RIVER AND WETLAND CONSERVATION AND PRESERVATION ISSUES IN ARIZONA: A STUDY OF AGENDA BUILDING

by

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STATEMENT BY AUTHOR

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Three-and-a-half years at the University of Arizona is contained in the pages that follow. Though the title page bears my name, the ideas belong to many, and its completion is due, in part, to the continuous encouragement from professors, friends, and family.

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LIST OF ABBREVIATIONS

ACALE -- Advisory Commission on Arizona Environment
ADEQ -- Arizona Department of Environmental Quality
ADHS -- Arizona Department of Health Services
ADWR -- Arizona Department of Water Resources
AGFD -- Arizona Game and Fish Department
AORCC -- Arizona Outdoor Recreation Coordinating Commission
APA -- Arizona Power Authority
ARC -- Arizona Riparian Council
ASLD -- Arizona State Land Department
ASPB -- Arizona State Parks Board
AWC -- Arizona Water Commission
AWRC -- Arizona Water Resources Commission
AWIC -- Arizona Water Information Center
BLM -- Bureau of Land Management, Department of the Interior
BOR -- Bureau of Reclamation, Department of the Interior
CAE -- Commission on the Arizona Environment
CAP -- Central Arizona Project
Corps -- Corps of Engineers, Department of Defense
GCAE -- Governor's Commission on Arizona Environment
GCAE -- Governor's Commission on Arizona Environment
GWCF -- Land and Water Conservation Fund
NWR -- National Wildlife Refuge
ORRRC -- Outdoor Recreation Resources Review Commission
PCTFCD -- Pima County Transportation and Flood Control District
SCORP -- Statewide Comprehensive Outdoor Recreation Plan
SRP -- Salt River Project
TNC -- The Nature Conservancy
USDA--FS -- Forest Service, United States Department of Agriculture
USDI -- United States Department of the Interior
USFWS -- United States Fish and Wildlife Service, Department of the Interior
USGS -- United States Geological Survey, Department of the Interior
VNBA -- Valley National Bank of Arizona
ABSTRACT

This study of agenda building concerns the identification and specification of the types of issues receiving the attention and action of governmental decision-makers. One of the most important reasons for studying agenda building is to facilitate a better understanding of the relationship between public participation and governance.

The research is a case study of the initiation and development of river and wetland conservation and preservation issues in Arizona. The primary objective is to refine and clarify agenda-building theory. A second purpose is to help decision-makers and the public better understand the multiple facets of highly complex and controversial issue, and in turn, create more equitable and effective policy.

The thesis provides a description and analysis of how and why river and wetland conservation and preservation issues have reached certain state and federal formal agendas to the exclusion of others and offers a prognosis about the future of these issues.
Rivers, streams, and wetlands cover less than one-half of one percent of the Arizona landscape yet for economic, recreational, and ecological reasons they are the most valuable of all habitat types. The larger perennial rivers supply approximately one-half of the state's water needs. Floodplains serve an important function as natural mitigators of flood hazards, and are highly sought after for residential and commercial developments and for open space and aesthetic amenities. Stream terraces and buried and active stream channels are the principal sites for sand and gravel mining operations. Water-based recreation sites are extremely popular with in-state and out-of-state tourists.

Moreover, rivers and wetlands are highly critical to species diversity and abundance. At least sixty percent of the vertebrates in the Southwest are dependent in some capacity on these habitat areas. This includes thirty-seven species and subspecies of native fishes, numerous sport fishes, most of the state's twenty-four species of amphibians, two native turtles, and four native snakes. Vegetation associated with streams and wetlands support higher avian population densities than any other forest habitat type. An estimated 431 species of birds (including 245 species of breeding birds) are found in Arizona, representing sixty-two percent of the North American bird species. Streams and wetlands are also critical to migrating birds that require food and cover to continue on their migratory routes.
In 1961, Dr. Charles Lowe, an ecologist at the University of Arizona, published a paper that introduced a term to describe the uniquely Southwestern habitat type upon which many of Arizona's native and non-native species depend. More encompassing than the concept of a wetland found in the eastern United States, the riparian association was defined as:

one which occurs in or adjacent to drainageways and/or their floodplains and which is further characterized by different species and/or life-forms than that of the immediately surrounding non-riparian climax (Lowe 1961).

This paper fundamentally altered scientist's perceptions of desert rivers and wetlands, and marked the beginning of a new discipline -- Southwest riparian ecology. While the ecological importance of riparian habitats is just beginning to be understood, the magnitude of the losses that have been suffered is staggering, being ignored by elected decision-makers, and virtually unknown to the general public.

Ninety-five percent of the original riparian habitat has been lost, mostly as a result of human occupation and development. Cottonwood-willow gallery forests, which once formed lush canopies along all of Arizona's major desert river systems, have become the rarest forest type in North America. Mature stands of mesquite bosques are now the fourth rarest plant community in America. One native fish is now extinct, four others are gone from the state, and twenty-one are federally listed as threatened or endangered or are under consideration for listing. Avian populations have also been severely effected. For example, at least 101
species of breeding birds were present prior to land-use changes on the lower Gila River in the vicinity of the Gila River Indian Reservation. In the past one hundred years twenty-two species of breeding birds have been extirpated from this area. River otter have been extirpated from the Gila and Colorado River drainages. Four species of riparian-dependent amphibians and reptiles went extinct in Arizona during the 1960s and 1970s as a result of human-induced changes to the landscape.

The Anglo-American settlement of Arizona was accompanied by numerous causes and forms of landscape change. Many of southern Arizona's largest riparian forests were decimated as a result of the early settlers' fuelwood and timber needs. Other riparian areas were converted to croplands because of the need for a proximate source of surface water or shallow groundwater for irrigation. Overgrazing, in combination with a series of severe floods and droughts and other factors, contributed to the deepening and widening of stream channels (arroyo cutting) between 1885 and 1916. In the process, marshes were drained and ground water tables were lowered below the discharge points of springs.

The political by-product of these flood and drought episodes in the West was the establishment of a federal reclamation program in 1902. This program led to the loss and alteration of most of the state's naturally flowing streams and loss of native, streamside habitat as a result of impoundments, diversions, vegetation removal, channelization, and dredging.
Roosevelt Dam, the first federally funded reclamation project in the United States was completed on the Salt River in 1911. By the end of World War II the major rivers of the state's interior — the Salt, Verde, Gila, and Agua Fria — had been impounded, and vast acres of riparian habitat were flooded or dessicated in the process for the purposes of water storage, flood control, power generation, and recreation. Non-native vegetation, most notably saltcedar, then invaded the regulated river corridors. The completion of Hoover Dam in 1935, Glen Canyon Dam in 1963, and several other dams and extensive canal systems on the Colorado River made it one of the most controlled major rivers in the world. The lower Colorado River downstream of Hoover Dam has also undergone extensive dredging and channelization. The cumulative impact of these projects is that more than eighty percent of the remaining marshes on the lower Colorado are now limited to three National Wildlife Refuges. These refuges include the portion of riparian habitats formerly considered to be the least valuable to wildlife. They are now considered to be the best because they are all that remain.

Rivers and wetlands in southern Arizona have met a similar fate. With the exception of the San Pedro River, Cienega Creek, and some smaller streams, the major perennial and intermittent flowing waters have dried up in most basins in this part of the state, as have many of the cienegas and marshes described in historic records.
Intensive groundwater development in municipal and agricultural areas has been responsible for the loss or diminution of surface waters. Groundwater development was needed because by the late 1930s most of the surface water supplies of the Salt, Verde, Gila, Agua Fria, San Pedro, and Santa Cruz Rivers had been appropriated for use. Continuous migration into the State, severe drought in the late 1930s and early 1940s, the advent of the high-capacity, deep-well turbine groundwater pumps (around 1937), and the availability of cheap hydroelectricity caused increasing numbers of farms to use groundwater for irrigation needs. This greatly increased production capacity. Between 1900 and 1940 the irrigated acreage in Arizona had increased from 185 thousand to 575 thousand acres. By 1950 total irrigated acreage had nearly doubled to 970 thousand acres, and today fluctuates slightly around one million acres. Consequently, by the mid-1940s groundwater levels began dropping precipitously. In areas where falling groundwater tables were hydrologically connected to surface waters, the streams or wetlands went dry. If the groundwater fell below a level accessible to riparian vegetation, the terrestrial vegetation was also negatively effected.

In the lower Gila River and other riverine systems, vast acreages of riparian vegetation (phreatophytes) were cleared to increase water yields, a practice adopted after World War II. In 1952, approximately 400 thousand acres of phreatophytes were found in Arizona. By 1967 the total acreage had been cut to just short of 280 thousand acres. Between 1967 and 1969 mature cottonwood trees were removed from the Verde River
streambanks to reduce the impacts of flooding. Public opposition to phreatophyte removal projects in the late 1960s and early 1970s eventually led to their cessation.

More recently, concern for rivers and wetlands in Arizona has focused on the degradation of water quality. Rapid population growth and urbanization have contributed significantly to the growth of wastewater treatment plants for industry and municipalities. In the mid-1980s thirty-eight wastewater systems in Arizona, many in high elevation communities, were in violation of point discharge standards. Mining activities and residues are responsible for the non-attainment of water quality standards for 179 of 207 river miles analyzed by the state. The introduction of pesticides after World War II has led to water quality degradation from agricultural runoff. Pesticides and their metabolites have been detected in the lower Gila and lower Colorado Rivers. In addition, overgrazing, timber harvesting, and other land use practices have accelerated erosion rates, leading to excessive loadings of salts, suspended sediments, and other contaminants that may attach themselves to the suspended particles.

Degradation of water quality, diminution and loss of flowing and non-flowing surface waters, destruction and replacement of native riparian vegetation, and reduction and extinction of native species partially or wholly dependent on river and wetland habitats are the ecological losses that have resulted. However, the impacts to streams...
and wetlands extend farther into the lives of Arizonans than this history suggests. Riparian open spaces in urban areas, beneficial to a community's aesthetic and recreational needs, have been lost. Natural, water-based recreation sites are becoming increasingly crowded and degraded.

Though only a small fraction of the river and wetland resource base remains in Arizona, continued population growth and pressures for economic development indicate that conflicts over the distribution and use of these areas will intensify. Irreversible decisions have been, and will continue to be made. The effects that these decisions will have on future generations locally and globally remains to be seen. It is an issue of growing importance to the state and the topic of this thesis.
CHAPTER 1

INTRODUCTION

The study of agenda building concerns the identification and specification of the types of issues receiving the attention and action of governmental decision-makers (Cobb and Elder [1972] 1983). One of the most important reasons for studying agenda-building processes is to facilitate a better understanding of the relationships between public participation and governmental action. A primary objective in this endeavor is to develop a conceptual model that describes the principal governmental and non-governmental actors, institutions, and policy processes. A useful model of public policy helps to clarify and simplify political life, and can illuminate some general causes and consequences of governmental decisions.

Slightly more than two decades ago, Cobb and Elder (1972) developed one of the first agenda-building models. Their model emphasized the mobilization of groups as the key determinant in issue expansion and governmental action. At the time of its publication, critics were quick to point out the model's shortcomings — at its worst it was thought to be "only of modest value" (Loveridge 1973); at best, "a useful checklist...of factors that are potentially important in shaping the evaluation of an issue" (Brunner 1976). More specific criticisms were directed at the researchers' failure to adequately describe or explain:
How agenda-building processes influence policy outputs, such as the difference between symbolic and substantive policies (Peterson 1974);

Who controls the agenda (Peterson 1974);

What operational definitions and empirical methods might be used to test the ideas and hypotheses presented (Loveridge 1973);

What role political forces other than those emphasized by group theory might have in agenda building (Loveridge 1973; Ross 1973);

Why some issues are included on the agenda to the exclusion of others (Ross 1973); and

Whether there are shifting potentials for issue promotion (Brunner 1976).

**Problem Statement and Purpose**

These theoretical problems still remain largely unresolved and other equally important questions have surfaced. One reason for this lack of resolution is that policy researchers have only recently taken an active interest in agenda building as they have in other stages of the policy process. Hence, relatively few descriptive or evaluative studies on this topic have been undertaken (Ripley 1985). The fact that those policy analysts who have devoted their energies to this field have yet to arrive at a clear consensus on a few key variables is testimony to the complex and elusive nature of agenda building, and a strong indicator of the need for more systematic evaluation and development of better theory.
The purpose of this thesis is to provide further understanding and clarification of agenda-building processes through a case study of river and wetland conservation and preservation issues in Arizona. This study will contribute to the field in two ways. First, it will refine and clarify existing agenda-building models. Second, because this thesis examines an issue of growing importance to the State of Arizona, it can help decision-makers and citizens better understand the multiple facets of a complex problem, and in turn, develop more equitable policy reflecting this understanding.

Organization

The thesis is organized into five chapters.

The next chapter begins with a brief discussion of the relevance of agenda-building theory to policy analysis. This is followed by a set of definitions and concepts used in the literature. The remainder of the chapter discusses elements of agenda-building theory examined in this case study, including theory related to issue generation and the role of crisis, policy processes, and institutional receptivity. The chapter ends with a discussion of previous research associated with historic western water politics, and a set of questions to be examined in the study.

Chapters Three and Four are the case study, a description and analysis of the initiation and development of river and wetland conservation and preservation issues in Arizona.
Chapter Three focuses on the first three decades of issue expansion and agenda-building processes between the 1940s and the late 1960s. The purpose of this chapter is to examine issue generation and other agenda-building processes. The major groups involved in river and wetland conservation issues in Arizona are presented, along with their reasons for and methods of involvement.

Chapter Four emphasizes agenda-building in the 1970s and 1980s, a period in which groups involved in these issues grew in both number and diversity, and state and federal government involvement increased considerably. The first part of this chapter presents secondary data indicating that Arizona is in a state of social, economic, and political transition. There is evidence that there is today a greater diversity of values and therefore more potential for group conflict and issue generation. Part two of this chapter describes how group structure within the state is reflecting these value changes. Chapter Four ends with an assessment of how government is responding.

Chapter Five summarizes the major findings and offers a prognosis about the future of these issues in Arizona.

Methods

The data and information used in the case study were gathered over a three and a half year period of residency in Arizona between August 1985 and January 1989. During this time I reviewed hundreds of published
articles, unpublished papers and reports, and government documents dealing with all facets of rivers and wetlands in Arizona. In addition to conducting a literature review, I directly participated in three professional task force groups, including the Policy Committee and Water Resources Committee of the Arizona Riparian Council (ARC), and the Arizona Department of Water Resource's (ADWR) Instream Flow Task Force. I also attended five state conferences related to the issue including the Arizona Section of the American Water Resources Association's 1986 and 1987 conferences on water marketing, and instream flow water rights, respectively; the 1986 and 1987 annual Arizona Riparian Council conferences; and the Commission on the Arizona Environment's (CAE) 1988 summer conference on riparian issues. My greatest involvement was as coauthor of The Arizona Rivers, Streams, and Wetlands Study, one of six components of the 1989 Statewide Comprehensive Outdoor Recreation Plan (SCORP) administered by the Arizona State Parks Board (ASPB).
CHAPTER 2

AGENDA-BUILDING THEORY AND APPROACH

The study of agenda building deals with the identification and specification of the types of issues receiving the attention and action of governmental decision-makers (Cobb and Elder 1983). Agenda building is commonly conceptualized as one of four stages of the policy-making process; the other stages being formulation, implementation, and evaluation (Figure 1) (Ripley 1985). When an analyst desires to retrace the history of a single policy action, a statutory law for example, the stages of the policy cycle are relatively easy to delimit. However, if the purpose is to retrace the history of an issue category, which is what is attempted in this case study, the stages are not readily identified. The usefulness of this concept is then improved upon by envisioning the stages not as discrete, mutually exclusive units, but as a "seamless web" of action and events (Wildavsky 1979). The result is a continuous and iterative policy-making process.

Relevance of Agenda-Building Theory to Policy Analysis

Studies of agenda building can contribute to a better understanding of policy-making process in at least three ways.

First, they can help decision-makers and the public recognize the amount of sensitivity and foresight in government (Solesbury 1976). Sensitivity reflects government's ability to identify and cope with
Figure 1. The Policy Cycle (adapted from Ripley 1985).
issues associated with small, isolated, or less politically articulate populations within the community. Foresight refers to government's ability to identify and cope with problems that first manifest themselves in subtle ways, but with time increase in magnitude and severity, often decreasing options for policy solutions in the process. Relatively maleable political institutions possess the foresight to recognize and resolve critical issues early in the agenda-building process.

A second reason for studying agenda building is to foster the ability to foresee unanticipated effects of policy (Hirschman 1981). Agenda-building studies can illustrate the connections between past and present policies, and assist contemporary policy actors with an enhanced ability to envision potential futures resulting from past and present-day decisions.

Finally, the study of agenda building directs attention towards the relationship between public participation and governmental decisions (Cobb and Elder 1983). This can be accomplished by identifying the forms of participation, the political conditions fostering differential participation responses, and the effects that these responses have on decision-makers. Understanding the linkage between participation and governance is of fundamental importance to an understanding of democracy.
Definitions and Concepts

The first task in any agenda-building study is to identify an issue for analysis. An issue may be defined as:

A conflict between two or more identifiable groups over procedural or substantive matters relating to the distribution of positions or resources (Cobb and Elder 1983).

This definition requires the researcher to identify two conditions to verify the presence of a public issue. First, there must be two or more groups involved in controversy over perceived values of positions or resources. Second, at least one of these groups must believe that through the efforts of government, the distribution and use of these resources or positions can be altered to be more congruent with that group's value system.

The concept of group used in this thesis is intended to include more than organized interest groups. The idea is closer to the sociological definition of a group:

Any number of persons who share a consciousness of membership and of interaction (Horton and Hunt 1980).

This definition allows one to also consider elites, decision-makers, and others as potential groupings.

Another definition that is important to this research is the term agenda. Three types of agendas are discussed in this thesis. They may generally be distinguished by: (a) the number of issues they contain; (b) the degree of issue saliency; and (c) the number and types of
participants (Figure 2). The boundaries between them are admittedly fuzzy.

The first type of agenda is called the "systemic" (public) agenda, and consists of:

all issues that are commonly perceived by members of the political community as meriting public attention and as involving matters within the legitimate jurisdiction of governmental authority (Cobb and Elder 1983).

The "formal" (governmental or institutional) agenda contains far fewer issues, and is primarily influenced by decision-makers. It is defined as:

that set of items explicitly up for the active and serious consideration of authoritative decision-makers (Cobb and Elder 1983).

The spectrum of agendas is expanded even further by adding the concept of a "decision" agenda. This is defined as:

the list of subjects within the governmental agenda that are up for an active decision (Kingdon 1984).

The decision agenda is more restrictive than the formal agenda because it excludes what Cobb and Elder (1983) call "pseudo" agenda items. A legislative bill that dies in committee without receiving any formal debate is one example of a pseudo agenda item.

An issue may emerge on any of these three types of agendas, and with time, depending on the process, shift to the left or right on the agenda spectrum. In the course of agenda building it may attract the interest of different groups that may attempt to either expand or contain further public participation. Cobb and Elder (1983) have
Figure 2. An Agenda Spectrum.
identified four general types of groups or publics that can be mobilized to support issue expansion: identification groups, attention groups, the attentive public, and the general public. These publics may be conceptualized as four concentric circles (Figure 3) (Cobb and Elder 1983). In this case study I will attempt to identify the conditions under which these four types of groups participate in agenda-building.

Groups at the core of a controversy are termed identification groups. This type of public is the first to become involved in a conflict once it has expanded beyond those initially involved. Members of identification groups perceive themselves to be most directly affected by the eventual outcome of an issue.

Whereas the participation of identification group members hinges on group affiliation, the participation of attention groups depends on the issue. Attention group members are disinterested in most issues, but are informed about, and interested in, certain specific issues. Identification groups and attention groups may be involved in a controversy long before the attentive or general publics become involved in an issue.

The third type of group, the attentive public, consists of relatively well-informed individuals who have a general and consistent awareness of many types of issues. Up to approximately ten percent of the American public is part of this group (Rosenau 1968).

The fourth and largest group is called the general public, and includes those who are not members of the other three groups and who are
Figure 3. Types of Publics (adapted from Cobb and Elder 1983).
generally uninformed about most issues. The general public seldom participates in politics, and when it does, participation is generally ephemeral and unorganized.

**Issue Generation and the Role of Crisis**

By definition, before an agenda-building process begins, an issue or conflict must emerge. Cobb and Elder's (1983) concepts of issue "initiators" and "trigger mechanisms" (crises) are used in this thesis to analyze processes of issue generation, expansion, and innovation. According to their model, issues may be created through a dynamic interplay between initiators and trigger mechanisms.

Initiators include one or more of the following: (a) one or more groups who perceive an unfavorable bias in the distribution of positions or resources; (b) a person or group who manufactures an issue for their own gain; (c) an unanticipated event; and (d) persons or groups who have no positions or resources to gain for themselves.

Trigger mechanisms are classified according to their origin, within the domestic (internal) or foreign (external) political system. The distinction between internal and external trigger mechanisms is used in this study to classify trigger mechanisms according to whether they occurred within, or outside of, the state, respectively.

Internal trigger mechanisms include: (a) natural catastrophes, (b) unanticipated human events, (c) technological change, (d) an actual imbalance, or bias, in the distribution of resources, and (e) ecological
change. External trigger mechanisms include direct or indirect participation in war and changing alignment patterns among governments.

**Agenda-Building Models**

The concepts of initiators and trigger mechanisms can be used to study issue generation, but theory is also needed to analyze other aspects of the agenda-building process. Models developed by Cobb and Elder (1983) and Cobb, Ross, and Ross (1976) are used for this purpose. They are the outside initiative model, the mobilization model, and the inside access model. These models are based on the assumption that there are four major stages through which an issue passes: initiation, specification, expansion, and entrance. They differ according to the ordering pattern of the stages, the agenda-building strategies employed by groups to expand or contain an issue, and the types of issues and societies to which they apply. They are considered to be ideal types in that more than one model may apply to an issue, particularly in societies with complex social structures and economies.

The agenda-building model created by Cobb and Elder (1972) was not named, but is essentially the same as the outside initiative model developed by Cobb, Ross, and Ross (1976). This model is intended to describe a situation in which an identification group outside of government articulates a grievance and attempts to expand the issue to other groups to attain systemic, and then formal agenda status. Cobb
and Elder (1983) developed their model to apply to the agenda-building process associated with any type of issue in American government. Cobb, Ross, and Ross (1976) restrict the model's applicability to egalitarian societies.

In the initiation stage of the outside initiative model a group outside of government articulates a grievance in very general terms. These grievances are translated into more specific demands in the specification stage. The issue is then linked to preexisting issues so that it may be expanded to successively larger (though not necessarily all) publics. The issue may then earn a place on the systemic agenda. If it becomes a formal topic for decision-makers the issue reaches the entrance stage of the model.

There are two types of strategies used by outside groups to expand conflict to other groups and policy-makers (Cobb, Ross, and Ross 1976). The first type, expansion strategies, are targeted towards interest groups or the general public, and may involve the formation of an entirely new group devoted exclusively to promoting the issue. These are termed special issue groups in this thesis. Characteristics of the issue, symbolism, and human, financial, and material resources are also important to issue expansion. When groups seek the attention of decision-makers they may also use entrance strategies, including: (a) violence and threats of violence; (b) institutional sanctions such as withholding votes, money or work; (c) use of political brokers, such as
political parties and interest groups; and (d) direct access to
decision-makers.

The mobilization model varies from the outside initiative model in
that it describes situations in which issues are initiated inside
government and consequently receive formal agenda status almost
immediately (Cobb, Ross, and Ross 1976). Decision-makers then attempt
to transfer the issue from the formal agenda to the systemic agenda in
order to garner widespread, voluntary compliance with the policy. This
model is most applicable to hierarchical societies and in societies with
leaders having reputed "supernatural" powers.

The initiation stage of the mobilization model begins with the
introduction of a new program or policy by government. Decision-makers
assume the role of the identification group. They follow their
announcement with a set of specific demands, detailing the behavior and
material needs required from the public. Once this specification stage
is completed, decision-makers begin to expand the issue to win public
support to implement the policy. If this is accomplished the issue
attains a place on the systemic agenda and the entrance stage of policy
process.

The strategies used by policy-makers to expand the issue from a
formal to the systemic agenda are identical to the strategies used by
outside groups in the outside initiative model.
As this model is not really applicable to American society, it is not relevant to this thesis. It has been presented to illustrate how societal structure can influence agenda-building processes.

The inside access model also applies to situations in which issues arise within government, but unlike the mobilization model, decision-makers and key supporters of the policy proposal purposefully attempt to prevent issue expansion (Cobb, Ross, and Ross 1976). The proposals typically arise within a government agency or from a group with close ties to an agency. The model is most applicable to societies characterized by a high concentration of wealth and status. It is also applicable to highly technical issues that decision-makers fear will not be well understood or accepted by the public.

The initiation, specification, and entrance stages of agenda building are closely linked in the inside access model. A group or agency within government commonly presents their grievance or policy proposal together with a specified set of demands. Unlike the other models, the benefits to be derived from the policy are generally more tangible than symbolic. Support for the issue is sought only from select identification and attention groups for fear that widespread public debate might thwart the initiator's efforts through the generation of alternatives to the proposed policy.

The expansion strategies used to win the support of certain identification and attention groups are often secured through direct
access to decision-makers or with the aid of policy brokers. Political logrolling is common.

**Institutional Receptivity**

One more theoretical concept is explored in this thesis to provide a broad perspective of agenda building. This is the concept of institutional receptivity. It refers to the manner in which the institutional structure of a political system delimits the types of issues that can be resolved, and the political capability to act.

Some issues may never be formulated into effective policies if there lacks a single institution to deal with the problem (Harrison 1986). When a multi-faceted problem must be dealt with by several institutions there can be conflicts of authority or competition between different branches of the bureaucracy (Reich 1984).

**Theories of Western Water Politics**

Determining whether the groups that have pressured for river and wetland conservation and preservation in Arizona are playing by the long-established rules of water politics, or are using other agenda-building strategies is a primary objective of this thesis. Much has been written about the politics historically associated with water development in the West and in Arizona. Some of this literature is used
here to formulate a set of questions to study contemporary agenda-building politics in Arizona.

Cobb, Ross, and Ross (1976) use a Corp of Engineers water development project to illustrate the inside access model. A historic system of inside access politics in Arizona has been described by Mann (1963). In The Politics of Water in Arizona, he relates how the fragmented and decentralized administrative structure associated with Arizona state natural resource agencies contributed to agency capture by certain clientele groups.

The concept of agency capture implies that certain groups are granted inside access to decision-makers. During the last century the traditional, commodity-oriented clientele groups -- ranchers, farmers, and railroad, mining and utility companies -- found it advantageous to form a "system of private alliances" to pressure for maximum development of water, land, and other resources at the cost of broad-based political participation.

Null's (1970) research indicates that up until at least the end of the nineteen sixties it would still be appropriate to use the inside access model to describe Arizona water politics. His dissertation describes the groups that have been most successful in securing political influence through intergroup and cooperative lobbying techniques, and how these groups directed their energies towards the state administrative bureaucracy.

In order to understand the historic agenda-building processes
associated with water development in Arizona one must examine them within the context of federal water politics (Thomas 1970), especially the politics associated with the development of the Colorado River (Parsons 1947; Mann 1963).

Questions to be Examined

The theories and observations emerging from the literature on agenda-building, public policy, and historic western and Arizona water politics are used to formulate a set of questions to be examined by the case study:

Using the concepts of initiators and trigger mechanisms, how were river and wetland conservation and preservation issues generated in Arizona?

Do groups favoring water development policies still use inside access strategies to achieve formal agenda status for their demands?

What agenda-building model describes the strategies used by newer groups pressuring for river and wetland conservation and preservation policies to achieve formal agenda status for their demands?

How does the institutional structure of Arizona government affect what agenda-building strategies are used, and the policies that result?
CHAPTER 3

SYSTEMIC AGENDA: 1940s TO 1960s

This chapter provides a description and analysis of the agenda-building processes associated with river and wetland conservation and preservation issues in Arizona from the 1940s to the 1960s. During this time period these issues existed on the systemic agenda, which is defined as:

all issues that are commonly perceived by members of the political community as meriting public attention and as involving matters within the legitimate jurisdiction of existing governmental authority (Cobb and Elder 1983).

One way to track an agenda-building process is through a time-series analysis of written forms of communication related to the issue such as newspaper or magazine articles, scientific publications, or government reports (Walker 1974; Sims 1983). Simcox and Zube (1985) compiled a bibliography of Arizona riparian areas that is ideally suited to this research application (Figure 4). I assumed that this bibliography would include much of the literature relating to the conservation and protection of rivers and wetlands in the state. The resulting graph indicates that interest in some aspect of rivers and wetlands began around the end of World War II, and that this interest continued to increase (with large increases in 1960-61 and 1965-66) until about 1970. Thereafter, the curve follows the same overall trend, but with increasingly higher peaks every few years. This information
Figure 4. Riparian Publications, 1945-1985 (adapted from Simcox and Zube 1985).
was used to identify the approximate time that river and wetland conservation and preservation issues initiated in Arizona and to track their general development.

This chapter describes how public fears of death and injury, property damage, water and power shortages, and diminished or halted economic growth cycles were exacerbated by trigger mechanisms, particularly floods and droughts. These natural events, in combination with wartime demands for energy and commodities, post World War II population growth, and economic recession were used by traditional, commodity-oriented groups to justify policies leading to the alteration or destruction of most of the state's rivers and wetlands. The most prominent justification for these policies was the need for more water. The inside-access model best describes the agenda-building process leading to these policies.

Water development project proposals and policies generated reactions from several groups over the use and management of rivers and wetlands in Arizona and the Southwest. Each group — environmentalists, game and fish managers, consumptive recreationists (hunters and fishermen), scientists, and non-consumptive recreationists (such as hikers and campers) — had its own perception of the problem of river and wetland use and management in Arizona. These groups subsequently applied pressure for policy change. The outside initiative and inside access models most aptly describe these agenda-building processes.
With time, river and wetland issues evolved and became increasingly complex, but the crux of the problem for all groups remained the same -- whether aquatic and riparian areas should be utilized for a few purposes to maximize economic growth, conserved at sustainable levels for multiple purposes, or preserved in their natural state.

**Crisis Trigger an Expansion in Federal Spending and Authority**

The role of crisis or trigger mechanisms in agenda building is a common theme in this case study. Natural catastrophes, particularly floods and droughts, have accompanied policy initiation and innovation many times in the history of the development of river and wetland conservation and preservation issues in Arizona. In fact, these trigger mechanisms had an important role in the establishment of the two federal agencies that have taken such a prominent role in water development projects in Arizona and the West, the Bureau of Reclamation (BOR) and the Army Corps of Engineers (Corps).

During the late 1880s and 1890s a series of severe floods and droughts hit the western United States and Arizona. The natural disasters wreaked havoc on the nascent farming and ranching industries, and instigated heated debate about whether the federal government or the states should pay for reclamation works (Worster 1985). Without an intensive reclamation program the land distribution policies created just a few years previous would fail. The first bills for a federal reclamation program were introduced into Congress in 1901. The bills as
initially drafted provided that funds from the sale of public lands would be used to reclaim lands in federal ownership. At the time eighty-four percent of western lands were owned by the federal government (Worster 1985), but irrigated areas like the Salt River Valley were almost entirely in private ownership (Salt River Project (SRP) 1979). At the urging of lobbyists representing the Salt River Valley and President Theodore Roosevelt, Congress modified the bill to include lands in private ownership and then passed the National Reclamation Act in June 1902 (SRP 1979). Arizona was only a territory without official representation in Washington at the time of this act's passage, yet it was able to secure the first federally funded reclamation project through close ties with the President. In his words:

There will be great pressure by different senators and congressmen who will honestly think that their state has the first claims, that they have the meritorious project, and as Arizona and New Mexico have not any senators or congressmen and as I raised three-fourths of my regiment [the "Rough Riders"] in New Mexico and Arizona I will take their place, and now I want to see that they get a fair deal (SRP 1979).

Construction of Roosevelt Dam on the Salt River was begun in 1903, initiating an era of massive federal subsidies for water development projects in the western United States.

In the eastern United States recurring bouts with floods on the Mississippi and other drainages led to similar policy developments. Between 1858 and 1922 eleven flood years were recorded on the
Mississippi, but none had such disastrous effects as the 1927 flood, the worst in over two hundred years. It caused over one hundred million dollars in crop losses, flooded 162 thousand homes and forty-one thousand buildings, and took between 250 and 500 lives (Daniel 1977). Congress responded quickly to this disaster by beginning hearings on flood control legislation in 1928. Numerous victims traveled to Washington to testify, and their foremost request was to get the federal government to take over the financing and planning of flood control works.

The first flood control act passed that year and was supplemented by other flood control acts in 1936, 1944, 1948, and 1950. This legislation, particularly the 1936 act, considerably increased the Corps of Engineers' budget and authority. Most of the Corps' work has been concentrated in the Southeast, but they have had numerous projects in Arizona as well, some of which generated considerable controversy.

The cumulative effect of the federal reclamation and flood control policies was to transform people's perceptions of rivers and wetlands from natural menaces that had to be conquered to scarce resources requiring protection. This took place gradually in many communities throughout the East and West. In Arizona, the agenda-building process for river and wetland conservation and preservation issues began at the end of World War II, gained strong momentum in the 1970s, and is still evolving today.
Traditional Groups Attempt Large, Incremental Adjustments in Policy

In the midst of World War II, the State of Arizona was in the final hours of an extremely heated debate over whether to ratify the Colorado River Compact of 1922 (Parsons 1947). Prior to the war the traditional, commodity-oriented interest groups were strongly divided on the issue.

Central Arizona farmers were opposed to importing surface water into the state in the 1930s because it was felt that bringing more land into production would intensify pressures on an already overburdened, depressed market. However, three years of consecutive drought between 1938 and 1940 led to a severe surface water shortage and an excessive reliance on rapidly depleting groundwater supplies. This trigger mechanism markedly altered farmers' opinions on the matter, for it was believed that a fourth year of drought would have spelled disaster for them and businessmen dependent on the farming economy.

The three-year drought also led to a serious shortage of electrical power, prompting a Federal Power Commission survey of the Arizona power situation (Federal Power Commission 1942). The report pointed out the existence of an electrical oligopoly (eight utilities and eight industrial companies handled ninety-four percent of the electricity in 1940), and concluded that development of hydropower on the Colorado River in Bridge Canyon and Redwall Canyon in Grand Canyon National Park, in Glen Canyon, and other sites could be of great benefit to electrical consumers and to the overall welfare of the state. In the face of heavy
opposition the utility companies eventually lent their support to the formation of the Arizona Power Authority (APA), created by the State Legislature in 1944.

During the previous year the Legislature appropriated two hundred thousand dollars to the Bureau of Reclamation to study the feasibility of bringing Colorado River water into central Arizona. The agency proposed three potential projects for the nascent Central Arizona Project (CAP): (a) the Marble Canyon Plan; (b) the Bridge Canyon Plan; and (c) the Parker Pump Plan. The first two projects would directly impact the Grand Canyon.

These dam proposals were three of 134 published in a 1946 federal interagency report entitled, *The Colorado River* (BOR 1946). The proposal to build Echo Park Dam in Dinosaur National Monument, Colorado was also listed in this report. The national controversy that ensued as a result of these proposals would have major implications for traditional western and Arizona water and power interests.

With relatively little public debate, the Echo Park Dam proposal was approved by the Secretary of the Interior in 1950, unleashing a national controversy that gained even greater momentum when the APA applied to the Federal Power Commission for license to build Bridge Canyon and Marble Canyon Dams in 1959 and 1960, respectively.

In a letter to the Chairman of the President’s Water Resources Policy Commission, Fred Packard, former Field Secretary of the National
Parks Association, describes his environmental group's frustration with inside-access politics:

Present procedure appears to be for the construction bureaus to secure congressional approval of the over-all program for the development of the water resources of a drainage, and then to assume that that approval applies to every phase of the project. In that way, certain installations of questionable value or of detrimental effect, which may be relatively minor parts of the entire program, are promoted until effective opposition to them becomes difficult. Also, the plans are in such a state of flux, many of the details not being known to the public or other interested government agencies, that organizations outside the bureau are unable to obtain definite information about them. Agencies and civic organizations are usually consulted only after planning has progressed to a point where definite action on such projects is just around the corner; and advance warning of them can be obtained only by studying myriad obscure technical reports that are not generally available. Under these circumstances, citizens interested in the welfare of the national parks and monuments are unable to obtain information about them sufficiently in advance of official action to express their view effectively (National Parks Magazine July-September 1950).

Secretary of the Interior, Stewart Udall, opposed Bridge Canyon and Marble Canyon Dams in 1962, believing that they would hinder the passage of the CAP (Null 1970). Two years later the Secretary announced that dams would not be approved unless they were part of a regional water and power plan. In August 1963, the Interior Department unveiled such a plan, the Pacific Southwest Water Plan, which included among other projects, the Bridge and Marble Canyon dams (U. S. Department of the Interior (USDI) 1963). Congressional hearings on the Plan began in 1965. The APA, however, believing that the dams would not be included in a federal Central Arizona Project act pressured the state to initiate a "go it alone plan." The agency felt that Arizona could repay the cost
of the CAP through the sale of hydropower if the dams were eventually built. The water project eventually passed as part of the Colorado River Basin Project of 1968 with the stipulation that no dams be built between Hoover and Glen Canyon Dams (Pub. L. No. 90-537, 82 Stat. 885).

Had the Bureau of Reclamation and Arizona Power Authority not chosen national parks as the preferred sites for their dam proposals, the national river conservation movement might not have garnered the widespread public support that led to each proposal's defeat, and river and wetland conservation issues in America and Arizona might be of a different form than they are today. The water and power development agencies and their constituencies attempted a much larger incremental jump in policy that the public was ready to accept. Moreover, they chose to attack a symbol (national parks) that was almost sacred in the American mind (Nash 1973; Runte 1979).

**Environmental Groups Generate Issue in Reaction to Policy Proposal**

Perceiving an unfavorable bias in the proposed distribution of water and land resources, national environmental groups initiated an issue. The American public was ripe for the controversy.

As more and more dams and flood control structures were built to alleviate these natural threats, Americans' perceptions of free-flowing rivers were transformed from something to be conquered to something to be cherished. This process took place gradually in many communities.
throughout the East and West as river after river was dammed or developed.

For example, in 1949, Governor Forest Smith of Missouri had this to say about a proposed federal water project in his state:

There are streams with natural attributes which, in their total, are so unique as to warrant the preservation of the streams, simply because they are unique....This proposal to impound the waters of the Current River [in Missouri] has even broader and more serious implications. It emphatically points to a deficiency in National policy which ignores such values in planning for comprehensive developments (Outdoor Recreation Resources Review Commission (ORRRC) 1962b).

Public awareness and concern over large-scale dam construction was greatly heightened after World War II as a result of the Echo Park Dam proposal for Dinosaur National Monument. An excellent example of the outside initiative model, the movement against the dam was led by the National Parks Association and the Sierra Club (National Parks Magazine October-December 1949, April-June 1950, July-September 1950, October-December 1950, January-March 1952, January-March 1954, July-September 1955, January-March 1956, April-June 1956). These groups became the nucleus of a national environmental coalition which through a variety of tactics secured broad-based public support for protection of this national monument.

Whitewater river recreation was in its infancy in the 1950s, and the Sierra Club, in order to build public awareness and concern for the monument, offered raft trips on the Colorado through the proposed dam segment (Palmer 1986). The Echo Park Dam controversy served as a
symbolic focal point of public attention that the environmental groups skillfully used to help expand the issue. The Sierra Club prepared illustrated pamphlets for mass distribution which asked the public: "Will you DAM the Scenic Wild Canyons of Our National Park System?" and "What is Your Stake in Dinosaur?" A color movie of the area was also shown throughout the nation to reinforce the symbol. Author, Wallace Stegner, edited a compilation of essays and photographs to further spread the word. Many of the nation's largest periodicals and newspapers, including Life, Newsweek, and Time joined the smaller conservation magazines in expanding the Echo Park controversy (Nash 1973).

The environmental groups won a victory in April 1956 when Congress agreed to delete the Echo Park proposal from the Colorado River Storage Project Act (Pub. L. 84-485, 70 Stat. 105). Moreover, the act contained the stipulation that no dam or reservoir under the authorization of the act be built within any national park or monument. The victory was not without cost. One of the Colorado River's most spectacular canyons, Glen Canyon, was dammed as a tradeoff for Echo Park. In fact, as few members of the environmental community or public had ever seen Glen Canyon in the early 1950s, it was used as a bargaining chip to preserve canyons throughout the national park system:

Farther upstream, four miles above Lee [sic] Ferry, another project [in addition to Marble Canyon Dam], the Glen Canyon Dam, would produce a lake 182 miles long. These reservoirs would of themselves not adversely affect Grand Canyon National Park as long as the waters released from them are allowed to
flow in the natural stream bed through the park, and they would benefit the region economically, as well as increase its recreational opportunities (National Parks Magazine October-December 1949).

As Glen Canyon was not well known in the mid-1950s, there were few who would perceive the policy as imposing costs on targeted groups or the population as a whole. In reality, the decision led to the irreversible alteration of public land to the benefit of commodity-oriented and municipal water interests. The opportunity costs resulting from the alternative action were not really different from the original proposal.

Prior to the flooding of Glen Canyon some environmental group representatives and members of the public rafted the canyon and realized the actual cost of their compromise. Glen Canyon was then used by these groups as a natural martyr, symbolizing a loss that they would not let be repeated, nor let the public forget. The symbol was eloquently captured in Elliot Porter's (1963) classic, The Place No One Knew: Glen Canyon and the Colorado.

The battle for Echo Park also provided important organizational lessons that would contribute to the defeat of the proposed Bridge Canyon and Marble Canyon Dams on the Colorado River in Grand Canyon National Park, the establishment of national environmental groups in Arizona in the mid-1960s, and the designation of the state's only federal wild and scenic river.
By the time that the Grand Canyon battle was being waged, preservationists had become highly skilled in utilizing symbolism and the media to their advantage. The symbols spanned the gamut of America's treasured values, appealing to national pride, spirituality, the welfare of future generations, apprehension about technology, the desire for scenic beauty, and the protection of national parks.

The Sierra Club's media blitz in the New York Times and the Washington Post in 1966 was so effective that the Internal Revenue Service threatened to remove the group's tax exempt status. Yet the organization's membership grew from thirty-nine thousand in June 1966 to sixty-seven thousand in October 1968.

The Sierra Club's establishment of an Arizona chapter in 1966 contributed further to the importation into Arizona of the value of protecting free-flowing rivers. In the late 1960s, this group stood alone in its opposition to the dams. Other groups favored the proposed projects because of connections with the Central Arizona Project (Null 1970).

The national environmental groups eventually succeeded; the dams were removed from further consideration in 1968 as a compromise to passage of the Central Arizona Project.

The defeat of Echo Park Dam and the dams in the Grand Canyon came as a result of outside initiative agenda-building strategies. Both controversies were initiated by environmental groups that perceived a potential inequitable distribution of resources through the
implementation of these water development proposals. Three trigger mechanisms were involved: a technological change that permitted the construction of large-scale dams, an actual bias in the use of the nation's rivers, and ecological changes that resulted from river modification projects.

The conflicts differ in that the latter did not result in the building of alternative dam sites. Instead, the dams were stricken from the proposal in exchange for passage of the nation's most expensive federal reclamation project, the Central Arizona Project. One large-scale, federally subsidized water project was simply substituted for another.

Environmental Groups Assume a Proactive Approach to Agenda Building

That same year that the Grand Canyon dams were defeated, Congress approved the Wild and Scenic Rivers Act. Not coincidentally, the idea for this federal river protection system was first proposed by a national environmental group just after the defeat of Echo Park Dam. The environmental groups had gained enough momentum in the 1950s and 1960s to shift from a reactive to proactive agenda-building posture and initiated their own policy agenda.

The Missouri Chapter of the Nature Conservancy, another national environmental interest group, is credited with introducing the idea for a national river system in 1957 (Palmer 1986). The idea was put forth
during testimony for the Ozark Rivers National Monument. As the Nation had already shown its support for the preservation of rivers in national parks, issue expansion was relatively easy.

In May 1960, five months before a Representative from Missouri introduced his bill "to provide for the development of a national recreation area within the National Park Service (NPS)," the Senate Select Committee on National Water Resources recommended:

that certain streams be preserved in their free-flowing condition because their natural, scenic, scientific, esthetic and recreational values outweigh their value for water development and control purposes now and in the future (U.S. Senate Select Committee on National Water Resources 1960).

The Committee also recommended that a study be undertaken to determine if other rivers and streams throughout the nation would be worthy of preservation. Shortly after issuing this recommendation, the Outdoor Recreation Resources Review Commission issued its report to the President. The Commission, composed of eight congressional members and seven presidentially-appointed citizens, had worked closely with the Park Service in developing its recommendations, which included the following:

Certain rivers of unusual scientific, esthetic, and recreation value should be allowed to remain in their free-flowing state and natural setting without man-made alterations (ORRRC 1962a).

Responding to the recommendations issued by the Senate Committee and ORRRC, the Departments of Interior and Agriculture initiated a joint study of America's rivers in 1962 at the urging of the Secretary of the Interior (Underhill 1985). That study, released in 1963, consisted of
an inventory of 650 rivers or river segments. Seventy-three of these rivers were designated for further field research. After completing this task, the study team members (representing federal natural resource agencies) drafted the legislation for President Johnson to introduce to establish a national wild and scenic river system.

The Secretary of the Interior would probably not have pushed for the interagency study had he not had the support of the Executive. Former Presidents Kennedy and Johnson both supported increasing the federal government's role in recreation and conservation policies. In March 1962, President Kennedy asked Congress to endorse most of ORRRC's recommendations (Public Papers of the Presidents of the United States 1963).

In February 1965, President Johnson declared during his Scenic Beauty Message that a river preservation policy would be one of his administration's goals:

The time has also come to identify and preserve free flowing stretches of our great scenic rivers, before growth and development make the beauty of the unspoiled waterway a memory (Public Papers of the Presidents of the United States 1966).

The first bill for establishing a national system of rivers was introduced by Senator Frank Church of Idaho and Congressman John Saylor ("Mr. Conservation) of Pennsylvania in 1965. In October 1968, after four years of fairly controversial debate, President Johnson signed into law the Wild and Scenic Rivers Act (P.L. 90-542, 82 Stat. 906). Eight rivers were automatically initiated into the System and
twenty-seven rivers were designated for future study. During the next decade the environmental groups would begin pressuring for wild and scenic river designations in the Southwest and in Arizona.

**Federal Policy Provides Impetus for State Involvement**

The chapter thus far has examined the development of federal river protection and recreation policy in the 1950s and 1960s. These policy events arose mainly through the efforts of national environmental groups. The outside initiative model best describes the agenda-building processes associated with the defeat of the dams. The inside access model best describes the agenda-building processes associated with the formulation of the Wild and Scenic Rivers Act.

This section of the chapter focuses on two examples where federal policy provided the impetus for the establishment of recreation and environmental policies in Arizona. These policies established agencies that would play an increasingly important, but restricted role in state river and wetland issues in the 1970s and 1980s.

In response to the public's growing concern for the protection of scenic beauty and land and water preservation, President Johnson's administration sponsored a White House Conference on Natural Beauty in 1965. In August of that same year, Arizona's Governor, Samuel P. Goddard, sponsored the first state beautification conference. In November, the Governor created by Executive Order the Governor's
Commission on Arizona Beauty (GCAB). Initially composed of twenty-seven Governor-appointed members — selected "because of their professional knowledge or personal dedication to the principal that ugliness need not be the handmaiden of progress and growth," — and an Advisory Committee composed of representatives of governmental agencies and business groups, the goals of the Commission were:

To promote clean, attractive, well-designed communities, beautiful highways, parks, shorelines, historic sites and structures through a continuing statewide program of public education and action among citizens, governmental groups and other organizations. To also protect and encourage awareness of Arizona's abundant natural beauty (GCAB 1966)

This agency was created to protect Arizona's scenic beauty, but it was never envisioned as being placed in the hands of the (environmental) groups which were, to a large degree, responsible for the public's acceptance of these new values. Its volunteer membership was concerned primarily with urban issues, especially litter, billboards, and air pollution. These issues were viewed as potential obstacles to continued economic growth in the state.

Hence, while the traditional constituency groups each had an agency with which to voice their concerns, the new environmental groups had none. In fact, one of the Commission's first resolutions was in direct opposition to the major issue being lobbied for by national environmental groups:

The Governor's Commission on Arizona Beauty supports H.R. 4671 [to build the Bridge Canyon and Marble Canyon dams], and at the same time, calls upon the Secretary of the Interior to develop and apply criteria for site planning, landscaping and dam
construction which would be compatible with the resource, and to promulgate rules and regulations in relation to the construction of roads, transmission lines, dams, maintenance of lake levels and operation of satellite service facilities so as to fully protect the awesome grandeur and intrinsic value of this outstanding resource, thus preserving and even enhancing the wilderness beauty of the Grand Canyon (GCAB 1966).

The Commission has been a principal actor in the development of riparian issues in Arizona, as has the Arizona State Parks Board and the Arizona Outdoor Recreation Resources Commission (AORCC). These latter two agencies represent the state's nonconsumptive recreation interests, and like the Commission, were created by policies stimulated by federal policy events. The following discussion describes these events.

The population boom and economic growth experienced in America after World War II provided people with increased leisure time and money to spend. As a result, Americans' demand for more and better recreational facilities and experiences skyrocketed. Between 1950 and 1960 the attendance figures at selected federal recreational sites grew from one hundred to six hundred percent depending on the agency (ORRRC 1962c). Consequently, recreation issues moved from problems of choice to problems of need:

By 1960, it was too late for the Federal Government to decide whether it should be, or wanted to be, in the recreation business. It already was (ORRRC 1962c).

Americans began perceiving a deteriorating recreational experience as the number and quality of recreational sites and facilities diminished in proportion to demand. Water-based recreational areas were
one of the hardest hit resources, but virtually every recreational resource type was affected.

The idea for recreational planning got a boost in 1948 when during his testimony against the proposed Wilson Dam in Montana's Bob Marshall Wilderness, Howard Zahniser of the Wilderness Society argued for the need for a national inventory of outdoor recreation needs (Palmer 1986). This dam was eventually defeated and the idea was formally adopted by Congress in 1958 with passage of the Outdoor Recreation Resources Review Act (P.L. 85-470, 72 Stat. 238).

The Outdoor Recreation Resources Review Commission was thus created and given the task of inventorying the nation's recreation resources. The Commission issued three recommendations which had relevance to recreation and river protection. The first, already mentioned, was the recommendation for river protection policy. The second recommendation focused on the need for a new recreation agency to consolidate federal authority. At the time there were more than twenty agencies with some involvement in outdoor recreation. The Bureau of Outdoor Recreation was established within the Department of the Interior in April 1962. The other recommendation was that recreation be established as a beneficial use of water. The Arizona Legislature had changed the water code for this purpose that year as the result of a 1956 resolution by the Arizona Game Protective Association (Mann 1963).

One additional piece of federal recreation legislation to influence Arizona state policy was the Land and Water Conservation Fund Act of
1965 (LWCF) (P.L. 88-578, 78 Stat. 897). This law established a matching fund to finance the acquisition and development of outdoor recreation areas and facilities. States could only become eligible for LWCF monies through the preparation and federal approval of statewide comprehensive outdoor recreation plans.

Recognizing the need for a formal state institution to represent a non-consumptive recreation constituency, Arizonans began lobbying for a state recreation department in the mid-1930s (National Parks Magazine July-September 1957). But, not until after World War II were the outdoor recreation needs of the state's growing urban population truly felt. In 1956 a special issue group, the Arizona State Parks Association, was formed specifically for the purpose of pressuring for the establishment of a state agency.

With the support of the Governor, legislation was enacted the following year which established a seven-member Arizona State Parks Board and an initial appropriation of thirty thousand dollars. The legislation specified that two of the members of the Board were to represent the livestock industry. The purposes of the Board were:

to select, acquire, preserve, establish and maintain areas of natural features, scenic beauty, historical and scientific interest, and zoos and botanical gardens, for the education, pleasure, recreation, and health of the people, and for such other purposes as may be prescribed by law (Ariz. Rev. Stat. Ann. 41-511).

Almost ten years later, in response to the stipulations of LWCF, the State Legislature introduced bills in February of 1965 to establish
the Arizona Outdoor Recreation Coordinating Commission, which became law in July of that year. The legislature gave AORCC fifty thousand dollars which was used, in part, to prepare the first statewide outdoor recreation plan. Like its federal counterpart, the Commission's first SCORP, Outdoor Recreation in Arizona, contained the first formal recommendation that portions of the state's streams be designated as natural rivers (AORCC 1965). Over twenty years later the SCORP would include an entire study devoted to river and wetland issues in Arizona.

**Traditional Groups Attempt Innovative Change in Policy**

It appears from the preceding discussion that when the traditional groups attempted to alter formal agendas through much larger than publicly acceptable incremental steps a reaction ensued from new groups within the population. The reaction was so strong that the latter groups were then able to assume a proactive agenda-building posture and have greater influence in defining formal agendas. Federal policy gains were then followed by similar measures at the state level of government. The following discussion illustrates that the same agenda-building pattern may occur as a result of attempts at innovative policy changes, particularly when the policies result in rapid, highly visible changes to the environment, or impose direct, tangible costs upon the public.

As in other western states, the population boom following World War II sent Arizona into rapid urbanization, catalyzing
political, economic and social change. Only a half-million people lived in the state in 1940, and only one-fifth of these people lived in Phoenix (sixty-four thousand) or Tucson (thirty-six thousand) (Valley National Bank of Arizona (VNBA) 1984, 1987). Arizona grew by fifty percent between 1940 and 1950 (750,000), and had reached 1.3 million by 1960. In that year, sixty-nine percent of the population lived in Maricopa or Pima Counties. By 1970, Arizona had over 1.7 million people, and seventy-four percent of the population lived in these counties.

Post World War II population growth and urbanization had profound effects on the state's economy, culture and politics. Commodity-oriented economic activities like mining, irrigated agriculture, and ranching were joined and even surpassed (in terms of total income production) by manufacturing and tourism. In 1957, manufacturing first surpassed mining as the leading income producer in Arizona, contributing 460 million dollars to the Arizona economy (Arizona Water Commission (AWC) 1975). Between 1960 and 1973, the value of the travel and tourism industry to the state of Arizona jumped from 290 million dollars to 690 million dollars, a 138 percent increase (AWC 1975). The growth in recreation demand (as reflected in general increases in visitation to parks and wildlife refuges, boating, hunting and fishing license purchases, and other indicators) undoubtedly contributed to this
economic transition. (These trends are discussed in greater detail in Chapter Four.)

Rapid increases in population and economic growth coupled with the droughts of World War II and increased demand for water and commodities led to considerable public fear of water shortages. On September 18, 1940, the drought had become so severe that only a three days' supply of water remained behind Roosevelt Dam (SRP n.d.). Shortly thereafter it rained, and continued to rain throughout the fall, but once again:

the seriousness of the drought had made it clear that better control of surface water was needed (SRP n.d.)

Major drought periods were also experienced in 1947, 1950, 1956, and 1961 (Steila 1972), further exacerbating fears of a water shortage. As the major rivers of the state, the Salt, Verde, and Gila Rivers, were already dammed, new innovative programs were sought by traditional and municipal interests to increase water yield. The agenda-building politics accompanying these policy proposals are best described by the inside access model.

The idea for the new water development proposal can be traced back to the 1920s. A United States Geological Survey (USGS) hydrologist published two papers which introduced the term "phreatophyte" as "a plant that habitually obtains its water supply from the zone of saturation, either directly or through the capillary fringe [of the soil]" (Meinzer 1923, 1927). In 1941, the USGS released a study showing
how large quantities of water were being consumed by phreatophytes (riparian vegetation) along the Gila River (Gatewood et al. 1950).

This knowledge was not applied in Arizona until March 1943. During that year the Assistant Secretary of Commerce, acting on behalf of the Phelps Dodge Corporation and Defense Plant Corporation, asked the Director of the USGS to initiate a phreatophyte removal project on the Gila (Gatewood et al. 1950). A study was begun the following month, and for the next two years researchers attempted to discover how much water could be made available by removing saltcedar from the Gila River in the vicinity of the Safford Valley (Gatewood et al. 1950). The mining company obviously had close ties to the federal agency for in an atmosphere of pending crisis, this "inside" group was able to place its policy proposal immediately on an administrative formal agenda.

In the next two decades, in an atmosphere of what Downs (1972) would describe as "alarmed discovery and euphoric enthusiasm," over two thousand papers relating to water use by vegetation were produced, and numerous vegetation manipulation projects undertaken. In the early 1950s one scientist estimated that phreatophytes covered sixteen million acres in the western United States, and consumed twenty-five million acre-feet of water per year (Ritzi, Bouwer, and Sorooshian 1985). At that time approximately four hundred thousand acres of phreatophytes were found in Arizona (AWC 1975). By 1967 only 280 thousand acres of phreatophytes remained. After that year major phreatophyte eradication projects occurred along the Gila River on the San Carlos Indian
Reservation, and on the Indian Reservations bordering the lower Colorado River for the purpose of agricultural land conversion. By 1969 there were two dozen major clearing projects in the state (Ritzi, Bouwer, and Sorooshian 1985). Most of the eradication programs were conducted by the Bureau of Reclamation, Army Corps of Engineers, and the Salt River Project (Johnson and Carothers 1982). These were generally for flood control purposes.

With thirty years of hindsight, a USGS hydrologist had this to say about the symbolism accompanying the "phreatophyte problem":

Salt cedars have been described as "waterhogs" (Douglass 1954), "aggressive" (Robinson 1965), "greedy" (Douglass 1965), "insidious" (Sebenik and Thames 1968), "theives" (Robinson 1952) and "water stealing culprits" (U.S. Information Service 1965). These expressions indicate the emotional and propagandistic attitude that is sometimes taken towards the phreatophyte problem (Van Hylckama 1982).

In an effort to expand the initial vegetation manipulation project into a statewide policy, the Salt River Project, Arizona State Land Department (ASLD) (which was responsible at that time for managing water supplies), and University of Arizona entered into a cooperative agreement called the Arizona Watershed Program for the purpose of conducting an intensive vegetative management program on the Salt and Verde River watersheds, including non-riparian vegetation communities (Cortner and Berry 1978). The result of this effort, a report titled, Recovering Rainfall: More Water for Irrigation, was published in October 1956 (Barr 1956). Now commonly referred to as the Barr Report, its
primary purpose seemed to have been to keep certain economic sectors of the population, namely irrigating farmers, from slipping in economic and political importance:

The increase in the [groundwater] pumping lift along with some other factors has resulted in a reduction in land irrigated in Arizona of about 50,000 acres between 1953 and 1954 and another 50,000 acres between 1954 and 1955. It appears that, unless other sources of water are found, the decline in acreage irrigated in Maricopa, Pinal and Pima Counties may continue at a rate of 50,000 acres per year -- more or less -- until the acreage irrigated in these counties will fall from 930,000 acres in 1953 to less than half that amount (Barr 1956).

Hence, the identification groups that would benefit most from this policy included downstream farmers who wished to continue irrigating with an inexpensive groundwater supply and upstream ranchers with grazing permits on the national forests (Cortner and Berry 1978). (The ranchers would benefit from the policy because the removal of certain types of vegetation would allow for more grasslands.) The cost of the proposed policy would be borne by riparian and other types of ecological communities and the newer groups that valued their presence:

The highest priority should be given to removal of large trees along waterways. Many groves of cottonwood and sycamore are of great value for picnic grounds, ranch house protection, and other recreational and residential purposes. Long stretches of tree-choked streams have no such value, however, and trees in these streams should be cut or poisoned with Ammate or similar harmless chemicals (Barr 1956).

For these and other reasons, the Barr Report met heavy criticism. Rather than relinquish control over the issue, the power to define the problem and its solution, the State Land Department and Salt River Project sought support from other groups who would have a vested
interest in this policy. A coalition group, the Arizona Water Resources Committee (AWRC), formed in December 1956 to lend its support to the Arizona Watershed Program. The groups represented included traditional commodity-oriented interest groups and municipal water interests (Cortner and Berry 1978).

In his introduction to the second annual meeting of the Committee, Rich Johnson, the group's Vice President and one of the most ardent supporters of the Central Arizona Project, expressed the group's pro-growth ideology:

Since water is a market commodity, then we must assume not only the right by the responsibility to manage and develop it within the framework of economics; that is, in accordance with the principles of economics — as determined by our political and social philosophy of government.

In this light, then you people are not custodians of a sentimental museum of natural history. Yours is not a stewardship of static values. You are not the guardian angels of a sepulchre for a body of holy resources.

Your task is to produce market commodities to meet the need and demand of our economy, and the product most in demand now is water — water for its many, many uses in a society that grows more complicated and more demanding each day.

Most certainly I would not leave the impression that I am attempting to lecture you people on your duties to the public. As a matter of fact, I think you recognized the truth of what I have been saying here long before the public did (Johnson 1958).
Several Groups Generate Issues in Reaction to Policy

The proposed and ongoing riparian vegetation manipulation programs initiated conflict from four groups: game and fish managers, consumptive recreationists (hunters), local communities, and scientists, all of which perceived an unfavorable bias in the allocation of costs resulting from the policy. These identification groups independently, but nearly simultaneously became involved in conflicts over the use of rivers and wetlands because of separate but nearly simultaneous trigger mechanisms. The hunters, communities, and scientists sought help from the state agencies most likely to put their issue on the formal agenda. These were the Arizona Game and Fish Department (AGFD) and the Governor's Commission on Arizona Beauty.

Wigal's (1973) introduction to his report of the nesting habits of the white-winged dove describes why and how game and fish managers and hunters became concerned about the phreatophyte clearing programs.

Prior to human settlement white-winged doves, a very popular game bird, inhabited mesquite bosques and other riparian woodlands. But as a result of the deforestation practices that accompanied a rapidly expanding agriculture and the uncontrolled harvesting of the birds, their population began to decline around 1915 and continued diminishing until 1940.

Beginning around the end of World War II, the dove population began slowly recovering partly as a result of the spread of the non-native
saltcedar, a plant that thrives in regulated river corridors (Johnson 1978). At the same time that hydrologists and flood control engineers were producing studies that showed the deleterious, water consumption habits of the plant, the Arizona Game and Fish Department was studying the beneficial effects of saltcedar on one of Arizona's most popular and economically beneficial hunting seasons.

In 1959, the Game and Fish Department reacted to the phreatophyte clearing and river channelization plans of the Army Corps of Engineers and the Bureau of Reclamation by initiating a series of short-term studies on southern Arizona rivers designed to obtain quantitative information of the value of saltcedar as dove nesting habitat.

The results of these studies were passed on to the Department's sportsmen constituency through its magazine, *Wildlife Views*. Wigal (1973) believes that the objections raised by the agency to the scope of a proposed phreatophyte removal project on the Gila River west of Phoenix were partly responsible for the defeat of a bond issue in March 1966 that would have provided matching funds for the project. What evolved a few years later was a conflict between a relatively weak state agency and its constituency pleading for an "orderly rate of development," and two powerful federal agencies, development-oriented state agencies, and their constituencies bent upon maximum and rapid economic growth. The conflict could only be resolved in the federal decision-making arena:
How far toward the "tin-roofed" watershed have we progressed, or do we want to go? The Game and Fish Department strongly believes that resources other than watershed run-off should be considered in the planned development of our State. We also believe that a watershed can be managed to preserve fish, wildlife and recreation values in conjunction with water conservation production management. We do not wish to see all the resource values of our rivers sacrificed for one purpose.

But the decision is not ours, nor is it totally up to the federal agencies involved. The Department can only point out the effect of clearing projects on wildlife. We do so to the development agencies and to the people of the state. The federal agencies are only following the wishes of Congress as requested by local interests. Congress reacts to the wishes of the people. In other words, the decision is YOURS (AGFD 1969).

In 1969, the Governor's Commission on Arizona Beauty began its investigation of vegetation manipulation in the vicinity of Globe, Arizona (GCAB 1969). Appealing to the concerns of local citizens the initial focus of the Commission was on the use and effects of chemical sprays (because of an accidental spraying during a vegetation manipulation project). The membership soon realized that vegetation manipulation activities (such as the direct removal of phreatophytes, riparian tree cutting, stream channelization, and flood control projects) in other communities were also having detrimental ecological, economic and recreation impacts. The Commission then began to investigate these aspects of the issues as well.

The Arizona Game and Fish Department's involvement in the issues increased significantly in 1970 due to another trigger mechanism, manifested as ecological change. The event was a drastic reduction in the white wing dove population as a result of the most controversial
channelization project in the state, the Lower Gila River Channelization Project (Advisory Commission on Arizona Environment (ACAE) 1971). Consequently, the agency reduced the hunters' bag limit from twenty-five to ten birds. This decision imposed direct costs on the small Gila River communities that depended on the revenues generated by hunters. The department also requested a moratorium on the project. The Sierra Club and other conservation groups expanded the controversy by enjoining the Corps of Engineers against construction of the channel modifications.

Soon thereafter, the Advisory Commission on the Arizona Environment (formerly the Governor's Commission on Arizona Beauty) gave their support, and requested the Secretary of the Interior and the Bureau of Land Management (BLM) to preserve sixty thousand acres of public lands in the Gila River "Green Belt" and to designate this land as the Fred J. Weiler Green Belt Resource Conservation Area (ACAE 1971). The Green Belt was designated in 1970.

Another group of people that were influential in shaping the issue during the 1950s and 1960s were scientists. Scientific involvement initiated around the turn of the century when researchers began to document changes in the Arizona landscape and ecosystems. The changes they noticed first were both obvious and recent. Their observations and scientific debate were also triggered by a series of severe floods and droughts in the late 1880s that initiated a major episode of channel cutting in the Southwest. The focus of the debate was the degree to
which the widening and deepening of stream channels and the disappearance and decline of perennial and intermittent surface waters resulted from human alteration of the landscape or climate (Leopold 1951; Antevs 1952; Hastings 1959).

In 1925, Bryan introduced the term "arroyo" to describe the stream channels that had been cut since 1880 in the Southwest, but until World War II relatively few papers were published on the subject.

By 1959, some points of this debate had already been decided in the academic community:

That overgrazing played an important part in changing the face of southeastern Arizona is probably not open to serious question. Where most of the controversy lies is in the role, if any, played by climate (Hastings 1959).

The debate on the causes of the channelization following post-Anglo settlement is still alive today (Hendrickson and Minckley 1984), but other aspects of river and wetland issues are also being discussed by scientists.

World War II serves as an important marker in the development and growth of the Southwestern scientific community; after the war ended scientists were increasingly drawn to Western academic institutions (Decker 1972). One of the results of this influx was the founding of the Arizona Academy of Science in 1956. This type of organizations provides scientists with a legitimate, low-risk arena for participation in agenda-building politics as well as meeting other academic needs.
Two papers were published in 1961 which enlarged the breadth of the scientific debate about human-induced changes on Southwest rivers and wetlands.

Lowe (1961) introduced the concept of "desert riparian" ecosystems as a unique and highly important biotic community. From this paper a new scientific discipline, Southwest riparian ecology, evolved around a rather nebulous bio-physical system:

A riparian association of any kind is one which occurs in or adjacent to drainageways and/or their floodplains and which is further characterized by species and/or life-forms different from that of the immediately surrounding non-riparian climax (Lowe 1961).

The paper altered scientists' perceptions of the vegetative communities associated with desert rivers and wetlands. These habitats had been previously overlooked because they were so different from those in the humid eastern and midwestern states (Johnson and Lowe 1985).

That same year, Miller (1961) published his classic paper, Man and the Changing Fish Fauna of the American Southwest. Changes in native fish populations were reported as early as 1904 (Miller 1961). Miller had been studying Southwest fishes since 1938 (Miller 1963), but this was the first paper to systematically document "the changing nature of the fish fauna, and to present evidence that modern man has been the chief architect of these changes." At the time of its publication at least six species of fish had already become extinct and at least thirteen others had been locally exterminated or threatened to the point where the populations might not be able to recover.
Miller was particularly concerned with the practice of chemically sterilizing streams and introducing non-native game fishes that was being undertaken by federal and state game and fish agencies. In fact, the single political statement in his thirty-five page paper was politely targeted at this practice:

Conservationists should make a determined effort to prevent the decimation of aquatic biota in this way [using chemical treatments like rotenone prior to the introduction of exotics], if necessary through the enactment of protective legislation (Miller 1961).

Begun in the late 1800s, the intensive period of exotic species introductions coincided with the construction of major dams and diversions between 1930 and 1950. "Rough fish" or "trash fish" were killed and replaced by game species like rainbow trout, often in natural or human-made habitats that could not support the introduced populations for more than a few years. Between 1952 and 1962, the United States Fish and Wildlife Service (USFWS) together with the Arizona and New Mexico game and fish departments aggressively conducted such programs (Carothers 1987).

Though relatively timid in his objections to chemical treatment practices in 1961, Miller and many of his contemporaries were outraged one year later when the USFWS, in conjunction with the game and fish departments of Utah and Wyoming, chemically treated over five hundred miles of the Green River (part of which flowed through Dinosaur National Monument).
This prompted Miller (1963) to go outside of the scientific community and publish an article describing the event in National Parks Magazine, the voice of the National Parks Association. The article provides insight into the scientist's perception of his role in policy formation and the nature of the problem:

Conservation [game and fish] departments need to find out what the rare, threatened, or scientifically important species are so as to avoid the possibility of exterminating populations before undertaking the application of toxicants.... Fortunately there are now two active groups in the American Society of Ichthyologists and Herpetologists to which these organizations can turn for such information.... A list of rare, restricted, and/or endangered species of fishes, amphibians has been compiled by these two committees and is available for reference by local, State, and federal agencies as well as by private conservation organizations and other interested persons (Miller 1963).

Five years later, Minckley and Deacon (1968), two prominent Southwest ichthyologists, published an article in Science, further documenting dramatic changes in aquatic habitats and extirpations of Southwestern endemic fishes. This paper also specified objectives for proposed endangered species programs:

What are needed are broad, comprehensive studies geared toward realization of three major objectives. (i) thorough documentation of the past and present population status of native animals, with publication of data and wide dissemination of topical reports; (ii) accumulation of basic information on ecologic requirements of depleted animal species and, if possible, preparation of descriptive life histories for such animals; and (iii) possible laboratory study and maintenance of populations of depleted species in seminatural conditions, in case nothing can be done to maintain their habitats in nature (Minckley and Deacon 1968)
Congress enacted its first law to protect endangered species in 1966 (Pub. L. 89-669, 80 Stat. 926), and that year the Fish and Wildlife Service began to define and catalog endangered species. A few western state game and fish departments, like Nevada and California, were also enacting programs to protect unique and endemic fishes (Minckley and Deacon 1968). The federal law was expanded in 1969 (Pub. L. 91-135, 83 Stat. 275).

Up until 1969, scientific interest in the effects of development of rivers and wetlands was primarily concerned with stream channel alteration and the disappearance of native fishes. Miller's (1963) article indicates that scientists were also concerned about what effects these environmental changes were having on amphibians and aquatic invertebrates, which would be just as vulnerable as fishes. But perhaps because of a lack of public concern for the welfare of these organisms and a concomitant lack of funding for research, studies focusing on such impacts do not appear in Simcox and Zube's (1985) riparian bibliography until the mid-1980s.

Instead, birds become the next organism to receive serious attention from the scientific community. Birds are commonly thought of as indicator species; they indicate the relative health of the habitat they occupy. The results of the initial studies of the importance of riparian habitat to breeding and nesting birds caused certain members of the scientific community to become much more involved in river and wetland conservation and preservation issues. Their involvement roughly
coincided with the involvement of hunters and local communities, and together helped to place river and wetland issues on several types of formal agendas in the 1970s.

The bird studies began with a phone call from Douglas Morrison, a wildlife manager with the Coconino National Forest to Dr. Steven Carothers, then an ornithologist with the Museum of Northern Arizona, in the fall of 1968 (Carothers 1988). Perhaps because of his awareness of the recent evidence supporting links between phreatophyte removal projects and a declining white wing dove population or perhaps for other reasons, Mr. Morrison had phoned to ask whether it might be appropriate to gather some data of the effects of a program sponsored by the Salt River Project in the Verde River Valley. The program was begun in 1967 and focused on the removal of mature cottonwoods along the Verde River's streambanks to prevent flooding of private lands (Johnson and Carothers 1982).

The Forest Service provided an initial grant of one thousand dollars for the two-year study. The results of this study were so impressive that in 1970 the Arizona Game and Fish Department provided a grant of fifty thousand dollars to continue the study for an additional three years. Two important conclusions emerged: (1) that phreatophyte removal was extremely detrimental to breeding bird populations, and (2) that the Southwest riparian habitat type supports higher population densities (including some of the highest avian densities per unit area
ever recorded in the continental United States) than any other forest habitat type (Carothers, Johnson, and Aitchison 1974).

**Summary**

This chapter has described and analyzed the generation and early development of river and wetland conservation and preservation issues in Arizona. The discussion focused on the time period following the end of World War II to the end of the 1960s, and examined why and how the major identification groups got involved in these issues. Though river protection and recreation issues had already attained formal agenda and decision agenda status at the federal level by 1968, such issues were only beginning to be noticed by decision-makers in Arizona. Hence, until 1970, these issues were largely contained on the state's systemic agenda.

The evolution of river conservation and protection policies was intimately tied to federal water development, recreation, and environmental politics and policies. The two federal agencies with direct involvement in the alteration and destruction of the natural aquatic and riparian resources in Arizona were independently created several decades ago through crisis politics triggered by natural disasters. Except for a few isolated controversies, the public generally supported river development policies and projects. But as more and more rivers were dammed and altered, public values of the resource changed; where free-flowing rivers were once perceived as
abundant and a life-threatening menace, they were gradually valued as a scarce resource and an asset to a community.

Accordingly, by the 1950s the American public had become ripe for the Echo Park Dam controversy initiated by the national environmental groups. These groups first intitated the conflict in response to a project proposal that appears to have been too large of an incremental policy adjustment for the public to accept. The proposal was initiated by traditional water and power interests who were attempting to capitalize on fears of water, power, and commodity shortages triggered by drought and war. These groups pursued their objectives through inside access politics.

Through an outside initiative agenda-building process, the environmental groups were able to defeat this and two subsequent large-scale dam proposals. That the dams were targeted for national parks undoubtedly contributed to issue expansion. The issue was also successfully linked to the public's desire for more recreational opportunities and the beautification of America. The defeat of the dam proposals in Dinosaur National Monument and Grand Canyon National Park helped the national environmental groups move from a reactive to a proactive agenda-building posture. They were able to initiate ideas for river protection legislation and readily obtained the assistance of the federal natural resource and recreation agencies. The inside access
model describes the agenda-building process accompanying the resulting federal policy, the Wild and Scenic Rivers Act.

In the mid 1960s Arizona was at the center of the controversy over the dam proposals in Grand Canyon National Park. In the midst of this conflict one of the nation's most influential environmental groups, the Sierra Club, established an Arizona chapter, and began its role as a leader of one of the principal identification groups involved in river and wetland conservation and protection issues in the state.

Before non-consumptive recreationists, another prominent identification group, could get deeply involved in these issues at the state level they needed formal representation. Stimulated by federal policy events, the state legislature enacted policies that created the state parks, recreation planning, and beautification agencies. In the following chapter I discuss the increasingly important role of these agencies in addressing river and wetland conservation and preservation issues in the 1970s and 1980s.

Game and fish managers and their constituency (consumptive recreationists), scientists, and a few local communities became involved in river and wetland conservation issues in Arizona in reaction to a new type of water development project — phreatophyte removal. Vegetation removal projects were also initiated by the traditional commodity-oriented groups, municipal water interests, and their representative agencies during the same time period as the early dam proposals. The agenda-building politics accompanying these proposals suggests an inside
access process. The inside access model also applies to the politics used by the newer groups to seek their demands. Hunters and scientists sought the assistance of the game and fish agency, local communities sought assistance from the state "environmental" agency.

The involvement of these latter identification groups was catalyzed by the convergence of several independent trigger mechanisms. Cook's (1981) "convergent voice" model also helps to conceptualize this agenda-building process. Unlike the outside initiative model which portrays issue development through the progressive expansion of group involvement, the convergent voice model describes a situation in which groups independently and nearly simultaneously initiate an issue and pressure for policy change.
CHAPTER 4

FORMAL AGENDAS: 1970s AND 1980s

In the previous chapter I described the agenda-building processes associated with river and wetland conservation and preservation issues on the systemic agenda. By the early 1970s, three state agencies, Arizona Game and Fish Department, Arizona State Parks Board, and the Advisory Commission on Arizona Environment (now called the Commission on the Arizona Environment), had committed themselves to formally addressing some aspect of the conflict. At the federal level, Presidents Kennedy and Johnson, legislative entrepreneurs, Congress, and a few agencies (particularly, the National Park Service, Bureau of Recreation and the Fish and Wildlife Service) had committed some of their energies to institutionalizing the values and demands of the national environmental groups. This chapter examines how group activity has expanded and how government has responded to continued group pressures to institutionalize value change.

Social values appear to be changing in Arizona for a variety of reasons. The first part of this chapter discusses demographic, attitudinal, economic, and recreation participation trends that indicate that Arizona is undergoing a major social transition. One result of this transition is that river and wetland issues have become increasingly complex.
A second result is that new and more diverse environmental, recreation, and special issue groups have formed to pressure for policy change. There are indications that these groups, like the more traditional, commodity-oriented groups, are beginning to forge coalitions amongst themselves for the purpose of securing more substantive gains on formal agendas. This is the subject of the second part of this chapter.

The continuing placement of river and wetland issues on many types of federal and state formal agendas shows that decision-makers are attempting to respond to value changes. But the many types of formal agendas are not equal in terms of a decision-maker's commitment of time, funding, and technical resources. Moreover, some formal agendas produce policy changes that are more substantive and enduring than others. Different types of formal agendas produce different types of policies in Arizona.

The executive, legislative, administrative and judicial branches of government all have formal agendas. The Executive can, for example, issue Executive Orders or Proclamations, or form special study commissions. Legislators may formally consider bills, create statutory law, or establish special committees to study an issue. Administrative agencies can research problems, prepare plans, establish agency policy, promulgate rules and regulations, and initiate special programs in response to group demands. The formal agenda of the judiciary branch most often takes the form of case law.
Kingdon (1984) makes a distinction between formal agenda items that decision-makers consider as a symbolic gesture to placate unruly or less legitimate groups, and those issues which are up for active consideration. He refers to this latter set of issues as being on a "decision agenda." Cobb and Elder (1983) term symbolic or token formal gestures as "pseudo agenda" items.

These concepts are used in the third part of this chapter to assess the degree to which Arizona state government has chosen to legitimize the values of non-commodity oriented groups by examining where and in what form river and wetland issues have attained formal agenda status.

**Arizona In Transition**

Rapid population growth and urbanization, a diversifying economy, and a transition from consumptive to non-consumptive recreational activities are changing the face of Arizona. Social values appear to be changing as a result.

**Population Growth and Urbanization**

Between 1970 and 1980 the population of Arizona climbed from over 1.7 to 2.7 million people (VNBA 1984, 1987) (Appendix A-1). Seventy-five percent of Arizonans lived in Maricopa or Pima Counties in 1980. The 1986 state population exceeded 3.3 million people, and it is expected to grow by another two million people by the year 2000. By the
turn of the century it is projected that four-fifths of the people will live in Maricopa or Pima Counties.

As Arizona communities have grown and become more urbanized, the attitudes and values of its population have shifted and diversified. The shift in attitudes is due, in part, to in-state and out-state migration patterns (Mann 1969). Since the end of World War II, the majority of people moving to, and staying in, Arizona (the net migration) came from states that were predominantly urban and far less arid than Arizona (VNBA 1984, 1987). Between 1975 and 1985, nine of the top ten states in terms of net migration to Arizona are located in the middle and eastern United States (Appendix A-2). The tenth state is California which is also heavily urbanized. Accordingly, the new Arizona immigrant arrives in this state with values and expectations about land and water resources based on experiences in his or her former state or region of residence.

Diversifying Economy

Population growth and urbanization have profoundly impacted the state's economy. Commodity-oriented economic activities like mining, irrigated agriculture, and ranching have been joined and surpassed (in terms of production or expenditures) by manufacturing and tourism (VNBA 1984, 1987) (Appendix B). An economy in transition has the potential to upset traditional group power centers and alliances, which may be reflected in formal agendas.
Travel and tourism expenditures are now the second largest source of income in Arizona. This industry is growing slightly slower than manufacturing, but still at an impressive pace. In 1984, its income contribution totaled nearly 5.2 billion dollars. Growth in recreation demand is contributing to this income-generating activity. Exactly what percentage of income contribution is related to stream and wetland recreation is unknown, but the following data are relevant.

Between 1980 and 1985, expenditures on wildlife-associated recreation in Arizona increased forty-four percent (AGFD 1988). Arizonans and out-of-state visitors spent 620 million dollars pursuing wildlife interests in 1986, and following the national trend, the greatest increase was in non-consumptive wildlife recreation (USFWS and Bureau of Commerce (BOC) 1982, USFWS 1987). Flatwater and flowing water boating expenditures totaled forty-seven million dollars. Off-highway motorcycle sales and service revenues were sixty-two million dollars. Together these three recreational expenditure figures total 729 million dollars, approximately fifteen percent of the total travel and tourism expenditures made in 1984 in Arizona. Slightly less than half of the expenditures were associated with fishing (326 million dollars), and roughly one-quarter of the expenditures with hunting activities (170 million dollars). Non-consumptive wildlife recreationists expended 124 million dollars of the total sum.
Diversifying Recreation

Another important trend affecting the development of stream and wetland conservation and preservation issues is the diversification of recreational activities occurring in the state's riparian areas. Where hunters and fishermen were once the major recreation groups, they have been joined and surpassed in numbers by non-consumptive recreationists, including hikers, nature observers, campers, picnickers, flat and whitewater boaters, and off-road vehicle drivers.

Like hunting and fishing, nonconsumptive fish and wildlife recreation is dependent, to various degrees, on the presence of surface water. Between 1980 and 1985 (the two years that the USFWS administered its national fish- and wildlife-related recreation surveys), the number of Arizonans participating in nonconsumptive wildlife recreation rose from over 1.7 million to over 1.9 million (AGFD 1988). Nearly eighty percent of Arizonans are nonconsumptive recreationists. Participation in virtually all forms of recreation are on the increase (Appendices C-1 to C-6). In some river areas demand appears to be exceeding supply. Riparian recreation areas such as the Grand Canyon and Black Canyon of the Colorado River, Aravaipa Canyon, Paria Canyon, Salt River Canyon, Cienega Creek, and some Nature Conservancy Preserves have become so crowded that permit and reservation systems have been imposed (Tunnicliff and Wilkosz 1988). Others, like the Verde River, San Francisco River, and Tonto Creek currently lack permit systems, but are
regulated to a limited degree to protect sensitive ecosystems and certain wildlife species.

The data and information on recreation trends suggest that non-consumptive and consumptive recreationists, if well organized, could merge into a powerful alliance, but they must first resolve conflicts amongst themselves. The most heated conflicts nearly always concern the availability and quality of recreational opportunities. Issues concerning hunting access and off-road vehicle use are particularly heated. These are most often regulatory issues.

Shifting and Competing Values

Three attitudinal surveys (two statewide and one regional), administered in the 1980s, suggest that these demographic, economic, and recreation trends are affecting the way Arizonans perceive their environment. The surveys also indicate that some rural Arizona communities which are still strongly influenced by commodity-oriented economies continue to retain some of the more traditional values of the state. This information is used later in the chapter to ascertain the extent to which decision-makers are responding to value change.

Zube, Law and Carpenter's (1984) survey of fifteen hundred Arizona residents identified: (a) predominant resource issues and landscape values; (b) preferred and non-preferred land uses; and (c) public preferences for resource management priorities. The data indicate a "substantial shift" in natural-resource and landscape values. With the
exception of a few, small rural communities with economies based on agricultural, mining, or timber activities, Arizona has evolved from a state where people generally shared commodity-oriented resource values to a state in which many people now share non-commodity values of a more urban origin.

When surveyed about land-use preferences, respondents indicated a preference for soil and water conservation activities (sixty-six percent), recreation (fifty-seven percent), and wildlife habitat (fifty-one percent). Forty percent of the respondents most preferred wilderness and farming. The least preferred land uses included commercial developments, subdivisions, and second-home or retirement communities (sixty percent). Individuals from commodity-oriented communities indicated that two of the three preferred land uses were also soil and water conservation activities. The most preferred land use from commodity-oriented communities, however, was always the one that fueled the local economy. These communities identified the same three least preferred land uses as the broader surveyed population.

The respondents were also asked about their resource management priorities for the purpose of providing policy-makers with insight on funding priorities. The survey indicated that wildlife, recreation, and energy were the resources of highest priority. Forty to forty-five percent of the statewide sample listed range, minerals, timber, and archaeological sites as their lowest resource management priorities. The commodity-oriented subgroup also preferred wildlife and recreation,
and showed strong preference for management of the commodity resource
tied to the local economy. This group's lowest management priorities
also included archaeological sites, commodity, and non-commodity
resources.

A second statewide attitudinal survey was administered in 1985
through a series of meetings held in all Arizona counties (College of
Agriculture, University of Arizona 1986). Because this survey was
oriented primarily towards rural communities, the issues of greatest
importance tended to reflect the long-standing cultural and economic
importance of farming, ranching, and other commodity-oriented
activities. The three most important general concerns were water
resources, competing land uses, and economic development.

The three most important water issues identified by the respondents
reflect continued concern over water scarcity, including: (a) a
decreasing water supply, (b) competition for water, and (c) water
conservation. Water quality concerns were reflected in the fourth and
fifth most important water issues -- degradation of water quality and
safe drinking water.

The most important concerns regarding land and other natural
resources reflect the respondent's concern for potential conflicts among
multiple, and sometimes competing resources uses. Land use conflicts
were of greatest concern, followed by intensive watershed management,
and retention of prime agricultural lands. In order of decreasing
preference, the remaining issues in this category include: flooding, effects of erosion, allocation of rangeland resources, recreation access, intensive grazing systems, vandalism, retired farmland, and solid waste disposal.

The third, most recent, and most relevant of the attitudinal surveys focuses on the San Pedro River Valley, one of Arizona's more significant and threatened riparian areas (Zube, Simcox, and Hoffman 1986). This survey provides the only attitudinal data relating specifically to riparian lands in Arizona and isolates responses from various types of groups.

It revealed that sixty-eight percent of the respondents are aware of changes in the landscape. Fifty percent of the respondents said that they witnessed either "very much" change (twelve percent) or "quite a bit" of change (thirty-eight percent). The most appropriate land uses for the San Pedro River Valley were thought to be its management as a wildlife area and preservation as a natural area. The reasons given for selecting these and other land-use preferences were related to the respondents' concerns for future generations (thirty-nine percent) and their own quality of life (twenty-nine percent). The land uses believed to be the least appropriate for the riparian area included subdivision (forty percent), mining (twenty-seven percent), and off-road vehicle driving (eighteen percent). The reasons for selecting the least preferred land uses included concerns for the riparian environment
(sixty percent) and the traditional uses of the river and the land (twenty-two percent).

The San Pedro survey provides further evidence of a society in transition. It highlights the divergent values and perceptions of riparian resources held by traditional and more contemporary groups including farmers, ranchers, real estate agents, elected local decision-makers, resource managers, environmentalists, and the local water resources association. The survey showed that resource managers, and to a lesser degree, environmentalists (members of the Sierra Club), possessed a pro-conservation value system that conflicts most with the values held by real estate agents, and to a lesser degree local decision-makers, farmers, and ranchers. The relatively polarized viewpoints create a highly controversial setting for building political agendas, and seem to imply that the new values are being imported into the community:

As in the state-wide study, the different value orientations indicated by these data suggest future difficulties in coming to grips with land use allocation decisions and, perhaps most important, in developing land use patterns in the surrounding areas that are sympathetic and supportive of the environmental and aesthetic values that the Bureau of Land Management is trying and the pending legislation [for the establishment of the first Riparian National Conservation Area] is designed to protect in the riparian zone (Zube 1987).

The three surveys just described provide a general picture of the values held by the Arizona public and its more traditional and contemporary sectors in the 1980s. The surveys indicate that the urban Arizonan generally holds non-commodity values when compared to his or
her rural counterpart. Recreation and wildlife habitat, two land uses that are intimately tied to the conservation and preservation of rivers and wetlands in Arizona, are preferred land uses and management priorities for both urban and rural residents. Residents of rural, agricultural areas are concerned about conflicts over land-uses and water resources. Residents of the San Pedro Valley, one of Arizona's most beautiful and most threatened riparian areas, are aware of the changes occurring in the landscape and are generally supportive of its conservation and protection. However, there are groups within the Valley possessing highly polarized viewpoints about land-use and management decisions which will make it difficult for decision-makers, particularly elected officials, to formulate public policy.

The polarized community sentiments of the San Pedro Valley are likely to be found in other communities of Arizona and will make negotiation between groups difficult. In such a political atmosphere it is difficult for elected officials to develop effective policy for controversial issues like the protection of rivers and wetlands, and they often will avoid the task.

**Group Response**

The debates concerning the uses of natural aquatic and riparian habitats in Arizona have often been confined to identification and attention groups. Many of these groups have national affiliates, while
others are found only in Arizona. Some of the national and state groups were formed to lobby for a specific issue. The attentive public has generally been kept informed of these types of issues through the media's coverage of issues associated with water development and water quality problems. The mass public has been aroused as a result of trigger mechanisms, especially floods. The purpose of this section is to describe and analyze the different types of groups (publics) described by Cobb and Elder (1983), and to discuss the agenda-building processes and policy outputs associated with different levels of group involvement.

Identification Groups

One result of the trends discussed in the previous section has been an increase in the number and diversity of groups with potential for pressuring for river and wetland conservation and protection policies. Beginning in 1974, the Advisory Commission on the Arizona Environment began publishing annual directories of environmental and resource conservation organizations in the state. Though it is likely that some groups were missed in the annual surveys, these directories provide a fairly good indication of the number and type of environmental and recreation groups having potential for supporting river and wetland conservation and preservation issues.

In its first year of publication the directory listed two associations, twenty-seven conservation (environmental) and wildlife
organizations, and six environmental councils (CAE 1974) (Appendix D). The 1987 edition of the directory listed thirty-nine of seventy-eight citizen and nonprofit organizations and one private educational institution that could have some interest in river and wetland conservation and protection issues for recreation, education, environmental, or public interest purposes (CAE 1987).

Special Issue Groups

Identification groups formed for the pursuit of a single policy objective are referred to in this thesis as special issue groups. The agenda-building processes associated with a few of the more prominent national and state special issue groups involved in river and wetland issues are described below. The inside access agenda-building model generally describes the process used to pursue group demands. The discussion that follows illustrates how these groups form under a variety of political circumstances, for a variety of reasons, and operate in a variety of ways.

Since 1973, three national organizations have been founded for the purpose of lobbying for river protection and recreation policies. Their memberships span the country and are still growing, in one case tripling in the last four years, and all have members in Arizona (Brower 1987; Cooley 1988; McCurdy 1988). River boaters were a major influence in creating the American Rivers Conservation Council, now called American Rivers (Washington, D.C.), Friends of the River (Sacramento,
California), and the National Organization for River Sports (Colorado Springs, Colorado) (Palmer 1986). Of these three groups, American Rivers has been most actively involved in Arizona, participating in wild and scenic river workshops, the fight against Cliff Dam and in the 1988 Arizona Rivers, Streams, and Wetlands Study Core Group.

Probably the most successful special issue group to form for the purpose of protecting threatened and endangered species in riparian and other habitats in Arizona is the The Nature Conservancy. The Arizona Chapter of this national organization was founded in 1966 and immediately established the first privately owned preserve in the state along Patagonia and Sonoita Creeks to protect the "very best remaining example" of a Fremont Cottonwood riparian plan community and the endangered Gila topminnow. Since that time this organization has established several other riparian habitat preserves (Appendix E), and has been actively involved in formulating administrative formal agendas in the Game and Fish Department (through the establishment and administration of the Natural Heritage Program of the Non-game Division), Department of Water Resources (through the Instream Flow Task Force), and State Parks (through the Rivers, Streams, and Wetlands and Natural Areas Advisory Groups of the 1988 Statewide Comprehensive Outdoor Recreation Plan).

While other special issue groups attempt to conserve and protect river and wetland habitat in Arizona through political processes, The Nature Conservancy uses a market approach which is ideally suited to the
state's traditional libertarian ethic and to times when federal and state decision-makers face huge budget deficits. However, the Arizona chapter has in recent years also adopted a political approach; it is one of the most active and vocal of all groups with respect to riparian habitat protection. The state chapter is unique in that respect from its counterparts in other states (High Country News April 25, 1988). Its success is also probably due to the group's reliance on one-to-one contact with landowners and decision-makers alike.

The Natural Areas Study Committee is another example of a special issue group that formed for the purpose of preserving riparian and other unique habitats in Arizona. This group began in the early 1970s through the assistance of the Sierra Club, Audubon Society, and other conservation groups. These groups helped to secure state and federal funding for a fifty thousand dollar, three-year study designed to identify natural areas in Arizona worthy of formal protection (Canyon Echo, May 1976). The study, undertaken by the Natural Areas Study Committee of the Arizona Academy of Science, led to the proposal that forty-five natural areas be preserved in Arizona (Arizona Daily Star March 30, 1973). In 1975, the Governor requested that Arizona State Parks Board administer a natural areas program, and it was established the following year along with an advisory council of ten scientists nominated by the Academy (Eakle and Smith 1988). The program has suffered from insufficient funds and staffing, and a focus on registry
rather than acquisition. Arizona State Parks Board is reorganizing the program through the 1989 Statewide Comprehensive Outdoor Recreation Plan to focus on riparian habitat protection.

While the Natural Areas Study Committee has not been very successful in securing their objectives in the state administrative arena, another special issue group, "Arizonans for Wild and Scenic Rivers," secured tangible policy benefits by working with federal elected representatives. One reason for this group's success is that it used tried and tested lobbying techniques developed by national environmental interest groups.

In June 1975, the year that the nationwide rivers inventory was begun, a regional environmental group called the Southwest Regional Conservation Committee invited members of the Grand Canyon Chapter of the Sierra Club to attend a wild and scenic river workshop (Canyon Echo June-July 1975). The workshop, attended by environmental group representatives and Bureau of Recreation, Bureau of Land Management (BLM), and National Park Service employees, led to the establishment of the new group (Canyon Echo August 1975). Founded for the purpose of establishing federal wild and scenic river designations in Arizona, this group held river workshops (Canyon Echo, April 1976, November 1977), sponsored river trips for decision-makers (Canyon Echo, August 1977, March 1981), and drafted federal legislation for their representatives to introduce in Congress (Canyon Echo, July 1978). The group's efforts were rewarded in 1984 when a forty-mile reach of the Verde River was

Another special issue group that has been influential in pressuring for river and wetland protection policy in Arizona is the Arizona Riparian Council. This group was founded in December 1985 for the purposes of educating the public on the value of Arizona's riparian areas, to disseminate scientific information on riparian ecology, and to influence future policy decisions. The group has sponsored three annual meetings for the purpose of sharing current research in riparian areas and so that members of the various subgroups within the organization (such as the education, water resources, and policy subgroups) can meet and organize activities. The Council's membership is comprised principally of state and federal natural resource agency employees (forty-one percent), private interests (twenty-seven percent), university faculty and students (twenty-two percent), and environmental group representatives (ten percent) (ARC 1986).

The group's attempts to influence agenda-building have focused on state administrative decision-making arenas. It has represented its interests through direct participation in the Department of Water Resource's Instream Flow Task Force; Rivers, Streams, and Wetlands Advisory Core Group and Natural Areas Advisory Core Group (as part of the 1988 Statewide Comprehensive Outdoor Recreation Plan); and the Commission on the Arizona Environment's Ad Hoc Committee on Riparian
Resources. It was one of three groups (the other two being the Commission and State Parks) to lend its support to a "consensus" document containing recommendations for riparian policies in Arizona. Having a membership that is dominated by state and federal agency employees provided almost instant legitimacy to this special issue group and facilitates inside access politics.

The last example of a special issue group associated with river and wetland conservation and preservation issues is the group called "Friends of the San Pedro." The series of events leading to its formation reveal a different purpose and agenda-building process than those just described.

In 1978, the United States Fish and Wildlife Service issued a report identifying streams and wetlands in Arizona which would qualify for the agency's Unique and/or Nationally Significant Wildlife Ecosystem Program (USFWS 1978). A segment of the San Pedro was one of the area's identified. In August 1985, the Huachuca Audubon Society, Chiricahua Sierra Club, and Defenders of Wildlife filed an application for minimum instream flow rights for this area with the Department of Water Resources. The application was assigned to the Bureau of Land Management in May 1986. In March 1987, the agency acquired 43,371 acres of private land on the upper San Pedro through a land exchange (BLM n.d.). Shortly thereafter, Arizona's Congressional delegation introduced legislation in Congress to protect fifty-seven thousand acres through the establishment of the "San Pedro Riparian National
Conservation Area," the first proposal for this type of designation in the country. The measure was approved by Congress (after introductions in the ninety-ninth and one hundredth Congress), and signed into law by the President on November 18, 1988 as part of an omnibus measure, the Idaho-Arizona Conservation Act (P. L. 100-696). Friends of the San Pedro, a broadly-represented group of approximately one hundred members, formed in October 1987 for the purpose of assisting the agency in its management efforts in the area (Hoffman 1988).

Attention Groups

Special issue groups concerned about the protection of rivers and wetlands in Arizona are growing in number and strength. Attention groups also occasionally lend support to river and wetland conservation and preservation issues, primarily through opposition to water development projects. Attention group participation seems to be indicative of outside initiative agenda-building process. Three examples of attention groups that have been involved in the state's river and wetland controversy are described below. They illustrate how the public, unorganized groups, and government can act as an attention group.

Local communities have been one of the most active types of attention groups involved in river and wetland debates. In the last two decades community residents have become especially involved in flood control projects and planning. The involvement of local communities is
almost guaranteed, as property owners and neighborhood residents now better understand how water development projects can impact their lives through direct and indirect economic, aesthetic, and human welfare costs or benefits.

Landscape architects are another example of an attention group that became involved in river issues. In November 1970, the Tucson Chapter of the American Institute of Planners proposed that Pima County establish a flood plain ordinance as an alternative to channelization (Arizona Daily Star, November 11, 1970). This group's concern seems to have resulted from the floods that occurred earlier in the fall.

Another trigger mechanism, namely, the Teton Dam collapse in Idaho in June 1976, brought the Arizona Bureau of Mines into the Orme Dam controversy. At a public hearing on the proposed construction of the latter dam, that agency testified that the proposed structure was to be built over faults that could trigger a similar disaster in Phoenix (Canyon Echo August 1976). This was one of several arguments that emerged as a result of the protracted debate surrounding the building of this dam.

Attentive Public

The longer an issue is debated the more likely it will be expanded to successively larger publics (Cobb and Elder 1983). The third public to become involved in issues through conflict expansion is the attentive public. This group consists of relatively well-informed individuals
possessing a general and consistent awareness of many types of issues. Local media, in the form of newspapers, television, and magazines serves as a principal source of information to this group.

I attempted to quantify in a very simple way the issue types and patterns relating to rivers and wetlands recorded by the media. The resulting graphs were generated from the 1970 to 1986 volumes of the index of the Arizona Daily Star stored at the University of Arizona Library. This is the only index of Arizona newspapers available at this library (an index of the Arizona Republic is available at the Arizona State University Library).

Articles appearing in this Tucson metropolitan paper are listed under dozens of categories. I counted the annual number of articles listed under the following general headings: water supply, water pollution, Central Arizona Project, flood related topics (such as floods, flood control, and flood damage), and dams. Articles pertaining to rivers and wetlands were most often listed under one of these categories though there may be other categories as well. Two important observations emerged from this analysis.

First, articles pertaining to dams and the Central Arizona Project increase in number and then slowly decrease following peaks in the number of flood articles with the exception of the 1983 floods (Figure 5). Second, the number of water supply articles have generally decreased, while the number of water pollution articles have increased.
Figure 5. Dam-, CAP-, and Flood-Related Articles in the Arizona Daily Star, 1970-1986.
(Figure 6). The media's surge in coverage of water pollution issues seems to have been triggered in part by the discovery of Trichloroethylene, a probable carcinogen, in Tucson groundwater in May 1981.

These observations have relevance to the case study in that they highlight shifting potentials for issue promotion and the role of crisis-generated politics. The graphs suggest that there may be times when certain issues might be perceived as having greater social relevance if they are linked to other pressing issues or crises. For example, public awareness to the danger of floods is heightened immediately after the event, and groups pressuring for water development projects can use the crisis to their advantage. Similarly, it appears that the attentive public has been increasingly exposed to water pollution issues since 1980, and it would be to the advantage of groups pressuring for the protection of rivers and wetlands to link the issue to the protection of water quality. Finally, the fact that this newspaper has, and continues to define river and wetland issues as problems of water quantity and water quality suggest that the conservation and protection of riparian areas in Arizona is still confined to the interest of identification and attention groups, and has not been recognized by the media or the public as a problem in its own right.
Figure 6. Water Supply and Water Pollution Articles in the Arizona Daily Star, 1970-1986.
General Public

While the attentive public maintains a general and fluctuating interest in many types of issues through media exposure, the general public is generally unaware of issues, but on occasion gets involved.

Examples of how trigger mechanisms have affected river and wetland issues through the arousal of the general public can be linked to drought and human accidents (as discussed in the previous chapter) and flooding.

Floods were particularly important as catalysts for shaping agendas in the 1970s and 1980s. Major floods occurred in September 1970 (Tonto Basin), June 1972 (Phoenix), October 1972 (upper Gila River), December 1978 (Phoenix), February 1980 (Phoenix), and October 1983 (Tucson) (AWC 1975). These trigger mechanisms affected formal agendas in significant ways, sometimes sparking policy innovation. They can best be conceptualized as catalysts for action on issues that have been debated for a while. This is particularly true if the events recur within a relatively short time period.

In the early 1970s, the floods caused some administrative and legislative decision-makers to begin to rethink the traditional structural approach to flood control. The Corps of Engineers was beginning to realize that after spending over eight billion dollars in projects over a period of thirty-five years, the cost of each successive flood was increasing (Arizona Daily Star, August 6, 1972). Local elected officials were meanwhile being bombarded with lawsuits from
citizens seeking payment for flood damage. State legislators responded in 1973 by enacting three acts relating to flood control (AWC 1975). One required local jurisdictions to delineate floodplains for zones where development is ongoing or imminent. The second piece of legislation provided that the state would reimburse local communities for up to one-half of costs incurred for rights-of-way and relocations related to flood control projects. The third act established a state flood control planning staff within the Arizona Water Commission.

The second and more impressive effect that these floods had on river and wetland issues was the beginning of a major effort by municipalities and developers to push for the construction of Orme Dam.

This dam, to be built at the confluence of the Salt and Verde Rivers, was authorized as part of the Central Arizona Project in 1968. Flood control was one of the major purposes for the dam, and after this act passed developers began to buy and develop floodprone lands in downtown Phoenix along the Salt River (Arizona Daily Star, January 20, 1980). In 1974 the State Legislature appropriated one hundred thousand dollars to launch the massive Rio Salado urban development project in this area.

The proposed dam would have forced the relocation of the Fort McDowell Yavapai Indians (their Reservation was established in 1903). As the group to be most directly affected by the proposal they were the first to protest its construction. They were joined by
environmentalists in June 1975. The Citizens Concerned About the Project and the Maricopa Audubon Society filed suit at that time because of their concern about the potential destruction of bald eagle habitat (Arizona Daily Star, June 12, 1975). Archaeologists also opposed the dam when it was discovered that the reservoir would flood nearly two hundred archaeological sites (Arizona Daily Star, August 13, 1975). Two years later when President Carter listed the dam as one of seventeen on his "hit list" of water projects some may have thought the project doomed. But within the next twelve months Phoenix was hit hard by three floods and the general public screamed for action (Arizona Daily Star, January 20, 1980).

In response to public outcry, elected officials renewed pressure for the dam's construction. In February 1980, the Salt River in Phoenix flooded again; the latter event caused Governor Babitt to reverse his opposition to the project (Canyon Echo April 1980). In fact, the political pressure was so intense that the Governor flew to Washington, D.C. to meet with President Carter to ask that the dam be removed from the "hit list" of federal water projects. The Governor also wanted to bypass a two-year study of alternatives to the project conducted by the Corps of Engineers and the Bureau of Reclamation, so that construction could begin immediately on flood control works. In September of that year Congress approved a measure providing funds for three of the projects on the President's hit list including Orme Dam (Arizona Daily Star, September 28, 1980), and the following month the President
reversed his position and signed the appropriation bill (Arizona Daily Star, October 7, 1980). Orme Dam was eventually shelved despite these efforts as the result of a Bureau of Reclamation study that showed that Phoenix would require a bigger and more expensive dam to prevent heavy flooding from recurring (Arizona Daily Star, August 2, 1983). With this study came the realization that new and rebuilt dams upstream would be a cheaper alternative. The alternative was "Plan 6" which included the proposal to build Cliff Dam on the Verde River.

While floods in Phoenix were used to justify water development projects that would alter and destroy free-flowing rivers and riparian habitat, the floods of October 1983 in Tucson triggered policy innovation that resulted in just the opposite. The public and local government's attitude about flood protection changed considerably after that trigger mechanism (Johnson 1987). In 1984, Pima County voters authorized an 8.3 million dollar bond measure that allowed the County to purchase flood-damaged lands (Fonseca 1988). In May 1986, Pima County voters authorized twenty million dollars in bonds for acquisition of open space lands, including flood-prone lands (Smutzer and Fonseca 1987). A portion of Cienega Creek, a significant riparian area with a perennial stream, was subsequently purchased with these bonds.
Governmental Response as Reflected by Formal Agendas

This chapter has thus far examined trends influencing value changes about rivers and wetlands in Arizona and how these value changes have been reflected by the development and involvement of groups concerned with aquatic and riparian habitat management and protection. The following section examines the many ways that government has responded to group demands through formal and decision agendas in the 1970s and 1980s. Many examples of executive, legislative, and administrative formal agenda outputs are presented. They are indicators of the degree to which group values for river and wetland conservation and protection have been institutionalized into society. The discussion is purposefully more detailed at the state level of government to better illustrate the substantive nature of different types of governmental actions.

Federal Formal Agendas

Nearly seventy percent of Arizona is owned by federal natural resource agencies (forty percent) or held in trust for the Indian tribes (twenty-eight percent) (Tunnicliff and Wilkosz 1988). The Forest Service (USDA-FS) and the Bureau of Land Management own and manage fifteen percent, and seventeen percent of the state, respectively. The National Park Service (3.6 percent), Fish and Wildlife Service (2.3 percent), and the Bureau of Reclamation (2 percent) claim the remainder.
Because nearly all of the state's major rivers originate on and flow for much of their duration through federal lands, federal policies are very important to the conservation and protection of these areas (Wilkosz 1987). Some of the more significant federal decision agenda items are described below. Collectively, these policy actions indicate that the federal government is responding to group demands for increased management and protection of aquatic and riparian resources, however most of the policies lack regulatory measures that are probably needed to truly protect many of these fragile resources.

That formal agendas are more easily obtained with the support of the Executive has been illustrated in this case study. It also seems that the Democratic Presidents have, in general, been more receptive to promoting river and wetland conservation and preservation policies than their Republican counterparts.

For example, two significant policies were created by President Carter in the late 1970s designed to regulate development of wetlands (42 Fed. Reg. 26951, 26961). President Reagan, on the other hand, recently signed an "obscure" measure, Executive Order 12630, "Governmental Actions and Interference with Constitutionally Protected Property Rights," designed to circumvent federal authority to regulate dredge and fill activities in wetlands as established under Section 404 of the Clean Water Act. The policies of each President are indicative of their liberal and conservative ideologies, respectively, concerning governmental regulation of natural resources.
Congress has responded to the demands of newer groups through the establishment of special land and river designations and the creation of a wetlands protection program. In addition to the 1968 Wild and Scenic Rivers Act (discussed in the previous chapter), Congress has enacted three pieces of legislation, all within the last few years, which serve to protect rivers and wetlands in Arizona: the Arizona Wilderness Act of 1984, the Emergency Wetlands Resources Act of 1986, and the Idaho-Arizona Conservation Act of 1988.

Besides designating Arizona's first wild and scenic river segment on the Verde River, the 1,054,580 acres of wilderness designations enacted by 1984 Arizona Wilderness Act protected several areas with important riparian habitats, such as Aravaipa Canyon, Paria Canyon, and the Salt River Canyon (Pub. L. 98-406, 98 Stat. 1485). When creating this (land reservation) policy, Congress was careful to avoid any language that implied a redistribution of traditional surface water rights. They relegated that authority to state judicial decision-making arenas and avoided public controversy:

As provided in paragraph (6) of section 4(d) of the Wilderness Act, nothing in this Act or in the Wilderness Act shall constitute an express or implied claim or denial on the part of the Federal Government as to exemption from Arizona State water laws (98 Stat 1488, Sec 101).

The same holds true for the Verde River wild and scenic designation:

This designation shall not prevent water users receiving Central Arizona Project water allocations from diverting that
water through an exchange agreement with downstream water users in accordance with Arizona water law (98 Stat 1491, Sec. 104).

The Emergency Wetlands Resources Act of 1986 directs the Department of the Interior (through the Fish and Wildlife Service) to develop a National Wetlands Priority Conservation Plan identifying the locations and types of wetlands that should have priority for state and federal acquisition (Pub. L. 99-645, 100 Stat. 3582). States are now mandated to "address wetlands...as an important outdoor recreation resource" and to develop a state wetlands priority plan identifying acquisition priorities as part of the Statewide Comprehensive Outdoor Recreation Planning process. Acquisitions are dependent upon money made available through the Land and Water Conservation Fund Program. However, in the past few years Congress has not appropriated money to this fund, so the successful implementation of this "regulatory" policy is questionable.

The Idaho-Arizona Conservation Act of 1988 is another legislative policy that provides for, among other things, the establishment of the San Pedro National Riparian Conservation Area. The act was signed into law on November 18, 1988. This land reservation is unique from others previously set aside by Congress in that it specifically includes federal reserved water rights:

Congress reserves for the purposes of this reservation a quantity of water sufficient to fulfill the purposes of the San Pedro National Riparian Conservation Area created by this title (Pub. L. 100-696).

The priority date accompanying this water right, like other federal reserved water rights, is the date that the reservation is established.
As such, it is a very junior right with respect to other water rights in the basin, and therefore may not truly protect the riparian habitat from surface water diversions or groundwater withdrawals.

One of the more substantive ways that federal natural resource agencies are responding to group demands for river and wetland conservation and preservation policies is through the establishment of riparian habitat management policies. These policies reflect and reinforce agency activities, and provide groups with a set of expectations for future administrative behavior and actions. In as much as these policies institutionalize values that conflict with those held by traditional clientele groups (such as ranching and timber interests), they have the potential to upset power relationships. It is still too early to assess how effective these administrative policies have been in incorporating the values of environmental, recreational, and scientific groups.

The purpose of the Bureau of Land Management's riparian area management policy is "to maintain, restore, or improve riparian values to achieve a healthy and productive ecological condition for maximum long-term benefits" (BLM 1987).

The Forest Service's riparian lands policy stipulates that riparian areas are to be managed to benefit riparian-dependent resources, to recognize the unique values of riparian areas, and to emphasize the protection, management, and improvement of them during the planning and
implementation of land management plans (USDA-FS 1986). This policy statement directs the agency to: inventory riparian areas in the Forest Land management planning process, develop and implement measures to manage and protect riparian areas according to national objectives and regional standards, and monitor the effectiveness of measures implemented for the management and protection of riparian areas.

The involvement of the federal judiciary in issues affecting rivers and wetlands in Arizona has been principally in the form of decisions concerning federal reserved water rights. The highly controversial nature of reserved water rights has prevented elected officials from placing these issues on their formal agendas, so the federal and state courts have been, and will continue to be, the formal arena for formulating policies that have the potential to redistribute water resources.

Federal reserved water rights are extremely important in Arizona as they are in other western states. Federal reservations are accompanied with an implied, though often unspecified, federal reserved water right to fulfill the purposes for which a reservation is established. The Supreme Court and federal district courts have ruled through a series of cases that certain reservations (national parks and monuments, national wildlife refuges and wilderness areas managed by the forest service) are entitled to reserved water rights for recreation or ecological purposes, while others, like land managed by the Bureau of Land Management and Forest Service, are not.
In August 1988 the Reagan administration attempted to circumvent a series of court decisions favoring the establishment of reserved water rights in wilderness areas. The Attorney General of the United States, Edwin S. Meese III, issued an opinion just a few days before he left the Justice Department stating that the federal government would not claim water rights for wilderness purposes. The eventual status of these water rights may not be known for years or even decades. They will be quantified in the general stream adjudications now in progress in the Arizona Superior Courts (discussed later in this chapter).

State Formal Agendas

While the federal government appears to be responding to changing values and group demands, Arizona's elected decision-makers seem reluctant to follow suit. Some agencies are attempting to fill policy gaps on issues where elected officials fear to act. Many of the most important decisions affecting water resources will be made by the state judiciary. Significant policy actions of the state executive, legislative, administrative, and judicial branches are presented below.

The expansion of river and wetland conservation and preservation issues began to gain considerable momentum in the beginning of the 1980s. Former Governor Bruce Babbitt, probably the most environmentally progressive of Arizona's governors, held office during this time period. Some of his policy statements regarding these issues are found in annual messages to the Legislature and in speeches to interest groups. He was
generally supportive of issues relating to the conservation and protection of the state's rivers and wetlands, but his policy actions consisted only of forming special study commissions relating to the recreational use of these and other natural resources.

It is interesting to note how the Executive redefined the issue with time according to other public and group concerns. The former Governor, like other successful elected officials in Arizona, made the completion of the Central Arizona Project one of his primary objectives. Rio Salado, an urban development project dependent on the construction of CAP-related flood control works, was another. After the floods of 1978 and 1980, the Governor found himself under greater group and public pressure to control flooding. Flood control then became a link to the completion of the CAP and Rio Salado:

Because of the extreme variability of the Colorado River flow, we cannot make full use of our CAP entitlement without additional seasonal water storage in Central Arizona. Orme Dam was designed for that purpose.

Because of the controversy generated over the Orme Dam site, alternative storage and flood control sites are now under review....In the meantime we must prepare the legislative framework for the Rio Salado Project....we must be prepared to get underway at the very moment the Orme Dam alternative is completed. Rio Salado is intimately linked to upstream flood control, and the decisions regarding both must be made in concert (Arizona House of Representatives 1980).

In 1982, he linked the two projects to the need for more water based recreation:

We must place special emphasis on the development of water-based recreational facilities. Opportunities to acquire additional water resources for recreational uses are rapidly
diminishing. The proposed Rio Salado Development in Phoenix is a perfect example of how recreation should be factored into water management projects (Babbitt 1982).

During his tenure in office, Governor Babbitt formed two task forces to study recreational issues. In 1982, the Task Force on Parks and Recreation in Arizona issued three recommendations related to water-based recreation in its final report:

The highest priority of the State Parks program should be placed on development of parks offering water-based recreation opportunities.

The State should provide for an equitable and broad geographic distribution of water-based recreation development.

The availability of surface water or groundwater for water-based recreation projects should be determined, and permission to utilize needed water should be secured at the earliest possible time (Governor's Task Force on Parks and Recreation in Arizona 1982).

These recommendations are reflected in his 1983 message to the legislature:

Water-based [recreation] sites are the prime attractions in this state of seemingly unlimited land-based opportunities. Many existing areas — along the Colorado River, Oak Creek, the Verde River, Arivaca Lake — are frequently used beyond capacity. Sites suitable for water-based recreation are extremely limited, water uses are competitive. Every opportunity to utilize water for recreational as well as consumptive uses should be explored (Babbitt 1983).

In 1984, the Governor, perhaps in response to the recommendations issued in 1983 by Commission on the Arizona Environment (discussed later in this chapter) further redefined his interpretation of the issue to include the protection of (riparian) wildlife habitat:

Another resource that is quickly diminishing along the [lower
Colorado River is wildlife habitat. Measures must be taken to protect and improve areas of fish and wildlife value and to ensure the integrity of existing wildlife refuges (Babbitt 1984).

In April 1985, the University of Arizona sponsored the First North American Riparian Conference. In the forward of the conference proceedings, the Governor adopted the scientist's terminology for river and wetland habitat (riparian) while demonstrating his support for a statewide protection policy:

What is needed is the implementation of a comprehensive legislative mandate for the protection, conservation and rehabilitation of riparian ecosystems. Previous efforts have addressed only pieces of the whole. Legislation must include all aspects of riparian systems and address all levels of involvement -- federal, state, local and private -- to be effective (Johnson et al. 1985).

One year later, Governor Babbitt's Task Force on Recreation on Federal Lands issued recommendations favoring more federal Wild and Scenic River designations, the need for a statewide rivers study (this was initiated by State Parks in August 1987), and the need for the Governor to propose river protection legislation:

The State should press vigorously for congressional designation of all additional qualifying rivers into the National Wild and Scenic River System.

The Governor should propose legislation to create a state wild and scenic river system. State Parks should conduct a rivers study of free flowing stretches in the state, including both those nominated by the Heritage Conservation and Recreation Service and any others that have not been identified to date for inclusion in a state wild and scenic river system (Governor's Task Force on Recreation on Federal Lands 1986).
Governor Babbitt left office before issuing any Executive Orders or Proclamations on river and wetland recreation or protection policies. He was generally supportive of river and wetland conservation issues (as long as they did not interfere with the Central Arizona Project), and this contributed to the expansion of these issues in the 1980s.

The Arizona Legislature has not yet shown its support of these issues. The Legislature's involvement with river and wetland conservation and preservation issues in the past two decades has been more symbolic than substantive. For example, in 1974 and 1978, bills were introduced into the Senate and House, respectively, which were attempts to provide statutory protection for riparian areas. Neither bill was ever debated in committee. They serve as examples of "pseudo agenda" items.

Senate Bill 1049 was introduced into the Senate Committee on Natural Resources and Environment (Appendix F-1) (Arizona House of Representatives 1974). This bill would have provided the Commissioner of the Arizona State Land Department with regulatory powers and responsibilities related to the protection of watercourses and their associated riparian habitats.

House Bill 2326, introduced in February 1978 to the Committee on Counties and Municipalities and Committee on Agriculture, was also regulatory in nature (Appendix F-2) (Arizona House of Representatives 1978). It would have provided the County Board of Supervisors
with the power to adopt standards to protect watercourses and riparian environments from detrimental effects.

Another example of a pseudo agenda item is a 1987 statute that established a riparian habitat trust fund but simultaneously terminated the state's ownership of streambeds (Ariz. Rev. Stat. Ann. 37-1101 (1988)). It has been estimated that this act has the potential to generate a fund of only $500 thousand to $700 thousand (Baron 1988). On the upper Verde River near Cottonwood, Arizona, where riparian land ranges in value between $3 thousand and $30 thousand an acre (Laurenzi 1989), the trust fund would buy 16 to 230 acres. The act allows private parties to purchase streambed acreage. No other Western state has passed such a law, and the states of Maine and Massachusetts are the only eastern states with a remotely similar policy (Baron 1988).

Recreational, environmental and public interest groups which fought this legislation see this law as a give-away of state lands, an impediment to recreational access and use of riparian areas, and a threat to critical riparian habitat (Arizona House of Representatives 1987, Arizona Daily Star, February 24, 1987). The Arizona Center for Law in the Public Interest, Defenders of Wildlife, and private citizens subsequently filed suit in July 1987.

Although the Legislature has essentially ignored the demands of newer groups with respect to these issues, it has addressed broader water issues through the formulation of the 1980 Groundwater Management Act and the 1986 Environmental Quality Act. Both are strong regulatory
measures with potential to contribute to the protection of aquatic and riparian resources, but it is premature to judge their effectiveness at this time.

Additionally, the legislators are now debating the water transfer issue. They have forestalled hearing bills until an "unofficial ad hoc group" composed of representatives of "the cities, mines, agriculture, La Paz County and private water developers" reach a consensus (Arizona Daily Star, April 10, 1988). Noticeably absent from this group are the environmental and recreation identification groups identified in this case study, despite the fact the water transfer legislation could severely impact their future interests. The environmental community does not feel that their participation in this ad hoc group would ensure that their concerns would be adequately incorporated into policy (Smith 1988). Instead, they are waiting for the group to reach an agreement and will then issue their demands independently. This is one method of maintaining some control over the definition of a problem, and how it should be resolved.

While the state's elected officials seem relatively unresponsive to the new values and groups emerging in Arizona, a few state agencies are not. The agencies that have formally addressed river and wetland conservation, recreation and protection issues include the: Commission on the Arizona Environment and its predecessor agencies, Arizona State Parks Board, Arizona Outdoor Recreation Resources Commission, Arizona
Game and Fish Department and its Commission, Arizona Department of Environmental Quality (ADEQ) (formerly the Arizona Department of Health Services (ADHS), and the Arizona Department of Water Resources.

The first three agencies have, in virtue of their enabling legislation, studied river and wetland issues, formulated recommendations to other decision-makers, and generated management plans. The recommendations have with time recognized the need for the state to create regulatory and other types of policies to manage and protect aquatic and riparian habitats.

The last three agencies have various degrees of regulatory powers with respect to game and fish, water and environmental quality, and water supplies. The Game and Fish Department and the Department of Environmental Quality have begun to exercise their regulatory powers with respect to river and wetland issues. The Department of Water Resources seems more reluctant to do this.

In the past two decades, the Commission on the Arizona Environment (and its predecessors) has at four separate times issued recommendations relating to the protection of rivers and wetlands in Arizona. Each successive set of recommendations has been more stringent, specific, and extensive than the preceding set. However, the agency's recommendations almost always included the need for more studies and the formation of a study commission. The first two recommendations were issued in 1975:

Riparian vegetation should not necessarily be managed in the same manner as other more abundant vegetation communities.
Major vegetation management programs should be analyzed through the National Environmental Policy Act process and evaluated on a multiple use basis (Governor's Commission on Arizona Environment (GCAE) 1975).

Four years later the Commission formed the Ad Hoc Committee on Riparian Legislation, following the second failed attempt at securing statutory protection. After six working meetings the Committee made recommendations to the full Commission and the Governor (Appendix G-1). The principal recommendation was that the Governor establish a task force.

In 1983, the Commission issued nearly twice as many recommendations as it had in 1979 (Appendix G-2). These policy outputs also focused on the need for a riparian task force, more studies, and non-regulatory programs.

The most recent and most ambitious involvement by the Commission occurred over a fifteen-month period in 1987 and 1988 and culminated at its August 1988 summer conference, "Riparian Habitat: To Be or Not to Be?" Conference attendees and Commission members were presented with a report assessing the status, economic value, public opinion and solutions to the controversial issues associated with riparian areas in Arizona. On September 20, 1988 the Commission adopted recommendations based on the report and the comments of the attendees (Appendix G-3). In substance, they were quite similar to those issued in previous years.
During the same time period that the Commission undertook its riparian study, the State Parks Board initiated the **Arizona Rivers, Streams and Wetlands Study** as part of the 1988 Statewide Comprehensive Outdoor Recreation Plan. A natural areas study and a wetlands addendum to the 1983 Plan were also produced then, and addressed riparian habitat protection.

The purposes of the rivers and wetlands study were to: determine the role that streams and wetlands can play in meeting Arizona's growing recreational needs, identify problems pertaining to streams and wetlands recreation, and recommend actions that might be taken to enhance future recreational use of these resources (Tunnicliff and Wilkosz 1988).

Under the guidance of a twenty-one-member Study Core Group composed of federal and state land and resource agency personnel, members of environmental interest groups, and consumptive and non-consumptive recreational user groups, the study emerged as an inventory of existing information regarding stream and wetland resources and management and a "conceptual plan" for future management. Two of the more significant recommendations to evolve from this year-long study included the need for a state streams and wetlands policy (Appendix H), and the creation of a coordinated interagency management program, the "Arizona Streams and Wetlands Heritage Program."

The nearly simultaneous undertaking of the **Arizona Rivers, Streams and Wetlands Study** and the Commission on the Arizona Environment's riparian study provided an opportunity for coalition building. One
result was a "consensus" document that was presented to the Governor and the Legislature for the purpose of securing their participation in the agenda-building process (Appendix I). The three recommendations included in the consensus document are identical to those issued by the Commission in September 1988. The background paper accompanying the recommendations was changed slightly to reflect the broadened interest of the coalition (Thornburg 1988).

As the Commission on the Arizona Environment and the Arizona State Parks Board lack regulatory powers, the policy outputs emerging from these agencies' formal agendas have been primarily in the form of studies, plans, and recommendations. The Arizona Game and Fish Department also produces these types of outputs, but its limited regulatory powers allow it to do more.

In 1976, the agency filed the first application for an instream flow water right with the Arizona Land Department, formalizing its recognition for the need to protect surface water in order to protect riparian habitat. This action served to motivate the state water agency to utilize its regulatory powers for the benefit of another agency's constituency. This generated controversy in a state that operates through inside access agenda-building processes.

In 1987, the Arizona Game and Fish Commission (AGFC) established two administrative policies dealing directly with the protection of riparian habitat in Arizona. The Riparian Habitat Policy and the
Wildlife and Wildlife Compensation policy are both regulatory policies (Appendices J-1 and J-2) (AGFC 1987a, 1987b).

Similar to the Arizona Game and Fish Department, the Department of Health Services (now called the Department of Environmental Quality) also used its regulatory powers to foster river and wetland management and protection. In 1981 the Arizona Water Quality Control Council established a Unique Waters Program to protect high quality waters that are of "exceptional recreational or ecological significance" or that are "critical habitat for a threatened or endangered species which is historically or presently known to be associated with such waters" (ADHS 1981). The West Fork of the Little Colorado River and Oak Creek have been designated as Unique Waters. Three other streams -- Peoples Canyon Creek, Francis Creek, and Burro Creek -- are scheduled for designation in 1989. Through such programs this agency appears to be responding to the demands of less traditional groups.

While the Department of Environmental Quality has broad regulatory powers to manage water quality, the Department of Water Resources has similar powers to manage water supplies. Its major involvement in river and wetland protection and recreation issues has been through the instream flow permitting process. In 1983, the former Director of the Arizona Department of Water Resources (under the Babbitt administration) issued a Decision and Order approving the instream flow permits filed by the Arizona Nature Conservancy for Ramsey and O'Donnell Creeks (Dishlip 1987). The Decision was issued in response to the numerous protests
that had been filed challenging the legality of issuing water rights for non-diverted surface waters.

Efforts to formalize the instream flow permitting program began in April 1986 when the Game and Fish Department indicated that it had identified 188 stream sections with wildlife or recreational values as potential candidates for instream flow applications (Dishlip 1987). The Game and Fish Department requested that the Department of Water Resources publish standards and criteria for evaluating the applications, and offered to help in its development. Representatives of the Bureau of Land Management, Bureau of Reclamation, and the Forest Service had also offered to lend their assistance.

In December 1986, the Department established an instream flow task force to resolve technical, legal, and policy considerations, stalling the promulgation of rules for a permitting process. The task force consisted mostly of representatives from state and federal agencies, but there were also representatives from the Attorney General's Office, Department of Interior, Arizona State University, the Salt River Project, the Arizona Nature Conservancy, and Pima County Transportation and Flood Control District. Biological and hydrological subcommittees were formed within the task force to resolve the more technical questions. The biological subcommittee, composed primarily of Arizona Riparian Council members, issued their report to
the task force in early summer of that year. The hydrological subcommittee has yet to complete the final draft of its report.

With many groups to respond to, the Deputy Director of the agency does not share the same level of concern about instream flow water rights as environmental and recreational groups and other state and federal natural resource management agencies:

The Office of Water Management for which I have the responsibility of directing is faced with many crucial issues in addition to instream flows. Our highest priority had to be set for the preparation of the Second Management Plans by early next year and the enforcement of the First Management Plans. In addition to these efforts there are a number of rule packages relating to the implementations of the Groundwater Code which were long overdue. With limited staff and resources available some priorities had to be established and in the overall scheme of things I felt that surface water rules including instream flow rules would simply have to be postponed (Dishlip 1987).

The agency intended to promulgate rules for the instream flow permitting process by the end of 1988. This has not yet occurred. As of January 1988, a total of 39 instream flow applications had been filed with the Department (Appendix K).

The controversy surrounding instream flow water rights in Arizona is tied to a decision issued by the state judiciary in 1976. In McClellan v. Jantzen (26 Ariz. App. 223), the Arizona Court of Appeals recognized recreation and fishing as beneficial uses of surface water that did not require diversion for an appropriation. (The legislators have yet to amend the state water code to reflect this decision.)
Decision-makers in the state judiciary will have an even greater role in shaping the future of river and wetland issues through the general stream adjudications. The purpose of a comprehensive stream adjudication is to determine the nature, priority, and extent of every existing user's water right. These rights have been established through several pieces of legislation and numerous court decrees (Arizona Water Information Center 1986). Decisions made concerning issues like groundwater-surface water interactions (conjunctive use) and the quantification of federal reserved water rights could profoundly impact Arizona's remaining rivers, wetlands, and riparian habitats.

Summary

This chapter described and analyzed the expansion of river and wetland conservation and preservation issues in the 1970s and 1980s. The major objectives were to examine the level and methods of group participation relating to these issues and to assess the degree to which government is responding to group demands.

The case study presented demographic, economic, and recreation participation data that collectively indicate that Arizona is undergoing a period of transition. Where the state was once predominantly rural, it is now heavily urbanized, and the population continues to climb. Its economic structure has been affected by this rural-to-urban transition. The economic contributions of manufacturing and tourism now surpass the contributions made by more traditional, commodity-oriented activities.
Recreation expenditures represent a significant portion of the tourism trade. Participation in virtually all forms of recreation are on the increase, and many of these recreational activities are dependent, to various degrees, on the presence of water.

There is also evidence that the state is experiencing a shift and diversification of the values held by groups about natural resources, including rivers and wetlands. Where Arizonans once believed that resources should be used primarily to foster economic growth, there are now many people in the state who feel a need for government to conserve and protect land, water, and wildlife for multiple or non-utilitarian purposes. In some areas of the state, however, values are highly polarized with respect to these issues, making political solutions difficult to achieve.

That the state is undergoing a political transition is further evidenced by the growth and diversification of the number of groups with potential for direct involvement in river and wetland issues. The discussion of groups included examples of special issue groups and attention groups, and described why and how they have participated in agenda building. The attentive public's exposure to river and wetland issues appears to be limited to water quantity and water quality issues, with the latter being increasingly important. The need for increased management and protection of aquatic and riparian resources has not yet been recognized by the media as a problem in its own right. In
addition, the research showed that trigger mechanisms can catalyze the involvement of the general public, revive nearly dead issues, and incite decision-makers to act. Floods were important catalysts for shaping formal and decision agendas in the past two decades. In Phoenix they were used to justify the development of more water development projects, while in Tucson they prompted decision-makers to create programs to purchase floodprone lands.

The chapter concluded with a discussion of how the federal and Arizona state governments are responding to changing values and group demands.

Two of the three federal statutes created in the 1980s target rivers in need of protection, but fail to adequately protect the areas from impacts resulting from future surface water diversions and groundwater withdrawals. The third statute is of a more regulatory nature, but it may fall short of expectations for lack of a secure source of funding. It is still too early to assess the political impact of the riparian management policies established by the two federal agencies with the greatest land management responsibility in Arizona. The federal courts have been relatively responsive to the demands of newer groups with respect to decisions made concerning reserved water rights on public lands, but these gains have been minimized through the actions of an unsupportive administration.

Issue expansion at the state level of government in the 1980s resulted, in part, from the support of the Executive. The Governor's
support was more symbolic than substantive, however, as he did not
establish any new management or protection policies. The state
legislators have been relatively unresponsive to the demands of newer
groups as evidenced by their issuance of pseudo agenda items. While
most elected officials seem to be ignoring the new values and groups
emerging in Arizona, a few state agencies are not. Yet those agencies
that have been the most responsive to the demands of the newer groups
lack the regulatory powers needed to implement their policy
recommendations and management plans. The agencies with powers to
regulate are responding to various degrees with programs and policies of
their own, but the agency charged with managing the water supplies of
the state and establishing an instream flow permitting program appears
to be less responsive than other state administrative agencies.
CHAPTER 5

CONCLUSIONS

This case study of the initiation and development of river and wetland conservation and preservation issues in Arizona was undertaken for two purposes; to refine and clarify existing models of agenda building and to provide the public and decision-makers with new insight on an increasingly controversial and complex issue. The former purpose can provide a better understanding of the policy-making process, while the latter can contribute to more equitable and effective policy. The research was intended to achieve these objectives by: (a) highlighting the amount of sensitivity and foresight present in government; (b) fostering the ability to foresee unanticipated effects of policies; and (c) identifying the linkage (or lack thereof) between public participation and governance. I used theories and observations from the literature on agenda-building, public policy, and historic western and Arizona water politics to design a set of questions that would accomplish these objectives:

Using the concepts of initiators and trigger mechanisms, how were river and wetland conservation and preservation issues generated in Arizona?

Do groups favoring water development policies still use inside access strategies to achieve formal agenda status for their demands?

What agenda-building model describes the strategies used by newer groups pressuring for river and wetland conservation and
preservation policies to achieve formal agenda status for their demands?

How does the institutional structure of Arizona government affect what agenda-building strategies are used, and the policies that result?

The first question was intended to examine how crises have influenced the development of river and wetland issues, and to provide a historical perspective on the long-term effects of crisis-generated policies. The case study provided evidence of the need to develop foresight to deal with long-term, intangible and complex problems before they become acute, and sufficient reason to contemplate the unanticipated effects of future policies that might irreversibly damage the state's remaining streams and wetlands.

The research suggested that in an arid region so precariously balanced on a finite and fluctuating water supply, trigger mechanisms such as floods and droughts are easily captured by initiators to swing policy in a direction favorable to their value system. Public sentiment can be swayed when the policy proposal promises to prevent the disastrous consequences of the crisis from recurring.

Floods and droughts served as catalysts for the creation of the federal reclamation and flood control policies that led to the alteration and destruction of most of America's free-flowing rivers and many of its wetlands. The series of severe floods and droughts that hit the West prior to the turn of the century were used by agricultural and
business interests to justify the need for a federally subsidized water control and delivery system.

Trigger mechanisms also helped to catalyze the generation of an idea for another type of water development proposal during World War II. A severe drought, in combination with wartime demands for commodity resources, were used by the mining industry to justify its proposal to initiate a phreatophyte removal program to increase water yield. The idea was quickly adopted by other groups who also sought water for development needs. Large tracts of riparian habitat were subsequently destroyed. This practice soon generated a reaction from sportsmen and game resource managers.

The idea to protect rivers, wetlands, and riparian habitat in Arizona developed in the midst of the phreatophyte controversy. Several different types of groups began to get involved. Scientists were beginning to express concern over the disappearance of native fishes and the loss of riparian habitat. Environmental groups were beginning to establish themselves in the state. They had already blocked the construction of one major dam in Colorado, and were on their way to winning another battle over the damming of the Colorado River in Grand Canyon and to establishing a federal river protection policy. Non-consumptive recreationists were being presented with the state's first outdoor recreation plan which included a recommendation for a state river protection policy.
State government did not really respond to group demands until two trigger mechanisms (the accidental spraying of herbicide at Globe, Arizona and a dramatic decrease in the bag limit of the white winged dove) directly threatened the health or economic well being of some Arizona communities. These trigger mechanisms prompted some agencies to place river and wetland issues on their formal agendas.

In addition to determining how trigger mechanisms influenced the placement of these issues on systemic and formal agendas, I also attempted to identify the degree of linkage between public participation and governance. This was the purpose of the second question and third questions concerning the inside access and outside initiative agenda-building models. The first model was intended to apply to societies characterized by a high concentration of wealth and status and to highly technical issues. Issues attain formal agenda status immediately, and are purposefully contained by the groups and agencies proposing a policy. Hence, public participation is minimal and the linkage between participation and governance is weak. The outside access model, on the other hand, was intended to apply to egalitarian societies. Issues achieve formal agenda status by first being placed on the systemic agenda and gradually expanding to successively larger publics until decision-makers decide to act. Because numerous groups can be involved in the outside initiative process, the linkage between participation and governance is potentially strong.
With one exception, these models were generally adequate to describe the agenda-building processes associated with the issues examined in the case study. The inside access model best described the politics historically and still used by commodity- and growth-oriented groups seeking to develop surface and ground waters. This model also described the politics used by environmental, recreation, scientific and other groups in Arizona to achieve policy gains through the administrative branch of state government. The outside initiative model best described the politics accompanying the defeat of proposed water development projects at the federal and state levels of government.

Neither of these models, however, adequately described the agenda-building processes accompanying the transition of river and wetland issues from the systemic agenda to the formal agenda. While it might be argued that some groups (such as hunters and game and fish managers) used inside access strategies, they did not attempt to contain the issue from further public debate. This precluded applying the inside access model. The outside initiative model was not applicable because the issues did not achieve formal agenda status through a process of issue expansion. Instead, the identification groups independently, but nearly simultaneously appealed to state government for help. Cook's (1981) convergent voice model best described this situation that resulted in the late 1960s.

The debate over the conservation and protection of rivers and wetlands is still largely confined to these identification groups.
These groups have not realized their collective political power and have not been able to expand the issue because of differences in opinion on questions of recreational use and access, political strategies, and organizational problems. There are, however, some indications that coalitions are beginning to form. Outside initiative agenda-building strategies may be needed to expand the issue to motivate decision-makers to act unless trigger mechanisms again converge to catalyze social change.

Whether issue expansion has been hindered because of the inherent complexity of river and wetland conflicts or because of the institutional structure of Arizona state government was explored through the fourth question. It was intended to examine how the structure of government might favor certain agenda-building processes and issues to the exclusion of others and encourage or inhibit public participation. It was also used to examine government's sensitivity to groups seeking to institutionalize new values in Arizona.

The case study suggested that the institutional structure of government has much to do with agenda-building politics and the resulting policies. Arizona administrative government was purposefully designed to foster close ties between natural resource management agencies and their constituency groups. This system seems to reinforce inside access processes and to hinder government's ability to respond to
demands from newer groups by protecting the economic and political status of traditional clienteles.

As the population of Arizona has grown and become increasingly urban, the number and diversity of groups with potential to benefit from changes in river and wetland management policies has increased. State government is responding to demands from newer groups, although formal agendas are not equally receptive to institutional change. It appears that the federal government is responding more uniformly to the demands of these newer groups indicating that the nation as a whole is more progressive, with respect to these issues, than the state.

At the state level, administrative agencies appear to be the most "sensitive" of the four decision-making arenas. As employment in the administrative branch is the most accessible to professionals from other regions of the country with ideologies not traditionally Arizonan, it is natural that this would be the first branch of government to respond to new ideas on the systemic agenda of a transitional society. The degree of sensitivity among these agencies varies however. This is because they possess various degrees of regulatory powers, various mandates, and the agencies are tied to clientele groups with various degrees of organizational, economic, and political powers.

Another institutional barrier to resolving these issues exists because water, the natural resource at the heart of the river and wetland controversy, often transcends jurisdictional and administrative boundaries. Flowing waters care not whether they happen to be on
federal, state, local, tribal, or private lands, or whether they are simultaneously the home for fishes, play area for recreationists, and water supply for cities, livestock, crops, and industry. Equitable and effective policy solutions are difficult to formulate and implement when management cannot be coordinated for lack of a single receptive institution or due to conflicting administrative mandates.

The research also indicated that elected officials are more firmly entrenched in traditional Arizona values than administrative officials and less receptive to value change. Legislators have avoided dealing with the highly controversial issues of instream flow and riparian habitat protection except through pseudo agenda items.

In Arizona, as in other Western states, the issue of river and wetland conservation and protection hinges, to a great degree, on securing water rights for non-commodity uses. Because elected decision-makers refuse to act, and administrative decision-makers lack the powers and organizational structure to do so, the fate of most of these water rights will be ultimately settled in the general stream adjudications of the state judicial arena. This decision-making arena provides limited opportunities for public participation.
With these conclusions in mind, recall that in the beginning of this thesis I stated that studies of agenda-building should identify the types of issues receiving the attention and action of governmental decision-makers. This case study suggests that in Arizona elected governmental decision-makers are reluctant to deal with controversial issues and relatively insensitive to groups that initiate issues signifying value change. State administrative decision-makers have great difficulty dealing with issues that transcend their jurisdictions. These are two reasons why it has taken so long for river and wetland conservation and preservation policies to be established and why the state courts have taken such a prominent role. Because these issues are also exceedingly complex and are only beginning to be discussed among the identification groups that have been most concerned with their resolution, it may take considerably more time before a broadly supported policy alternative is proposed and subsequently institutionalized into statewide policy. Considering that as little as five percent of the state's original riparian habitat remains and that land and water development pressures are only increasing, the question that should be asked is whether the resources can wait for the policy. Alternative decision-making forums that incorporate the concerns of the multiple management entities and affected groups should be considered to expedite the generation of an effective and equitable solution.
APPENDIX A

DEMOGRAPHIC TRENDS

1975 to 1980

<table>
<thead>
<tr>
<th>State</th>
<th>In-State</th>
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<th>Net Migration</th>
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<tr>
<td>Illinois</td>
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<td>New York</td>
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1980 to 1985

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*No data for 1973-78 and 1985-86.
APPENDIX C

RECREATION TRENDS
Riparian Areas Included in Appendix C-5

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<th>State Parks</th>
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<td>Glen Canyon</td>
<td>Havasu</td>
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<tr>
<td>Buckskin</td>
<td>Grand Canyon</td>
<td>Imperial</td>
</tr>
<tr>
<td>Catalina*</td>
<td>Lake Mead</td>
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</tr>
<tr>
<td>Dead Horse Ranch*</td>
<td>Montezuma Castle</td>
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</tr>
<tr>
<td>Lake Havasu</td>
<td>Organ Pipe Cactus</td>
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<td>Lyman Lake</td>
<td>Tuzigoot</td>
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<td>Painted Rocks</td>
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<td>Patagonia Lake*</td>
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<td>Roper Lake*</td>
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* These State Parks were not in existence for the total duration of the time period shown in the graph.

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<td>Arizona Floodplain Management Association</td>
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Appendix D -- Continued

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<td>Canelo Hills Cienega</td>
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<tr>
<td>Ramsey Canyon</td>
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<tr>
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<td>Hassayampa River Preserve</td>
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<td>Aravaipa Canyon</td>
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<td>Portal Preserve</td>
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Cooperative Projects

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<td>Leslie Spring (USFWS)</td>
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APPENDIX F

RIPARIAN PROTECTION BILLS INTRODUCED INTO THE
ARIZONA HOUSE OF REPRESENTATIVES
APPENDIX F-1

SENATE BILL 1049 (1974)
AN ACT

RELATING TO PUBLIC LANDS; PROVIDING FOR PROTECTION OF WATERCOURSES AND RIPARIAN ENVIRONMENT BY STATE LAND COMMISSIONER; PRESCRIBING POWERS, DUTIES AND PROCEDURES, AND AMENDING TITLE 37, ARIZONA REVISED STATUTES, BY ADDING CHAPTER 5, ARTICLE 1.

1 Be it enacted by the Legislature of the State of Arizona:
2 Section 1. Title 37, Arizona Revised Statutes, is amended by adding chapter 5, article 1, to read:

CHAPTER 5
WATERCOURSE AND RIPARIAN
ENVIRONMENT PROTECTION

ARTICLE 1. GENERAL PROVISIONS

37-901. Definitions

IN THIS ARTICLE, UNLESS THE CONTEXT OTHERWISE REQUIRES:
1. "ALTER" MEANS TO CHANGE OR MODIFY IN ANY WAY THE CHANNEL, FLOW, QUALITY OR QUANTITY OF ANY WATERCOURSE OR TO CHANGE OR MODIFY IN ANY WAY THE RIPARIAN ENVIRONMENT.
2. "APPLICANT" MEANS ANY INDIVIDUAL, PARTNERSHIP, COMPANY, CORPORATION, MUNICIPALITY, COUNTY, STATE OR FEDERAL AGENCY OR OTHER ENTITY.
3. "COMMISSIONER" MEANS THE COMMISSIONER OF THE STATE LAND DEPARTMENT.
4. "DEPARTMENT" MEANS THE STATE LAND DEPARTMENT.
5. "PLANS" MEANS MAPS, SKETCHES, ENGINEERING DRAWINGS, WORD DESCRIPTIONS AND SPECIFICATIONS SUFFICIENT TO DESCRIBE THE EXTENT, NATURE AND LOCATION OF THE PROPOSED ALTERATION AND THE PROPOSED METHOD OF ACCOMPLISHING SUCH ALTERATION.
6. "RIPARIAN ENVIRONMENT" MEANS THE VEGETATIVE COMMUNITY ADJACENT TO OR DEPENDENT ON THE WATERCOURSE.
7. "WATERCOURSE" MEANS ANY LAKE, RIVER, CREEK, STREAM, WASH, ARROYO, CHANNEL OR OTHER BODY OF WATER HAVING BANKS AND BED THROUGH WHICH WATERS FLOW OR HAVE FLOWED AT LEAST PERIODICALLY.

37-902. Alteration of watercourse or riparian environment; permit; application

NO PERSON SHALL ENGAGE IN ANY PROJECT OR ACTIVITY WHICH WILL ALTER A WATERCOURSE OR RIPARIAN ENVIRONMENT WITHOUT FIRST APPLYING TO AND RECEIVING A PERMIT THEREFOR FROM THE DEPARTMENT. SUCH APPLICATION SHALL BE SUBMITTED NOT LESS THAN NINETY DAYS PRIOR TO THE INTENDED DATE OF COMMENCEMENT OF CONSTRUCTION OF SUCH ALTERATION AND SHALL BE UPON FORMS TO BE FURNISHED BY THE DEPARTMENT OR IN SUCH OTHER FORM AS DEEMED APPROPRIATE BY MEMORANDUM OF AGREEMENT WITH OTHER STATE AND FEDERAL AGENCIES AND SHALL BE ACCOMPANIED BY PLANS OF THE PROPOSED ALTERATION.

37-903. Application consideration; report from other agencies; hearing

A. UPON THE RECEIPT OF ANY PERMIT APPLICATION ACCOMPANYING PLANS THE COMMISSIONER SHALL EXAMINE AND FURNISH COPIES OF THE APPLICATION AND PLANS TO, AND CONSULT WITH, OTHER STATE AGENCIES HAVING AN INTEREST IN THE WATERCOURSE OR RIPARIAN ENVIRONMENT TO DETERMINE THE LIKELY EFFECT OF THE PROPOSED ALTERATION UPON THE FISH AND WILDLIFE HABITAT, AQUATIC LIFE, RECREATION, AESTHETIC BEAUTY AND WATER QUALITY VALUES OF THE WATERCOURSE.

B. WITHIN THIRTY DAYS OF THE RECEIPT OF COPIES OF SUCH APPLICATION AND PLANS FROM THE DEPARTMENT, SUCH OTHER STATE AGENCIES SHALL NOTIFY THE COMMISSIONER WHETHER THE PROPOSED ALTERATION WILL HAVE AN UNREASONABLY DETRIMENTAL EFFECT UPON THESE VALUES AND SHALL INCLUDE WITH SUCH NOTIFICATION ANY RECOMMENDATIONS FOR ALTERNATE PLANS DETERMINED BY SUCH AGENCY TO BE REASONABLE TO ACCOMPLISH THE PURPOSE OF THE PROPOSED WATERCOURSE ALTERATION WITHOUT ADVERSELY AFFECTING SUCH VALUES.

C. IF THE COMMISSIONER OR ANY OF THE CONSULTING STATE AGENCIES BELIEVE THE PROPOSED ALTERATION WILL HAVE A SIGNIFICANT ENVIRONMENTAL IMPACT, THEN A PUBLIC HEARING WILL BE SCHEDULED, AND NOTICE THEREOF PUBLISHED AT LEAST TEN DAYS PRIOR TO THE MEETING IN A NEWSPAPER OF GENERAL CIRCULATION IN THE COUNTY WHERE THE PROPOSED ALTERATION IS LOCATED.

37-904. Proposed decision and recommendations; applicant refusal to modify; hearing; appeal

A. BASED UPON HIS OWN INVESTIGATION AND THE RECOMMENDATIONS AND ALTERNATE PLANS OF OTHER STATE AGENCIES, AND THE HEARING RECORD, IF A HEARING WAS HELD PURSUANT TO SECTION 37-903, THE COMMISSIONER SHALL PREPARE AND FORWARD TO THE APPLICANT HIS PROPOSED DECISION.
B. Within fifteen days of the date of mailing of the proposed decision, the applicant shall notify the commissioner if it refuses to modify its plans in accordance with such recommendations or that it requests a hearing thereon.

C. Such hearing shall be held pursuant to the provisions of Title 41, Chapter 6, Article 1.

D. Upon the conclusion of the hearing and completion of any investigation conducted by the department or upon failure of an applicant to notify the department of its agreement to modify its plans in accordance with the proposed decision, the commissioner shall enter his findings in writing, approving the application and plans in whole or in part, or upon conditions, or reject such application and plans for such proposed watercourse alteration.

E. Any applicant or other person appearing at such hearing shall have the right of judicial review pursuant to the provisions of Title 12, Chapter 7, Article 6.

37-906. Violations; penalties; abatement; injunction

A. Any person who violates any of the provisions of this article, or any order or condition of approval which has been served upon such person by certified mail and such person fails to comply therewith within the time therein provided, or within ten days of such service if not otherwise provided, is guilty of a misdemeanor punishable by a fine of not less than one hundred fifty dollars nor more than five hundred dollars. Each day of such violation shall constitute a separate offense.

B. Any alteration engaged in by any person without approval having been obtained therefor as prescribed in this article is declared to be a public nuisance and shall be subject to proceedings for immediate abatement. The commissioner shall seek a temporary injunction from the appropriate superior court to restrain the proposed alteration until approval therefor has been obtained by the applicant as provided in this article.

37-907. Restoration of watercourse or riparian environment

Any person convicted of unlawful alteration shall, in addition to the penalties provided for in section 37-906, be directed by the court to restore the watercourse or riparian environment to as near its original condition as possible or to effect such other measures as recommended by the commissioner toward mitigation of damages.
APPENDIX F-2

HOUSE BILL 2326 (1978)
AN ACT

RELATING TO COUNTIES; AUTHORIZING BOARD OF SUPERVISORS TO ADOPT STANDARDS FOR PROTECTION OF WATERCOURSES AND RIPARIAN ENVIRONMENT FROM DETRIMENTAL EFFECT; AMENDING SECTION 11-251, ARIZONA REVISED STATUTES, AS AMENDED BY LAWS 1977, CHAPTER 110, SECTION 1 AND CHAPTER 133, SECTION 1, AND REPEALING SECTION 11-251, ARIZONA REVISED STATUTES, AS AMENDED BY LAWS 1977, CHAPTER 159, SECTION 3.

Be it enacted by the Legislature of the State of Arizona:

Section 1. Section 11-251, Arizona Revised Statutes, as amended by laws 1977, chapter 110, section 1 and chapter 133, section 1, is amended to read:

11-251. Powers of board

The board of supervisors, under such limitations and restrictions as are prescribed by law, may:

1. Supervise the official conduct of all county officers and officers of all districts and other subdivisions of the county charged with assessing, collecting, safekeeping, managing or disbursing the public revenues, see that such officers faithfully perform their duties, direct prosecutions for delinquencies, and, when necessary, require the officers to renew their official bonds, make reports and present their books and accounts for inspection.

2. Divide the counties into such districts or precincts as required by law, change them and create others as convenience requires.

3. Establish, abolish and change election precincts, appoint inspectors and judges of elections, canvass election returns, declare the result and issue certificates thereof.

4. Lay out, maintain, control and manage public roads, ferries and bridges within the county and levy such tax therefor as may be authorized by law.
5. Provide for the care and maintenance of the indigent sick of the county, erect and maintain hospitals therefor and, in their discretion, provide a farm in connection with the county hospital and adopt regulations for working the farm.

6. Provide suitable rooms for county purposes.

7. Purchase, receive by donation or lease real or personal property necessary for the use of the county prison and take care of, manage and control it, but no purchase of real property shall be made unless the value has been previously estimated by three disinterested citizens of the county, appointed by the board for that purpose, and no more than the appraised value shall be paid therefor.

8. Cause to be erected and furnished a courthouse, jail, hospital and such other buildings as necessary, and construct and establish a branch jail, when necessary, at a point distant from the county seat.

9. Sell at public auction, after thirty days' previous notice given by publication in a newspaper of the county, stating the time and place of the auction, and convey to the highest bidder, for cash or contract of purchase extending not more than five years from date of sale and upon such terms and conditions and for such consideration as the board shall prescribe, any property belonging to the county which the board deems advantageous for the county to sell, or which the board deems unnecessary for use by the county, and shall pay the proceeds thereof into the county treasury for use of the county, except that personal property need not be sold but may be used as a trade-in on the purchase of personal property when the board deems this disposition of the personal property to be in the best interests of the county.

When the property for sale is real property, the board shall have such property appraised by a practicing attorney, a licensed real estate broker and a qualified employee of a bank or title and trust company dealing in real property transactions. They shall establish a minimum price which shall in no instance be less than ninety per cent of the appraised value. The notice regarding the sale of real property shall be published in the county where the property is situated and may be published in one or more other counties, and shall contain, among other things, the appraised value, the minimum acceptable sale price, and the common and legal description of the real property.

10. Examine and exhibit the accounts of all officers having the care, management, collection or disbursement of money belonging to the county or appropriated by law or otherwise for the use and benefit of the county.

11. Examine, settle and allow all accounts legally chargeable against the county, order warrants to be drawn on the county treasurer therefor and provide for issuing the warrants.

12. Levy such tax annually on the taxable property of the county as may be necessary to defray the general current expenses thereof, including salaries otherwise unprovided for, not exceeding two dollars on every one hundred dollars of value for any one year, and levy such other taxes as are required to be levied by law.
14. Direct and control the prosecution and defense of all
actions to which the county is a party, and compromise them.
15. Insure the county buildings in the name of and for the
benefit of the county.
16. Fill by appointment all vacancies occurring in county or
precinct offices.
17. Adopt provisions necessary to preserve the health of the
county, and provide for the expenses thereof.
18. Contract for county printing and advertising, and provide
books and stationery for county officers.
19. Provide for rebinding county records, or, if necessary, the
transcribing of county records.
20. Make and enforce necessary rules and regulations for the
government of their body, the preservation of order and transaction
of business.
21. Adopt a seal for the board, a description and impression of
which shall be filed by the clerk in the office of the county recorder,
and the secretary of state.
22. Establish, maintain and conduct, or aid in establishing,
maintaining and conducting public aviation fields, purchase, receive
by donation or lease any property necessary therefor, lease, at a nominal
rental if desired, sell such aviation fields or property to the United
States or any department thereof, or sell or lease such aviation fields
to a city, exchange lands acquired pursuant to this section for other
lands, or act in conjunction with the United States in maintaining,
managing and conducting all thereof, and, when any such property or part
thereof is not needed for the purposes herein mentioned, it shall be sold
by the board and the proceeds paid into the general fund of the county.
23. Acquire and hold property for the use of county fairs, and
conduct, take care of and manage them.
24. Authorize the sheriff to offer a reward, not exceeding ten
thousand dollars in one case, for information leading to the arrest and
conviction of persons charged with crime.
25. Contract for the transportation of insane persons to the
state hospital, or direct the sheriff to transport such persons and
allow the expenses thereof.
26. Bury deceased indigents and mark their graves with a stone,
giving the name, age and date of death.
27. Sell or grant to the United States the title or interest
of the county in any toll road or toll train in or partly within a
national park, upon such terms and consideration as may be agreed upon
by the board and the secretary of the interior of the United States.
28. Enter into agreements for acquiring rights-of-way, construc-
tion, reconstruction or maintenance of highways in their respective
counties with the government of the United States, acting through its
duly authorized officers or agents pursuant to any act of congress, and
any such agreements entered into prior to June 26, 1952 are validated
and confirmed.
29. Do and perform all other acts and things necessary to the full discharge of its duties as the legislative authority of the county government.

30. Make and enforce all local, police, sanitary and other regulations not in conflict with general law.

31. Budget for funds for foster home care during the school week for mentally retarded and otherwise handicapped children who reside within the county and attend a school for the handicapped in a city or town within such county.

32. Do and perform all acts necessary to enable the county to participate in the "economic opportunity act of 1964" (P.L. 88-452; 78 Stat. 508, as amended).

33. Provide a plan or plans for their employees which provide tax deferred annuity and deferred compensation plans as authorized pursuant to title 26, United States Code Annotated. Such plans shall allow voluntary participation by all employees of the county. Participating employees shall authorize the board to make reductions in their remuneration as provided in an executed deferred compensation agreement.

34. Adopt and enforce standards for shielding and filtration of commercial or public outdoor portable or permanent light fixtures in proximity to astronomical or meteorological laboratories.

35. Subject to the prohibitions, restrictions and limitations as set forth in section 11-830, adopt and enforce standards for excavation, landfill and grading to prevent unnecessary loss from erosion, flooding and landslides.

36. Make and enforce necessary rules and regulations for the operation and licensing of any establishment not in the limits of an incorporated city or town in which is carried on the business of providing baths, showers or other forms of hydrotherapy or any service of manual massage of the human body.

37. Provide pecuniary compensation as salary or wages for overtime work performed by county employees, including those employees covered by the provisions of title 23, chapter 2, article 9. In so providing, the board may establish salary and wage plans incorporating classifications and conditions prescribed by the federal fair labor standards act.

38. ESTABLISH, MAINTAIN AND OPERATE MEDICAL CLINICS AS DEFINED IN TITLE 36, CHAPTER 24, ARTICLE 1.

39. SUBJECT TO THE PROHIBITIONS, RESTRICTIONS AND LIMITATIONS AS SET FORTH IN SECTION 11-830, ADOPT AND ENFORCE STANDARDS FOR PROTECTION OF WATERCOURSES AND RIPARIAN ENVIRONMENT FROM ANY UNREASONABLE DETRIMENTAL EFFECT.

Sec. 2. Repeal

Section 11-251, Arizona Revised Statutes, as amended by Laws 1977, chapter 159, section 3, is repealed.
APPENDIX G

RECOMMENDATIONS ISSUED BY THE COMMISSION ON THE ARIZONA ENVIRONMENT AND PREDECESSOR AGENCIES REGARDING RIPARIAN HABITAT PROTECTION

That the governor establish a task force on riparian policy and that charges to that task force include: (1) develop definitions and criteria for riparian habitats in Arizona, to include evaluations of existing inventories; (2) authorize and implement a study to clarify the complex legal and jurisdictional tangle relating to riparian zones; (3) establish priorities for preservation or conservation of riparian communities in Arizona; (4) initiate a program in public awareness of the ecological significance and beneficial uses of riparian environments; (5) encourage research in riparian environments and identify means to fund and initiate that research; and finally (6) make recommendations concerning policy and legislation necessary to preserve, enhance, and restore riparian communities and provide effective and feasible management regulations.

The Governor's Commission on Arizona Environment strongly supports the formation of a Governor's Task Force on riparian areas. The task force should be made up of technical experts, users of riparian areas and local residents. The development of local concern groups should be encouraged and supported by the task force.

Recreation and riparian habitat should be recognized as uses of water and given a value in water policy planning, with the same recognition designated to other state state planning (education, transportation, and recreation).

Land exchange by the Arizona State Land Department which serve to protect riparian habitat should be supported.

Maintenance of riparian habitats should be supported through emphasis on cooperative efforts between state, federal, and local government agencies and private entities.

The non-game wildlife check-off on state tax forms should be continued. Part of these funds should be allocated for protection of riparian habitat.

Develop a definition of riparian habitat for use throughout Arizona.

Identify and integrate existing inventories of riparian areas in Arizona, identify information gaps, and determine how much riparian areas exist, where they are, who manages them, and what condition they are in. The Natural Heritage program in the Arizona Game and Fish Department may be the logical place to conduct this activity. The Arizona State Parks Natural Areas Program information should be used in this integrated inventory.

Investigate and document the legal bases in Arizona and other states for protection, controlling, and enhancing riparian habitats.

Develop a state system to evaluate and prioritize riparian habitats for protection and appropriate uses, and recommend management practices.
Appendix G-2 -- Continued

Develop recommendations addressing the teaching of riparian resource conservation as part of environmental education.

Identify needs for further research, including:
- Techniques to improve existing riparian habitat and establish new riparian habitats.
- Relationships between increased water yields and the condition of riparian habitat.
- Dynamics of riparian habitat.

Develop a state policy on riparian habitat management to guide federal, state, local and private actions.

Recognize and support exchanges of State Trust lands containing riparian habitat for non-riparian federal lands. (This is currently being done and should be continued.)

Develop incentives for the appropriate management of privately owned riparian habitats including conservation easements, land exchanges, tax credits.

Develop recommended legislation and regulations to carry out the state riparian habitat management policy and establish incentives.

Identify enforcement needs to protect riparian areas.

Encourage cooperation between Arizona's Indian nations and the State of Arizona in the management of riparian habitat consistently and provide assistance as appropriate.

Because the Commission finds that riparian resources are necessary to preserve the economic stability and the quality of life in this state, we urge the Governor to issue an Executive order that would require state agencies to consider the principles of preservation and, when appropriate, mitigation of the adverse impacts on or restoration of riparian resources in their decisions, actions, regulations and funding.

Because the Commission finds that the effective preservation of riparian resources requires the initiative and cooperation of the Legislature, we urge the Legislature to enact a concurrent resolution establishing a Legislative Committee on Riparian Resource Protection which shall include members of both houses, representatives of appropriate state agencies and user interest groups. Members of the committee are to be chosen jointly by the President of the Senate and the Speaker of the House. The committee shall consider, among other things:

A. Development of mechanisms, including legislation if required, for the acquisition, protection and management of riparian resources on public and private lands.
B. A means of encouraging the use of common terminology, definitions and inventory data.
C. A means of encouraging cooperation among local, state and Federal agencies that have jurisdiction over riparian management, utilization, protection and regulation.
D. Establishment of minimum in-stream flow standards where appropriate.
E. Facilitation of the development and implementation of educational programs to increase knowledge of and sensitivity to riparian resource issues.

The Commission urges the Governor to designate November 15-20 as "State Streams and Riparian Resources Week," to create awareness of the values of stream and riparian resources and provide focus on the many events planned for the week.

The State of Arizona finds that the well-being and quality of life of its citizens depends on achieving and maintaining an equitable balance among competing uses of the state's streams and wetlands, while maintaining the natural integrity of these resources. This balance must:

Recognize the traditional and changing interests in uses of streams and wetlands.

Recognize that the conservation and wise-use of stream and wetland resources is in the best interest of all citizens of the state.

Conserve stream and wetland waters for water-based recreational uses and for fish and wildlife habitat.

Restore degraded streams and wetlands for future generations to use and enjoy.

Expand and promote stream- and wetland-based recreational opportunities.

Identify and conserve critical recreation, habitat, water quality, and instream flow water values of the state's streams and wetlands.

Further, to provide for this balance of uses the state will:

Foster an atmosphere conducive to communication and cooperation among competing stream and wetland users so that an equitable allocation of these finite resources can be achieved.

Provide guidance and authority for consistent and coordinated management of streams and wetlands.

The following recommendations are a consensus -- of the Commission on the Arizona Environment, the Arizona State Parks' Rivers, Streams, & Wetlands Study (SCORP 1989), and the Arizona Riparian Council -- of the strategies needed to address this critical issue. To facilitate the accomplishments of statewide recognition, protection, and proper utilization of Arizona's stream and riparian resources, the following recommendations are submitted:

I. Because it has been found that stream and riparian resources are necessary to preserve the economic stability and the quality of life in this state, the Governor is urged to issue an Executive Order that would require state agencies to consider the principles of preservation and, when appropriate, mitigation of the adverse impacts on or restoration of stream and riparian resources in their decisions, actions, regulations, and funding.

II. Because it has been found that the effective preservation of stream and riparian resources requires the initiative and cooperation of the Legislature, the Legislature is urged to enact a concurrent resolution establishing a Legislative Committee on Stream and Riparian Resource Protection which shall include members of both legislative houses, representatives of appropriate state agencies and user interest groups. Members of the Committee are to be chosen jointly by the President of the Senate and Speaker of the House. The Committee shall consider, among other things:

A. Development of mechanisms, including legislation if required, for the acquisition, protection, and management of stream and riparian resources on public and private lands.

B. A means of encouraging the use of common terminology, definitions, and inventory data.
Appendix I — Continued

C. A means of encouraging cooperation among local, state, and federal agencies that have jurisdiction over stream and riparian management, utilization, protection, and regulation.

D. Establishment of in-stream flow standards where appropriate.

E. Facilitation of the development and implementation of educational programs to increase knowledge of and sensitivity to stream and riparian resource issues.

III. The Governor of Arizona should designate November 15-20, 1988 as "State Stream and Riparian Resources Week." This action will create awareness of the values of stream and riparian resources to the State of Arizona, and provide focus on the many events planned for that week.
APPENDIX J

POLICY STATEMENTS ISSUED BY THE ARIZONA GAME AND FISH COMMISSION

REGARDING RIPARIAN HABITAT PROTECTION, 1987

It is the policy of the Arizona Game and Fish Commission that the Department shall recognize riparian habitats as areas of critical environmental importance to wildlife and fisheries. The Department shall actively encourage management practices that will result in maintenance of current riparian habitat, and restoration of past or deteriorated riparian habitat as per the Department of Wildlife Compensation procedures. Further, the Department shall actively encourage the maintenance, restoration, and protection of instream flows, which are essential to maintaining riparian habitat.

It is the policy of the Arizona Game and Fish Commission that the Department shall not accept compensation at less than a 100% level for actual or potential habitat losses resulting from land and water projects. Further, habitat compensation plans developed in accordance with federal and state law, will utilize resource category designations as stipulated in the Department's Wildlife and Wildlife Habitat Compensation Procedures. Among factors deemed important by the Commission are potential impacts to special category species and/or economically important wildlife species as well as issues which reflect the value, quantity, and quality of habitats which may be impacted by proposed projects.
## Appendix K. Minimum Instream Flow Permit Applications Filed with the Arizona Department of Water Resources, January 1988 (AZWR 1988)

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</tbody>
</table>

Legend: A=Application, C=Candidate for Permit, P=Permit, PR=Protested, W=Withdrawn


Arizona Game and Fish Department. 1987. Unpublished watercraft registration, hunting and fishing license, and trout and duck stamp data. Phoenix: Planning and Evaluation Branch, Arizona Game and Fish Department.


Baron, D. 1988. Assistant Director, Center for Law in the Public Interest, Tucson. Telephone conversation with author, 10 November.


No. 350. Tucson: School of Renewable Natural Resources, University of Arizona.


Smith, R. 1988. Assistant Southwest Representative, Sierra Club, Phoenix. Telephone conversation with author, 10 November.


