River	(N/A)	1	--	--
Klamath River	2	2	4	2.0
La Plata	(N/A)	1	--	--
NEIWPCC	2	3	5	2.5
Ohio River	1	1	2	1.0
Pecos River	1.5*	1	2.5	1.25
Potomac River	1	2	3	1.5
Red River	None-no director	3	--	--
Republican River	(N/A)	1	--	--
Rio Grande	(Not provided)	1	--	--
Sabine River	1	1	2	1.0
S. Platte	(N/A)	2	--	--
Susquehanna River	1	2	3	1.5
Thames	2	2	4	2.0
Upper Colorado Riv	1	1	2	1.0
Wheeling Creek	(Not provided)	2	--	--
Yellowstone River	1	1	2	1.0
Average	1.66	2.0	3.7	1.88

*Defined as "adequate" by director"

The responses to the choices in the question were weighted as follows:

1 = all respondents indicated that state contributions had increased slightly or significantly.[54]
2 = all respondents indicated that state contributions had increased slightly or significantly or did not change.
3 = one or more respondents indicated that state contributions had decreased slightly.
4 = one or more respondents indicated that state contributions had decreased significantly.

The lower score in this ranking indicates higher overall state support in terms of compact funding. Column 2 in Table 8 summarizes the quantification of this variable and column 3 indicates the average score for the systems-resource model aspect of the theoretical OE model. The average or mean score of the systems-resources model was 1.88. Eleven interstate water commissions scored below this mean score:

Delaware River Basin compact
Great Lakes compact
Bear River compact
Connecticut River compact
Klamath River compact
NEIWPCC
Arkansas-Oklahoma Arkansas River compact
Interstate Sanitation Commission
Thames River compact
Arkansas River compact
Canadian River compact

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[54] Because complete budget figures were neither uniform not uniformly available, the state commissioner survey responses were used as a construct of state financial support.

Strategic Constituencies Model: Using the strategic constituencies model aspect of the theoretical model, this equation would be symbolically represented as:

$$SC = \frac{OVE_s + RI_s + SA_s + GC_s}{4}$$

The responses of the state commissioners to the following question was used to quantify the OVE_s variable:

> "How effective do you, as the state representative, believe this commission has been in achieving the purposes you have identified and ranked in question 5?" (Question 5 asked for the state commissioners' rankings of the compacts goals).

The responses provided in the question were weighted as follows:

1 = very effective
2 = somewhat effective
3 = somewhat ineffective
4 = very ineffective

Thus, a lower score indicated a higher degree of overall commission effectiveness as perceived by the state commissioners. A summary of the responses and ratings are included in column 1 of Table 9.

The responses to the state commissioner to the following question were used to quantify the RI_s variable:

> "What has been the impact of actions and/or recommendations made by this commission on the development of a regional water policy approach by your state."

TABLE 9

Strategic Constituency Model
Interstate Water Compact State Evaluation

COMPACT	Overall Effectiveness	Regional Impact	State Activity	Goal Consensus	Raw Score	Average
Arkansas River	2.75	2.33	2.0	2.0	9.08	2.27
Ark-Okla-Ark River	2.00	1.25	2.0	2.0	7.25	1.81
Bear River	1.38	1.86	1.0	2.0	6.24	1.56
Canadian River	1.33	1.33	3.0	2.0	7.66	1.92
Connecticut River	1.83	1.75	4.0	2.0	9.58	2.4
Costilla Creek *	1.00	2.00	1.0	1.0	5.00	1.25
Delaware River	1.25	1.83	1.0	2.0	6.08	1.52
Great Lakes	1.81	1.81	2.0	2.0	7.62	1.91
Interstate San.	1.80	2.25	2.0	3.0	9.05	2.26
Kan-Okla Ark River	1.67	1.67	2.0	1.0	6.34	1.59
Big Blue River *	1.00	1.00	1.0	1.0	4.0	1
Klamath River	2.00	2.00	4.0	2.0	10.0	2.5
La Plata *	1.00	3.00	1.0	1.0	6.0	1.5
NEIWPCC	1.67	1.79	2.0	3.0	8.46	2.12
Ohio River	1.53	1.73	2.0	3.0	8.26	2.07
Pecos River	1.50	1.50	1.0	1.0	5.0	1.25
Potomac River	1.43	1.29	1.0	1.0	4.72	1.18
Red River *	1.40	1.83	1.0	2.0	6.23	1.56
Republican River *	2.30	3.33	2.0	1.0	8.63	2.16
Rio Grande *	1.00	1.67	2.0	1.0	5.67	1.42
Sabine River	1.25	2.00	3.0	2.0	8.25	2.06
S. Platte *	2.00	3.00	2.0	2.0	9.0	2.25
Susquehanna River	1.60	2.00	2.0	2.0	7.6	1.9
Thames	1.50	2.00	4.0	1.0	8.5	2.06
Upper Colorado Riv	1.75	1.50	1.0	2.0	6.25	1.56
Wheeling Creek *	1.80	2.20	4.0	1.0	9.0	2.25
Yellowstone River	3.00	3.00	1.0	2.0	9.0	2.25
Average	1.74	1.83	2.1	1.95	7.64	1.904

* Responses not included in averages due to lack of overall survey response

The responses of the state commissioners were weighted as follows with the lower score indicating a more positive impact (see appendix for exact wording of response choices):

1 = significantly positive impact
2 = marginally positive impact
3 = marginally negative impact
4 = significantly negative impact

A summary of the responses and ratings are included in column 2 of Table 9.

The responses of the state commissioners to the following question were used to quantify the SA_s variable:

> "If possible, please identify three important legislative or regulatory actions your state has taken in the last ten years in furtherance of (or in opposition to) the compact commission's purposes you have identified in question 5."

The responses of the state commissioners were weighted in terms of the percentage of respondents who could identify specific state regulation or legislation associated with commission purposes. The state commissioners who represent their state on the commission must inform the state as to what actions it must take in order to implement commission goals. Thus, the assumption in this variable is that the fewer the number of state commissioners who can identify specific state actions, the less likely that all of the member states will have actually taken concrete steps to realize the regional goals of the compact.

The weight[55] given to the aggregate responses of the state commissioners of each compact were as follows:

1 = more than 75% of the respondents can identify such actions
2 = 50% to 75% of the respondents can identify such actions
3 = 25% to 49% of the respondents can identify such actions
4 = less than 25 % of the respondents can identify such actions.

Thus, the lower score indicates a higher percentage of respondents who can identify state actions to implement commission purposes. A summary of these findings is included in column 3 of Table 9.

Finally, the responses of the state commissioners to the following question were used to quantify the GC_s variable:

"Below is a list of official purposes of the compact on which you serve, derived from the Congressional

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[55] The percentages chosen appear to be somewhat arbitrary (that is the difference between 75% and 76% identification may seen to be inconsequential. However, in a small (four member) compact commission, if one of the four state commissioners cannot identify a state action (75%), that is a significant regional difference in terms of compact unity. On the other hand, in commissions where states have several commissioners such as the Great Lakes Commission and the NEIWPCC, if one of the state commissioners cannot identify a state action while another can (a likely scenario where commission responsibilities are divided), a response rate of less than 100% is not as statistically significant because of the larger number of respondents. Still, as the percentage of respondents decreases even in large commissions, the probability that no state action has been taken by one or more states increases. The percentages chosen were meant to encompass differences in terms of state action identification among both single membership and multiple membership in the compacts studied.

enabling statute. Please rank these purposes in terms of what you believe are the commission's priorities, with 1 being the top priority."

There may be some overlap in terms of the official purposes of the compact, and it is possible that in some cases the official purposes of the compact may be vaguely worded. However, it is assumed for this study that the farther apart the members are in terms of what they believe is the number one goal of the compact, the less likely they will positively assess the commission's actions because of goal conflict.[56]

The degree of goal consensus among state commissioners will be weighted[57] as follows:

1 = more than 75% agree upon the number one goal of the commission.
2 = 50% to 75% agree upon the number one goal of the commission.
3 = 25% to 49% agree upon the number one goal of the commission.

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[56] Certainly, the results of the survey indicate that even in vaguely worded, multiple goal compacts, the members of some commissions show great unanimity in terms of what they perceive as the commission's number 1 goal. Thus commission size or vagueness in compact wording does not seem to be an obstacle to achieving compact goal consensus. Indeed, the fact that vagueness allows a variety of goals to be undertaken on a priority basis indicates that commissions without goal consensus on at least their number 1 priority may be more prone to inaction due to dysfunctional goal conflict.

[57] For reasons similar to those offered in the previous footnote, the percentages used to assess goal consensus are provided in order to reflect the relative importance of dissent among small, single-member and large, multi-member compact commissions. For purposes of uniformity as well, the percentages are identical to those used in the state action variable.

4 = less than 25% agree upon the number one goal of the commission.

Thus, the lower the score, the more goal consensus there is among the state commissioners and the greater the likelihood that the commission will be seen as effective by the state respondents. A summary of these responses is included in column 4 of Table 9, along with an overall average rating of the compacts based on these four variables representing the strategic constituencies model.

The overall average or mean of the strategic constituencies model was 1.90. Eleven interstate water compact commissions scored below this mean score:

Ohio River Sanitation Commission
Yellowstone River Commission
Great Lakes Commission
Sabine River Commission
Connecticut River Commission
Klamath River Commission
NEIWPCC
Interstate Sanitation Commission
Thames River commission
Arkansas River commission
Canadian River commission

Table 10 summarizes the variable ratings of all three models for all 27 interstate water compacts (including those without a formal commission structure). It also provides a ranking of each compact commission in terms of effectiveness as measured by the OE model presented in Chapter IV and represented symbolically in the equation provided at the beginning of this chapter.

TABLE 10

Summary Table
Overall Effectiveness Ranking of Interstate Water Compacts

COMPACT	Goal	System Resource	Strategic Constituencies*	Total	Rank
Arkansas River	2	2	2.3	6.3	16
Ark-Okla-Ark River	2	3	1.8	6.8	17
Bear River	1.5	2.5	1.6	5.6	10
Canadian River	3	2	1.9	6.9	18
Connecticut River	1.5	2	2.4	5.9	11
Costilla Creek	--	--	1.3	--	--
Delaware River	1	2	1.5	4.5	3
Great Lakes	1.5	2	1.9	5.4	9
Interstate San.	1	4	2.3	7.3	19
Kan-Okla Ark River	2	1.5	1.6	5.1	8
Big Blue River	--	--	1	--	--
Klamath River	1.5	2	2.5	6	12
La Plata	--	--	1.5	--	--
NEIWPCC	1.5	2.5	2.1	6.1	13(+)
Ohio River	1	1.0	2.1	4.1	2
Pecos River	3.5	1.3	1.3	6.1	13(+)
Potomac River	1	1.5	1.2	3.7	1
Red River	--	--	1.6	--	--
Republican River	--	--	2.2	--	--
Rio Grande	2.5	--	1.4	--	--
Sabine River	1.8	1	2.1	4.9	6(+)
S. Platte	--	--	2.3	--	--
Susquehanna River	1.5	1.5	1.9	4.9	6(+)
Thames	2.0	2	2.1	6.1	13(+)
Upper Colorado Riv	2	1	1.6	4.6	4
Wheeling Creek	1.5	--	2.3	--	--
Yellowstone River	1.5	1	2.3	4.8	5
Average	1.75	1.88	1.86	5.5	

*Rounded to first digit

The reader will note that eight compacts were not ranked.[58] However, the initial data provided in Table 9 does tend to support an earlier assertion by many compact proponents and opponents that many of these single-purpose compacts (water allocation compacts for example) are comparatively very effective in terms of handling specific regional duties such as one-time water allocation problems.[59] The problem lies in the limited scope of their responsibility for promoting regional action in other regional watershed issues.

This section thus concludes with the development of a comparative effectiveness ranking of the interstate water compact commission population listed below. For purposes of identifying effective versus ineffective interstate water compact commissions, we initially shall use the overall average score of the compacts drawn from Table 10, which summarizes and ranks the interstate water compacts according to the equation:

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[58] Those not ranked included those that lacked a formal commission structure (characterized by periodic meetings of state officials, generally for technical engineering purposes) and a director was either not provided for in the compact or the commission position was vacant (the latter applies to the Red River Commission). The Wheeling Creek and Rio Grande Commissions were not ranked because funding data were missing.

[59] See the average scores on Table 5.4 for the commissions that lack a director/chair; namely the Costilla Creek, Big Blue, La Plata. However, notice the scores for the Republican and South Platte indicate that being a single purpose compact by itself does not ensure effectiveness.

$$OE = \frac{OVE_D + RI_D}{2} + \frac{F_D + F_S}{2} + \frac{OVE_S + RI_S + SA_S + GC_S}{4}$$

An effective interstate water compact as identified by the OE model developed in this study will be characterized as one that has a lower overall mean score equal to or lower than the average compact score (5.5). Thus the more effective compacts in order of overall mean effectiveness would include:

1. Potomac River
2. Ohio River
3. Delaware River
4. Upper Colorado River
5. Yellowstone River
6. Sabine River (tied)
7. Susquehanna River (tied)
8. Kansas-Oklahoma Arkansas River
9. The Great Lakes

A relatively ineffective interstate water compact as identified by our OE theory as one that has a total score that is higher than the average compact (5.5). Thus, the relatively less effective compacts in order of their overall scores are as follows:

10. Bear River
11. Connecticut River
12. Klamath River
13. Pecos River (tied)
14. Thames River (tied)
15. NEIWPCC (tied)
16. Arkansas River
17. Arkansas-Oklahoma Arkansas River
18. Canadian River
19. Interstate Sanitation Commission

However, this ranking does not reflect how well each commission met the individual criteria for each of the three models (goal, system-resources and strategic constituencies) used to develop the OE model of this study. The assumption behind the OE model developed for this study was that each of these models measures a distinct yet essential effectiveness dimension; thus, all models are weighted equally. Accordingly, how relatively effective the commissions are depends not only on their scoring at or below the overall mean for all three models, but also on how well each compact satisfies the effectiveness criteria for each of the three models.[60]

For purposes of consistency and in order to facilitate comparison to the overall mean rankings, the mean score of each of the three models is used as a further basis for determining the relative effectiveness of each commission. Table 11 summarizes this further refinement of interstate water compact commission effectiveness.

For purposes of definition, compacts are ranked in Table 11 according to the following criteria:

1. An effective water compact commission is one that scored below the mean score for each of the three models, as well as scoring below the overall mean for all three models.

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[60] As standard deviation would not be useful for comparative purposes due to the limited population of some compacts, this focus on individual model means as well as the overall mean provides an alternative means of establishing score disparities and the identifying outlier scores.

TABLE 11

FINAL RANKING OF COMPACTS

Rating	Compact	Overall Mean (5.5) Score/Rank	At or below Mean (1.72) Goal Model	At or below Mean (1.88) Systems-Resource	At or below Mean (1.90) Strategic Constituencies
Effective	Potomac	3.7/(1)	Yes (1.0)	Yes (1.5)	Yes (1.18)
	Susquehanna	4.9/(6)	Yes (1.5)	Yes (1.5)	Yes (1.90)
Relatively Effective	Ohio	4.1/(2)	Yes (1.0)	Yes (1.0)	No (2.07)
	Delaware	4.5/(3)	Yes (1.0)	No (2.0)	Yes (1.52)
	Upper Colorado	4.6/(4)	No (2.0)	Yes (1.0)	Yes (1.56)
	Yellowstone	4.8/(5)	Yes (1.5)	Yes (1.0)	No (2.25)
	Kansas-Oklahoma	5.1/(8)	No (2.0)	Yes (1.5)	Yes (1.59)
	Sabine	4.9/(6)	No (1.75)	Yes (1.0)	No (2.06)
	Great Lakes	5.4/(9)	Yes (1.5)	No (2.0)	No (1.91)
Relatively Ineffective	Bear	5.6/(10)	Yes (1.5)	No (2.5)	Yes (1.56)
	Pecos	6.1/(13)	No (3.5)	Yes (1.25)	Yes (1.25)
Ineffective	Connecticut	5.9/(11)	Yes (1.5)	No (2.0)	No (2.4)
	Klamath	6.0/(12)	Yes (1.5)	No (2.0)	No (2.5)
	NEIWPCC	6.1/(15)	Yes (1.5)	No (2.5)	No (2.12)
	Arkansas-Oklahoma	6.8/(17)	No (2.0)	No (3.0)	Yes (1.81
	ISC	7.3/(19)	Yes (1.0)	No (4.0)	No (2.26)
	Thames	6.1/(14)	No (2.0)	No (2.0)	No (2.06)
	Arkansas	6.3/(16)	No (2.0)	No (2.0)	No (2.27)
	Canadian	6.9/(18)	No (3.0)	No (2.0)	No (1.92)

2. A relatively effective water compact commission is one that scored below the mean score for fewer than all three individual models as well as scoring below the overall mean for all three models.

3. A relatively ineffective water compact commission is one that scored below the mean score for two of the three individual models but scored above the overall mean for all three models.

4. An ineffective water compact commission is one that scored below the mean score for fewer than two of the three individual models[61] and scored above the overall mean for all thee models.

Thus, the 19 interstate water compact commissions will be ranked accordingly:

Effective commissions

1. Potomac River
2. Susquehanna River

Relatively effective commissions

3. Ohio River Sanitation
4. Delaware River basin
5. Upper Colorado River
6. Yellowstone River
7. Kansas-Oklahoma Arkansas River
8. Sabine River*
9. Great Lakes*

* Indicates were below the overall mean but only below the mean of one of the three individual models.

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[61] The assumption behind this relative effectiveness differentiation is that the greater the number of individual effectiveness models that a commission exceeds the mean score, the more likely there is not just one but multiple problems (internal, resource, and external) with the compact that are hindering its effectiveness.

Relatively ineffective commissions

10. Bear River
11. Pecos River

Ineffective commissions

12. Connecticut River
13. Klamath River
14. NEIWPCC
15. Arkansas-Oklahoma Arkansas River
16. Interstate Sanitation
17. Thames River
18. Arkansas River
19. Canadian River

This information will form the basis for testing the theories about what constitutes an effective interstate water compact, the substance of section 2 of this chapter.

SECTION 2

The Validity of Compact Effectiveness Identification

The list of interstate water compacts in the previous section identified as effective and relatively ineffective according to the OE model for interstate compacts requires an initial external validity analysis. Do the "effective" or "relatively effective" compacts theoretically identified: (1) meet the minimum requirements for forming a compact (i.e. to avoid court litigation, the only politically realistic alternative formal mechanism for interstate water disputes) and (2) have characteristics that clearly differentiate them from compacts identified as relatively ineffective? (i.e. are they arbitrary or nonquantifiable differences). If the OE model is to be useful for

identifying effective compacts, it must be able to meet these two threshold requirements.

Litigation Avoidance

To answer the initial litigation avoidance purpose of a compact, an examination of state versus state litigation before the U.S. Supreme Court under its original jurisdiction power was undertaken through the use of the LEXIS legal research data base. If a compact is effective, at a minimum there should be no post compact litigation among state compact members. The presence of such U.S. Supreme Court litigation after compact ratification would indicate that the compact is not an effective alternative mechanism for resolving interstate water disputes.

Girardot (1989:157) highlights the growing importance of compacts as an alternative to litigation, pointing to recent and projected future drought problems. Compacts must provide a coherent scheme for resolving such disputes quickly and easily. Otherwise they will be futile devices, and court litigation will become the dominant avenue for water dispute resolution.

A review of the U.S. Supreme Court cases decided after the ratification of each of the compacts rated "effective" or "relatively effective" did not reveal any instances of state versus state interstate water compact litigation,

indicating initial support for the compact effectiveness rankings provided by the theoretical model[62].

Distinctive Effective Compact Characteristics

Beyond meeting this minimum litigation avoidance standard, effective compacts should have identifiable characteristics that distinguish them from the relatively ineffective compacts. Otherwise, the differences in effectiveness could be arbitrary or at best not useful in terms of isolating specific factors that make compacts effective.

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[62] However, several relatively ineffective compacts did experience such litigation, including federal litigation over the Canadian River, Pecos River, and Arkansas River compacts.

In addition three important non original jurisdiction decisions by the U.S. Supreme Court involving effective interstate water compacts require comment. In Dyer v. Sims, 341 U.S. 22 (1951), the Ohio River compact (ORSANCO) was the subject of a funding dispute by West Virginia. However, the issue in this case was more of a test of the scope and validity of compacts as legally enforceable instruments rather than a challenge to the effectiveness of ORSANCO. The result of this case clarified the superior legal scope of the compact over state legislation by virtue of the impairment of contract provision of the U.S. Constitution.

The more recent Intake Water Company v. Yellowstone River Basin Compact case, 476 U.S. 1163 (1986) was more specifically aimed at the power of that commission to bar new interstate water diversions. This case highlighted the limited status quo nature of this compact and will be discussed further in the context of the comparative nature of interstate water compacts. However, the outcome of this case again actually strengthened the power of a compact by upholding its power to bar interstate water diversions.

The City of Milwaukee v. Illinois case, 451 U.S. 304 (1981) dealt with pollution of Lake Michigan by Chicago. Although the suit dealt with a Great Lakes issue, it did not involve the Great Lakes Commission (GLC) because pollution is not a priority issue under this compact. The limited nature of the GLC in the area of pollution control is one of the issues that will be explored further in Chapter VI.

In order to begin such a comparative analysis, it is necessary to group these compacts into functional categories that permit a meaningful comparative framework for analysis. Otherwise, comparing the characteristics of a compact with a wide variety of functions (e.g. the Delaware River Basin Compact - multipurpose) with a compact of a very limited scope (e.g. the Thames River Compact-flood control) would yield broad and rather meaningless distinctions from an effectivness standpoint.[63]

In Table 12 all of the compacts commissions included in this study were divided into four functional categories as defined by Jerome Muys from his 1971 major legal study of interstate compacts (1976:312) for standardization purposes. The compacts in this study were then divided as follows in terms of their effectiveness for each of the four Muys categories in order to comparatively distinguish them:

1. Water allocation compacts
2. Pollution control compacts
3. Planning and flood control compacts
4. Comprehensive compacts

Water Allocation (Apportionment) Compacts

The first category, water allocation compacts, consists of four "relatively effective" compacts and six "ineffective" or "relatively ineffective compacts. The

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[63] That is, both could be considered effective in terms of their official purposes, yet totally different in terms of structure, operation, and results. It would create an apples and oranges result from a comparative standpoint.

TABLE 12

Compact Types

Effective or Relatively Effective Compacts *

Water Allocation	Pollution Control	Planning & Flood	Comprehensive
Upper Colorado (5)	Potomac (1)	Great Lakes (9)	Delaware (4)
Yellowstone (6)	Ohio (3)		Susquehanna (2)
Sabine (8)			
Kansas-Okla (7)			

Relatively Ineffective or Ineffective Compacts

Water Allocation	Pollution Control	Planning & Flood	Comprehensive
Bear (10)	NEIWPCC (14)	Connecticut (12)	
Klamath (13)	ISC (16)	Thames (17)	
Pecos (11)			
Arkansas (18)			
Ark-Okla (15)			
Canadian (19)			

* Rankings (in parentheses) are based upon final rankings in Table 5.6.

"relatively effective" compacts all share the characteristic of having a limited purpose (e.g. one-time water allocation). All but the Yellowstone compact have not faced significant internal problems nor have they faced external challenges in terms of litigation or state noncompliance.

The ineffective compacts in this category were also limited in nature but, according to national survey responses to the weaknesses of the compact, suffered either from: (1) internal conflict Arkansas River (attorneys dominate), Arkansas-Oklahoma River (water agency members dominate), Pecos River (continual tie votes), Canadian River (state vetoes) and Bear River (personal interests dominate);[64] or (2) inability to enforce laws leading to states breaking rules (Canadian River), litigation (Arkansas and Arkansas-Oklahoma Arkansas River Compacts, Pecos River, and Canadian River), or a general lack of authority to handle additional pollution responsibilities (Klamath).

Further examination of the survey responses reveals that the Sabine River compact was rated relatively effective because it has not yet faced difficult water apportionment decisions. Similarly, the Yellowstone River compact was rated relatively effective not because of it structure as much as the limited geographical impact of the compact and

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[64] The relatively ineffective compacts seem to lack consensus among member states and thus have been hobbled by litigation or internal conflict, according to survey and LEXIS data.

its protection of existing state water rights from outside diversion. The Kansas-Oklahoma River compact was considered more effective than its counterparts on the Arkansas River (The Arkansas River and Arkansas-Oklahoma Arkansas River compacts) because it is a less controversial conservation storage versus water flow compact, and accordingly has not faced U.S. Supreme Court original jurisdiction litigation like the latter two. Thus, it would appear that, at least in the eyes of the state compact representatives, the Yellowstone, Sabine, and Kansas-Oklahoma compacts are appropriately identified as "relatively effective" by the survey data because they protect overall or general state interests without injecting conflicting regional issues. However, as a model for accomplishing more controversial water allocation decisions on a regional basis, the higher ranked Upper Colorado River Compact offers more useful distinctions.

The Upper Colorado River compact, according to survey respondents has the added advantages of:

1. having representatives who have a direct line to the governors,
2. no single state veto problems,
3. promoting of regional economic development by forming the compact in order to acquire federal financing of the Colorado River Storage Project of 1956, and
4. having developed a significant public relations campaign to promote regional interests in the basin.

Thus, in addition to protection of state water interests that other effective water allocation compacts offer, the Upper Colorado River Compact offers regional benefits beyond what the states could acquire. The fact that the lower Colorado River, governed by a non-commission compact formed in 1922 and fraught with litigation and controversy, has fared poorly in comparison to this compact indicates that the Upper Colorado River Compact presents a possible interstate water compact model in the area of water allocation and justifies its high effectiveness ranking in this category.

Water Pollution Control

This second category identifies one "effective" and one "relatively effective" pollution control compact, as well as two "relatively ineffective" ones. The primary distinctions between the effective and ineffective compact ratings according to survey respondents are (1) the strong feeling of inadequacy in terms of the funding in the advisory NEIWPCC and enforcement empowered Interstate Sanitation Commission (ISC)[65] and (2) the internal commission conflicts (i.e. New England Interstate Water Pollution

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[65] Although the response rate of the ISC to the survey was below 50%, there is some indication that the current funding and political problems it faces is due to a larger problem reflected in the state of one ISC respondent that, "The compact enacted in 1935 has as its prime mission regulating approaches to pollution abatement. Since that time state and federal environmental agencies have assumed comprehensive regulatory responsibilities rendering the role inappropriate for the ISC."

Control Commission (NEIWPCC) responses indicate that commission is totally run by state agency commissioners as opposed to non-agency commissioners, and ISC respondents indicate that an extensive amount of time is taken to negotiate politically sensitive compact issues).

The advisory Potomac River Compact Commission is a noteworthy example of an effective pollution control compact. Although it lacks the enforcement powers of the ISC, its reputation for technical competence and its heavy emphasis on education and persuasion through public relations and information transfer have made it an effective regional voice for pollution control. The Ohio River Valley Water Sanitation Commission (ORSANCO) rated "relatively effective" also is noted for its ability to include interest groups in its industry action committee structure and, in conjunction with a strong communications program, it too has been able to promote a more regional approach to Ohio River pollution without frequent resort to its enforcement powers.

Thus, the reputations of the Potomac and ORSANCO compacts for competence and persuasion seem to distinguish them according to an effectiveness perspective from the NEIWPCC and the ISC, which seem to suffer from resource and external credibility problems. Certainly, the current funding problems in the "ineffective" compacts is reflected in this credibility problem, although this is not to say that both the NEIWPCC and ISC have not been very effective in the past in meeting pollution problems in their area.

A lesson for model compact consideration from this category is the importance of reputation and education characteristics in improving compact effectivness.

Planning (Water Resources) and Flood Control

This category includes only three compacts that provided sufficient information to utilize the OE model developed in this study.[66] Only the Great Lakes Commission (GLC) was deemed "relatively effective", although its overall score was very close to the average cut-off for effectiveness and had the lowest overall ranking among all compacted rated as "effective".

The major legal difference between the GLC and the Thames and Connecticut River compacts was the more limited compact purposes of the latter two, which were mainly confined to the equitable distribution of financial burdens incidental to flood control. The GLC, though advisory in nature, has a much broader scope in terms of water development issues.

The GLC's communication links with the vast number of interest groups concerned about the Great Lakes is another distinguishing characteristic that makes it more visible and likely creates a more positive image than the more limited and rather obscure Thames and Connecticut River commissions. Although the GLC does not have the authority to force

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[66] Wheeling Creek financial data was mpt available in order to permit its use in the OE model equation.

decisions upon the diverse interests in the Great Lakes, it does provide a regional forum for wide-ranging interest group discussions, another distinctive feature that would help explain its "relatively effective" rating.

Comprehensive (federal interstate) Compacts

The fourth category of compacts includes only two compacts: the Susquehanna and Delaware River compacts. As these compacts were both rated as "effective" and "relatively effective" respectively, the only issue to explore at this point is why two very similar and somewhat contiguous and somewhat contemporaneous compacts received different effectiveness ratings.

The major difference seems to be the circumstances under which the two compacts were initiated. The Delaware was formed in response to Supreme Court litigation and hurricane disaster which created a sense of urgency that helped bond state compact members in terms of compact purposes. The Susquehanna compact was modeled after the Delaware compact without the significant previous controversy of the DRBC and thus had fewer obstacles to overcome. As federal interstate compacts, both compacts have the unique characteristic of formal federal participation in compact commission administration and funding.

In summary, the equation presented in Chapter IV provides identifiable characteristics that distinguish

effective from relatively ineffective compacts. The results are generally consistent with the descriptive findings of Jerome Muys (1976:312-313) based on a 1971 study of interstate water compact funded by the National Water commission. His findings on three of the categories used in this study were as follows:

1. the federal-interstate compact had an impressive record of accomplishment (consistent with the model findings)
2. Water allocation compacts have been generally adequate given their relatively modest objectives (supported somewhat by the fact that 40% of these compacts were identified as "relatively effective").
3. Flood control and planning compacts "now largely appear to be dead letters." (with the possible exception of the GLC, this conclusion also seems to be supported by the findings of this study).

Thus, identifying compacts as "effective" or "relatively effective" according to the OE model developed in this study in order to test hypotheses of water compact effectiveness propounded by political and legal scholars appears theoretically justifiable. The issue of what hypotheses are consistent with the effective compacts findings of this section is the subject of the next portion of this section.

Hypotheses of What Constitutes an Effective Interstate Water Compact: An Assessment

A review of the literature provides a variety of hypotheses as to what constitutes an effective interstate

water compact. For the most part, these hypotheses have been based upon limited empirical findings and have not been subject to a theoretically based and comprehensive evaluation which has been undertaken in this study.

A number of general and untested compact effectiveness hypotheses, summarized earlier in this chapter, have been identified and defined. These hypotheses are tested in order to determine whether or not they are consistent with compact effectiveness findings of this study.

1. A common hypothesis by regional scholars in both the legal and political science disciplines is that an interstate compact must have adequate enforcement authority to ensure that the states comply with the regional nature of compact goals (e.g. King, 1958:414; Curlin, 1972:342; Florence, 1985: 438; and Weston,1989:30). According to the findings of the Council of State Governments and the legal authority vested in the commissions by compacts approved by Congress, the Interstate Sanitation Commission, Ohio River, the Upper Colorado River, Delaware River, and Susquehanna River would be considered compacts with adequate enforcement power.[67]

However, one of these enforcement empowered compacts, the Interstate Sanitation Commission (ISC), was ranked as ineffective according to the OE model. While the low response rate from the national survey that was the basis for the ISC's low effectivness rating might have influenced this ranking somewhat, analysis earlier in this section

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[67] For a list of criteria defining what is coercive power, see King (1958:411). Essential in this list is the ability of a compact to enforce its own rules in court without relying on court action by the respective states.

indicates that the ISC in the past few years has had difficulty gaining the funding and the overall support from some of its state members, justifying a relatively ineffective rating.

It also should be noted that five compacts that lacked enforcement power (Potomac, Yellowstone, Sabine, Kansas-Oklahoma, and Great Lakes compacts) nevertheless were deemed effective or relatively effective according to the same OE model (See Table 11). Thus, the OE model findings would indicate that the presence of enforcement power is neither a necessary nor a sufficient condition for the establishment of an effective interstate water compact.

One explanation for the existence of effective compacts without coercive powers may lie in the respect that these compacts have generated among state members. Leach and Sugg argued, on the basis of the Interstate Oil Compact, that compact effectiveness lies in the quality of the compact commissions recommendations and its ability to persuade the state members by education to accept these recommendations.

Another explanation is that commissions do not need coercive power if they have established a close working relationship with their state members. Leach and Sugg (1969:43) argue that "the development of coordination and cooperation is much more important than the exercise of restraint (negative controls)."

In comparing the Potomac River compact (deemed advisory, yet ranked as the most effective in our OE model)

with the Ohio River Sanitation Commission (ORSANCO) compact (an enforcement empowered compact identified as "relatively effective" according to the OE model), Leach and Sugg argue that education and public relations work is the real key to successful cooperation. Citing a study on the need for empowering the Interstate Commission of the Potomac River Basin, Leach and Sugg (1969:92) provide the following quote, except for the moral effect of interstate action against a polluter, very little of real value would come out of investing Ohio-type compact power in the Potomac Commission. Leach and Sugg (1969:187) point out that ORSANCO's power lies mainly in education and persuasion rather than compulsion to win adherence to its pollution standards. This issue will be explored further in the communications hypotheses.

Michelman (1978:231) perhaps puts this issue of compliance into perspective when he observed that the key to understanding public bureaucracies lies in analyzing their abilities to institutionalize, that is to obtain compliance (by whatever means) for their decisions in their task environments. In other words, the OE model would support the conclusion that enforcement power is one way but not the only way an organization such as an interstate compact may be effective in terms of achieving regional goals and regional consciousness.

Furthermore, as Glendening and Reeves (1984:282) conclude, even with enforcement power, the "paucity of

financing has hampered their (compact commissions') effectiveness in planning and mobilizing support for interstate action."

2. A second hypothesis deals with the origins of an interstate compact. Barton (1961:174) and Martin, Birkhead, Burkhead (1960:332) assert that the federal government has been the moving force in most significant basin developments in America[68]. Barton (1961:171) specifically argues that the national government is an essential party to induce the states to agree upon a compact. The argument follows that the origins of effective interstate water compacts can be traced to federal government involvement. Otherwise there would be no politically powerful force to convince the states to join together to resolve this collective action water resource problem.

A test this hypothesis is to identify an "effective" or "relatively effective" interstate water compact that developed without direct federal promotion (i.e. beyond the traditional Congressional consent legislation which is required of all interstate compacts.

In the water allocation category, the impetus for the Upper Colorado River Compact was anticipation of the federally funded Colorado River Storage Project (Jamail, McCain, and Ullery, 1978:50 and Goslin, 1976:424). The Canadian River compact was also created by the desire for the federally funded Canadian River Project (Vawter, 1954:24) and the Arkansas River Compact was created to

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[68] Schoolman (1986:819, 825) argues to the contrary that as compacts become devised by Congress, states are robbed of their traditional role in negotiating and drafting a treaty, making the product more of a regional council than a compact.

obtain construction of the John Martin Dam. However, the latter two compacts were rated "ineffective" by the OE model.

Furthermore, the impetus for the "relatively effective" Sabine River Compact, according to Elliot (1986:1263), was not federal but local competing claims to the river's waters by water users in both states. Thus, the federal origins of a compact appear to be neither a necessary nor sufficient condition for effectivness in the water allocation category

Similarly, there was a lack of federal involvement in the origins of two other categories of compacts: the Planning and Flood and Comprehensive categories. Neither the nonfederal origins of the Great Lakes Compact nor the state initiative basis for both the Delaware and Susquehanna River Compacts (GAO, 1981:27 and Derthick, 1974:73) (all of which were rated "effective" or "relatively effective") would indicate that federal promotion is not a significant indicator of compact effectiveness.

Indeed, in the planning and flood category, the federal legislative link to the origins of the Connecticut, Merrimack, and Thames compacts, which have been rated "ineffective", also would indicate that there is no direct connection between effectiveness and federal origins of interstate water compacts.[69]

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[69] As Leuchenburg (1972:250) points our, "the interstate compact was not a device chosen by state governments which, on their own initiative, were developing the resources of the Connecticut Valley, but was hit upon as

In the category of effective pollution control compacts, the origins of the Potomac River compact can be traced to White House and Congressional influence (Moss, 1968:264) and the National Resources Committee recommendations of the late 1930's (Vawter, 1955:1693-94). Moreover, although the origins of ORSANCO can be traced to local pollution concerns, Cleary (1967:6) credits the National Resources Board[70] as the major impetus for the realization of ORSANCO. However similar ties can be made to the National Resources Committee and the formation of the "ineffective" ISC and the NEIWPCC.

The Advisory Commission on Intergovernmental Relations (1972:160) argues to the contrary that the initiatives for all pollution control compacts were primarily at the state level and that no compacts came into existence because of the Federal Water Pollution Control Act or the Federal Water Quality Act. In light of the existence of "ineffective" water pollution compacts, whether you accept the argument that pollution compacts were a response to federal or state initiatives, there does not appear to be a direct link

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a means to prevent such developments by the federal government." Thus, it should not be surprising to find that the Connecticut River compact was not rated effective by the OE model.

It should also be noted that these three compacts (Thames, Connecticut, and Merrimack) along with Wheeling Creek, emerged from the federal Flood Control Act of 1936 (Chapman, 1985:28).

[70] President Franklin Roosevelt created this council of cabinet officers in 1933 to explore opportunities for state-established regional agencies.

between federal origins of a compact and its effectiveness in the pollution control category as well.[71]

A related compact origins hypothesis is that compacts are formed in response to an economic or environmental crisis. Advocates of this hypothesis point to compact formation in the Delaware River (Hurricane Diane) and Ohio River (drought, population, and industrialization pressures) to support their position. However, the impetus for several other "effective" and "relatively effective" compacts was in anticipation of future events rather than in response to a crisis, notably the Susquehanna, Sabine, and Great Lakes compacts. Voight, for example, points out the non-crisis atmosphere in which the Susquehanna River Basin Compact in his early comprehensive study of the Susquehanna River:

> It may be said that the Susquehanna was certainly in as favorable a condition as any major stream in the U.S., in the sense that there was still time for forward thinking, time in which to plan for both development and conservation.

3. A third hypothesis among regional scholars is the need for formal participation of the federal government in the administration of an interstate water compacts (e.g. Dimock and Benson, 1937:18 and Grad, 1963:18). The rationale for this argument is that compacts draw strength from federal infusions of authority, federal resources (expertise, policy information, or finances become

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[71] However, it could be argued more generally that the compacts were formed out of either fear of federal intervention or because of the inattention by the federal government to a watershed's problems. This argument, if supported by further research in the area of compact origins, could support the federal origins argument in a more general manner.

> available to the commission), and the federal government becomes morally committed to carry out its water resource programs in accordance with the compact plan. In the case of the federal-interstate compacts, Grad (1963:849) points out that federal involvement creates strong moral and political claims on all future Congresses, even it they are not judicially enforceable.

Proponents of this view point to the success of the Upper Colorado River Compact with its federal representation versus the continued turmoil that the earlier 1922 Colorado River Compact continues to experience without federal representation (Hundley, 1975:335). Indeed, it has been argued indirectly that the reason why the recent low-level radioactive waste compacts are experiencing problems is because there is no federal representation on these compacts (Condon, 1990:36).

However, not all types of the compacts identified as "effective" or "relatively effective" according to the OE model (Table 11) have federal representation. The one notable exception, the Great Lakes Commission, which is the only compact rated "relatively effective" in the planning and flood category that does not have federal representation. Because of the unique nature of the Great Lakes Commission (GLC), it will be analyzed in more detail in Chapter VI in order to explore this and its other unique features. However, it should be noted that several compacts in the water allocation category which are identified as "ineffective" or "relatively ineffective" also have federal representation, including the Arkansas River, the Arkansas-

Oklahoma River, Bear, Canadian River, Klamath River, and Pecos River compacts. Thus, although all effective compacts except for the Great Lakes Commission include the presence of a federal representative, this representation alone is neither a necessary nor a sufficient condition for ensuring an effective interstate water compact in the water allocation and planning and flood categories.

It should be noted, however, that the presence of federal representation on the Potomac and ORSANCO compacts and absence of such representation on the relatively ineffective ISC and NEIWPCC compacts does provide a clear distinction among the pollution control compacts studied. This is a noteworthy difference considering the significant federal involvement in interstate pollution issues since 1970.[72]

4. A fourth general hypothesis deals with how the voting structure of a compact affects its effectiveness. Specifically, it is hypothesized

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[72] It could be argued that the reason for the earlier positive evaluations of the NEIWPCC and ISC (by Leach and Sugg, 1969:91,184; Vawter, 1955:1712; Maloney, 1975:43; Zimmerman and Wendell, 1976:92; and Martin, Birkhead and Burkhead, 1960:132) was the relatively minimal federal presence in the pollution area. As the federal government intervention in water pollution control increased, the need and thus the effectiveness of these interstate compacts without federal involvement decreased. Why should states deal with two entities (the federal government and either the ISC and NEIWPCC) when the federal government requirements are often overriding in terms of compliance. On the other hand, it could be argued that interstate pollution control compacts such as ORSANCO and the Potomac River already have federal representations so the member states have a mechanism by which a regional water policy can be developed in conjunction with the federal government.

> that a unanimous vote requirement creates a one state veto situation leading to gridlock when the commission is confronted with controversial issues. (King, 1957:411; and Simms, Rolfs, and Spronk, 1988:23-11). More specifically, Vawter (1954:21) argues that effective organizations should be designed to meet serious conflicts and crisis, and a one state veto hampers the commission's ability to respond to such situations. Wanschneider (1984:1062) highlights the dilemma of the veto versus majority rule:
>
> One is therefore choosing either to confirm the rights of the current (status quo) rights holder to block change (unanimity), or one gives the right to a majority to impose change on a minority, and thereby confiscate property."

Certainly there are examples of "relatively ineffective" or "ineffective" compacts that have unanimity voting requirements, such as the Canadian and Pecos River compacts. Nonetheless, if this hypothesis is correct, one would assume that none of the effective commissions identified by the OE model would utilize unanimous or one state veto provisions in their decision-making.

An examination of the compact instruments of all of the "effective" or "relatively effective" compacts indicates that the Potomac River, Kansas-Oklahoma Arkansas River, and ORSANCO compacts all have some form of state veto. Thus, the presence of a one state veto does not necessarily hamper compact effectiveness. Indeed, responses from the Great Lakes Commission indicate that they work by consensus despite the power to act on a majority rule basis.

5. A fifth hypothesis by Michelman (1978:55) and Price (1968) is that an organization is more effective when it has a high degree of communication among its members.

To test this hypothesis in the area of interstate water compacts, two sources of communication data are used: the amount of public information the commission issues annually and the frequency of contact between the commission and its state commissioners. If the hypothesis is valid, compacts determined to be effective by the OE model should have more publications and more commission contact with state representatives than those judged to be relatively ineffective.

From the Guide to Publications of Interstate Agencies and Authorities issued by the American Library Association (Sulzer and Palen, 1986), "effective" or "relatively effective" organizations that publish (in addition to annual reports or technical reports) either public information or newsletters and journals include:

1. Great Lakes Commission
2. Delaware River Basin Commission
3. Interstate Commission on the Potomac River Basin
4. Ohio River Valley Water Sanitation Commission
5. Susquehanna River Basin Commission
6. Upper Colorado River Basin Commission

Missing from this list are the following "relatively effective" water allocation compacts: the Yellowstone, Sabine, and Kansas-Oklahoma Arkansas River compacts.

In addition, a "relatively ineffective" and an "ineffective" commission also made the high level of publications category:

7. the NEIWPCC
8. the Pecos River.

From the standpoint of meetings/contacts with the commission, national survey responses from the state commissioners indicate the following compact commissioners have contact with the commission at least once a month (in order of frequency):

1. Upper Colorado River
2. Delaware
3. Susquehanna River
4. Bear River
5. Interstate Sanitation Commission (ISC)
6. Great Lakes
7. Ohio River
8. Arkansas River
9. Potomac River

This list again indicates that several water allocation compacts rated "relatively effective", namely the Yellowstone, Sabine, and Kansas-Oklahoma compacts, did not achieve a high level of communication in terms of publications as well. Three "relatively ineffective" or "ineffective" compacts (Bear River, ISC, and Arkansas River) also scored high on the commission contacts list.

From these data, we cannot conclude that communication is either a necessary or sufficient condition for general commission effectivness. However, it is noteworthy that in

three of the four categories of compacts (the water allocation compact category being the exception), compacts deemed effective according to the OE model also had high levels of communication.

6. A sixth hypothesis, also derived from Price (1968) and Michelman (1978:124), is that organizations with a major elite constituency are more likely to have a high degree of effectiveness than those without such groups. The explanation for this proposition in the context of compact effectivness theory is that without such support, the compact would be unable to achieve the regional support its needs as a interstate organization.

In a nationwide survey of compact directors and state commissioners, the respondents, after ranking the interest groups in terms of their "political ability to influence the achievement of this compact commission's goals", were asked to identify "a specific interest group whose views would be representative of that general class of interest groups."

It is noteworthy that all of the respondents of compacts rated effective were able to identify such interest groups, but at least 9 compacts either not rated or rated "ineffective" or "relatively ineffective" were not able to identify one such group. (See Appendix D) Thus, we can not reject the hypothesis that interest group identification may influence the effectiveness of an interstate water commission, although it is not a sufficient condition for compact effectiveness.

It is also of interest that all of the directors/chairs of those compacts rated "effective" or "relatively

effective" (with the exception of the Yellowstone and Susquehanna) were able to identify formal mechanisms for interest group participation (joint meetings, functional advisory committees, and committee participation).

Only four of the ten compacts rated relatively ineffective could specifically identify a specific mechanism. One observation that could be drawn from these data is that agencies that are open to interest group participation in general are more likely to be effective than those who are not. However, the fact that the Yellowstone and Susquehanna have no such specific mechanisms makes any inference from this finding highly speculative.[73]

7. A seventh general hypothesis relates to the geographic size and flexibility of an interstate water compact. In terms of scope, Martin (1960:131) argues that adequate geographical reach is essential for an effective interstate water compact, which includes the need to include all affected members of the watershed included in the compact.

Despite this rather apparent requirement, one compact rated "relatively effective", the Great Lakes Compact, lacks even this essential feature, as Congress deleted the

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[73] The idea of a compact serving the interests of an elite interest group has negative implications in terms of overall effectiveness, however. Parsons and Mathews (1990:359) argue that water elites in California and Arizona practice gate-keeping in terms of permitting non-elite groups from participating. As Helen Ingram (in Goldfarb, 1988:100) warns, "To be viable, that is to survive, regional agencies have had to tailor their actions to build support. Support-building actions then compromise their ability to approach water and other resource problems in a comprehensive, coordinated, regional manner."

Canadian provinces of Ontario and Quebec from the compact. As noted earlier, this is another of the unique aspects of the Great Lakes Commission which will be explored in Chapter VI.

However, a related issue is whether or not a compact can be too big geographically to gain regional consensus. Table 13 lists the drainage areas of a number of the basin areas governed by interstate compact. Geographical size does not appear to be a distinguishing factor, as "relatively effective" compacts range from as small as Sabine River drainage basin (3,465 square miles) to as large as the Great Lakes Basin drainage area (250,000 square miles). Number of state members (See Table 14) also does not seem to be a factor in terms of compact effectiveness in light of the large number of states included in the Great Lakes Commission.

In terms of the flexibility of the compact, Simms, Role, and Spronk (1988:23-11) argue that compacts are generally unable to adapt to changing circumstances and thus may be rendered ineffective. Certainly, that was an allegation raised in the state commissioner survey responses against the "ineffective" ISC, despite the fact that it gained additional authority over air and water in 1969 Zimmerman and Wendell, 1976:93).

However, of the compacts King (1958:417) identified as inflexible (i.e. those with duties defined with either mathematically certainty allowing very little leeway for

TABLE 13

Drainage Basin Areas of Interstate Compacts
(in square miles)

Arkansas River	18,915 (below John Martin Reservoir, Colorado)
Arkansas River Basin	96,674 (Near Muskagee, Oklahoma)
Arkansas River Basin	150,482 (Van Buren, Arkansas)
Bear River	2,447
Big Blue River	3,280
Canadian River	47,576
Colórado River Basin	111,800
Costilla Creek	152
Delaware River	12,765
Klamath River	3,920
La Plata	331
Ohio River	155,000
Pecos River	19,540
Potomac River	14,670
Red River	60,613
Republican River	14,526
Rio Grande River	14,300
Sabine River	4,842
South Platte River	23,193
Susquehanna River	27,500
Yellowstone River	69,103

Source: Simms, Rolf and Spronk

TABLE 14

Number of State Members in Interstate Water Compacts

Compact	Number of States
Water allocation:	
Arkansas River	2
Arkansas-Oklahoma River	2
Kansas-Oklahoma River*	2
Bear River	3
Big Blue River	2
Canadian River	3
Costilla Creek	2
Klamath River	2
La Plata River	2
Pecos River	2
Red River	3
Republican River	3
Rio Grande River	3
Sabine River*	2
Upper Colorado River*	5
Yellowstone River*	3
Water Pollution:	
Ohio River*	8
NEIWPCC	7
Interstate Sanitation Com.	3
Potomac River*	5
Flood and Planning:	
Connecticut River	4
Thames River	2
Wheeling Creek	2
Great Lakes*	8
Comprehensive:	
Delaware River*	4
Susquehanna River*	3

* Effective compacts according to OE model

handling problems not contemplated), three compacts were identified as "effective" or "relatively effective" by the OE model (the Potomac River, Sabine River, and Yellowstone River). The Potomac and Sabine Rivers have since been amended by acts of Congress in 1970 and 1977 respectively, and the Yellowstone River Compact was strengthened by a U.S. Supreme Court Decision in the Intake Water Company case previously discussed.[74] Thus, the argument that an inflexible compact cannot be effective does not seem supported by evidence that Congressional or Court action[75] can increase flexibility and scope of interstate water compacts and thus enhance their effectiveness. Rather, it provides support for Leach's (1961:678) contrary argument that (even an inflexible) interstate compact is an advance over narrowly structured state authorities because compacts

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[74] A review of formal Congressional actions since 1922 when the first interstate water compacts were approved (utilizing the Government Monthly catalogue from 1900-1976) and the GPO Silverplatter 1976-1991)indicates that four other compacts have also been amended by Congress: the Bear River (P.L. 96-189, 1980), the Wheeling Creek (P.L. 98-420, 1984), the Delaware River (P.L. 98-490, 1984), and the Susquehanna River (P.L. 99-468, 1986). Indeed, these actions plus the amendments to the Potomac and Sabine River compacts would seem contrary to the earlier prediction of Ridgeway (1971:ix) that once Congressional consent was granted, too frequently the compact receive no further attention.

[75] However, not all court action is positive in terms of compact effectiveness. Crossland (1988:852) argues that in the case of the (relatively ineffective) Pecos River compact, court construction in this litigation ridden compact has actually made the compact more rigid than it was designed to be.

can grow and change in response to changing needs, if the states membership so chooses.[76]

Foster (1987:34) provides a related hypothesis in terms of compact flexibility by stating that political leadership is required to achieve effective, transboundary progress. Thus, it can be hypothesized in the transboundary water resource area that each of the interstate compacts deemed effective or "relatively effective" by the OE model should be able to identify a specific political leader associated with it.

To test this hypothesis, the commissioners of all the interstate water compacts were surveyed and asked to identify "a key state or national political figure who is closely associated and actively involved in (the) compact and its activities." (See Appendix D) It is predicted that if this hypothesis is correct, every compact identified as effective should have a key political figure to assist in either assisting the compact with national resources or providing the support for Congressional approval of needed additions to compact authority.

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[76] Indeed, the state members have chosen the role of the Sabine and Yellowstone compacts to remain primarily a means of preserving the existing water situation with some limited exceptions to be decided on a case by case basis rather than the development of a new pattern for these river basins (Leach and Sugg, 1969:100). Thus, this is the regional water policy choice of the states and thus meets their current needs. It does not rule out further changes as issues of federal and Native people's water claims enter into the water allocation decision-making.

Of the 9 compacts identified by the OE model in Table 11 as "effective" or "relatively effective", only four compacts were identified by state commission members as having close ties to a key state or federal political figure: the Delaware River, Great Lakes, Potomac River, and Ohio River compacts. Thus, there does not appear to be empirical support from the national survey to support this political figure hypothesis.

Conclusion

Certainly, these hypotheses do not exhaust the possible qualitative causes of compact ineffectiveness or perhaps future causes of compact ineffectiveness. For example, Goldfarb (1980:97) argues that a major deficiency in American water resource planning is its fragmentation. Issues of Indian rights and federal reserved rights are absent from many Western water allocation compacts, and the future impact of these rights on water allocation could significantly affect future water allocation disputes. The growth of environmentalism since the 1970's is another event that has put an additional wrinkle in water allocation and planning decisions of older compacts and also could alter how effectively states can manage water resources effectively in the future.

The key to compact effectiveness as measured in this Chapter boils down to whether or not the states have accepted the compact commissions as the means for addressing

regional watershed matters rather than acting individually. (Leach and Sugg, 1969:225). For, as Barton (1961:179) has pointed out, state commissioners interests and responsibilities lie with their respective states and not with the compact agency. This state acceptance requirement, according to Weston (1989:30):

> Takes time and political will to create attitudes and institutions which will allow joint sovereignty of states over common natural resources.

Furthermore, Leach (1961:678) argues that states:

> create interstate agencies which do not obligate them to embark at once upon a specific enterprise or enterprises, but which nevertheless enable them to do so if need be.

This chapter has attempted to clarify the importance of evaluating the effectiveness of interstate compacts in resolving regional water issues from the state's perspective and not from a national regulatory perspective. As such, the interstate water compact commissions are not all the same, as they were created to perform varying tasks. The classification of these compacts into the four categories identified was necessary to permit a comparative evaluation of these four types of compact administration. It can be concluded that some compacts can be very limited in nature yet be judged effective by their state members precisely because they have resolved the limited or specific nature of the water resource controversy. (However, they are not

necessarily effective from the standpoint of overall regional governance.)

Certainly, the validity of a number of untested but commonly-held hypotheses of compact effectiveness have not been supported by the OE model. The contrary conclusions that may be drawn from the model findings may surprise water resource experts. Most notable is the lack of support for the hypotheses that effective interstate compacts:

(1) must have coercive enforcement power
(2) must have federal origins,
(3) do not have state veto voting provisions, and
(4) have to be flexible in their original compact instrument

Less surprising perhaps is the lack of the support for the hypothesis that the physical size of the compact or the number of states in a compact affects its effectiveness. This issue will be further explored in Chapter VI when a more comprehensive review of the Great Lakes and two other compacts will be undertaken.

Evidence that would suggest support for hypotheses relating to the importance of federal representation in compacts (particularly pollution control compacts) and the importance of high levels of communication between the commission and its constituencies are noteworthy findings as well of this chapter. In addition, evidence suggesting that compact effectiveness may be associated with the degree of support by elite water resource interest groups and recognition of the ability of even inflexible compacts to

become effective by external means are important findings as well.

In summary, the OE model identified in Chapter IV and operationalized and applied in this chapter provides a new perspective for evaluating compact commissions for what states want them to do. The next Chapter will explore the interstate water compact from three specific case study perspectives to further test this model from a comparative perspective, as well as to evaluate how well these compacts have achieved national as well as regional water resource objectives.

CHAPTER VI

ORGANIZATIONAL EFFECTIVENESS: A TALE OF THREE COMPACTS

Introduction

Thus far, this study has determined that four of the seven general hypotheses of interstate compact commission effectiveness identified in the literature are not supported by the organizational effectiveness (OE) model developed in Chapters IV and V. This information by itself is significant from the standpoint of refocusing effectiveness studies away from those four hypotheses and the variables associated with them. However, these findings paint only a general picture of which compact effectiveness variables are supportable; namely, some degree of formal federal government representation in the compact (with the exception of the Great Lakes Commission), extensive communication between the commission and its constituencies (in all categories but the water allocation category of interstate compacts), and the support of commission activities by one or more elite water resource interest groups in the region.

These general lessons, as Hardy (1960:107) points out, can only find further proof through specific applications of these three hypotheses. Thus, this chapter will apply the general findings of the three compact effectiveness

hypotheses supported by the OE model to three interstate water compacts: the Delaware River Basin Commission, the Great Lakes Commission, and the California-Nevada Interstate compact.

The reasons for choosing these three particular compacts to further test the Chapter V findings are twofold:

1. Each of the compacts represents a different type of compact and a different relative ranking of compact effectiveness for comparative evaluation and generalization purposes:

    a. the Delaware River Basin Commission (DRBC) was ranked relatively high among all compacts in terms of effectiveness according to the OE model and thus more closely approaches the "ideal" type of commission from an effectiveness standpoint;

    b. the Great Lakes Commission (GLC) was barely above the cutoff level between "relatively effective" and "relatively ineffective" compacts, making it a marginally effective compact. It is worthy of examination in light of its significant physical and structural differences with the DRBC and because it is the lone deviation from the federal government representation hypothesis; and

    c. the California-Nevada compact failed to receive Congressional approval after fifteen years of operation at the state level, making it an obvious contrasting example of an ineffective commission as compared to the DRBC and the GLC.

2. Comprehensive case studies of each of these compacts were available to permit analysis of these three compacts from a more contextual basis than previously examined. Thus, more specific application of the three general effectiveness hypotheses can be undertaken to determine how well these hypotheses comport to the realities of interstate water resource management.

There are potential criticisms to the case study application approach of this chapter. Some regional theorists, for example, argue that attempts to apply general principles to different regional settings are doomed to failure. Ostrom (1970), for example, argues that the unique hydrologic characteristics of the Great Lakes makes traditional approaches to development of river basin authorities difficult to apply. Donahue (1987:5) further argues that "no single institutional form is indisputably capable of accommodating all the Great Lakes management needs in and of itself."

This argument that regional instrumentalities are unique is a powerful one from a microenvironmental perspective. However, as Martin (1960:5) points from a macroenvironmental perspective, all water resource regions face the same central problems of water quantity and water quality. Finding the common ground from the latter perspective makes the search for general effectiveness variables more attainable and useful, without letting regional differences unnecessarily cloud the larger effectiveness picture.

Other theorists such as Helen Ingram (1973) argue that the politics of water is not a traditional subject that raises the level of regional cohesiveness (and consciousness) but is purely local politics. Therefore, she argues, it is not possible to find compact effectiveness factors that are generalizable beyond a particular region.

However, this argument assumes that establishment of a regional entity such as a compact is meant to be the immediate solution to regional conflict. It ignores the overriding value of the compact commission as the major vehicle for advancing regional consciousness, a necessary precondition for structuring regional solutions (Weston, 1989:30). Whether or not regional consciousness is actually achieved can only be determined over a period of time, with the regional organization facilitating the regional working relationships necessary to achieve regional objectives.

Thus, this study of variables that affect compact commission effectiveness rises above the peculiarities of local water politics. It offers a means for improving the effectiveness of the commission and thus strengthening the structure through which regional water management objectives can be achieved.

Donahue (1985:4) summarizes the importance of the regional institutional aspect of this argument in the context of the Great Lakes basin:

> a thorough understanding of those (existing) institutional arrangements, as well as the political influences associated with them, is a requisite and perhaps dominant component of any analysis of Great Lakes water resource problems.

Accordingly, after a brief description of the three compacts to be examined, this chapter will focus upon the hypotheses of federal involvement, compact communications, and level of interest group support in the context of the

compact commissions developed in Chapter V -- compacts which have varying degrees of effectiveness.[77]

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[77] It should be noted that the marginal effectiveness rating of the GLC according to the OE model developed is supported by two other recent comprehensive surveys of the GLC conducted by Donahue (1987) and Marans, Bulkley, Anambutr, Fan, and Mackenzie (1988). Donahue (1987:230) concludes that attitudes by states and Canadian provinces characterize the GLC as predominantly marginal or inadequate. The Marans et. al. survey (1988:53) concluded, in terms of protecting water quality, that the regional institutions were the least effective unit of government.

The reason for the overall more negative perception of GLC effectiveness than the OE model rating found in these two surveys can be attributed to the fact that there were Canadian survey participants (and Canada was specifically excluded from participation in the compact by Congress). In addition, the fact that Great Lakes water pollution is largely an issue of federal action and one which the GLC does not significantly participate in might also explain the Marans survey findings. In light of the wide range of other activities in which the GLC is authorized to participate, ranging from navigation to lake level stabilization and recreation issues, the Marans survey was testing only one aspect of GLC authority.

Certainly, there are mixed findings on GLC effectiveness by experts on Great Lakes issues. Donahue (1987:122) concludes after an exhaustive list of the strengths and weaknesses of the GLC that the feeling that current Great Lakes institutions are largely inadequate for basin management is a "rather subjective yet pervasive conclusion." Yet, in conjunction with the Council of Great Lakes Governors, a private, nonprofit organization which includes six of the eight governors of the basin, four of the eight Great Lakes states have passed legislation to handle basin water diversion issues, indicating some positive regional action resulting from the Council and the GLC.

Thus, the rather mixed effectiveness rating of the GLC is understandable in light of these varying subjective assessments of a very broad compact.

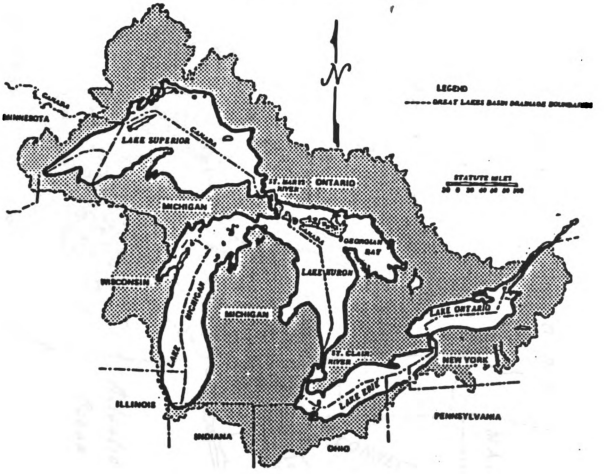
Three Interstate Water Compacts: Comparisons and Contrasts

At first blush, the Delaware, Great Lakes, and California-Nevada compacts are so geographically dissimilar as to defy comparison (See Figure 4). The Great Lakes Basin, at 295,000 square miles, is 23 times the size of the Delaware Basin and even larger than the basin area of the California-Nevada compact. It is comprised of eight states and two Canadian provinces versus four states in the Delaware Basin and two states in the California-Nevada compact. The enormous size of the Great Lakes Basin overshadows the combined total quantity of water in all of the 27 compacts studied in this project, as it comprises 95% of the U.S. supply of fresh surface water. Only the Great Lakes has an international component (Canada) and, as a flood and planning compact has, according to the National Water Commission (1973:421), "perhaps the most limited (authority) in the water resources field."

By contrast, the Delaware River Basin is a federal-interstate compact that drains an area of only 13,000 square miles but 20 million people rely on it for their water supply. The Delaware River Basin Commission (DRBC) has developed a basin-wide management plan and has the federal government as a voting and financially contributing member of the commission, unlike the other two compacts.

The California-Nevada compact is a water allocation compact that encompasses a diverse interstate water region

THE GREAT LAKES BASIN



Note: Reprinted from: U.S. General Accounting Office, 1982, *A More Comprehensive Approach Is Needed to Clean Up the Great Lakes*. CED-82-63, May 21, 1982.

FIGURE 4

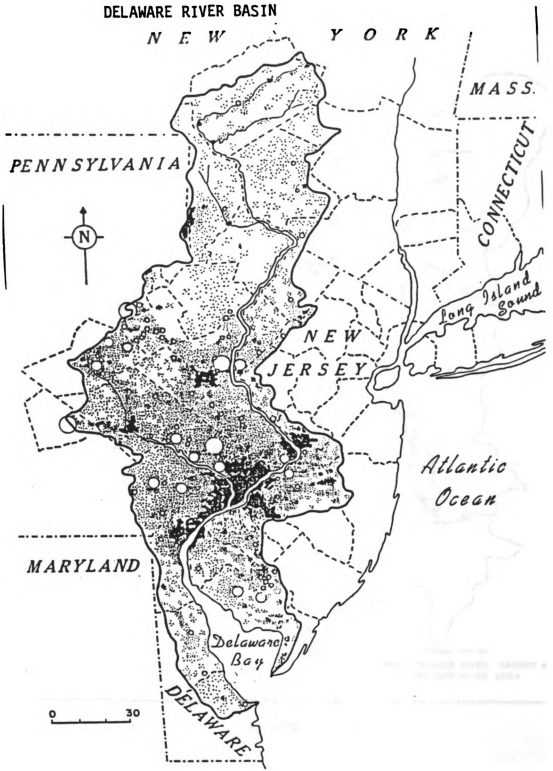


FIGURE 4 (cont'd)

California-Nevada Compact Drainage Basin

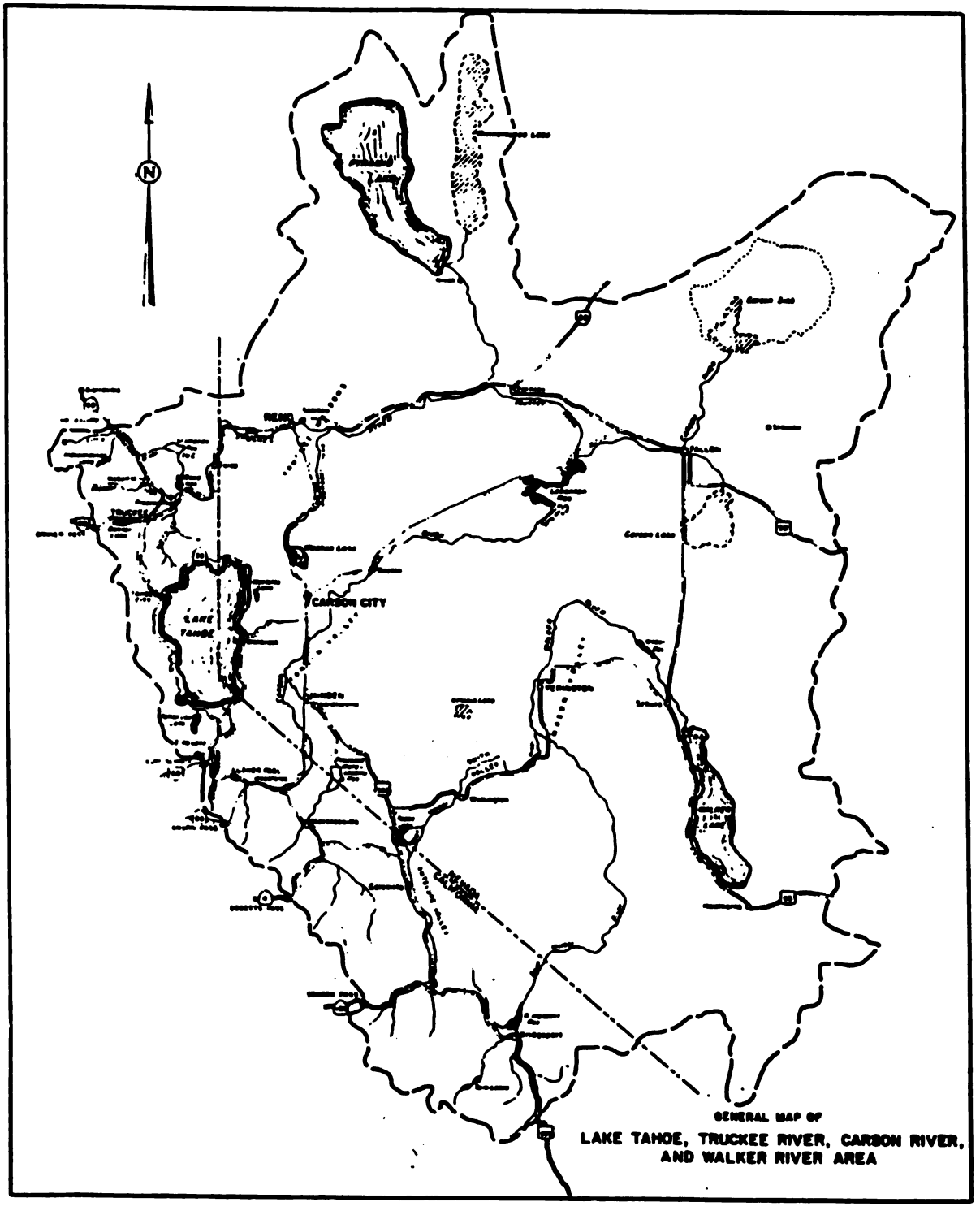


FIGURE 4 (cont'd)

that includes Lake Tahoe and the Truckee, Carson and Walker Rivers. Its purpose was to seek recognition of existing uses and more importantly to divide up the surplus waters among the two states. Thus, it is a water allocation compact rather than advisory planning compact (GLC) or a federal interstate compact which can develop regional management plans (DRBC).

Unlike DRBC that successfully achieved federal participation and the Great Lakes that did not seek formal federal participation, the California-Nevada compact invited but was unable to achieve federal approval of a compact with federal membership. It was officially declared dead by its key sponsor (retiring U.S. Senator Paul Laxalt) in 1986 when, after 16 years of negotiation, the U.S. Senate included amendments in its consent legislation which were unacceptable to Nevada[78].

Despite these contrasting geographic and compact purposes, there are some striking similarities among these compacts. All three compacts were preceded by extensive court litigation. Jackson and Pisoni (1973) highlight the continuing litigation among the various interests in California and Nevada, and the desire among the water interests in the two states to obtain more certainty in

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[78] The amendments reserved federal and Indian water rights in a manner unacceptable to Nevada and contrary to the specific provisions of the compact ratified by the two states in 1971.

light of litigation threats to existing water rights by federal and Native American water claims.

Similarly, as Ridgeway (1971:139) describes the history of the Great Lakes, "there is no more litigated, conflict-ridden, fought-over water region in all of the U.S. than that of the Great Lakes." The number of Supreme Court cases among Great Lakes states attests to this fact.[79] The Delaware River Basin has had two major U.S. Supreme Court decisions concerning water diversion to New York City in 1931 and 1954.

Indeed, a major motivation for each of the three compacts can be traced to a desire to avoid the prolonged and unpredictable results of litigation. Furthermore, both the Delaware and Great Lakes water levels are currently controlled by continuing U.S. Supreme Court decrees.

Another similarity among the three compacts was the nature of the self-interest that motivated a compact approach in each case. The DRBC initially was formed to settle existing water disputes (GAO, 1981:28), as was the California-Nevada compact (along with dividing up surplus water). The states of the Great Lakes had a somewhat similar motivation, dominated by a fear of interstate water diversions out of the basin (Fredrichs and Easter, 1990:562).

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[79] For example Wisconsin v. Illinois 281 U.S. 179 (1930), New York v. Illinois 274 U.S. 488 (1927), and eight other U.S. Supreme Court cases have been decided by the U.S. Supreme Court between 1922 and 1941 (Barton, 1961:119).

Furthermore, all three compacts were opposed at their inception by a powerful constituency. The Great Lakes compact was opposed initially by the New York Power Authority, the California-Nevada compact by native peoples and several federal government agencies, and the DRBC to this day by New York state because of New York City's desire to tap Delaware River water for increased diversion purposes (GAO, 1981:17).

In many ways the comparisons in approach and the contrasts in physical aspects offer a good opportunity to test the nationwide applicability of the three general hypotheses and their relationship with compact effectiveness. It is these three hypotheses upon which this chapter will now focus.

Federal Representation and Compact Effectiveness

Perhaps the most significant issue for determining more specifically how federal representation on an interstate water compact affects its effectiveness lies in applying this hypothesis to the GLC. The DRBC is a federal-interstate compact rated as "relatively effective" by the OE model, an earlier GAO (1981) study, and a study by a former DRBC commissioner (Weston, 1989). As the federal government is a voting member of the DRBC, its participation is consistent with the hypothesis that federal representation is necessary for an effective compact.

Similarly, the inability of the California-Nevada compact commission to receive federal approval and thus be authorized as an interstate compact is also an indication of the need for federal representation in order to create an effective commission. Although the federal government helped negotiate the 1971 compact, the fact that it refused to endorse a formal interstate compact that bound the U.S. to allocations of water between the two states[80] also supports the federal representation hypothesis.

However, the GLC was the only interstate water compact ranked as a "relatively effective" compact (albeit marginally so) by the OE model, yet it had no formal federal representation. The GLC was the sole exception to the federal representation hypothesis. Indeed, the National Water Commission (1973:153) recommended that federal government presence in the Great Lakes region be increased through the formation of a federal-interstate compact, indicating that increased effectiveness was expected from

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[80] Indeed, every administration since the compact's formation has opposed its approval. Although Senator Laxalt and then Governor Reagan supported the compact, when Reagan became President he opposed its approval despite the fact that Laxalt, perhaps the President's closest friend in the U.S. Senate, made it his top legislative priority, putting it on the "fast track" for Senate action (New York Times, September 2, 1986).

Failure to gain Congressional consent was fatal to the compact because the U.S. owns or controls most of the storage and diversion facilities in the basin area. Failure of the federal government to be bound by the state water allocation agreement would nullify the reason for the compact. The states relied upon the hope that if the federal government consented to the compact, it would live up to its terms as it did in the Klamath River compact.

more formal federal government representation. Thus, a case analysis of the GLC was utilized to explain this anomaly.

Case studies by Donahue (1987) and the International Joint Commission (1989) were examined to determine the degree of federal involvement in the GLC. Two reasons may explain the GLC's effectiveness rating despite its lack of formal federal representation.

First, there is already a significant federal role in the Great Lakes outside of the GLC. As Donahue (1987:77) points out, the federal role in the Great Lakes is the predominant role in the basin due to its binational nature. Although its funding support has declined by 28% between 1980-89, Washington funding for basic research, monitoring, and enforcement programs to restore and protect the Great Lakes has been a reality for two decades despite the lack of federal representation on the GLC. Thus, with or without formal representation on the GLC, the federal government is a significant actor in all Great Lakes water issues.

Secondly, the GLC sees the federal government as the focus of its lobbying effort and has an on-going informal relationship with the federal government, including informal liaison with MARAD, the EPA, the Corps of Engineers, NOAA, the Seaway Development Corporation, and the Soil Conservation Service (Report to the Advisory Committee, 1985:13). Thus, although formal representation is lacking, the fact that the federal government still plays a significant, informal role in GLC activities indicates the

importance of the informal federal presence in the basin and helps explain the GLC compact effectiveness rating despite its lack of formal federal representation.

Undoubtedly, formal federal representation would better facilitate formal working relationships and create a higher level of federal-state interaction by virtue of Presidential appointment of a federal representative. However, the fact remains that federal representation (albeit at the informal level) is an important factor in the GLC and in the basin as a whole, as was case in the other compacts that were deemed effective by the OE model.

In summary, it would appear that the federal representation hypothesis is perhaps stated too narrowly as it only encompass formal federal representation. The GLC experience would indicate that a significant informal federal presence in a basin can also influence a commission and thus impact upon its effectiveness. Thus, an examination of other interstate water compacts as to the extent of the federal presence in a basin (both formal and informal) might better refine the federal representation hypothesis and its impact on compact effectiveness.

Communication, Compacts, and Constituencies

A second effectiveness hypothesis that was supported by the OE model in all but one of the interstate water compact categories (the exception was in water allocation compacts) was the relationship between the amount of communication

between compact commissions and their constituencies. The hypothesis predicted that the greater these communication links were, the more effective the commissions would become. The general rationale for this hypothesis is that communication increases regional understanding and cooperation, leading to less parochial state decision-making.

It is obvious that for those water allocation compacts whose primary function is technical and who are severely restricted in the compact instrument to specified amounts of water, frequent communication would not likely have the same positive impact as it would in compacts which have a great deal of discretion or broad planning powers that require continual review.

However, the fact that all of the compacts rated as effective by the OE model in the other three compact categories had significant degrees of contact with their constituencies deserves further examination from the perspective of these three case studies to determine more specifically the basis for this relationship.

According to the national survey of compact directors conducted for this project, the director of the GLC indicated that 2 formal meetings and 3-5 executive meetings were held each year. The director of the DRBC, which was rated higher in the effectiveness ranking than the GLC, indicated an average of 10-12 formal meetings a year. By contrast, the California-Nevada which was to a have a

federal representative was never formally approved by Congress so no clear channels of communication were discernible.

Upon closer examination case study examination, the difference in terms of the degree of communication between the DRBC and the GLC is not just in the number of contacts each commission has had with its constituency. There are also major differences in the level at which these commission-constituency contacts are made (by high or low level representatives of the compact and the constituencies) and the representative/comprehensive nature of constituencies which are in contact with the commission (i.e. were all of the major interest groups accorded the same access/input to influence the commission's decision-making?)

Although the GLC relies heavily on the communication function to pursue its advisory mandate, primarily through the sharing of information it has collected among the region's state members as well as coordinating state positions (Report to the Advisory Committee, 1985:24), it reports primarily to lower-level staff commission representatives of the states and not to the governors or their senior advisors. Thus, there is a lack of key gubernatorial participation[81] and consequently a

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[81] The Governors instead have formed the Council of Great Lakes Governors as the private forum for utilizing the persuasive powers of their respective offices.

intervening layer of bureaucracy that may hinder the transfer of GLC recommendations and information to the higher state policy levels. As Donahue, Executive Director of the GLC, wrote in 1984:

> For almost three decades, the Great Lakes Commission has provided an open forum for bringing the Great Lakes states together on various issues of common interest. The states have yet to use the compact to its full potential -- not due to any flaw in its provisions, but by administrative choice.

Despite these limitations, several Great Lakes observers have noted a more cooperative spirit has developed in the region, though there remains institutional resistance to joint management efforts [Hamline, 1987:304 (note 63)].

The DRBC, on the other hand, has had significant participation by high level state employees and governors and thus has established a stronger and more direct link to state policy makers. (See responses in Appendix D.)

Secondly, the GLC has attempted generally to include some of its numerous elite interest groups in joint meetings and joint projects, as well as membership in two committees: the natural resources and transportation and economic development committees (Great Lakes Commission Staff, 1982:2). The DRBC has more formally placed elite interest groups in functional advisory committees directly related to their interests in the Delaware River, assuring full interest group representation -- including the federal government -- on DRBC management actions.

Future research from additional case study analyses might produce even more specific communication differences between the various interstate compacts, perhaps leading to a more quantifiable linkage between communication and compact effectiveness. In any event it appears that the communication variable is one that can be more specifically defined after additional case study research.

The negative consequences of failure to communicate fully with all constituencies can be found in the California-Nevada compact case study. Though it was developed after consulting with the federal government and Indian tribes prior to compact ratification, the compact drafters did not allow the Indian tribes or the federal government to vote on compact ratification, nor were the substantive objections of these two key constituencies adequately addressed in the compact the two states ratified.

The result was a perception on the part of the Indians and federal government that their interests were not adequately represented in the final compact, ultimately leading to the failure of Congress to approve this compact. Furthermore, as Jackson and Pisoni (1973) point out, the compact from the start was merely a collection of special water interest groups who did not seek anything more than protecting their specific interests. The unapproved commission was not envisioned as a communication channel to all interested parties in order to plan the overall development of the region.

Accordingly, case study analysis would indicate that the communication hypothesis is a supportable but perhaps overly broad umbrella overshadowing at least two more specific communication issues, the level of the contacts between the commission and the constituencies, and how well the elite constituencies are represented in commission contacts. These two variables offer future opportunities for research into the communication hypotheses and how it affects compact effectiveness.

Compact Commissions and Major Elite Constituency Support

All three compacts studied in this chapter share a common tie in terms of interest group diversity. The Great Lakes Directory of Natural Agencies and Organizations, for example, lists over 1300 Great Lakes-related organizations. The DRBC report completed in 1959 (Martin, 1960:32) lists 156 citizen associations related to the Delaware River.

Although the number of interest groups associated with the California-Nevada compact were fewer because of its smaller size and more limited state composition, their impact is not any less powerful. As late as the 1960's the compact was dominated by special interests who treated the water in the basin as a commodity to sell to tourists or to tap for irrigation. (Jackson and Pisoni, 1973:50). Elite interest groups interested in the California-Nevada compact included power, irrigation, agriculture and Tahoe property owner interests.

All three compacts thus have had identifiable elite interests groups associated with and to some degree support them. Yet the California-Nevada compact failed to obtain Congressional approval and thus is properly labeled ineffective. How does the failure of the California-Nevada compact fit the dictates of the hypothesis supported by the OE model that an effective compact has at least one major elite constituency supporting it?

After a review of case studies of each of these three compacts, two factors related to this elite constituency support hypothesis emerge that might explain this discrepancy in the California-Nevada compact:

(1) the basis for elite interest group support of a commission, and

(2) whether the elite interest group acts as an internal or external part of the commission structure.

First, what is the basis for elite interest groups supporting a compact commission over litigation or less structured regional or state alternatives? In the case of the GLC, the impetus of the compact was the desire to regulate and restrict access to Great Lakes water.

The support for the GLC and the creation of additional regional institutions like the Council of Great Lakes Governors to resist Court orders that might permit diversion of water out of the basin appears to have outweighed specific major interest group concerns about encouragement

of regionally focused programs related to water quality and quantity.

With no enforcement authority, the creation of regional organizations such as the GLC could provide beneficial technical information to make the case against out of basin water diversions without harming specific interests. Besides, the wide variety of special interest groups and the widely divergent notions of the Great Lakes physical and political environments in what Donahue (1985:13) calls the competitive "special interest milieu" of the region makes the compact a convenient forum for reconciling these competing uses. The conflicts in the Great Lakes basin are both economic (ports, international trade, and tourism) and regional (Western versus Eastern Great Lakes issues)

Similarly, the DRBC was formed because of a series of court cases which allowed increased diversions to New York City, the damage caused by two hurricanes in the mid 1950's, and a prolonged drought in the 1960's. These events made it incumbent upon the Delaware basin states to try to resolve their differences created by natural crises through a binding compact that both promotes regional planning and reduces the uncertainty of litigation and natural disasters through basin water projects. In this situation as well, the compact commission serves a purpose beyond which the states could otherwise achieve individually. Thus, elite interest groups would have a vested interest in maintaining the commission. Only the interests of New York state seem to

diverge from the DRBC, as evidenced by their reduced contributions to the compact. However, New York remains a partner in the compact.

The California-Nevada compact commission has no such usefulness since its purpose is limited to specifically dividing up surplus waters and allocating them to the two states, a contract function that does not require a commission to perform. The only value of the compact beyond this fact is to bind the federal government to the state allocation agreed upon in the compact, again a function that does not require administration and thus would not attract elite group support to the commission either during or after the Congressional ratification process.

The other issue is whether elite interest groups are an internal or external part of the commission decision-making process. By virtue of functional advisory committees (DRBC) or joint meetings (GLC), the elite interest groups of these two effective compact commissions are an integral part of the internal operation of the commission. The California-Nevada compact does not provide for such internal representation and indeed actually has kept a key interest group out of the formal compact process altogether (Indian tribes).

These insights into elite interest group support of compact commissions offer interesting future research possibilities in further testing of the elite interest group support hypothesis. In any event, this case study approach

to the hypothesis highlights the overall value of contextual application to the general theory of compact effectiveness.

Conclusion

This chapter has reviewed the three hypotheses which were generally supported by the OE model developed in Chapters IV and V. The purpose of this chapter was to utilize well-researched case studies of selected and distinctive interstate water compact commissions to further refine the variables associated with compact effectiveness.

The chapter highlights the value of viewing compact commissions from both a broad, comparative basis as well as from a more contextual case study basis. Just as compact commissions vary by region, so does the contextual basis more specifically modify but not undermine the general hypotheses related to compact commission effectiveness.

The findings that compact effectiveness can be affected by both formal and informal federal representation explains the Great Lakes superficial deviation from that hypothesis.

The fact that the compact-constituency communication variable is not just a function of the number of such contacts but may also be a function of the level of communication channels as well as the representative nature of the interest groups which are in direct contact with the commission is another valuable fact gained by this case study application.

The underpinnings of the elite interest group support and its impact on compact commission effectiveness is more fully understood after case study analysis within the context of (1) the specific reasons for major interest group support of the commission and (2) the internal versus external elite interest group involvement in the commission.

In short, this limited case study application has provided new insights into some of the apparent inconsistencies between the OE model findings and actual compact operation without contradicting the OE model findings in the earlier chapters. It has also uncovered new areas of research to further refine the OE model presented. As such the case studies have provided a new avenue to further the study of compact effectiveness variables.

Chapter VII, the concluding chapter, will summarize the overall finding of this project as well as offer some observations as to the usefulness of using the compact approach in lieu of developing a national water policy.

CHAPTER VII

SUMMARY FINDINGS, CONCLUSIONS, AND FUTURE IMPLICATIONS FOR U.S. WATER POLICY

The politics of water resource control promises to continue to be an increasingly divisive issue due to the growing regional imbalance of water supplies in the U.S. Furthermore, the legal and historical roots of state control of water described in the first two chapters of this paper will continue to be significant and perhaps even impossible obstacles to the development of a truly national approach to water policy unless catastrophic conditions dictate national intervention.

Needless to say the pitfalls of leaving water resource management solely to the states has become obvious in light of the interstate nature of much of the U.S. surface water. Furthermore, recent court decisions have confirmed that state control of water resources is indeed a legal fiction, and the courts have continued to impose controversial equitable apportionment settlements upon states when regional institutions such as formal interstate compacts have not otherwise been developed.

In an attempt to avoid court and/or Congressional intervention in water resource policy, states have turned to

regional institutions as a means to fill the void between state and national controls of water and to preclude further court intervention. These institutions offer a means to break the gridlock in water policy that now exists as state governments seek to retain some control over their increasing scarce or threatened water resources.

There, of course, remains a tension between regional institutions and their state and federal competitors, as the U.S. system of federalism neither recognizes regional institutions nor offers incentives for their development. However, the emergence of a regional alternative to Congressional or court interference is preferable for the states, as the decision-making remains in the hands of the state representatives of the region and not in the hands of national policy makers.

Of all the regional institutions in existence, the most powerful formal institution is the interstate compact. Although sometimes maligned as lacking political accountability and unduly dilatory in decision-making (Barton, 1961:173), Chapter III highlights the positive role they can and do play in handling very divisive issues, offering the stability and legal standing necessary to address the highly conflictual issue of control of scarce water resources which no other regional institution can provide. This Chapter and the accompanying bibliography provide a thorough analysis of interstate compact literature for future research.

Interstate compact management is not unique to the water resources field, but there has never been a systematic evaluation of its overall usefulness as an instrument of regional management. The unique external and internal aspects of an interstate compact commission have discouraged such an evaluations.

Until this study, there also was no theoretical framework for assessing compact effectiveness, leading to many limited, subjective, and largely descriptive assessments of the compact commissions. Many of these past evaluations were based upon a fundamental misconception of the nature and purpose of an interstate compact commission. Instead of the compact being viewed and evaluated as an extension of state interests, evaluators have inappropriately measured compact commission effectiveness in terms of its ability to make and enforce independent decisions in opposition to state interests.

In order to conduct an evaluation of the effectiveness of the compact commission for regional water resources management, there is a need in the literature to clarify the issue of how to measure compact effectiveness and how to identify variables that affect commission effectiveness. Therefore, for the first time, a new organizational effectiveness model -- incorporating three basic organizational theory models, developed to be reflective of the unique nature of interstate compacts, and constructed so as to be useful for evaluating the entire U.S. population of

interstate water compact commissions -- was developed in Chapter IV. Appropriate indices of these three OE models were identified from organizational theory literature and applied to the new OE compact commission model.

In Chapter V, these indices were operationalized into variables that were incorporated into this new OE model in order to rate compact commission effectiveness. It is the first time that such a ranking has been attempted.

Using this list of effective compact commissions derived from the application of the new OE model to the interstate water compacts, general theories of what makes an effective compact were extracted from the compact literature and were tested to determine which of these theories were supported by the new OE model. The findings of this stage of the study (in Chapter V) were somewhat surprising, as four of the seven commonly held hypotheses of what is necessary for the existence of an effective interstate compact were not supported by the effectiveness model developed in this study. Those general hypotheses that did receive some support from the OE model were:

1. There appears to a positive relationship between compact effectiveness and the formal participation of the federal government in the administration of the compact, at least in the area of pollution control compacts.

2. There appears to be a positive relationship between the level of communication among member states of the compact and compact effectiveness.

3. There appears to be a positive relationship between the identification of elite constituencies associated with a compact commission and the commission's effectiveness.

However four hypotheses were not supported by the new OE compact model, namely:

1. The hypothesized positive relationship between compact effectiveness and the existence of adequate enforcement power in the compact commission was not supported by the new OE model.

2. The hypothesized positive relationship between the federal or crisis origins of a compact and its effectiveness was not supported by the new OE model.

3. The hypothesized negative relationship between the existence of a one state veto in a compact and the compact's effectiveness was not supported by the new OE model.

4. The hypothesized negative relationship between the large size or inflexible nature of a compact and its effectiveness was not supported by the new OE model.

Subsequent external validity checks on the model did not indicate an apparent error in the construction of the model.

Thus, the lack of support for several commonly-held but untested hypotheses about compact effectiveness, especially the lack of support for the proposition that effective interstate compacts must have adequate enforcement powers (widely believed to be one of the main reasons why advisory compacts could never be effective regional managers of

scarce resources), requires that negative perceptions about the interstate water compact commission be reconsidered.

As many compact experts have alluded to but failed to emphasize in their studies, few states want a powerful and autonomous, enforcement empowered regional entity that further diminishes their sovereign powers. The national government can perform that role quite nicely. Rather they merely want such entities merely to do what the states cannot do individually, preferably by state consensus rather than brute force. Autonomy and enforcement power may not necessarily be desirable if individual state support for such actions is lacking.

What conclusions can we draw from this initial testing of the compact effectiveness hypotheses that were drawn from the literature? Perhaps there is a link between the preliminary findings of this study and the assertion raised by Leach and Sugg (1969:225) that the key to compact effectiveness boils down to whether or not a state has accepted the compact commission as the primary means for addressing regional watershed matters rather than acting individually; thus, perceiving the commission as an extension of itself.

Applying this Leach and Sugg's state extension concept to the seven compact effectiveness hypotheses previously tested, the findings of the OE model are generally consistent with this concept. For the four compact effectiveness hypotheses from the literature that were not

supported by the OE model, the state extension explanation would be as follows:

1. Adequate enforcement power is not necessary for compact effectiveness, for if states accept the compact as an extension of itself, enforcement powers are not necessary in order to obtain state compliance.

2. Federal origins or crises are not essential for forming a compact, as it may be in the best interests of the state to form a compact commission to handle problems outside state boundaries in order to get the necessary out-of-state cooperation.

3. A one state veto is not a hindrance to compact commission effectiveness, for if the commission is seen by each state as an extension of itself, a state veto is unlikely to be necessary.

4. The size of the compact commission and inflexibility of the compact do not effect its effectiveness, as the compact is only as large or as inflexible as the states want it to be in light of their needs for regional administration.

The hypotheses supported by the OE model can also be explained under the state extension concept. For example:

1. The finding that federal support of and participation in a compact commission positively affects the commission's effectiveness is consistent with the state extension concept, as the federal presence provides both a carrot and the necessary legal authority that would permit and encourage interstate as opposed to unilateral regional water management efforts.

2. The state extension concept also would be consistent with the new OE model's finding that the effectiveness of a compact is positively affected by well developed communications linkage between the commission and the state constituencies in the basin. The regularization of communication across state lines would make the compact commission as familiar a forum for addressing an regional water issues as utilizing

state water agencies, making more likely the translation of intrastate political desires into interstate realities.[82]

3. The state extension concept would also be consistent with the new OE model's support for the proposition that commissions need to develop external support among major elite interest groups concerned in the region, as these groups can sustain the commission in times of crisis and develop regional bonds of support both within and beyond state boundaries. In so doing, these groups also contribute to state acceptance of the political legitimacy and relevancy of compact commissions as an extension of itself.

Thus, these initial findings of the OE model shed some light on the reality of compact commission effectiveness. However, as this is a new area of theoretical exploration in the public administration field, the hypotheses supported by the OE model require more specificity. Chapter VI, utilizing case studies, presents a further attempt to explore the three hypotheses supported by the OE model. The relatively small population of interstate water compacts makes the case study analysis approach a fruitful present

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[82] For example, in 1986 when Congress granted the governors of the Great Lakes (and not the GLC) a veto power over any diversion of water outside of the Great Lakes basin, it left it to the governors to devise a mechanism to implement this power. Two such diversions have since confronted the governors (in Lowell, Indiana and Pleasant Prairie, Wisconsin). This bare veto power without an institutional means to implement it has led to a rather unsatisfactory basis for resolving these disputes: more on the basis of raw state political power than regional consensus. Unfortunately, rather than using the GLC as a structure for resolving these diversion issues, the governors have convened conferences that lack the institutional framework that an interstate compact commission might offer. Otherwise, for mediation purposes, the compact commissions offer an ideal mechanism for addressing such regional issues.

and future approach for studying interstate water compact management.

From the case study approach, we gain the following refinement of the three hypotheses supported by the new OE model; namely,

(1) that both formal and informal federal representation on a compact commission can be a positive factor in a compact commission's effectiveness. The Great Lakes Commission exception to this hypothesis, initially identified in Chapter V, can be explained by recognizing that compact effectiveness is impacted by informal as well as formal federal participation in a compact commission,

(2) that it is the organizational level of communication contact and the representative nature of interest groups in direct contact with the commission and not just the quantity of contacts that affect compact commission effectiveness, an area ripe for further quantitative research, and

(3) that it not enough to know that elite interest group identification and support of a compact commission impacts the commission's effectiveness. It is also necessary to know the specific reasons for a group's support, as well as whether or not the elite group is an internal or external participant in the commission.

A concluding note on this study concerns how this interstate compact approach can enhance national interests in developing equitable management and apportionment of the nation's increasingly scarce water resources.

Developing an effective interstate water compact commission is an important step in promoting a regional versus state approach to water resource issues. A regional perspective could provide the means for articulating a more

equitable and broader perspective to water management issue; thus, reducing the likelihood of intrabasin water wars and enhancing state capabilities for handling interstate water issues without encountering Commerce Clause problems or increasing the proliferation of sometimes counterproductive U.S. Supreme Court litigation.

Secondly, the compact as a product of multi-state and federal legislation slows the political momentum for precipitous Congressional water diversion actions that might otherwise override state interests in a basin (Report to the Great Lakes Governors, 1983:57) The regional unity achieved over time by an effective compact would encourage a bargaining situation where the state members of a compact, by reason of their membership in a regional commission, would be in a much better position to force the federal government to take into account regional needs. Thus, the political numbers game in Congress between the haves and have-not states would be more balanced, forcing a compromise that should better reflect the interests of both sides.

If a national water policy is to be developed, it will need state support and not just raw enforcement power in order to be effective. The interstate compact approach is an intermediate means of tackling an issue that Congress has so far refused to directly confront. However, as the population of water shortage regions in the West continues to grow, so does that region's political strength in

Congress and consequently their ability to acquire new sources of water by legislative fiat if not negotiation.

Before the issue of control of water resources becomes state versus state, the issue should be addressed in a forum that transcends traditional state political boundaries. The interstate compact commission approach begins that process and provides a forum and a legal structure within which the regional realities of water resource management and water politics can be addressed.

APPENDIX A

(Source: The Council of State Governments)

APPENDIX A

WATER APPORTIONMENT

ARKANSAS RIVER BASIN COMPACT OF 1970 (ARKANSAS-OKLAHOMA)

Apportions the waters of the Arkansas River Basin, creates the Arkansas-Oklahoma Arkansas River Compact Commission to administer the apportionment agreement, encourages pollution abatement programs, and facilitates cooperation for total development and management of water resources in the river basin. Commission advises a 100-member citizens organization known as the Arkhoma Association.

Member States and Statutory Citations:
Arkansas: Ark. Stat., Sec. 21-2101 (1971)
Oklahoma: 82 Okla. Stat. 1971, Sec. 1421 (1971)
Congress: 87 Stat. 569 (1973)

Additional Information:
Date of Organization: 1970
Number of members: 7, 3 from each state and one federal representative.

Method of Selection: Commissioners are appointed by the governor of each state and subject to consent of the state senate.

ARKANSAS RIVER COMPACT OF 1949

Apportions the waters of the Arkansas River and establishes an administration as the supervising agency.

Member States and Statutory Citations:
Colorado: C.R.S. 73, Art. 69:37-69-101 (1949)
Kansas: Gen. Stat. Ann. 1964, Sec. 82a-520 (1949)
Congress: 63 Stat. 145-152 (1949)

Additional Data:
Date of Organization: 1949
Number of members: 7
Method of selection: Three commissioners from each member state appointed by the governor of each state, and one commissioner, representing the federal government, appointed by the president.
Number of employees: None

ARKANSAS RIVER COMPACT OF 1965 (KANSAS-OKLAHOMA)

Apportions the waters of the Arkansas River Basin, establishes a commission to administer the agreement, and encourages further pollution-abatement programs in this river basin.

Member States and Statutory Citations:
Kansas: K.S.A. 80-1601, 82a-528 (1966)
Oklahoma: 82 O.S. 1971, Sec. 1401 (1965)
Congress: P.L. 789, 89th Congress (1966)

Additional Data:
Date of Organization: 1967
Number of members: 6
Method of selection: The governors of Kansas and Oklahoma appoint three commissioners. The federal commissioner is appointed by the president, but he has no voting power.
Number of employees: 1

BEAR RIVER COMPACT

Apportions the waters of the Bear River and establishes a commission to administer the compact among Idaho, Utah, and Wyoming. Amended in 1980 to increase the storage allowance and establish a depletion level of 28,000 acre feet annually. Also allocated new blocks of water for future development in Idaho and Utah.

Member States and Statutory Citations:
Idaho: Idaho Code 1947 (1961 Supp.), Sec. 42-3402 (1955)
Utah: Utah Code Ann. 1953 (1961 Supp.), Sec. 73-16-2 (1955)
Wyoming: Wyoming Stat. 1957, Sec. 41-486 (1957)
Congress: 72 Stat. 38 (1958)

Additional Data:
Date of Organization: 1958
Number of members: 10
Method of selection: Three commissioners from each member state appointed by the governor of each state, and one commissioner, representing the federal government, appointed by the president.

Number of employees: Work of commission performed by the U.S. Geological Survey at Logan, Utah, under cooperative agreement, and by state employees, as necessary.

BIG BLUE RIVER COMPACT

Establishes a commission to promote interstate comity and equitable apportionment of waters in the river basin, to promote orderly development of water resources, and to continue active water pollution abatement programs in the party states. Provisions of the compact are administered by existing agencies in signatory states.

Member States and Statutory Citations:
Kansas: Laws of 1971, Ch. 332, Sec. 1 (1971)
Nebraska: Laws of 1971, L.B. 609 (1971)
Congress: 92nd Congress, 86 Stat. 193 (1971)

Additional Data:
Date of Organization: 1972
Number of members: 5
Method of selection: Each state has one ex-officio member. The governor of each state appoints an advisory member, and the president appoints a federal representative.
Number of employees: None

CANADIAN RIVER COMPACT

Establishes a commission to allocate and apportion waters of the Canadian River in New Mexico, Oklahoma, and Texas, and to perform all functions required by the compact either independently or in cooperation with appropriate government agencies and to make and transmit annual reports to the governors and to the president on the commission's activities for the preceding year.

Member States and Statutory Citations:
New Mexico: N.M.S. (1953 Ann.), Sec. 75-34-3, note (1951)
Oklahoma: 82 Okla. Stat. 1951, Sec. 526.1 (1951)
Texas: Vernon's Tex. Civil Stat. 1958, Art. 7466h (1951)
Congress: 64 Stat. 93 (1950); 66 Stat. 74 (1952)

Additional Data:
Date of Organization: 1952
Number of members: 4
Method of selection: One commissioner appointed by the governor of each state, and one commissioner, representing the federal government, appointed by the president.
Number of employees: None

COSTILLA CREEK COMPACT

Apportions the waters of Costilla Creek in Colorado and New Mexico and creates the necessary administrative structure. In 1963 both states and Congress approved an amendment perfecting further utilization of the interstate waters.

Member States and Statutory Citations:
Colorado: Col. Rev. Stat. 1973, Art. 68:37-68-101 (1945)
New Mexico: 1945 Laws of N.M., p. 74 (1945)
Congress: 60 Stat. 246 (1946); 77 Stat. 350 (1963)

Additional Data:
Date of Organization: 1945
Number of members: 2
Method of selection: One commissioner appointed by the governor of each state.
Number of employees: 1

KLAMATH RIVER COMPACT

Establishes a commission to promote comprehensive development, conservation, and control of the resources of the Klamath River and to foster interstate comity between California and Oregon.

Member States and Statutory Citations:
California: Calif. Water Code, Sec. 5900, et seq. (1957)
Oregon: O.R.S. 1959, Sec. 542.610 (1957)
Congress: 69 Stat. 613 (1955); 71 Stat. 497 (1957)

Additional Data:
Date of Organization: 1957
Number of members: 3
Method of selection: One commissioner from each member state (California: director of the Department of Water Resources; Oregon: state engineer serving as ex-officio representative of the State Water Resources Board), and one commissioner, representing the federal government, appointed by the president.
Number of employees: 0

LA PLATA RIVER COMPACT

Apportions the waters of the La Plata River between Colorado and New Mexico, and creates a joint commission to administer the compact.

Member States and Statutory Citations:
Colorado: C.R.S. 1973, Art. 63:37-63-101 (1923)
New Mexico: N.M. Stat. 2953, Sec. 75-34-3 (1923)
Congress: 43 Stat. 796 (1925)

Additional Data:
Date of Organization: 1927
Number of members: 2
Method of selection: State engineers from each member state. (Colorado state engineer is appointed by the director of the Department of Natural Resources. New Mexico appointment is by the governor.)
Number of employees: None

PECOS RIVER COMPACT

Establishes a commission to administer provisions for storage, division, and use of the waters of the Pecos River in New Mexico and Texas.

Member States and Statutory Citations:
New Mexico: N.M.S. 1953 Ann., Sec. 75-34-3 (1949)
Texas: Vernon's Tex. Civ. Stat. 1958, Art. 7466f (1949)
Congress: 63 Stat. 159 (1949)

Additional Data:
Date of Organization: 1949
Number of members: 3
Method of selection: One commissioner appointed by the governor of each member state, and one commissioner, representing the federal government, appointed by the president.
Number of employees: 3

RED RIVER COMPACT

Congress, in 1955, granted consent to Arkansas, Louisiana, Oklahoma, and Texas to negotiate a compact providing for an equitable apportionment among them of the waters of the Red River and its tributaries (69 Stat. 654). Final consent is contingent upon mutual acceptance by the party states of the compact's terms.

Member States and Statutory Citations:
Arkansas: Act 201 of 1979
Louisiana: Act 71, 1978 Regular Session
Oklahoma: no citation available
Congress: P.L. 96-564

REPUBLICAN RIVER COMPACT

Establishes an agency to provide for the most efficient use of the waters of the Republican River Basin for multiple purposes and to provide for an equitable division of those waters among the party states. Provisions of the compact are administered by existing agencies of signatory states.

Member States and Statutory Citations:
Colorado: C.R.S. 1973, Art. 67:37-67-101 (1943)
Kansas: K.S.A. 1964, Sec. 82a-518 (1943)
Nebraska: N.R.S. 1943, Vol. 2A, p. 741 (1943)
Congress: P.L. 60, 78th Congress (1943)

Additional Data:
Date of Organization: 1959
Number of members: 3
Method of selection: Provided by statute
Number of employees: None

RIO GRANDE INTERSTATE COMPACT

Establishes the Rio Grande Interstate Compact Commission to administer the compact and to apportion the waters of the Rio Grande River between Colorado, New Mexico, and Texas.

Member States and Statutory Citations:
Colorado: C.R.S. 73, Art. 66:37-66-101 (1939)
New Mexico: Stat. Ann. 1953, Sec. 75-34-3 (1939)
Texas: Vernon's Rev. Stat. 1954, Art. 7466e-1 (1939)
Congress: 53 Stat. 785 (1939)

Additional Data:
Date of Organization: 1939
Number of members: 4
Method of selection: One commissioner apointed by the governor of each signatory state and one federal representative.
Number of employees: None

SABINE RIVER COMPACT

Establishes a commission to apportion the waters of the Sabine River and to plan, develop, and conserve the water resources of the river basin in Louisiana and Texas.

Member States and Statutory Citations:
Louisiana: La. Rev. Stat. 38:2329, et seq. (1954)
Texas: Vernon's Tex. Civ. Stat. 1958, Art. 7466i (1953)
Congress: 65 Stat. 736 (1951); 68 Stat. 690 (1954)

Additional Data:
Date of Organization: 1953
Number of members: 5
Method of selection: Two commissioners appointed by the governor of each member state, and one commissioner, representing the federal government, appointed by the president.
Number of employees: None

SOUTH PLATTE RIVER COMPACT

Establishes a commission to apportion the waters of the South Platte River between Colorado and Nebraska.

Member States and Statutory Citations:
Colorado: C.R.S. 1973, Art. 65:37-65-101 (1925)
Nebraska: Neb. Rev. Stat. 1964, Vol. 2A, p. 733 (1923)
Congress: 44 Stat. 195 (1926)

Additional Information:
Date of Organization: 1926
Number of members: 2
Method of selection: Governor appoints one commissioner from each member state.
Number of employees: None

UPPER COLORADO RIVER BASIN COMPACT

Establishes a commission to administer apportionment of the waters of the Upper Colorado River Basin System and to promote agricultural and industrial development.

Member States and Statutory Citations:
Arizona: A.R.S. 1956, Sec. 45-581 (1949)
Colorado: C.R.S. 1973, Art. 62:37-62-101 (1949)
New Mexico: N.M. Stat. 1953, Sec. 75-34-3 (1949)
Utah: Utah Code Ann., Sec. 73-13-9 (1949)
Wyoming: Wyo. Stat. 1957, Sec. 41-507 (1949)
Congress: 63 Stat. 31 (1949)

Additional Data:
Date of Organization: 1949
Number of members: 5
Method of selection: One commissioner appointed by the governor of each member state and one commissioner, representing the federal government, appointed by the president.
Number of employees: 5

YELLOWSTONE RIVER COMPACT

Establishes a commission to apportion the waters of the Yellowstone River among Montana, North Dakota, and Wyoming.

Member States and Statutory Citations:
Montana: Mont. Rev. Code 1947, Ch. 9, Sec. 89-903 (1951)
North Dakota: N.D. Cent. Code, Ch. 61-23 (1951)
Wyoming: Wyo. Stat., Sec. 71-2901 (1951)
Congress: 63 Stat. 152 (1949); 65 Stat. 663 (1951)

Additional Data:
Date of Organization: 1952
Number of members: 3
Method of selection: One commissioner appointed by the governor of each member state, and one commissioner, representing the federal government, appointed by the director of the U. S. Geological Survey.
Number of employees: None

WATER POLLUTION CONTROL

NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMPACT

Establishes a commission to coordinate the water pollution control activities of the signatory states as they pertain to the waters of the compact area. Other activities include the assurance of water quality planning and standards in the compact area, improving groundwater program coordination and distributing public oriented information addressing current environmental issues.

Member States and Statutory Citations:
Connecticut: Public Act No. 203 (1947)
Maine: Ch. 450, Public Laws (1955)
Massachusetts: Acts of 1947, Ch. 421 (1947)
New Hampshire: Laws of 1951, Ch. 190 (1951)
New York: N.Y. Laws of 1949, Ch. 764 (1949)
Rhode Island: P.L. 1947, Ch. 1838 & 1901 (1947)
Vermont: Acts of 1949, No. 148 (1949)
Congress: P.L. 80-292 (1947)

Additional Data:
Date of Organization: 1947
Number of members: 35

Method of selection: Five commissioners from each member state appointed in the manner each state selects.
Number of employees: 11

OHIO RIVER VALLEY WATER SANITATION COMPACT

Establishes a commission for the purpose of maintaining waters in the river basin in a satisfactory sanitary condition available for safe use by public and private agencies and to maintain fish and aquatic life for recreational usage.

Member States and Statutory Citations:
Illinois: I.R.S., Ch. 111 1/2, Sec. 117
Indiana: House Enrolled Act. No. 337 (1939)
Kentucky: Ch. 150, Acts 1940, Reg. Sess. (1940)
New York: Laws of 1939, Ch. 945 (1939)
Ohio: Amended S.B. 33, Reg. Sess. (1939)
Pennsylvania: 32 P.S. 816.1-7
Virginia: Ch. 117, Acts of Gen. Assembly (1948)
Congress: P.L. 76-739 (1940)

Additional Data:
Date of Organization: 1948
Number of members: 27
Method of selection: Three commissioners appointed by the governor of each state, and three commissioners, representing the federal government, appointed by the president.
Number of employees: 23

POTOMAC VALLEY COMPACT

Establishes a commission to preserve water quality and to conserve water and related land resources of the Potomac River Basin. It should not be confused with the Potomac River Basin Compact which failed to become operational after 10 years of vigorous promotion. In 1979 the Commission created the Cooperative Water Supply Operations on the Potomac (CO-OP), which provides water usage forecasts and coordinates water management of the Upper Potomac reservoirs and local Washington metro reservoirs.

Member States and Statutory Citations:
Maryland: Ch. 320 Nat. Res. Art., Sec. 8-301 (1939)
Pennsylvania: 32 P.5.741-43
Virginia: House Bill 406 (1970)
West Virginia: W.V. Code, Act 1C, Ch. 29 (1961)
Dist. of Col.: D.C. Code 1973, Supp. IV-1977 (1940)
Congress: 54 Stat. 748 (1940); 84 Stat. 856 (1970)

Additional Data:
Date of Organization: 1941, authority amended 1970
Number of members: 18
Method of selection: Three commissioners from each signatory state appointed by the governor of each state, three commissioners appointed by the mayor of the District of Columbia, and three commissioners, representing the federal government, appointed by the president
Number of employees: 13

TRI-STATE SANITATION COMPACT

Establishes a commission in the joint boundary area of Connecticut, New Jersey, and New York to promote and enhance water quality standards. More recently, the commission has served as the coordinating and planning agency for air quality control within the tri-state boundary area.

Member States and Statutory Citations:
Connecticut: Conn. Gen. Stat. Ann., Sec. 25-55 (1941)
New Jersey: N.J. Stat. Ann., Sec. 32:18-1 (1935)
New York: McK's. E.C.L., Sec. 21.0501 (1936)
Congress: Public Res. 62, 74th Cong. (1935)

Additional Data:
Date of Organization: 1936
Number of members: 15
Method of selection: Five commissioners from each member state appointed by the governor and confirmed by the senate.
Number of employees: 22

WATER RESOURCES AND FLOOD CONTROL

CONNECTICUT RIVER VALLEY FLOOD CONTROL COMPACT

Establishes a commission to provide for financial reimbursement by downstream states for economic losses to political subdivisions in which flood control reservoirs are located. Commissioners have exercised more responsibility recently in keeping abreast of activities along the river which affect flood control.

Member States and Statutory Citations:
Connecticut: Conn. Gen. Stat. (1953 Supp.), Sec. 1476c (1949)
Massachusetts: Acts of 1951, Ch. 692 (1951)
New Hampshire: N.H. Rev. Stat. Ann. 487 (1951)
Vermont: Vt. Laws 1951, Act No. 244 (1951)
Congress: 67 Stat. 45 (1953)

Additional Data:
Date of Organization: 1953
Number of members: 12
Method of selection: Three commissioners appointed by the governor of each state. Two of the Massachusetts commissioners serve as ex-officio members.
Number of employees: 1

GREAT LAKES BASIN COMPACT

Establishes an advisory and recommendatory commission to the states on regional water resources matters, including comprehensive water use, economic development, and maintenance of high-quality environment.

Member States and Statutory Citations:
Illinois: I.R.S., Ch. 127, Sec. 192.1 et seq.
Indiana: Ch. 220, Laws of 1955, H.B. 216 (1955)
Michigan: Act No. 28, P.A. 1955 (1955)
Minnesota: Laws of Minn. 1955, Act. No. 28 (1955)
New York: Laws of 1960, Ch. 643 (1960)
Ohio: Amended H.B. 415, 105th Gen. Assembly (1963)
Pennsylvania: 32 P.S. 817.1-6
Wisconsin: Ch. 275, Laws of 1955
Congress: 82 Stat. 414 (1968)

Additional Data:
Date of Organization: 1955
Number of members: 38
Method of selection: Three to five commissioners selected in such manner as each state determines by law.
Number of employees: 9

THAMES RIVER FLOOD CONTROL COMPACT

Establishes a commission to administer the compact and promotes the cooperation in flood control and in the use of water resources of the Thames River Basin.

Member States and Statutory Citations:
Connecticut: Conn. Gen. Stat. 1958, Sec. 25-101 (1957)
Massachusetts: Ch. 616, Acts of 1957 (1957)
Congress: 72 Stat. 364 (1958)

Additional Data:
Date of Organization: 1959
Number of members: 6
Method of selection: Three commissioners from Connecticut appointed by the governor. In Massachusetts, the governor appoints one member and two ex-officio members.
Number of employees: None

WHEELING CREEK WATERSHED PROTECTION AND FLOOD PREVENTION COMPACT

Establishes a commission for the purpose of administering programs of flood control and preservation of natural resources and recreational facilities in the Wheeling Creek watershed.

Member States and Statutory Citations:
Pennsylvania: 32 P.S. 819.1-3
West Virginia: W. Va. Code, Art. 1F, Ch. 29 (1967)
Congress: 81 Stat. 553 (1967)

Additional Data:
Date of Organization: 1967
Number of members: 10
Method of selection: Five commissioners appointed in accordance with the laws of each state.
Number of employees: 1

COMPREHENSIVE

DELAWARE RIVER BASIN COMPACT

Establishes a commission as a regional multipurpose water resources agency. The United States is a party to the compact, as well as having granted congressional consent to the agreement among states.

Member States and Statutory Citations:
Delaware: 53 Del. Laws, Ch. 71 (1961)
New Jersey: Laws of 1961, Ch. 13 (1961)
New York: Laws of 1961, Ch. 148 (1961)
Pennsylvania: 32 P.S. 8115.1U1
Congress: 75 Stat. 688 (1961)

Additional Data:
Date of Organization: 1961
Number of members: 5
Method of selection: Governors of the signatory states serve as ex-officio members; one commissioner, representing the federal government, is appointed by the president. Each has a full-power voting alternate.
Number of employees: 44

SUSQUEHANNA RIVER BASIN COMPACT

Establishes a federal-interstate administrative agency to engage in comprehensive planning, development, and management of water and related resources of the Susquehanna River Basin. The Commission has recently promulgated regulations regarding consumptive uses of water, groundwater withdrawals and water conservation. The U.S. government is a full member of the compact.

Member States and Statutory Citations:
Maryland: Ch. 391, Nat. Res. Art., Sec. 8-301 (1967)
New York: N.Y. Acts of 1967, Ch. 785 (1967)
Pennsylvania: 32 P.S. 820.1-8
U.S.: P.L. 91-575, 84th Congress (1968)

Additional Data:
Date of Organization: 1970
Number of members: 4
Method of selection: Members consist of governors of the signatory states, ex-officio and one commissioner is to be appointed by the president of the United States to serve during his term of office.
Number of employees: 26

APPENDIX B

APPENDIX B

Compact Directors and Chairs

Last Name: Vicory, Jr.
First Name: Alan H.
Title: Executive Director
Address: 49 E. Fourth St.
City: Cincinnati
State: OH
Zip: 45202
Commission: Ohio River Valley Water Sanitation Comm.

Last Name: Poltak
First Name: Ronald F.
Title: Executive Director
Address: 85 Merrimac St.
City: Boston
State: MA
Zip: 02114
Commission: NEIWPCC

Last Name: Zeni
First Name: L.E.
Title: Executive Director
Address: 6110 Executive Blvd, Suite 300
City: Rockville
State: MD
Zip: 20852-2391
Commission: Potomac River Basin

Last Name: Bielo
First Name: Robert J.
Title: Executive Director
Address: 1721 North Front St.
City: Harrisburg
State: PA
Zip: 17102-2391
Commission: Susquehanna River Basin Comm.

Last Name: Cook
First Name: Wayne
Title: Executive Director
Address: 355 S. Fourth East Street
City: Salt Lake City
State: UT
Zip: 84111
Commission: Upper Colorado River Comm.

Compact Directors and Chairs

Last Name: Hansler
First Name: Gerald M.
Title: Executive Director
Address: P.O. Box 7360
City: West Trenton
State: NJ
Zip: 08628
Commission: Delaware River Basin Comm.

Last Name: Horak
First Name: William F.
Title: Chairman
Address: 821 E. Interstate Ave.
City: Bismarck
State: ND
Zip: 58501
Commission: Yellowstone River Compact Comm.

Last Name: Furrh, Jr.
First Name: James B.
Title: Chairman
Address: 1212 Capitol Towers
City: Jackson
State: MS
Zip: 39021
Commission: Sabine River Compact Admin.

Last Name: Michenfelder
First Name: Robert A.
Title: Chairman
Address:
City: Piermont
State: NH
Zip: 03779
Commission: Connecticut River Valley Flood Control

Last Name: Hale
First Name: William E.
Title: Chairman
Address: 7208 Carriage Road, N.E.
City: Albuquerque
State: NM
Zip: 87109
Commission: Pecos River Commission

Compact Directors and Chairs

Last Name: Vigneault
First Name: J.J.
Title: Chairman
Address: Mineral Management Service
Rm. 4253, 18 & C
City: Washington, D.C.
Zip: 20240
Commission: Arkansas/Oklahoma Arkansas River Compact Comm.

Last Name: Thornbrugh
First Name: Paul E.
Title: Chairman
Address: 11435 E. 5th St.
City: Tulsa
State: OK
Zip: 74128
Commission: Kansas/Oklahoma Arkansas River Comm.

Last Name: Kuonen
First Name: Nell
Title: Chairman
Address: 6600 Washburn Way
City: Klamath Falls
State: OR
Zip: 97603
Commission: Klamath River Compact Comm.

Last name: Spielvogel
First Name: Chester R.
Title: Chairman
Address: 113 Clemence Hill Rd.
City: Southbridge
State: MA
Zip: 01550
Commission: Thames River Valley Flood Control

Last Name: Barnett
First Name: Jack A.
Title: Engineer-Manager
Address: 106 W. 500 South, Suite 101
City: Bountiful
State: UT
Zip: 84010
Commission: Bear River Commission

Compact Directors and Chairs

Last Name: Hershey
First Name: Joe
Title: Chairman
Address: Star Route, Box 708
City: Texline
State: TX
Zip: 79087
Commission: Canadian River Compact

Last Name: Cooley
First Name: Frank
Title: Chairman
Address: P.O. Box 98
City: Meeker
State: CO
Zip: 81541
Commission: Arkansas River Compact Admin.

Last Name: Ham
First Name: Arlene
Title: Chairman
Address: 116 Crestridge
City: Rapid City
State: SD
Zip: 57701
Commission: Rio Grande

Last Name: Donahue
First Name: Mike
Title: Executive Director
Address: Argue II Bldg., 400 Fourth St.
City: Ann Arbor
State: MI
Zip: 48103-4816
Commission: Great Lakes Commission

Last Name: Lane
First Name: John
Title: Director
Address: 50 Haddale Ave.
City: Wheeling
State: W. VA
Zip: 26003
Commission: Wheeling Creek Watershed

Compact Directors and Chairs

Last name: Mytelka
First Name: Alan
Title: Executive Director
Address: 311 W. 43rd St.
City: New York
State: NY
Zip: 10036
Commission: Interstate Sanitation Comm.

APPENDIX C

APPENDIX C

Respondent's Name _____

COMPACT DIRECTOR/CHAIRMAN QUESTIONNAIRE
Arkansas-Oklahoma Arkansas River Basin Compact

1. How often are formal meetings held with the state representatives of the compact?

_____ meetings per year

2. Over the past ten years, describe the level of state contributions to the commission's budget (in actual dollars)?
Circle one of the following:

a. increased significantly (at a faster rate than the rate of inflation).
b. increased slightly (increase was not sufficient to keep up with the rate of inflation)
c. did not change
d. decreased slightly (decrease in contributions by one of the states not offset by other state contributions)
e. decreased significantly (decrease in contributions by more than one state member not offset by other state contributions).

Comments:_____

3. Does the commission primarily rely upon annual appropriations by its members for funding, or does it primarily rely on longer term (multi-year) sources of funding (such as bonds, long term grants, etc.)? Circle one of the following:

a. Annual appropriations b. Multi-year funding

Comments:_____

4. Are you aware of any pending interstate litigation involving the water resources within the jurisdiction of your commission?

a Yes b. No

If yes, which states? _____

Comments: _____

5. Are there other regional institutions whose authority over the water resources overlaps with the jurisdiction of your compact commission?

a. Yes b. No

If yes, please identify. _____

Comments: _____

6. Approximately what percentage of your time as compact director/chairman is spent in the following areas?

a. ___ Internal commission administration
b. ___ Informational activity for public and state consumption
c. ___ Consulting and/or negotiating with state representatives or officials on regional and state water resources legislation consistent with the commission's goals.

Comments:_____

7. Below is a list of 10 general classes of interest groups that may be concerned with the actions of your commission. Please rank them on a scale of 1 to 10 in terms of their political ability to affect the achievement of your compact commission's goals (1 being most important and 10 being least important. (Your individual ranking will be kept confidential)

___ Environmental
___ Electric Power
___ Transportation
___ Commercial and industrial
___ Shoreline owners/riparian
___ Recreational
___ Commercial fishing
___ Agriculture
___ Native people
___ Local governments/agencies

8. For each of the classes of interest groups that you ranked as 1, 2 and 3 in the previous question, please identify a specific interest group whose views would be representative of that general class of interest groups.

Rank 1. _____

Rank 2. _____

Rank 3. _____

9. Describe what formal or informal mechanism exists for the commission to receive input from the three interest groups you identified in the previous question.

_____

_____

10. Below is a list of official purposes of the compact derived from the Congressional statute. Please rank these purposes in terms of your commission's priorities , with number 1 being the top priority. (Please make each ranking distinct, i.e. no ties)

___ Equitable apportionment of Arkansas River Basin waters
___ Maintain an active pollution abatement program
___ Facilitate cooperation between the Arkansas and Oklahoma water administration agencies in the total development and management of the Arkansas River Basin water resources.
___ Promote interstate comity between the two states.

Comments on the phrasing of these goals?_____

_____

_____

11. Would you say the purposes of the agency have changed since the compact was first formed? Yes No (circle one)

If yes, explain why_____

_____

_____

12. What are the two or three most important actions the commission has taken in the last ten years in furtherance of these purposes?

1._____

2._____

3._____

13. How effective has the commission been in achieving the purposes you have identified and ranked in questions 10. (circle one)

Very effective Somewhat effective

Somewhat ineffective Very ineffective

Please explain the basis for your overall effectiveness ranking:

_____

_____

14. What is the greatest strength of your compact commission?

_____

_____

15. What is the greatest weakness of your compact commission?

_____

_____

Respondent's Name _____

COMPACT COMMISSIONER QUESTIONNAIRE (12 questions)
Re: Delaware River Basin Commission

The following questions solely relate to your membership on the Delaware River Basin Commission.

1. Approximately how often are you in contact with commission staff and/or the compact commission members from other states to discuss issues involving this compact? (Circle one)

1. Once a year 3. Once a month 5. Once a week 7. Other _____
2. Twice a year 4. Twice a month 6. More than once a week

2. Over the past ten years, describe the approximate level of your state's contributions to this commission's budget (in dollars). If you are a federal representative, please indicate the level of federal contributions, if any. (Circle one)

a. increased significantly (at a faster rate than the rate of inflation).
b. increased slightly (increase was not sufficient to keep up with the rate of inflation)
c. did not change
d. decreased slightly
e. decreased significantly

Comments:_____

3. Are you aware of any pending interstate litigation which involves the water resources within the jurisdiction of this commission? (Circle one)

1 Yes 2. No

If yes, please briefly identify the parties in the case:_____

4. Is there a key state or national political figure who is closely associated and actively involved in this compact commission and its activities?

1. Yes 2. No

If yes, please identify_____

(Questions continued on reverse side of this sheet)

5. Below is a list of official purposes of the compact on which you serve, derived from the Congressional enabling statute. Please rank these purposes in terms of what you believe are the commission's priorities, with number 1 being the top priority. (Please make each ranking distinct, i.e. no ties)

___ Promote interstate comity and remove all present and future controversies regarding the Delaware River waters.
___ Make secure and protect present developments within the states.
___ Provide for cooperative planning and action with the parties to the water resources.
___ Encourage conservation, utilization and development of water resources.
___ Provide management and control of the water resources.

Comments on the phrasing of these goals or any additional goals and ranking?

_____

_____

6. How effective do you, as the state (or federal, if applicable) representative, believe this commission has been in achieving the purposes you have identified and ranked in question 5. (Circle one)

1. Very effective 2. Somewhat effective
3. Somewhat ineffective 4. Very ineffective

Please explain the basis for your overall effectiveness ranking:

_____

_____

7. What has been the impact of actions and/or recommendations made by this compact commission on the development of a regional water policy approach by your state? (Circle one)

1. Has had a significantly positive impact on the development of a regional approach to water policies in your state.
2. Has had a marginally positive impact on the development of a regional approach to water policies in your state
3. Has had no impact on the development of a regional approach to water policies in your state.
4. Has had a marginally negative impact on the development of a regional approach to water policies in your state.
5. Has had a significantly negative impact on the development of a regional approach to water policies in your state.
6. Not applicable

Comments:_____

8. If possible, please identify three important legislative or regulatory actions your state has taken in the last ten years in furtherance of (or in opposition to) the compact commission's purposes you have identified in question 5. (If you are a federal representative, please indicate federal actions, if any).

1._____

2._____

3._____

9. Below is a list of 10 general classes of interest groups that may be concerned with the actions of this commission. Please rank them on a scale of 1 through 10 in terms of their political ability to influence the achievement of this compact commission's goals (with a ranking of 1 being the most important, 2 being the next most important, ... and 10 being the least important. (Your individual ranking will be kept confidential)

___ Environmental
___ Electric Power
___ Transportation
___ Commercial and industrial
___ Shoreline owners/riparian
___ Recreational
___ Commercial fishing
___ Agriculture
___ Native people
___ Local governments/agencies

(Questions continued on the reverse side of this sheet)

10. For each of the classes of interest groups that you ranked as 1, 2, 3 and 4 in the previous question, please identify a specific interest group whose views would be representative of that general class of interest groups.

Rank 1. _____

Rank 2. _____

Rank 3. _____

Rank 4 _____

11. What is the greatest strength of this compact commission?

_____

_____

12. What is the greatest weakness of this compact commission?

_____

_____

Do you want a copy of the results of this survey? Yes No

APPENDIX D

APPENDIX D

COMPACT	Question 1: Commission meetings/ contact per year (formal meetings) (Av. Contact) Director	Comms.	Question 2: Budget-Level of state contributions* (overall) Dir.	State Mechn.	Question 3:/4 Pending Litigation (Regnl.) Dir.	(Indiv.) States
Arkansas River	2	15	++	-	Yes	Yes
Ark-Okla-Ark River	1	5	0	-	Yes	Yes
Bear River	2	22	-	+	No	No
Canadian River	1	1	0	0	Yes	Yes
Connecticut River	4	6	0	0	No	No
Costilla Creek	-	6	?	+	-	-
Delaware River	10-12	52	+	+	No	Yes
Great Lakes	2	18	++	+	No	No
Interstate San.	4	20	--	--	Yes	No
Kan-Okla Ark River	1	5	0	+	Yes	No
Big Blue River	-	2	?	+	-	No
Klamath River	1	12	0	0	No	No
La Plata	-	1	?	+	-	No
NEIWPCC	4	10	0	0	No	No
Ohio River	3	17	+	+	No	No
Pecos River	1	24	+ (ad eq)+		No	Yes
Potomac River	4	12	+	+	No	No
Red River	-	7	?	0	-	No
Republican River	-	2	?	+	-	No
Rio Grande	2	18	?	+	-	Yes
Sabine River	2	2	+	+	No	No
S. Platte	-	1	?	0	-	No
Susquehanna River	6	23	+	+	No	No
Thames	1	1	0	0	No	No
Upper Colorado Riv	2-3	52	++	+	No	No
Wheeling Creek	1	12	?	0	No	No
Yellowstone River	2	9	+	+	Yes	No

* ++ = significant increase, + = increase slightly, 0 = no change, - = decrease slightly, -- = decrease significantly

COMPACT	Question 4 (State) Key Political Figure? #	Gov. level	Question 3 (Dir) Commission funding Annual	Multi-year	Question 5 (State & Dir) Regional Inst. overlap?
Arkansas River	2	state	X		No
Ark-Okla-Ark River	0	-		X	No
Bear River	0	-	X		No
Canadian River	0		X		No
Connecticut River	0		X		Yes - (Corps of Engineers)
Costilla Creek	0		-	-	-
Delaware River	4	2 state 2 federal	X		Yes - (Del Valley Reg. Planning)
Great Lakes	4	1 state 3 federal	X		Yes
Interstate San.	1	state	X		Yes
Kan-Okla Ark River	0		X		Yes
Big Blue River	0		-	-	- No
Klamath River	0			(interest on funding	Yes
La Plata	0		-	-	- -
NEIUPCC	0			X	No No
Ohio River	1	federal	X		No No
Pecos River	1	federal		X	No No
Potomac River	2	federal	X		Yes - (Metro Wash COG
Red River	0		-	-	-
Republican River	0		-	-	-
Rio Grande	0		-	-	-
Sabine River	0		X		Yes (Sabine River Authority
S. Platte	0		-	-	-
Susquehanna River	0		X		No
Thames	0			(interest or funding	Yes (Corps of Engineers)
Upper Colorado Riv	0		X		Yes (Colo Salinity Control Forum)
Wheeling Creek	3	2 federal 1 state	-	-	-
Yellowstone River	0		X		No

COMPACT	Question 6 (Director) % of time spent on Interl.	Info	Policy	Question 5 (State) and 10 (Director) Official purpose of compact-- Median State/ Director Agree?	Question 6 (State) and Question 13 (Director) Commission effectiveness-- State Med.	Dir.
Arkansas River	70		30	No	-	++
Ark-Okla-Ark River	90	10		No	+	+
Bear River	50	25	25	No	++	+
Canadian River	95	2	3	Yes	+	+
Connecticut River	10	40	50	Yes	+	+
Costilla Creek	-	-	-	-	++	
Delaware River	80	15	5	No	++	++
Great Lakes	25	50	25	No	+	++
Interstate San.	20	10	20	Yes	+	++
Kan-Okla Ark River	90	5	5	-	+	++
Big Blue River	-	-	-	-	++	
Klamath River	5	5	5	Yes	+	++
La Plata	-	-	-	-	++	
NEIWPCC	20	20	60	Yes	+	+
Ohio River	60	20	5	No	++	++
Pecos River	100			No	-	--
Potomac River	46	40	4	Yes	++	++
Red River	-	-	-	-	+	
Republican River	-	-	-	-	+	
Rio Grande	-	-	-	Yes	++	++
Sabine River	80	20		No	++	+
S. Platte	-	-	-	No	+	
Susquehanna River	85	10	5	No	+	+
Thames	-	-	-	-	+	++
Upper Colorado Riv	20	5	75	No	+	+
Wheeling Creek	-	-	-	-	++	++
Yellowstone River	80	20	-	-	-	+

1. 50% of time seeking fed. and state funds
2. Work only as needed
3. ++ = effective, + = somewhat effective, - = somewhat effective, -- = ineffective

COMPACT	Question 7 (Director) and 9 (state) #1 type of Interest Group affecting commission (median) Director	State	Question 12 (Director) and 8 (state) Regional Actions taken by commission/ state? Type? Director	Indentify? State Act	Question 7 (state) Regional Impact of commission* (median score)
Arkansas River	Agric	Agric	Admin	Yes	+
Ark-Okla-Ark River	Local Gov	Local Gov	Admin	Yes	++
Bear River	Agric	Agric	Policy	Yes	+
Canadian River	Envir	Commercial	-	No	++
Connecticut River	Envir	Envir	Policy	No	+
Costilla Creek	-	Agric	-	Yes	+
Delaware River	Local Gov	Local Gov	Policy	Yes	+
Great Lakes	Envir	Envir	Policy	Yes	+
Interstate San.	Local Gov	Local Gov	Policy	Yes	+
Kan-Okla Ark River	Local Gov	Local Gov	-	Yes	+
Big Blue River	-	Agric	-	Yes	++
Klamath River	Agric	Agric	-	No	+
La Plata	-	Agric	-	Yes	0
NEIWPCC	Local Gov	Local Gov	Policy	Yes	+
Ohio River	Local Gov	Envir	Policy	Yes	++
Pecos River	Local Gov	Local Gov	Admin	Yes	+
Potomac River	Local Gov	Local Gov	Policy	Yes	++
Red River	_	Local Gov	-	Yes	++
Republican River	_	Agric	-	Yes	0
Rio Grande	Envir	Agric	-	Yes	+
Sabine River	Commercial	Commercial	Admin	No	+
S. Platte	-	Agric	-	Yes	0
Susquehanna River	Electrical	Electrical	Policy	Yes	+
Thames	Recreation	Envir	Admin	No	+
Upper Colorado Riv	Envir	Agric	Policy	Yes	++
Wheeling Creek	Natives	Local Gov	Admin	No	0
Yellowstone River	Natives	Agric	Policy	Yes	0

* significantly positive = ++
marginally positive = +
no impact = 0
marginally negative = -
significantly negative = --

Question 9 (Director)
Formal and Informal Mechanisms for
Interest Group Input

COMPACT	
Arkansas River	Annual meeting
Ark-Okla-Ark River	Briefings and meetings
Bear River	Through state compact members
Canadian River	None
Connecticut River	Quarterly meeting attendance
Costilla Creek	--
Delaware River	Public hearing, advisory committees, conferences
Great Lakes	Joint meetings and joint projects
Interstate San.	Informal communication
Kan-Okla Ark River	Through state agency reps.
Big Blue River	--
Klamath River	Public meeting
La Plata	--
NEIWPCC	Commission meetings and with staff
Ohio River	Advisory committees and underwrites travel costs for some group
Pecos River	None
Potomac River	Public meeting and committee membership
Red River	--
Republican River	--
Rio Grande	--
Sabine River	Through Sabine River authorities
S. Platte	--
Susquehanna River	Commission meetings and hearings
Thames	None
Upper Colorado Riv	Formal and informal meetings
Wheeling Creek	--
Yellowstone River	Annual meeting attendance

Questions 14 & 15 (Director) and 11 and 12 (State)
Strengths & Weaknesses of Compact Commission

COMPACT	Director	States
Arkansas River	Strength - Quality of reps Weakness - can't stop litigation	Strength - J. Martin reservoir Weakness - attorneys dominate meetings, lack of consensus
Ark-Okla-Ark River	Strength - members Weakness - not enough power	Strength - public forum Weakness - each of consensus, dominated by water agencies
Bear River	Strength - precision of compact Weakness - uncertainty of future depletion	Strength - simplicity, quality of members Weakness - varied state & personal ints.
Canadian River	Strength - unanimity of action Weakness - unanimity of action	Strength - simple, keep N.M. from water Weakness - can't stop state rule breaking
Connecticut River	Strength - no friction among members Weakness - state agency member selection	Strength - tax allocation, EPA representation Weakness - advisory, quorum problems
Costilla Creek	------	Strength - communication Weakness - administrative costs
Delaware River	Strength - simple majority vote Weakness - budget contributions	Strength - resolved conflicts, goodwill, staff Weakness - funding, delays, education public
Great Lakes	Strength - credibility Weakness - lacks binding authority	Strength - unity, forum, staff, research reputation Weakness - no power, no fed support, Canada, port domination
Interstate San.	Strength - citizen commissions Weakness - too effective, ex offici	Strength - regional perspective, dialogue coord Weakness - no longer primary pollution regulator, too much political commission negot
Kan-Okla Ark River	Strength - coordination with state Weakness - budget and staff	Strength - simple Weakness - can't stop overdevelopment
Big Blue River	------	Strength - narrow purpose Weakness - no future planning
Klamath River	Strength - state cooperation Weakness - fed rep has no vote	Strength - forum Weakness - limited authority
La Plata	-----	Strength - working relationships Weakness -
NEIWPCC	Strength - technical guidance & assist Weakness - finances	Strength - information, coord., work w/EPA Weakness - funding, dom by agency, no legal authority
Ohio River	Strength - bring ints together Weakness - resources	Strength - visible, staff, commun, coord with fed Weakness - enf stds, resources, slow turnover
Pecos River	Strength - annual public activities, review Weakness - lawsuit, lack of ideas	Strength - mechanical Weakness - tie votes

Questions 14 & 15 (Director) and 11 and 12 (State) (continued)
Strengths & Weaknesses of Compact Commission

COMPACT	Director	States
Potomac River	Strength - staff, confidence in program Weakness - finances, participation	Strength - coord, forum, staff, coop Weakness - rep, lack of auth, consultant status
Red River	Strength - none Weakness - no presidential chair appt.	Strength - work together, commissioners Weakness - budget, consensus, few meetings
Republican River	-----	Strength - specific allocations, and commissioner rels. Weakness - vague purpose, lack auth.
Rio Grande	Strength - communication Weakness - public meetings	Strength - communication Weakness - inflexible and not future oriented
Sabine River	Strength - knowledge of basis Weakness - no pressing issues	Strength - no problems yet Weakness - lack of state int, limited accountability
S. Platte	-----	Strength - self-executing Weakness - admin powers, favors Colo.
Susquehanna River	Strength - legal powers Weakness - funding	Strength - forum, reg power, homogeneous Weakness - poor state rels, funding, no priority consensus
Thames	Strength - realistic Weakness - ?	Strength - reps from state envi agencies Weakness - tax, staff
Upper Colorado Riv	Strength - unity and effective Weakness - closure difficult sometimes	Strength - direct link to governors, coord Weakness - limited purpose, slow
Wheeling Creek	Strength - completed project Weakness - caused political death of politicians	Strength - coop & flood control Weakness - politicians
Yellowstone River	Strength - willing to take on battles Weakness - most water has pre-compact authority	Strength - informal, small Weakness - crisis management, not resolve interp questions questions

APPENDIX E

SIGNATORY PARTIES CONTRIBUTIONS
BASED ON SRBC FISCAL YEARS
(1972-1990)

(In Thousands)

Fiscal Years	State of New York	Commonwealth of Pennsylvania	State of Maryland	U.S. Gov't.	Total Signatory	Other Income	Total Revenue	% Signatory To Total Revenue	% Other Income To Total Revenue
1972	$ 75.0	$ 75.0	$ 75.0	$ 75.0	$ 300.0	$ —	$ 300.0	100	0
1973	150.0	150.0	150.0	150.0	600.0	29.6	629.6	95	5
1974	112.5	120.0	120.0	120.0	472.5	869.9	1,342.4	35	65
1975	150.0	150.0	150.0	150.0	600.0	715.3	1,315.3	46	54
1976	150.0	150.0	150.0	150.0	600.0	2,834.1	3,434.1	17	83
1977	125.0	150.0	150.0	150.0	575.0	1,179.6	1,754.6	33	67
1978	125.0	200.0	200.0	187.5	712.5	738.3	1,450.8	49	51
1979	125.0	200.0	200.0	200.0	725.0	289.7	1,014.7	71	29
1980	200.0	210.0	210.0	207.5	827.5	733.8	1,561.3	53	47
1981	200.0	210.0	210.0	202.5	822.5	1,062.2	1,884.7	44	56
1982	90.0	222.75	210.0	212.75	735.5	865.7	1,601.2	46	54
1983	90.0	225.0	225.0	217.0	757.0	411.8	1,168.8	65	35
1984	90.0	230.0	225.5	226.75	772.25	586.5	1,358.75	57	43
1985	100.0	230.0	225.5	230.0	785.5	542.0	1,327.5	59	41
1986	104.0	235.0	239.5	225.0	803.5	766.1	1,569.6	51	49
1987	106.6	240.0	239.6	232.5	818.7	598.5	1,417.2	58	42
1988	106.6	248.5	239.5	246.75	841.35	619.18	1,460.53	58	42
1989	256.6	262.0	247.5	258.75	1,024.85	794.88	1,819.73	56	44
1990	106.6	276.0	240.3	269.5	892.4	537.81	1,430.21	62	38
	$2,462.9	$3,784.25	$3,707.4	$3,711.5	$13,666.05	$14,174.97	$27,841.02	49	51

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