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Report to the
Great Lakes Science Advisory Board

GLC 22222 137

**Multi-Institutional
Management:
The Green Bay Experience**

**Multi-Institutional
Management:
The Green Bay Experience**

by C. Jarrell Yarbrough

presented to
The Social and Economic
Considerations Committee of the
Great Lakes Science Advisory Board

March 1985

Disclaimer

This report was prepared by C. Jarrell Yarbrough, Ph.D. under contract to the Social and Economic Considerations Committee of the Science Advisory Board. Its publication marks the completion of Phase I of the Committee program, "Comparative Case Studies of Inter-jurisdictional, Inter-agency Cooperation for Programs to Enhance Environmental Quality."

Findings, conclusions and recommendations are those the author presented to the SECC. Members of the Committee reviewed and commented on the report (Appendix 1) and strongly recommended its publication as a contribution to literature in the socio-political field.

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1. Motivation: In a multi-institutional context a catalyst must provoke the effort to collaborative planning. In the case of FOB the catalyst was the advent in 1981 of a new national administration and the perception--shared by all of the agencies alike--of a threatened reduction in federal dollars. Each agency was similarly situated with respect to the perceived external threat; it was to no single agency's advantage to play a hold-out strategy. The important point here is that deterioration of the Green Bay ecosystem was not in itself sufficient to motivate agencies to work together.

2. Emergent leadership: While groups naturally tend toward the identification of a leader, the FOB experience suggests three things: (a) in a collaborative planning process weak leadership is the norm even though strong leadership may be required to make it work; (b) the cost in time, effort, and opportunities foregone of reaching a collaborative decision is high; (c) the longer it takes the collaborative group to reach a decision, the higher the probability that decisions will be made elsewhere, outside the collaborative group, by institutions with broad authority.

3. The nature and variety of membership: In the case of FOB the major players are policymakers and decisionmakers, those with line authority and the capability to act. This is a strength but it poses several problems as well. The strength is that the members are those who can make decisions if they want to or have to. The problems have to do with: voluntary participation and the distribution of discretion; hidden hierarchies of power and informal structures of influence; the number, variety, and heterogeneity of institutional actors; and mutual knowledge needs.

4. Establish legitimacy: The FOB experience reaffirms the political principle that any program of collaborative planning must pay conscious and constant attention to securing and maintaining legitimacy and must devise strategy and tactics to do so.

These steps, as illustrated by the FOB experience are consistent with a body a literature on organizational theory. With specific reference to the FOB, the following conclusions were reached.

- 1) As an organization FOB is an advisory body; as such it has a number of characteristic weaknesses. Nevertheless, a major plus is that the member institutions got together in the first place.
- 2) The level of participation in FOB has been mixed.
- 3) The annual Future of the Bay conferences have been moderately successful.
- 4) The Bay Lake Regional Planning Commission, the lead agency in FOB, has performed credibly. Still, practical operating capability is a major weakness. FOB needs political and financial support.
- 5) The requirements of consensus decision making is a basic weakness. In sum, FOB is not a means to comprehensive ecosystem management based on rehabilitative strategies.

Theoretical Issues and Other Case Studies

The theoretical literature begins with skepticism about the potential of consensus management and ends with the abandonment of the concept of consensus and with the call for authority to overcome the intrinsic dilemmas of consensus. These difficulties, each of which is a structural barrier to consensus, were categorized as follows:

1. The distribution of discretion;
2. "Free Rider" problem;
3. Consensus and the calculus of self-interest;
4. Dilemmas of cost/benefit structure:
 - a) deprivation cost;
 - b) opportunity cost;
 - c) the cost of authority; and,
5. The rationality of inhibiting rational management.

The chief lesson that the theoretical literature has to teach us is that structure is what governs and structure is not neutral; it is biased toward some approaches to management and against others. The existing structure of authority is biased against successful consensus management.

Six case studies from the literature reported on the application of consensus management in practice. The locations of these studies are: Gray's Harbor, Washington; Coos Bay, Oregon; San Francisco Bay, California; Irvine, California; and the Norfolk Boards, England.

The propositions of the theoretical literature are borne out in the case studies. In theory and in practice, it appears, the probability is slight that ecosystems can be successfully managed through consensus. This does not mean that there is no role for consensus strategies in ecosystem management. It is reasonable to speculate that such strategies might prove useful in building support and legitimacy for programs of ecosystem rehabilitation.

The literature leads to the additional conclusion that legislative strategies which aim to make ecosystem rehabilitation the context for management--the constraint around which interests and institutions should work--are a necessary but not sufficient part of any comprehensive approach to ecosystem rehabilitation.

Conceptual Scheme of Ecosystem Management: Politics and Economic Realities

The model of the Green Bay Ecosystem resource base and the political and economic control system is characterized by mutual interactions among a number of components in a dynamic system. It is intended as a descriptive tool, as an aid in comprehending the many interrelated forces that work to determine what ecosystem management will be and what the type and pattern of ecosystem resource use will be. In addition, the model is intended to stimulate the imagination toward discovering important general problems and possible avenues toward resolution.

Ecosystem management and politics depend on five sets of variables:

- 1) the ecological status and dimensions of the ecosystem resource base;
- 2) user interactions and market forces;
- 3) affected publics and their identification of problems;
- 4) the general political setting; and,
- 5) the policy areas and intergovernmental management context.

These five sets of variables are the components of the conceptual model.

The research program presented rests on two general propositions:

- 1) First, research aimed at providing a basis for the improvement of institutional performance must be directed to the study of institutional behavior as well as institutional structure.
- 2) Second, research aimed at assessing institutional performance must do three things:
 - (a) Establish criteria by which the results of institutional behavior are to be judged. The question is to identify the criteria to be used to judge the movement toward the goal of ecosystem rehabilitation.
 - (b) Research revealing how existing institutions behave must be pursued.
 - (c) The criteria for judgement should be applied to the findings of institutional behavior to identify inadequacies in performance. These inadequacies in performance should be viewed as areas deserving of additional research attention.

The goal is to find ways to translate ecological criteria into institutional measures of success; to have the established criteria for judgement become an institutionalized element in a program of ecosystem rehabilitation. Research on these questions would represent an important extension of the state-of-the-art in the analysis of ecosystem management and politics, and would be applicable to the study of ecosystem rehabilitation in Green Bay, elsewhere in the Great Lakes, and beyond.

Introduction

Problems occur in the use and management of environmental resources whenever certain conditions are present. One condition that creates problems for any plan of ecosystem management is the widespread distribution of independent rights or discretionary authority to the use or management of the resource. This "distribution of discretion" (Stone, 1978) makes comprehensive planning and management extraordinarily difficult to achieve. Yet it is this condition that confronts any effort at ecosystem rehabilitation, whether it be in the United States or in Canada: "A limitation to rehabilitation of the Great Lakes appears to be more of an entanglement of institutional arrangements than knowing what to do in an ecological sense". (Harris, et al., 1982.) In short, attempts at ecosystem rehabilitation are confronted with a dilemma: any attempt at comprehensive management must accept existing multi-institutional arrangements and try to implement plans and policies within them. But to accept existing institutional arrangements is to accept a structural distribution of discretion that seems to preclude comprehensive management. This dilemma has prompted a search for a way out, a search for strategies capable of overcoming the distribution of discretion and of developing and implementing rehabilitative policies. One strategy repeatedly suggested is that of "consensus management".

The argument for consensus is straightforward and deceptively simple. Consensus is necessary because no single agency or person has either the authority or the responsibility for the whole Green Bay ecosystem. This means that the viability of rehabilitative strategies depends upon affirmative and mutually consistent actions in a number of different institutions, each of which is capable of exercising a functional veto by either refusing to act or by acting in a manner inconsistent with rehabilitation. In order to avoid functional vetoes and to secure mutually supportive decisions, so the argument goes, the techniques of consensus must be applied. Consensus as a management strategy accepts the existing structure of authority and works within it by means of dialogue, sharing of information, airing of disagreements, bargaining, negotiating, and balancing interest. As a norm, consensus management assumes that the parties needed to make a plan work will, through communication and negotiation, reach a shared understanding of a problem and will agree upon a solution. It further assumes that as a result of this understanding and agreement the parties will be willing to commit their resources and to coordinate their activities, which may include modifying or halting some conduct in a manner that will implement the plan and resolve the problem.

The idea, in sum, is that the present structure is a given. It cannot be transcended and it is neither feasible nor desirable to alter it in any fundamental way. What must be done is to find a way to make the existing structure work more effectively with reference to the rehabilitation of the Green Bay ecosystem. Consensus management, it is proposed, may be a way to achieve this aim.

Is such a strategy a feasible way to achieve comprehensive management? This paper addresses this question and others by means of a case study of the recent Green Bay experience accompanied by a selective literature review. The paper is in four parts. Part I is the case study. It looks briefly at the GLER (Great Lakes Ecosystem Rehabilitation) experience and then turns to the Future of the Bay Program. GLER has to do with the scientific study of ecosystem rehabilitation and the development of a prospectus for "Green Bay in the Future". The Future of the Bay (FOB) is a program "to encourage greater agency cooperation and coordination in the planning and management activities related to the waters of Green Bay". (BLRPC, 1982.) The Bay-Lake Regional Planning Commission (BLRPC) is the lead agency in FOB, with a responsibility to act as coordinator. FOB promises to offer some operational guidance for the use of consensus techniques in resource management. Part II of the paper is a selective literature review. It will assess selected theoretical and case study literature about consensus management with an eye to the lessons the literature may teach. Part III presents a conceptual scheme of ecosystem management and politics. This takes the form of a generalized model of the relationship between the Green Bay ecosystem resource base and the political and economic control system that determines its use. The aim of the model is to enhance comprehension of the complexities of ecosystem management and to serve as a guide in future studies. Part IV considers information needs and points up some promising areas for research.

Part I

Great Lakes Ecosystem Rehabilitation (GLER)

In 1980, following a preliminary feasibility study on rehabilitating the Great Lakes ecosystem, the Great Lakes Fisheries Commission (GLFC) funded a case study of Green Bay, Lake Michigan. The preliminary study had concluded that "comprehensive ecosystem rehabilitative strategies are, in general, feasible to develop" (Francis, et al., 1979), and it is probable that rehabilitative measures can be made optional. The study recommended that rehabilitative strategies for the Great Lakes should be "initiated first for smaller ecosystems such as bays and harbors and tailored to the particular conditions and stresses impacting particular areas". (Francis, et al., 1970.) The Green Bay case study assessed several approaches to ecosystem planning and management. Three successive workshops examined the more critical stresses affecting the Green Bay ecosystem and concluded that nutrients, suspended solids and sediments (SS & S), toxic substances, and overfishing and exotic species are the more significant stresses. One product of the case study was a rehabilitative prospectus for "Green Bay in the Future". (Harris, et al., 1982.) The prospectus is in the form of an ecosystem-oriented management plan termed "The Green Bay Plan", that recommends specific strategies for dealing with critical biological and physical stresses affecting the Bay. In addition, the plan analyzes in a preliminary fashion the institutional, social, and economic dimensions of implementing rehabilitative strategies. While the plan does not advocate a particular institutional arrangement, it does point out the need for a cooperative involvement.

...The agencies and user groups associated with the Bay have a long history of limited cooperation. As a result the present ad hoc policies do not promote rehabilitation. The current momentum must be redirected toward a management consensus based upon sound ecological principles.

Governing by consensus is very difficult. It depends upon a broadbased understanding of a problem and the alternative solutions to the problem. It also depends upon long-term commitment by public and private sectors to coordinate the use of resources necessary for rehabilitation. Further, it depends upon significant local citizen involvement which includes frequent contact with local elected officials as well as elected representatives in state and federal government.

The limitations to rehabilitation of the Great Lakes appear to be more of an entanglement of institutional arrangements than knowing what has to be done in an ecological sense. (Harris, et al., 1982.)

The GLER process, as can be seen, reaches a stopping point: the scientific knowledge exists, but the institutional knowledge does not. The question is, how can what we already know be implemented? How can we get there from here? What form of management will prove necessary and sufficient to implement the Green Bay Plan? The answer proposed, as has already been said, is consensus management.

The knowledge generated by the research and surveys pertaining to the Great Lakes has documented the continual deterioration across much of the Great Lakes ecosystem. Scientists have had increasing success in documenting the extent of the deterioration and some of its causes and consequences.* The GLER research led to the conclusion that more "holistic" systems perspectives are needed to guide research for policies capable of reversing the deterioration. Francis, et al., (1979) argue that ad hoc reductionist policies, that is, policies determined on an individual parameter by parameter basis, do not promote ecosystem rehabilitation. Such reductionist policies are of some help in dealing with the issues, but ad hoc policies do not promote rehabilitation. Successful rehabilitation of Great Lakes ecosystems, it is argued, will require systemwide ecosystem approaches to management. Those who would prescribe ecosystem approaches to management are, however, confronted with this basic question: "Can the ecosystem rehabilitation strategies derived from the scientific research be carried out through existing institutional arrangements? If so, how so, and if not, what changes need to be made"? (Yarbrough, 1984.) What is to be done? The GLER research, having provided the necessary scientific understanding of the situation, leaves off at this point.

Future of the Bay (FOB)

The Future of the Bay is a program to promote greater agency cooperation and coordination in the planning and management of activities related to the Green Bay ecosystem. The Bay-Lake Regional Planning Commission describes the program in these terms:

With the decline in federal funding for water quality planning, the Bay-Lake Regional Planning Commission formally participated in a committee effort that investigated continued data gathering, analysis, and implementation of studies affecting the Bay of Green Bay. The Committee, composed of local units of government, governmental agencies and special interest groups, conducted detailed work sessions with the Bay-Lake Regional Planning Commission. This effort resulted in the identification of the need for a cooperative effort on Green Bay to be titled "The Future of the Bay" (FOB).

The committee recommendations were that the Bay-Lake Regional Planning Commission continue to coordinate FOB activities. The Bay-Lake Regional Planning Commission formally accepted the coordination role at its November, 1981 meeting. During 1981, the FOB activities involved a number of technical advisory committee meetings in which policymakers and the general public were given the opportunity to express their concerns about the Bay of Green Bay. During the year, the Commission surveyed technicians and the general public to establish priorities for the issues affecting Green Bay. (BLRPC, 1981.)

*These conditions are described in Francis, et al.; (1982) from which much of this section is taken and are discussed in Yarbrough, 1984.

The result of these early deliberations was the identification of both a set of objectives for FOB and a set of major issue areas related to the Bay. Table 1 presents the goals and objectives, and Table 2 lists the major issue areas.

With this as prologue, the question asked here is: Does this FOB program provide a model for multi-institutional resource management that, mutatis mutandi, can be transferred to other ecosystems with similar features and problems. In order to answer the question, FOB must be looked at in greater detail.

The Resource: The Bay of Green Bay

Green Bay has been characterized as:

a long, shallow extension of northwestern Lake Michigan ...morphometric statistics include: a length of 193 km (120 mi) along a medial track running NE from the mouth of the Fox River to the head of Big Bay deNoc; a mean width of 22 km (14 mi); a mean depth of 15.8m (52 ft); a water surface area of 4520 km² (1640 mi²); and a volume of about 67 km³ (16 mi³). (Mortimer, 1978.)

The Green Bay watershed drains about 4000 km² (15,675 mi²) of land surface in twenty-four counties in both Wisconsin and Michigan, or about one-third of the total Lake Michigan drainage basis. (Bertrand, et al.; 1976.) Although fourteen rivers and numerous tributaries drain into Green Bay, the Wolf-Fox River system contributes the largest volume of water (an estimated mean of 118 ms¹) (Mortimer, 1978), and most of the suspended and dissolved pollutants entering the Bay (Bertrand, et al., 1976). About one-third of the total watershed is forested whereas much of the rest is intensively farmed or occupied by urban areas. In addition, the Fox River Valley is heavily industrialized and contains the largest concentration of pulp and paper mills in the world.

The lower Bay and Fox River have been recognized for many years as an extremely polluted water system (Burchard, et al., 1976). Urban development, industry, farming, logging, and other human activities have contributed to the complex water quality problems; high water levels in the Great Lakes system and human encroachment have eliminated wetland areas; water fowl populations and hunting activities have declined for more than a decade; and the commercial fishery in the lower Bay has been reduced to perch, while the sport fishery nearly disappeared for a time. (Harris, et al., 1982.)

In sum, scientists have documented the deterioration of the resource as well as some of the causes and consequences of the deterioration.

The Institutional Context

The institutional context for managing the ecosystem is fragmented. It can be characterized as a setting in which there is a broad distribution of

discretion; many agencies possess independent mandates and have their own agendas and goals, as do commercial users of the bay. Seven cities, five villages, thirty towns, seven counties, and two states, for a total of fifty-one governmental units, bound the Bay. In addition, at least seventeen federal, state, and regional agencies have regulatory, management, planning and/or information responsibilities within the watershed. Public interest groups such as Bay Renaissance, Inc. and the Lake Michigan Federation have also identified the Bay as a special concern. In short, the context is one of multiple institutions with a long history of disagreement, conflict, and limited cooperation.

TABLE 1. OBJECTIVES

1. Identify the public and private agencies and other interest groups that have a responsibility to the Bay and the current status of their activities.
2. Provide a forum for developing and maintaining a sustained and balanced plan for multiple use of the area resources (including fishery, shipping, recreation, and local related industrial, agricultural, and other uses).
3. Foster an understanding of plans and programs related to the Bay.
4. Inform, involve, and influence interested and affected citizens, elected leaders and agency representatives.
5. Identify the results of previous efforts which address primary stresses on the land and water of the Bay, and define areas where additional studies are needed.
6. Identify existing and project primary uses which may be conflicting or complementary for the land and waters of the Bay.
7. Identify and refine the future opportunities for use of the Bay which are compatible to a sustained and balanced plan for multiple use.
8. Identify specific problems, alternative solutions and their implications, and develop a community concensus (sic) on the most appropriate course of action to take on each issue.
9. Identify and seek an understanding of current and future legislative mandates affecting the Bay and adjacent land areas in order to influence beneficial change.
10. Identify timely and publicly sensitive issues for early attention by this group.
11. Develop an implementation plan addressing both short- and long-range issues and problems.

Source: Bay-Lake Regional Planning Commission Annual Report, 1981.

TABLE 2.
FUTURE OF THE BAY - MAJOR ISSUE AREAS
Water Quality Land Development Fisheries, wetlands, wildlife habitat Public education Institutional structure Harbors - transportation and development Recreation

Source: Bay-Lake Regional Planning Commission Annual Report. 1981.

The Lead Agency

The Bay-Lake Regional Planning Commission (BLRPC) was created by Governor Patrick Lucey in April, 1972 at the request of seven county boards within the region. Florence County joined the Commission in December, 1973, bringing the total number of member counties up to the present eight. The eight counties are Brown, Door, Florence, Kewaunee, Manitowoc, Marinette, Oconto, and Sheboygan.

The Commission "is composed of three representatives from each of the Bay Lake counties. Some of the commissioners are locally elected officials, and others are private citizens that are actively involved in community affairs. The commissioners are appointed by their county boards and the Governor upon the advice of the county boards". (BLRPC, 1981.)

As a regional planning commission the BLRPC is an advisory body to local units of government and to state and federal agencies on multi-jurisdictional matters that primarily relate to the physical development of its service area. The policies and programs of the agency are established and controlled by the officials and citizens of the region who serve as the planning commissioners.

In accordance with Wisconsin statute, commissions may "make plans for the physical, social, and economic development of the region". The general purpose of the plan is "guiding and accomplishing a coordinated, adjusted and harmonious development of the region which will, in accordance with existing and future needs, best promote public health, safety, morals, order, convenience, prosperity or the general welfare, as well as efficiency and economy in the process of development". Commissions have three primary sources of revenue which support their planning efforts. These are direct contributions from local units of government, and state and federal planning assistance funds. In addition, the statute specifies that "the regional planning commission may accept gifts and grants from public or private individuals or agencies if the conditions under which such grants are made are in accordance with the accomplishment of the objectives of the regional planning commission".

The statute also provides that a local unit may "...withdraw from a regional planning commission at the end of any fiscal year by a two-thirds vote of the members-elect of the governing body taken at least six months prior to the effective date of such withdrawal. However, such unit shall be responsible for its allocated share of the contractual obligations of the regional planning commission continuing beyond the effective date of its withdrawal."

The region for which the BLRPC is responsible is comprised of eight counties, one hundred and twenty-three towns, thirty-seven villages, sixteen cities, and the Oneida Indian Reservation, for a total of one hundred and eighty-five local units of government. The total area of the region is 5,433/sq. miles or 9.7% of the area of the State of Wisconsin. The total population of the region, as determined by the 1980 census of housing and population, is 476,269 people and is approximately 10 percent of the State's population. The region has over four hundred miles of coastal shoreline along Lake Michigan and Green Bay, and there are twelve major watershed areas within the region which drain into the waters of Green Bay and Lake Michigan.

The Formation of FOB

A sequence of steps can be discerned in the process that led to the formation and subsequent operation of Future of the Bay. The steps will be discussed in turn.

1. Perception of a collective need and potential collective benefits:

With the election of Ronald Reagan to the office of President of the United States, a number of area agency representatives began to realize that there was likely to be a reduction of federal dollars as a result of the economic policies of the new administration. The agencies became concerned that the fruits of a number of efforts that had been underway over some time could be lost if some way was not found to preserve the level of data and information already achieved. This was the initial impulse for FOB: a shared perception of a threat to agency accomplishments and the need to do something in response. Over the course of the summer of 1981, agency representatives met regularly to discuss alternatives. As a result of this dialogue it became clear that there were common interests in preserving information and data and that it would benefit all if the agencies could continue to work cooperatively on common issues related to the Bay. It was these shared perceptions of threat, need, and potential benefits that laid the foundation for FOB.

2. Emergent leadership:

The dialogue continued and during its course it became apparent that there was a need to have some agency to provide leadership to bring the group together, to facilitate the resolution of issues, and to develop programs as appropriate; in other words, a lead agency was needed to coordinate the FOB process. This need was recognized by all of the participants and the decision to choose a coordinating agency was made by

consensus. The next question was, what should be the character of such an agency, what criteria should a lead agency meet? It was decided that the coordinating agency should be: (a) an areawide agency with a mandate that encompassed the whole area of concern, in particular that portion of the Bay of Green Bay and the surrounding land area that is in the State of Wisconsin; (b) the agency should have as its general mandate or purpose the overall planning for and technical study of the Bay of Green Bay; (c) the agency should have political credibility with the local political units within the area.

It became apparent that the majority of the members of the group felt that the issues related to the waters of Green Bay were much broader than any single county and that the principal focus of FOB was to the waters of Green Bay in an extensive geographical setting. In reviewing the agencies and their characteristics and in looking at the Bay in its geographical setting, it became clear that the Bay-Lake Regional Planning Commission was the only agency that fit the basic criteria. A decision was therefore made to designate the Bay-Lake Regional Planning Commission as the lead or coordinating agency of FOB.

The tentative designation of BLRPC as the FOB lead agency was submitted for deliberation and decision to the commissioners of the agency. According to Bay-Lake Executive Director "...we went to our Commission and said here's a story that's evolved over the last year and one-half. We are being looked at as a potential lead agency for this purpose. The commission took it under advisement a couple of months later and said, "prove to us that the other agencies with whom you wish to cooperate are sincere and endorse our involvement in a lead agency role's".* Acting on instructions from the Commission, the BLRPC solicited and received "either eleven or thirteen letters of endorsement from various agencies requesting or endorsing the role of the Commission to serve in that capacity (i.e., as lead agency)". (Bergman, 1984.) With these written expressions of political support in hand, the Commission accepted the role of lead agency in the FOB process.

No operational guidance accompanied the endorsement nor was there any special funding for the new role. Nevertheless, the BLRPC went forward with the effort and began to give attention to structural issues. The Future of the Bay was placed within the organizational structure of the Commission as a standing committee - the Future of the Bay Steering Committee. The steering committee is served by two technical groups, the Future of the Bay Technical Advisory Group (TAC), which is composed of technicians and scientists from various agencies that have interests in and responsibilities for the Bay. It is served also by the staff of the BLRPC which provides administrative assistance for both the steering committee and TAC.

After deciding upon a structure, the Commission sought nominations for steering committee membership from a variety of agencies in the area. When the nominations were received they were forwarded to the Commission which formally appointed the members of the FOB steering committee.

*Interview with Ralph Bergman, March 1, 1984.

The main criterion for selection was that members of the steering committee be policymakers, political representatives who "...sit in a place of decisionmaking - sewerage districts, harbor commissions, soil and water conservation districts" (Bergman, 1984), as opposed to technicians. The TAC has never had a formal structure for group membership. It has a healthy list of members composed of representatives of institutions that have interests in the Bay.

Deciding "What to Do"

After the steering committee was created the members asked two basic questions: What is it we're supposed to do, and what's it all about? After deliberation it was decided that the committee should promote some sort of "awareness process" about the Bay and Bay issues and that the FOB should become visible. This process took the form of the first Future of the Bay Conference at Bay Beach in lower Green Bay. The idea was that this would be the first of many annual Future of the Bay conferences. The conference covered a number of areas and participants and included technicians, community leaders, and the general public. Activities included boat rides, tours, exhibitions, demonstrations, and so on, in an effort to enhance awareness of the Future of the Bay.

When the conference was over the steering committee held an evaluative session at which it was concluded that:

the conference was a good exercise and should be continued, but that it was not enough. It was time to get on to some issues. The steering committee therefore gave the BLRPC staff a rather stiff charge, to wit: identify an issue which is regarded as a meaningful, even if controversial one, in the Bay, and then within a year bring together the area's diverse interests and come to a resolution of that issue...that was the charge, within a year. (Bergman, 1984.)

The BLRPC staff was somewhat concerned with the charge because first, a year is a shorter time frame than planning normally works within and, second, there was no particular funding for the time and effort.

Good fortune befell the Commission, however, in the form of a grant from the Coastal Management Program to conduct a study on innovative uses for dredge spoils in the lower Bay. Coincidentally, the time frame for the dredging study was the same as that for the steering committee charge - one year; the study was to be completed by the end of 1983. The two efforts were therefore merged and resolution of the dredging issue became the first test of the FOB process.

Whether it had been planned before or after the steering committee charge and the Coastal Program grant is unclear, but the chief issue of the second annual Future of the Bay Conference was dredging and dredging alternatives. The conference thereby served as a major step in the creation of the study on dredging and, in addition, served as the "formal entre" (Bergman, 1984) for the United States Corps of Engineers to come to the community with its proposals for dredging on the lower Bay.

The Corps does this in the normal course of events - they create a site selection team...and then at some time they go to the general public. Well, ...they became an integral part of our technical study team tech group, and we had something like four to five people from Detroit here every month at our meetings. (Bergman, 1984.)

As a result of such participation the Corps of Engineers helped the BLRPC to produce the dredge report entitled, "The Ten Year Dredged Material Disposal Plan for Lower Green Bay".

The plan is the result of a collaborative planning effort by officials and agency representatives at the local, state, regional, and federal levels. Among the participants in the effort were representatives of the commercial and recreational users of Green Bay and the Fox River, persons interested in the environmental impacts of dredging and other harbor activities, and those involved with the actual dredging operations of the channel. The TAC assisted the planning effort by providing information, by direct meetings with local officials, and by presentations to interested groups. Technical staff members from the BLRPC served as facilitators for the Committee. This process allowed for the consideration of a number of factors affecting the disposal of dredged material.

The first meeting of the Technical Advisory Committee was held in December, 1982. In attendance were representatives from BLRPC, Brown County, the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Wisconsin Department of Natural Resources, and the University of Wisconsin-Green Bay Sea Grant Program. Eight additional TAC meetings were held over the next thirteen months. The membership grew to include the Soil Conservation Service, Brown County Harbor Board of Commissioners, Fox Valley Water Quality Planning Agency, the University of Wisconsin-Madison Sea Grant, Wisconsin Department of Transportation, City of Green Bay departments, Wisconsin Coastal Management Program, and interested citizens and property owners.

The purpose of the TAC, as expressed by the BLRPC, ...was to bring together the various regulatory agencies and other interested parties to analyze previously published studies/reports on the Green Bay Harbor and the Bay of Green Bay; to coordinate and incorporate into the discussion the results of ongoing testing, sampling, and field research; to identify relevant areas of concern; and to identify and select alternatives for the disposal of dredged material. These meetings also served as a forum for the discussion of environmental and economic issues expressed by participants and the exchange of points of view. (BLRPC, 1983.)

Going on simultaneously, and parallel to the TAC activities, staff members from the Wisconsin DNR, U.S. Fish and Wildlife Service, and the Brown County and Bay-Lake Regional Planning Commissions, participated with the U.S. Army Corps of Engineers in a site selection process. Representatives from these agencies met with agents from the Corps to identify and evaluate potential upland disposal areas and potential confined disposal areas within the waters of Green Bay.

During this time preliminary findings generated by the TAC meetings were presented to appropriate agencies and were made public. In addition, BLRPC staff members met with a number of local officials to hear their views on the issues. Among the issues discussed were the proposed disposal sites, changing government regulations, existing and projected urban development patterns, and environmental and economic concerns.

The Second Annual Future of the Bay Conference was held in November, 1983. Its topic was dredging and the disposal of dredged material. An all-day workshop was held and addressed such issues as research topics, business and political issues, opportunities for alternative uses of dredged material, and environmental concerns. In the evening the Corps made a presentation concerning the possible uses of dredged material. The public was encouraged to participate in the conference and over one hundred members from the community attended.

The public received additional information through media coverage of the issue. Dredge disposal is a topic of considerable interest to the local and regional media, so TAC meetings were covered and the TAC findings reported. The collaborative effort continued after the conference. To a large degree the collaborative process is one of technical agency coordination and cooperation and insofar as a consensus was approached, it had to do with technical issues. The process is one of examining alternatives and accepting or rejecting them.

Completion and publication of the "Ten Year Dredged Material Disposal Plan" was the culmination of the collaborative process. The next step was for the Corps of Engineers to begin public workshop activities and to initiate intergovernmental discussions that would result in the choice and implementation of a site for the disposal of the dredged material.

With the completion of the study the Bay-Lake Regional Planning Commission had met the charge given to it by the Future of the Bay steering committee: identify a controversial issue which is regarded as a meaningful one in the Bay, bring together the area's diverse interests, and within a year come to a resolution of that issue.

Future of the Bay: An Operational Model

The FOB Program represents an operational model for collaborative planning and decisionmaking. It is operational in the sense that the "components" of the model emerged from the experience of trying to make collaborative planning work rather than from an a priori conception of what was necessary to allow local, regional, state, and federal officials to reach agreement on issues. What follows is an attempt to discern, describe, analyze, and assess the components of the FOB model by taking a step back - getting some distance from the FOB experience and seeing it as a process that moved through a sequence of steps. Each step is termed here a model component.

1. Motivation:

In a multi-institutional context there must be some catalyst; something must provoke the effort to collaborative planning. In the case of FOB, it was not the status of the resource, the Bay of Green Bay, that excited the agencies and promoted collective action. Rather, it was a perceived threat to the missions and well-being of the agencies themselves: the thrust of a new national administration and a probable reduction in federal dollars. This worried all of the agencies alike; all of the agencies stood to lose from a change in direction and reduction in support. In these respects each agency was similarly situated and it was, at least in the uncertain atmosphere of 1980-81, to no single agency's advantage to play a hold-out strategy.

Several ideas may be drawn from this. First, some sort of catalyst is required to spur the need for collaborative efforts. Second, whatever the catalyst, it must affect all of the relevant agencies in nearly the same way and the agencies must perceive it to be in their self-interest to work cooperatively. They must perceive that a collective benefit in which each can share will be forthcoming as a result of joint action. Third, the catalyst must be something other than the status of the resource itself.* The fact that the Green Bay ecosystem is a deteriorating resource was not in itself sufficient to motivate agencies to work cooperatively. Rather, it required an external stimulus; a catalyst from outside the immediate operational environment of the agencies concerned. The stimulus was a shared external threat. It does not matter that this threat was the unintended consequence of a change in national policy.

What it suggests is that changes in the environment of agency conduct can lead to adaptive changes in agency conduct itself. This suggests, further, that changes in the environment of conduct can be deliberate as well as fortuitous. Choices can be made that will influence behavior by changing the conditions within which agencies operate, rather than bearing directly on the agencies themselves. The example commonly given for this kind of "macro control" is a cut in income tax to increase consumption even though no individual consumer is approached by government. With regard to ecosystem management, the choice could be a legislative mandate that makes ecosystem rehabilitation the context for management. If this is done, the ecosystem becomes, by means of statutory law, a constraint around which other interests must work; it becomes part of the objectives that must be satisfied in all other policies. In short, institutional behavior is changed by means of a change in the structure of a sector of behavior, namely, the structure of the relationship between institutions and the ecosystem.

*A caveat should be entered here. Although it is generally the case that the status of the resource is not sufficient to motivate collaborative efforts, it is not always the case. The Bay Conservation and Development Commission of San Francisco appears to be an exception. San Francisco's efforts were, however, bolstered by a legislative mandate.

2. Emergent leadership:

The emergence of the BLRPC as the lead agency in the FOB process illustrates the principle that establishing leaders is essential to effective decisionmaking and planning. It illustrates also the natural tendency of the group to evolve toward the identification of a leader. If a group embodies differing purposes, more than one leader will evolve and leadership may change from issue to issue. In the case of FOB, the common recognition emerged that the collaborative process, which is one of discussion, negotiation, and compromise, is more effective when there is a coalescing of positions through a leader or coordinator. Therefore one had to be chosen.

The language used in the FOB process is of significance here because it highlights the reality of the structure of the process. As said above, it is an established principle, reaffirmed by the FOB experience that groups naturally tend toward the identification of a leader. FOB identified Bay Lake. But while the BLRPC is identified as the leader, it is never called that by name. Rather, it is named "the lead agency" or the "coordinator". This suggests three things: (a) in a collaborative planning process weak leadership is the norm even though strong leadership may be required to make it work. Institutional actors retain their independent mandates and will protect their autonomy against perceived infringements on it by any other agency including, if not particularly, the lead agency. This is built in; weak leadership is a consequence of the structure; (b) because the lead agency cannot make decisions but can only facilitate them, the cost in time, effort, and opportunities foregone of reaching a collaborative decision is high; (c) the longer it takes the collaborative group to reach a decision, the higher the probability that decisions will be made elsewhere, outside of the collaborative group, by institutions with broad authority such as, for example, the U.S. Army Corps of Engineers.

3. The nature and variety of the membership:

Who the players are is the key feature of any planning model. In the case of FOB the major players are policymakers and decisionmakers, those, that is, with line authority and the capability to act. This is a strength, but it poses several problems as well.

The strength is that the members are those who can make decisions if they want to or have to. The problems are several:

- (a) Members participate voluntarily on the basis of self-interest and with their own independent mandates intact. When the threat to self-interest wanes, or is better understood over time, the incentive to participate and to reach agreement weakens and the process tends to revert toward the bias in the existing structure, that is, fragmentation, conflict, and the distribution of discretion that frustrates consensus and inhibits policymaking.

votes are allocated on the basis of population, however, with more votes for a large population, the urban counties and thereby urban interests will be dominant. In either case, one of the two sets of counties will perceive substantial cost and loss of benefits.

The number and variety of institutions involved in the collaborative scheme is another factor influencing the perception of benefits and costs. Perceived costs are likely to increase as the number and variety of the institutions involved increases. For example, members representing the five counties will perceive fewer costs in a five-county collaborative planning scheme than in a scheme that includes five county governments, three city governments, and two agencies. Similarly, two states in a bi-state arrangement will perceive fewer costs and less loss of influence than if they were parties to a multi-state arrangement.

In sum, the number, the variety, and the heterogeneity of institutional factors are potentially negative factors in the cost-benefit structures of collaborative planning.

- (d) The FOB process reaffirms the finding (Davis, 1980) that if a collaborative planning group is going to be effective in reaching decisions, each actor must know the other in terms of such things as:

Authority: How much direct authority do the members have, who do they represent, how flexible can they be, and so on.

Constituency: Is the member's formal constituency its only constituency or does the member have an "outside constituency"; that is, does the member represent some external interest.

Dependability: To what degree can a member be depended on to take a certain position in a situation and to be consistent? Inconsistency will affect the member's position and the informal structure of influence.

Potential for coalition: To what degree is the member able and willing to enter a coalition to arrive at agreement.

Mutual knowledge of these and other dimensions is essential if there is to be effective cooperation. The lesson here is that this kind of knowledge needs to be facilitated and that a means for promoting such mutual knowledge is a necessary element in any model of collaborative planning.

4. Establish legitimacy:

If leadership (lead agency in the case of FOB) is to be effective it must have legitimacy and political credibility. By political credibility is meant that other agencies believe in the leadership's right to lead.

In the case of FOB, the Bay Lake Regional Planning Commission would not assume the role of lead agency until it had in hand overt expressions of political support. This was important because the freely given written endorsement of the Bay-Lake role by other agencies constituted a recognition of the legitimacy of the FOB process and structure.

The FOB experience thus reaffirms the venerable political principle that the probability of success for a program is enhanced when it is supported by those who must make it work; that is, when it is legitimate. Any program of collaborative planning (or consensus management) must pay conscious and constant attention to securing and maintaining legitimacy and must devise strategies and tactics to do so.

5. Organizational structure:

Organizational theory teaches us that to organize human beings means to:

- (a) discover, make explicit and maintain their common values and purposes;
- (b) persuade or coerce them to work in pursuit of these values and purposes by fulfilling definite functions as members, contributors, officers, and so forth;
- (c) stabilize these functions by suitable institutionalization, so that decisions, more especially policy decisions, may be continually made and executed;
- (d) embody the means of persuasion, i.e., the ideas, in a suitable symbol relating the organization's values and purposes to the larger group and culture within which it operates. (Friedrich, 1963.)

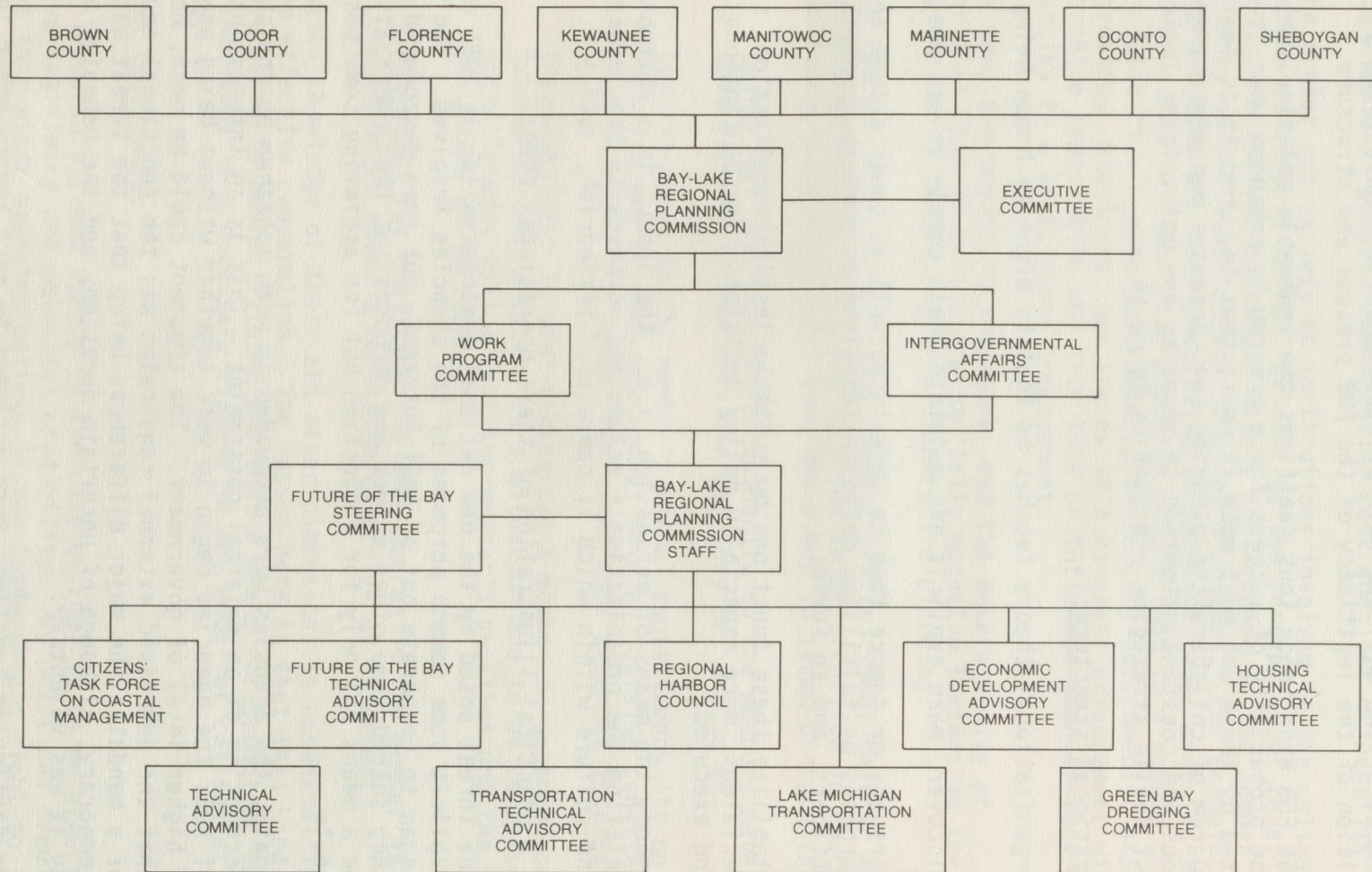
FOB is a practical illustration of these operational steps:

- (a) The threat posed by the new national administration in 1981 made explicit some common purposes of the agencies involved. The agencies began to cooperate out of self-interest, but then discovered that they shared some other values and purposes and that cooperation might be a means not only for protection but for achieving some positive goals.
- (b) Again, the agencies were persuaded to work together by the shared perception of an external constraint. This is an interesting feature of FOB; the agencies began to work together without being prodded by a higher level of government. The argument could be made, however, that the perceived external constraint was the functional equivalent of a mandate, the major differences being that the threat was temporary, although of uncertain duration, and the behavior provoked by it was voluntary.

No particular functions were assigned to each agency other than being a discussant in the process of trying to figure out what to do. Only

Figure 1.

ORGANIZATIONAL STRUCTURE OF THE
BAY-LAKE REGIONAL PLANNING COMMISSION



SOURCE: BAY-LAKE REGIONAL PLANNING COMMISSION.

the BLRPC was given a definite role, that of lead agency or coordinator. But this role was clear only in designation; Bay-Lake was given neither operational guidance nor budgetary support. It was given only a charge.

- (c) FOB was institutionalized in the form of a steering committee, a technical advisory committee, and a lead agency. It was made part of the organizational structure of the Bay Lake Regional Planning Commission. (See Figure 1, page 18) Neither the steering committee nor the lead agency may make and execute policy decisions. FOB has legitimacy but not authority; its role is strictly advisory.
- (d) FOB has embodied its processes in a suitable symbol. The symbol is the name itself, The Future of the Bay. There was implicit recognition on the part of the early participants that for three purposes it was necessary to have a symbol. First, a symbol is necessary to communicate the essence of what the program is about. Second, a suitable symbol could assist in securing legitimacy. Third, if the symbol could connect with the culture and values of the local area and the purposes of important actors within and outside of the region it could assist in generating support, both political and financial.* After a fair amount of discussion, the chosen symbol was - the Future of the Bay.

The Model Summarized

This analysis of the Green Bay FOB experience yields a normative model for the development and organization of collaborative planning, and mutatis mutandi, consensus management. This is not to say that FOB itself is the ideal to be emulated; it is not. It has major weaknesses as well as some strengths. What is being said, rather, is that based on the FOB experience a normative model can be constructed which has the potential to assist future efforts in multi-institutional planning and management. The components of the model have already been discussed. They will be presented here in outline form.

Components of a Normative Model for Multi-Institutional Planning and Management

1. Motivation for planning and management:

(a) Catalyst:

- (1) external stimulus and constraints: change the environment of conduct.

*It is not suggested that the discussion took the form of academic discourse. Nevertheless, choosing the proper symbol was clearly a concern of the participants.

ERRATA

On page 19, Figure 3.1, "Bill Defects in Double-Breasted Cormorant Chicks per 10,000, 1979-1987:", the percentage sign should be eliminated from the values given on the figure. Thus, the number of defects in chicks in the vicinity of Green Bay is 52.1 per 10,000, not 52.1%

- (2) relevant actors:
 - mutual perception of effect/mutual perception of costs and benefits.
 - positive connection between catalyst and self-interest of relevant actors

Observation: The norm is that the catalyst should control the environment of conduct by making ecosystem rehabilitation a constraint that relevant actors must internalize. The catalyst should be deliberate, for example a legislative mandate, rather than random.

2. Emergent leadership:

- (a) Leadership will emerge.
- (b) Awareness of tendency toward weak leadership in multi-institutional management.
- (c) Capable leadership requires:
 - (1) ability to withstand attack: political credibility:
 - legitimacy.
 - political support: constituency support, external support.
 - budgetary support: successful operation requires money.
 - (2) authority to make decisions.
 - (3) authority to secure the implementation of decisions.

Observation: The norm is that successful multi-institutional management will require overcoming the structural tendency toward weak leadership. This can be done by means of altering the structure in which the relevant conduct takes place and by paying attention to certain characteristics of capable leadership. Structural alteration is the norm of component 2 as well as 1: control the environment of conduct by making ecosystem rehabilitation the context for management, make it a part of the objectives that must be satisfied in all other policies.

Effective leadership requires that the institution performing the role of leader be capable of withstanding attack. Such capability is a function of political support, financial support, and authority. Political support must be both external, for example a legislative mandate, and internal, that is, support must come from key publics, constituencies, and institutions within the management area. Political legitimacy enhances political credibility and aids in securing political support. Legitimacy is also an aid in securing budgetary support. Finally, the leader must be delegated the authority to make binding decisions and to see them carried through.

3. Nature and variety of membership:

- (a) Relevant actors:
 - (1) levels and types of institutional actors.
 - (2) heterogeneity/homogeneity of constituencies.
- (b) Structural factors:
 - (1) formal structure of influence.

- (2) informal structure of influence.
- (c) Mutual knowledge: knowing the actors.

Observation: It is harder to pinpoint a norm or norms here because this component is the core of the model and the heart of the problem: fragmentation, conflict, and the distribution of discretion frustrate comprehensive planning and policymaking. The bias in the existing structure of authority is against comprehensive ecosystem rehabilitation and it is no more than a platitude to say that the norm is - overcome the structural bias. Such a norm offers no operational guidance. Nevertheless, it should be stressed that if ecosystem rehabilitation is the goal, its achievement will require overcoming structural constraints. This feature of the model reinforces the search for strategies and tactics.

This being said, three observations may be made. First, the FOB shows little, if any, promise for overcoming structural difficulties. Its essence is to accept the existing structure and to work within it. Second, strategies of consensus management do not offer much help in dealing with the problem of structure. Third, a preliminary norm may be stated: macro controls will be required to overcome the bias of the existing structure. Macro controls are a necessary but not a sufficient means to that end. Macro controls, to reiterate, are distinguished from others by the fact that they are indirect (Lowi, 1978). They are called macro to indicate that they are methods of control that manipulate the environment of behavior rather than the behavior itself. Behavior remains the ultimate target, but behavior is influenced by changing the conditions under which institutions and persons operate rather than acting on the institutions or persons themselves.

It will be recognized that this is the norm of component 1 stated a bit differently for component 3. It is emerging as the chief norm of the model.

4. Establish legitimacy:

- (a) Legitimacy: community values and beliefs.
- (b) Political credibility: community interests.
- (c) Strategy and tactics.

Observation: The norm is that to be effective programs of ecosystem rehabilitation must be legitimate and politically credible. They must be connected in a positive way to the values, interests, and beliefs of the communities in which they are to take effect. If they are not, they will fail. On an operational level, the norm prescribes a search for strategies and tactics to secure legitimacy.

5. Organizational structure:

- (a) Discover common values and purposes.
- (b) Joint action via persuasion or coercion.
- (c) Institutionalization.
- (d) Symbolic action.

Observation: The norm here is to stabilize program functions so that policies can be sustained and implemented over time. This requires that organization, policy, and the implementation of policy be closely connected and that the connections be given conscious and close scrutiny. If the first four components of the model have met their norms, organization should be achieved with relative ease. But what this norm calls attention to is that the form and operation of the policymaking organization requires its own attention because it can have an independent influence on the chances of making and implementing successful policies.

Strengths and Weaknesses of the Future of the Bay

FOB has been operative for three years and it is now possible to assess some of the strengths and weaknesses of the program. What follows is a selective look at the strengths and weaknesses of FOB to date.

1. As an organization FOB is an advisory body; as such it can bring to it people or agencies that otherwise might not want to participate. FOB is not a threatening program because it has neither authority nor power. Agencies will hesitate before participating in a program with a powerful organization at its center for fear of losing a degree of autonomy. One feature of the existing structure of authority is that agencies are self-protective and jealous of their authority and autonomy. Still, a major plus for FOB is that the institutions that comprise its membership got together in the first place.
2. The level of participation in FOB has been mixed. Participation by members of the technical advisory committee has been particularly good. The same cannot be said of the steering committee. The reasons for the lower level of participation of the steering committee are unclear, but it can be hypothesized that:
 - (a) Once the initial period of threat and uncertainty was over, once the agencies had adapted to the changes in their environment introduced by the new national administration, the need for cooperation and for FOB as a protective organization was not as pressing. Participation in FOB therefore declined as a priority and agency resources were used in other pursuits.
 - (b) Once the BLRPC had been given its charge to find a controversial issue and resolve it within a year, there was nothing else for the steering committee to do. Although the steering committee had agreed that its principal focus was the waters of Green Bay, the committee had never conceived of itself as a body engaged in the search for comprehensive solutions to complex multi-dimensional problems. The steering committee did not adopt the GLER formula of seeking comprehensive solutions to ecosystem problems based on ecological principles and rehabilitative strategies.

(c) The committee had no stabilized ongoing organizational functions that required sustained participation. The need to participate was low and therefore the level of participation was low.

3. The annual Future of the Bay conferences have been moderately successful. They have succeeded in getting some media attention, in focusing some public attention on the Bay of Green Bay, and in giving a boost and an inducement to the FOB process.
4. The BLRPC, the lead agency in FOB, has performed credibly. It accepted a charge from the steering committee for which it had no particular political support and no funding and it carried it through to completion within the allotted time. The coincidental timing of the steering committee's charge and the coastal program's grant of funds assisted the effort but it does not take away from it. What that fortuitous circumstance highlights is that FOB has inadequate financial support.

Point number 4 touches a major weakness of FOB, practical operating capability. The program does not have the resources to engage in major efforts with regard to the waters of Green Bay. Unless some major source of support for an ongoing program is forthcoming, FOB will continue to play a limited role in improving the condition of the Green Bay ecosystem.

FOB needs political support as well as financial support, and in a sense the two merge. FOB needs political support in order to receive financial support, and greater financial support would increase political support. The political support has to come from several levels. First, it must come from the state level because most federal interest in the Bay is directly tied into some state organization; for example, EPA and the Corps of Engineers are directly related to the Department of Natural Resources (DNR), and so on. In addition, basic recognition by the Governor's Office and the Office of the Secretary of DNR would help promote the political recognition and political credibility of FOB.

5. Even were financial and political support forthcoming, two basic weaknesses of FOB would remain. First, the steering committee must reach decisions through some form of consensus. This is difficult to do, it takes time, effort, and resources, and results in opportunity costs. Second, as an organization FOB is an advisory body. This has its advantages, as has been noted, but it also has its drawbacks. No one need follow FOB's advice, no matter how technically sound it may be. And if its advice is not heeded, FOB is helpless.

In sum, FOB is a worthwhile effort that should be continued with a higher level of financial and political support. FOB is not, however, a means to comprehensive ecosystem management based on rehabilitative strategies. For that, something else is needed.

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Part II

The Call for Consensus*

The Great Lakes Ecosystem Rehabilitation Studies (GLER I and GLER II) conclude with the proposition that successful implementation of rehabilitative strategies will require affirmative policies based on ecological principles within the existing structure of institutional authority: local, regional, state, and federal, and will depend upon cooperative action on the part of many agencies and institutions in the private as well as the public sector. The authors conclude:

"...The agencies and user groups associated with the Bay have a long history of limited cooperation. As a result, the present ad hoc policies do not promote rehabilitation. The current momentum must be redirected toward a management consensus based upon sound ecological principles.

Governing by consensus is very difficult. It depends upon a broad based understanding of a problem and the alternative solutions to that problem. It also depends upon long-term commitment by public and private sectors to coordinate the use of resources necessary for rehabilitation. Further, it depends upon significant local citizen involvement which includes frequent contact with local elected officials as well as elected representatives in state and federal government.

The limitation to rehabilitation of the Great Lakes appears to be more of an entanglement of institutional arrangements than knowing what has to be done in an ecological sense." (Harris, et al., 1982.)

The argument, to rephrase it, is that because no single agency or institution has either the responsibility or the authority for the whole ecosystem, successful implementation of any plan will depend upon some form of consensus management. Part II of this paper will take this argument as a hypothesis and will, by means of a selective literature review, examine the feasibility of consensus management as a strategy for comprehensive ecosystem rehabilitation.

Conceptual and Theoretical Issues of Consensus Management

The theoretical literature begins with skepticism about the potential of consensus management and ends with the abandonment of the concept of consensus and with the call for authority to overcome the intrinsic dilemmas of consensus. These difficulties, each of which is a structural barrier** to consensus, may be categorized as follows:

1. The distribution of discretion;
2. Free rider problem;
3. Consensus and the calculus of self-interest;

*This section is adopted from a more extended treatment of consensus management in Yarbrough, 1984.

**The operational barriers are presented in the case study literature.

4. Dilemmas of the cost/benefit structure:
 - a. deprivation cost;
 - b. opportunity cost;
 - c. the cost of authority; and
5. The rationality of inhibiting rational management.

Each difficulty will be discussed in turn.

1. The distribution of discretion:

Stone (1978) argues that comprehensiveness and coordination are incompatible with a wide distribution of decisionmaking discretion. If planning for anything (e.g., ecosystem rehabilitation) requires comprehensiveness it is obvious that the availability of decisionmaking discretion in numerous public and private hands "precludes such comprehensiveness". This cannot be avoided by assuming that there is a latent or "unconscious" consensus of goals waiting to emerge among decisionmakers in the public and private sectors. On the contrary, as is evidenced by the numerous conflicts between government and private groups, the situation is more often one of dissension. Nor can dissension be overcome and consensus created through processes that develop shared purposes. "This is not a society based upon a perceived integrated national interest, but one in which specialized interests are at odds with each other." (Stone, 1978.)

This principle applies to other political arenas. Neither states nor regions nor localities are societies based upon perceived integrated interests, but are ones in which specialized interests are at odds with each other. The situation is made more difficult because frequently programs pursued by governmental actors conflict with those pursued by actors in the private sector. The crucial problem is that conflicting criteria and conflicting goals are built into the structure of our political economy and cannot be avoided or overcome in any comprehensive way. Private firms will exercise their discretion based on "reasonable" business criteria. This can defeat a public effort such as ecosystem rehabilitation where the criteria for decision must be based on ecological principles. Public institutions, on the other hand, will focus on specific institutional programs and desired agency objectives without regard to broader goals or to a comprehensive public interest. This vast distribution of discretion in public and private hands, an inherent feature of the existing institutional structure, means that planning by both governmental agencies and private firms is "...destined to fall short of intended results". (Stone, 1978.)

Stone's analysis yields three propositions important to the concept of consensus management.

First, structure is what governs, and structure is not neutral; it is biased toward some approaches to management and against others. The existing structure of governmental authority and market enterprise defines the essential terms and conditions of planning and management.

This being the case, attempts at ecosystem management will be frustrated. The existing structure will preclude comprehensive ecosystem management.

Second, the best that can be achieved is to balance competing interests, but this is a far cry from planning.

Third,...the existing structure is one of dissension not consensus. (Yarbrough, 1984.)

In sum, consensus management confronts an intrinsic dilemma: the essence of consensus management is to accept the existing structure of authority and to attempt to implement plans and policies within it. But to accept the existing structure of authority is to accept an inherent structure of dissension and a distribution of discretion that precludes comprehensive management. Viewed from this theoretical perspective, consensus management--*because of its basic nature*--can offer no operational guidance toward ecosystem rehabilitation.

2. The free rider problem:

To understand the free rider problem, consensus must be more precisely defined. Consensus should be conceived of as a process and as a decision rule. As a process consensus is a way of reaching decisions by means of dialogue and the sharing of information and understandings, a process of bargaining, negotiating, and compromise. As a decision rule consensus is at or near the pole of unanimity. A decision rule is a rule by which an institution or a set of institutions reaches a decision. The rule prescribes how and by whom decisions are to be made. Decision rules can range from the imposition of a decision by a single actor to unanimous consent of all actors. Consensus, to repeat, comes close to requiring unanimous consent. This is so because actors in a consensus management arrangement are autonomous with respect to the arrangement; that is to say, the decision rule is one of willing consent and actors may choose to agree or not to agree according to their own criteria.

Ostrom and Ostrom (1971) argue that one consequence of using consensus as a decision rule in the management of a common pool resource (ecosystem management, for example) will be the relative lack of attention to investment in projects which provide a common (collective) benefit. This results from a dilemma intrinsic to consensus decisionmaking: the free rider problem.

Take, for example, a collective good such as ecosystem rehabilitation. This is difficult to divide and distribute to individual actors according to their contribution to its cost. An actor who is unwilling to contribute to the cost of ecosystem rehabilitation will still receive the benefits of rehabilitation because it is infeasible to prevent the reception of the benefit.

Similarly, an actor who refuses to curtail use of the resource that is to be managed may profit all the more if others curtail their own use.

This dilemma frustrates consensus and as a result, many actions that would provide collective benefits are not undertaken. No strategy of consensus management is likely to be effective, then, "...unless it can insure that most actors contribute their share of the cost of providing an indivisible good or service, whether the cost be a financial contribution to some project or a limitation on the use of some resource". (Goetze and Godwin, 1982.) In other words, unless there is some arrangement requiring other benefited actors to contribute their fair share, each actor will be concerned that some other actor will get a "free ride".

One major feature is shared by each strategy proposed for overcoming this intrinsic tendency toward the suboptimal provision of collective benefits. It is the prescription for an authoritative institution that can force actors to pay their fair share of the cost. The use of authority to compel actions, however, is not consensus management, nor is the decision rule a consensual one. In the end, *the free rider dilemma leads to the abandonment of consensus management. It calls for authority to overcome the intrinsic difficulties of consensus.*

3. Consensus and the Calculus of Self-Interest:

Ostrom and Ostrom (1971) argue, as do others, that because institutional actors follow a calculus of self-interest, when a decision rule of consensus is imposed upon a competitive common pool situation, the actors, whether corporate or governmental, will be led to adopt any or all of these patterns of behavior: (a) to conceal or minimize access to essential information; (b) to ignore adverse impacts on the common pool resource in the conduct of one's own activities; (c) and/or to pursue a hold-out strategy in relation to other actors drawing upon the same common pool resource.

It is necessary in a program of consensus management that the institutions necessary to the management of the resource share information about their activities relative to the resource. But because information about any one institutional actor's use of the resource may lead other actors to try to alter or stop its activities, an individual actor may attempt to conceal or at least minimize distribution of information about its use of the resource. This undermines consensus management. Further, unless the benefit/cost calculus of all similarly situated actors can be changed and can be made roughly similar, no real collective benefit will be forthcoming because actors may be led to ignore the general consequences of their individual actions. For example, if one enterprise or agency chooses to alter its own action so as to take into account the social cost (external cost), it will seldom have much effect on the entire system unless all other similarly situated actors alter their conduct in the same way. Therefore, each relevant actor must be either induced or compelled to absorb (internalize) the social cost it creates in order that actors not find themselves at a competitive disadvantage. If this is not done no fundamental change in the accumulated impacts being made on the common pool resource will occur. Finally, if attempts are made to gain consent by all actors to voluntarily change their conduct so as to reflect

the total cost of their activity, some actors will be enticed into adopting hold-out strategies. "If all users except a few reduce their demands upon a limited common pool resource, this increases the supply available to those who hold out and refuse to go along with a voluntary arrangement". (Ostrom and Ostrom, 1971.) This could end any probability of consensus because most actors will be unwilling to enter a voluntary agreement regarding the use of a resource if any actor is free to withdraw from the consensus at will.

This argument, too, concludes by abandoning consensus management in favor of authority and enforcement:

It is therefore necessary to forego the use of willing consent in order to gain a capability to enforce joint decisions on all parties. Solutions to common pool problems inevitably involve some sort of public organization to assure collective decisions that can be enforced against all users. This requires recourse to the coercive capabilities inherent in government authority. (Ostrom and Ostrom, 1971.)

4. Cost/Benefit Structure: Alternative Decision Rules

(a) Potential deprivation cost:

Alternative decision rules carry with them different degrees of potential deprivation cost.* For example, if the decision rule is that all of the significant and binding decisions will be made by one institution, or small set of institutions, those affected are likely to disagree with many decisions. With this decision rule, affected actors may expect to bear high deprivation cost. In contrast, if a majority vote is the decision rule for all issues, "...those affected can predict that they have a chance of agreeing with at least half of the decisions". (Ostrom and Ostrom, 1971.)

Potential deprivation costs therefore would be lower under a majority decision rule than under a decision rule allowing only one or a few to decide for all. The point is that *as the proportion of a given set of participants required to agree increases potential deprivation costs decrease*. If unanimous consent--the likely rule of consensus management--is the decision rule, potential deprivation costs will be zero. The cost of effort and time to reach unanimous consent could be high, however.

(b) Potential opportunity cost:**

Consensus management requires that actors must agree (consent) to a decision before action can be taken. This means that time,

*Potential deprivation cost may be defined as the perceived loss of efforts, money, time, autonomy or other resources. (Yarbrough, 1984.)

**Opportunity cost may be defined as the effort, time, and money devoted to collective decisionmaking and the opportunities foregone while the deliberations are in process. Opportunity cost and decision cost will be used as synonyms.

money and effort that could be used for other purposes must be committed to reaching agreement. While engaged in the effort to achieve consensus, the opportunity to do other things may be lost and, if building consensus takes some time, even more opportunities may pass by. "Therefore, time, money, and effort devoted to collective decisionmaking and the opportunities foregone while deliberations are in process can all be conceptualized as potential opportunity cost." (Ostrom and Ostrom, 1971.)

The understanding that potential costs of some sort are connected with the choice of any decision rule leads to the recognition that the most acceptable decision rule for dealing with common pool resources "...lies somewhere between the extremes of unanimous consent and dictatorship". (Ostrom and Ostrom, 1971.) Deprivation costs are too high when one or a few institutions decide for all and opportunity costs are too high with a rule of unanimous consent. It should be noted, however, that for many institutions the cost-benefit ratio may be positive with a rule of unanimous consent even if the result is a minimal provision of collective benefits. This is so because institutions perceive fewer threats to their autonomy when the decision rule is unanimity. A rule of unanimous consent means that other institutions cannot decide on events in a given institution's jurisdiction independent of the given institution's will and preference. (Goetze and Godwin, 1982.)

Ostrom and Ostrom, and Goetze and Godwin, identify the problems surrounding the use of consensus as a decision rule. That is the strength of their respective theories. But what they do not tell us is what would be an optimal decision rule. The theories do not show us a way out.

5. The rationality of inhibiting rational management:

The theoretical literature leads to the understanding that rational institutional actors behave in ways that inhibit the rational management of resources because the bias of the institutional structure within which they operate makes it rational for them to do so. The question this raises is - why?

The point of departure for understanding why it may be rational to inhibit rational management is provided by Goetze and Godwin (1982). Understanding, they write, begins with two basic assumptions. The first is that institutional actors are rational and possess a "utility" function. Included in this function is the concern of an institutional actor for the welfare of the institution and the welfare of the institution's constituents. The second assumption is that participation in intergovernmental resource management is "...largely a function of the incentives, positive and negative, facing an institutional actor". (Goetze and Godwin, 1982.) The authors contend that ...positive incentives are equivalent to the benefits actors expect to receive from participation...and negative incentives are equivalent to an expected cost.

Benefits are of two types: collective benefits (collective goods) and private benefits (private goods) Yarbrough writes to this point:

Collective benefits are those preferred outcomes expected to result from the collective decisions and actions of the management institution (or the intergovernmental management program). Examples are...ecosystem rehabilitation or greater water quality. Collective benefits tend to be indivisible benefits. In contrast, private benefits are divisible goods that can be distributed in an exclusive manner to particular institutional actors. Examples are eligibility for grant programs or increased budgetary support. Collective goods, unlike most private goods, depend on collective decisions and collective actions. And if collective goods are to serve as incentives to institutional participation and cooperation, then institutional actors must perceive that the benefits are likely to be realized. In the absence of such perceptions, participation and cooperation are unlikely to be forthcoming. The problem is, institutional perceptions confront the intrinsic dilemma of collective action - the free rider problem* ...The free rider problem is an intrinsic component of the incentive structure confronting would-be participants in collective action. By way of illustration, ecosystem rehabilitation is difficult to divide and distribute to individual institutional actors according to their contribution to its cost. And if an actor either uses a hold-out strategy and refuses to contribute to the cost of rehabilitation or refuses to curtail adverse use of the resource, there is no feasible way in a voluntary scheme of things to prevent the actor from reaping the benefit of the collective good. The consequence of such an incentive structure is that many actions that would bring a collective benefit are not undertaken because of the intrinsic flaw in the incentive structure. No collective management scheme, which is to say no consensus management strategy, is likely to work unless it can overcome the free rider problem. In the language of social science, so long as the incentive structure contains this intrinsic defect, the provision of collective goods will be suboptimal. (Yarbrough, 1984.)

In short, structural characteristics make it rational to behave in ways that inhibit rational management.

Does the literature offer any guidance as to what kind of incentive structure will overcome this tendency toward the suboptimal provision of collective goods? Once again, the common answer in literature is that comprehensive resource management cannot be achieved through consensus management. Authority must be used to compel compliance; that is, either create "or use...an authoritative institution that can force the cost contributions".

Summary

The chief lesson that theoretical literature has to teach us is that "structure is what governs and structure is not neutral; it is biased toward

*Discussed above, on pages 27 and 28

some approaches to management and against others". (Yarbrough, 1984.) The existing structure of authority is biased against successful consensus management. The existing structure sets the terms and conditions for management and the terms are those of dissensus, not consensus. Proponents of consensus management therefore face a dilemma: consensus must work within the existing structure and the existing structure precludes consensus. Several features of the institutional structure serve to confound consensus, these are: the free-rider problem, other disincentives such as loss of autonomy, loss of political support, deprivation cost and opportunity cost, and the probable behavior of institutional actors in a competitive common pool situation with consensus as a decision rule. Behaviors include concealment of information, hold-out strategies, and disregard of the impact of one's actions on the resource. In addition, there is the probable fact that similarly situated institutional actors will not share a similar benefit cost calculus. This can be stated another way:

No single set of utility preferences is likely to exist among the institutional actors who are parties to an ecosystem (consensus) management plan. Therefore, there exists no course of management policy of maximum utility. No optimizing model for the 'best solution' to the problems of ecosystem management may be built. Optimizing models are constructed around the idea that some scale of preferences, reflecting some single set of values according to which the solution is optimal, can be established, and against which the possible consequences of alternative policies can be judged so as to establish the order of their desirability. If more than one set of values exists, they must be translatable into a common set. (Yarbrough, 1984, following Bauer, 1972.)

This, the theoretical literature suggests, may not be possible. It is within such a structure, and as a result of it, that rational institutional actors behave in ways that inhibit the rational management of resources. The bias of the institutional structure within which they operate makes it rational for them to do so.

Case Studies:

1. Gray's Harbor, Washington:

Gray's Harbor is one of two major estuaries on the coast of Washington State and the only one with an authorized deep-draft navigation channel (35 feet). The estuary encompasses approximately 100 square miles, half of which are tide flats or inter-tidal land. The harbor watershed drains approximately 2,500 square miles from four rivers in the south-central position of the State's Pacific coastline. (Davis, 1980.)

In the late 1970's a Special Area Management Planning program was developed for Gray's Harbor. Special area management planning is "...a process of building public consensus through issue identification and resolution with techniques of mediation, negotiation, and systematic planning". (Davis, 1980.)

Davis (1980) writes that the Gray's Harbor special area management program, a design for making collaborative planning decisions, was envisioned as a comprehensive planning process that would move systematically from broad estuary-wide issues to site-specific decisions on activity standards and use standards. Decisions were to be made by means of a planning task force consisting of federal, state, and local officials. The goal was to match task force membership with the problems to be resolved. The Gray's Harbor Regional Planning Commission was designated as the lead agency for the planning process.

The plan and decisionmaking format moves from the general to the specific by narrowing the range of choices through a succession of management levels. The entire estuary was broken down into eight sub-areas. The sub-areas are planning areas each representing a common set of human related and natural factors. Each planning area was described along a number of dimensions, for example, conflicts, major committed uses, assets, and so on. Forty-four management units were established. Site-specific decisions were to be made in the management units in conformity to guidelines developed at the planning area level.

The general presumption in the Gray's Harbor model was that direction would be established first at the broadest management level, then the range of choices would be narrowed for each succeeding and more detailed management level. The idea was that getting agreement on general management policies would be easier, therefore that was the place to begin. This would postpone having to deal with the standing problems and conflicts at the site-specific level.

How did it work? Davis writes that "...the conceptual decisionmaking model that Gray's Harbor represented did not work well operationally". The operational problems were the result of a number of factors, including lack of understanding, inappropriate information, difficulty in maintaining agreements, different levels of understanding, mistrust and time, and absence of leadership. Davis has this to say about these factors:

(a) A lack of understanding:

- (1) "Task force members did not understand the roles they were being asked to play in this process as a planner/negotiator versus their normal role as regulator." (sic).
- (2) "Individuals did not have a clear understanding of the legal and regulatory constraints of other members."

(b) Inappropriate information: "Information was not tailored to the types of decisions that had to be made".

(c) Maintaining agreements: "Agreements reached conceptually by the task force were difficult to recall when reviewing specific language documenting that agreement."

- (d) Levels of understanding: "Individuals have different levels of understanding of the issues involved."
- (e) Time and mistrust: "There was insufficient time for individuals who had developed a general mistrust of each other over years of regulatory conflicts to believe that they could come to an agreement."
- (f) Leadership roles: "Leadership roles were not nurtured early enough in the process."

Turn this set of negatives around and, with a modest exercise of imagination, they yield a set of operational norms. In order to increase the probability for success in a consensus management scheme:

- (a) Facilitate understanding: Make sure members (task force or otherwise) understand the role they are being asked to play in the process. If the roles are different from the normal ones they play, particular attention should be given to making the differences clear. Participants should have a clear understanding of the constraints, legal and regulatory, of other members.
- (b) Provide appropriate information: Tailor the information to the types of decisions that have to be made.
- (c) Link agreements to actions: Conceptual agreements should be linked, at least tentatively, to the actions required to implement them. This connection between agreement and probable operations, including who agrees to do what, should be documented. This will help actors recall agreements and will assist in maintaining agreements.
- (d) Levels of understanding: It should be recognized that individuals will have different levels of understanding of the issues involved and these differing perspectives should be brought out and made visible.
- (e) Time and mistrust: It should be recognized, as a general principle, that in any collaborative planning effort there will be participants who have developed a general mistrust of each other over the years and time will be required for them to believe that they can come to an agreement. (Note: this could result in substantial opportunity costs.)
- (f) Leadership roles: Leadership roles should be nurtured early in the process and leaders should be given commitments of support.

2. Coos Bay, Oregon:

There are 22 estuaries on the Oregon coast. Of these, only three are authorized and developed for deep-draft navigation. Coos Bay, the largest estuary on the Oregon coast (excluding Columbia River) has a 35-foot channel and encompasses 13,300

acres. It drains a watershed of approximately 650 square miles with one major river and 30 tributary streams. (Davis, 1980.)

Coos Bay represents another experience with Special Area Management Planning. Davis writes that the Coos Bay estuary management plan offered the opportunity to correct for the problems encountered in Gray's Harbor and to develop a new approach to special area management in "high conflict areas". He describes the sequence of steps used in this development and elaborates several key techniques used in the Coos Bay process. His analysis is organized around two primary considerations: "What is the ability of the group to make decisions" and "what is the sequential process that the decisionmakers go through"?

The Coos Bay decisionmaking group was an interagency task force composed of representatives of the federal, state, and local governments. It was determined that consensus would be the decision rule for the task force and because of this much effort and time was required to prepare the group for decisionmaking. Davis identifies several major factors that were involved in the preparation for decision. The factors are not unlike those found in the FOB process discussed earlier, but his study does reveal an important additional principle, belief in the process. The group will not be able to make decisions unless they understand and believe that decisions can be made. There may be many techniques for achieving this necessary belief, but Davis argues that the best technique is being able to actually see the group make a decision even if it is a small one.

Once the group has achieved the ability to make consensus decisions, actual decisionmaking, according to Davis, involves a sequence of five major steps:

- (a) Orientation: Decisionmakers must be oriented to the resource they are to deal with and to each other;
- (b) Issue identification: The group will need to identify, classify, and prioritize issues for resolution;
- (c) Background information: It is necessary for the decisionmakers to share the same background information. They should share similar points of departure in understanding the situation ...One of the most important areas of necessary background information [is] "...a complete review of the legal and jurisdictional constraints that have bearing on the planning areas";
- (d) Decisionmaking tools: Decisionmakers must share a "vocabulary of management tools" prior to the making of substantive decisions. The members must understand and agree to management categories, definitions of terms, allowable uses and activities, and development standards;

- (e) Making management decisions: The manner in which management decisions will be made will be shaped, in part, by the "specific format for the plan". The basic Coos Bay concept is to begin with decisions broad in scope and to use them as constraints to mold subsequent more detailed decisions. It is at the level of detailed decisions that more conflict can be expected. (Davis, 1980; Yarbrough, 1984.)

The fifth step, making management decisions, needs to be structured. Coos Bay offers these guidelines. First the planning area must be broken into sub-areas. This reduces a large complex area to smaller, but understandable pieces. Second, the geographic area should be organized into management units. Management units should be defined with reference to ecological criteria. The chief objective of this is to promote decisions at the geographical management unit level. Breaking the planning area into sub-areas is the least successful step in the entire process, Davis finds. It is very difficult to lay out even general policy guidelines for the more specific decisions that will be made at the management unit level because participants realize the implications for their interests. While Davis does not make the point, the theoretical literature reviewed suggests "...that at this stage in the consensus management process actors would begin to engage in hold-out strategies and other forms of obstructionist behavior". (Yarbrough, 1984.)

Conflict resolution, citizen involvement, and technical information round out the structure of step number 5, "making management decisions". In discussing the need for technical information Davis makes two important observations.

- (1) in many cases technical determinants will not overcome conflict or interests. In fact, getting agreement on the adequacy and significance of the data may be as difficult as reaching agreement on the issues themselves.
- (2) planning decisions in special area management programs are often compromises. Reaching a consensus decision may be dependent upon a realization by task force members that it is acceptable and even advisable to make decisions in conflict with the technical data. (Davis, 1982.)

By this he means a resource loss may be accepted here in order to gain guarantees for resource protection elsewhere.

The study concludes on an unsettling note. Special area management/collaborative planning is, Davis writes, "an approach that is not shaped by physical, economic, or political determinants, but by the need to reach agreement". This highlights a problem basic to consensus management. Consensus management is a process aimed at getting what does not presently exist in the institutional structure, that is, agreement. The goal of consensus management, in short, is consensus. In this sense, consensus management is all process; it has no substance, and it has no norm. If agreements based on ecological principles can be secured, well

and good. But if agreements can be got only by ignoring ecological principles, that is just as well and good. There are no principles of choice in the consensus process except to resolve conflict and reach agreement.

3. San Francisco:

In 1959, a report published by the United States Corps of Engineers estimated that if filling continued at the present rate (3. square miles per year, 1940-1957), San Francisco Bay would be "reduced to a channel in less than one hundred years". (Caplenas, 1982.)

The publication of the Corps report on the Bay provided a solid base of information for governmental officials, political figures, the press, and the public. The study made public and highlighted a number of problems around the circumference of San Francisco Bay. Proposed dredge and fill projects were a particular source of problems. Some of the projects would entail major physical changes. These drew considerable public attention and criticism. Public and city interest was aroused and frustration was expressed by many residents over the lack of effective protection in development of the Bay. In a particularly significant move, the local elected officials of the San Francisco Bay area "publicly proclaimed that an overall plan of the Bay and shoreline areas was needed". (Caplenas, 1982.) In sum, elected officials provided visible and vocal leadership.

An association of Bay Area Governments (BAG) was formed but as Caplenas (1982) points out, it had no power. Nevertheless, the future of the Bay continued to receive public attention and political pressure began to mount around the demand to do something. This pressure ultimately resulted in the legislation needed to protect the Bay.

In 1964 a legislative mandate, the McAtteer-Petri's Act, created the Bay Conservation and Development Commission (BCDC) as an official governmental body. The Commission was established for four years and given the job of preparing a plan for San Francisco Bay. The BCDC completed the legislatively mandated plan in 1969. The state government subsequently decided that the Commission should become the permanent agency to carry out the plan.

The Commission was empowered to deny or grant permits for all Bay dredging or filling in accordance with the provisions in the legislation and the standards in the Bay plan prepared by BCDC. In short, the BCDC was delegated the authority to prepare a comprehensive and enforceable plan for conservation of the water and the development of the shoreline of San Francisco Bay. With the power to implement the plan, the BCDC is able to effectively protect the Bay from environmentally destructive activities (Yarbrough, 1984.)

Several major factors have been identified (Caplenas, 1982) which made it possible for BCDC to accomplish its goals and objectives. They are:

- (a) The BCDC had an efficient, effective staff "capable of keeping the agency in an undeviating line toward the realization of its objectives".
- (b) The BCDC operated openly, with public debates and public hearings, every step of the way.
- (c) The BCDC had statutory power to plan comprehensively and to control uses and regulate them to achieve the desired environmental results.
- (d) The BCDC was an agency strong enough to withstand attack and strong enough to create a comprehensive, ecologically-based management plan for San Francisco under the pressure of many conflicting demands.
- (e) The BCDC was not infringing on any powers of local governments, "but it was providing a regional evaluation of projects in addition to the local evaluation". It could, however, prevent local projects inconsistent with the standards of the plan. (Caplenas, 1982; Yarbrough, 1984.)

4. The Norfolk Broads, England:

In an illustrative case study of the Norfolk Broads*, O'Riordan (1978) asks the question: Why is an affluent post-industrial society unwilling to "recognize and pay for the steady but persistent deterioration it inflicts on its natural habitat?" He then goes on to identify several factors that contribute to the persistence of this kind of social behavior: time and ignorance, the problem of defining the problems, inadequate institutional coordination, and the political balancing of irreconcilable demands. His conclusions about each of these problems will be presented here.

The uncertainties of knowledge are familiar: detailed study of ecological phenomena takes time; there are methodological difficulties; interim results, often based on incomplete analysis, have to be presented and action taken on such a basis. This kind of ignorance, "in the sense of inadequate understanding, feeds prejudice and suspicion and may establish premature political positions which can cloud the unambiguous objectivity of further scientific ecological investigation". (O'Riordan, 1978.)

*The Norfolk Broads is "...a region in northeastern Suffolk and eastern Norfolk consisting of flooded medieval diggings (known locally as Broads); winding sluggish rivers, most of which are navigable, and a surrounding landscape of drained grazing marshes and reed fen plus alder woodland which harbor a great variety of plant, insect, and birdlife". (O'Riordan, 1978.) The Norfolk Broads are subject to a number of incompatible demands; the most neglected demand is conservation and the protection of the characteristic natural habitats.

This familiar situation leads to a point that may not be so obvious: "When knowledge is uncertain, when investigations are incomplete, and the processes are too complex to assure unambiguous findings, competing interests can define the problem and pinpoint solutions to fit their own goals." (Yarbrough, 1984.) O'Riordan characterizes this situation as: "The problem of defining the problems".

What is more, in an atmosphere of uncertain knowledge and scientific doubt, people will not agree about the causes of or the solutions to ecological problems. In such an atmosphere interest groups will allow their interests to influence their judgment. "Judgments will be a function of the diversity of interest and condition in a context of uncertainty."

Diversity and disagreement, and the conflict that stems from them are the source of politics, in this instance, ecological politics. It is in this way that ecological questions become political questions, embedded in a political process made up of the politics of interest, the politics of pointing the finger and blaming the other guy, the politics of bureaucracy, the politics of public expenditures, and the politics of ideology.

An additional political characteristic is inadequate institutional coordination. As with ecosystem management in the United States and Canada, responsibility for managing the Norfolk Broads, an "essentially unified ecological complex" (O'Riordan, 1978), is artificially and historically divided among a number of jurisdictions.

In this context of multiple jurisdictions, diverse interests, and substantive disagreement, ecological problem-solving becomes a politics of blaming the other guy. For example:

Although the AWA (Anglian Water Authority) is prepared to blame the farmers for although being at least partly responsible, however, the farmers themselves are anxious to blame sewage waste on the boats. Few Norfolk farmers will admit to overfertilizing. And even fewer will accept that land drainage is a cause of eutrophication...they will throw their political weight against any measure liable to interfere with the management of this land, and will readily point an accusing finger at the tourist hirecraft which, they claim, stir up mud and damage bankside vegetation... The hire-boat trade is equally insistent that their vessels do not cause much damage... They believe that bank erosion is largely caused by the trampling of anglers and cattle....

and so on. An important principle of ecological politics is being expressed here that should be noted: What this means is that while ecological problems may exist as units, when ecological problems become political problems they do not exist as units. There is no unity to the

way in which people perceive their problems; "there is no unity with respect to the problems people actually have," or to their interests and values. What is more, since the political process has a time dimension, "each of these elements changes over time." (Bauer, 1972.)

This means, further, that resource managers must necessarily become political actors. The political task of the manager is to negotiate agreements, to bargain, to balance irreconcilable demands and, when possible, to seek consensus. In this task, the manager will be influenced by pressure from various sources (interests) "amongst whom he may have to seek compromise". (O'Riordan, 1978.)

As has been said, balance and compromise, and a consensus constructed of balance and compromise, is neither comprehensive planning nor comprehensive management.

5. Oakland:

While the Oakland project was an economic program, not ecosystem management, the findings of the case study (Pressman and Wildavsky, 1973) are transferrable to other policy areas. The project was a program of the Economic Development Administration (EDA) to provide permanent new jobs to minorities. It began with an act of the United States Congress in 1966; it was amply funded at \$23 million; it had the approval of city officials and private employers, and it received much publicity and symbolic support. Nevertheless, it failed. The case study of the project is an examination of why it failed. What Pressman and Wildavsky demonstrate is that what appears to be simple and straightforward is really complex and convoluted; that "perfectly ordinary circumstances--changing actors, diverse perspectives, multiple clearances--that are found in any program present serious obstacles to the implementation of a program." (Pressman and Wildavsky, 1983; Yarbrough, 1984.) They show that what seemed to be a simple program turned out to be a very complex one involving numerous actors, many differing perspectives, and "a long and torturous path of decision points that had to be cleared. These characteristics sharply reduced the chances of successfully completing a program". (Pressman and Wildavsky, 1973.)

The study examines in detail the "complexity of joint action", discussing along the way such issues as multiple participants and perspectives (differing perspectives mean differing measures of success), the multiplicity of decisions (multiple points of decisions, occupied by diverse and independent actors, greatly reduce the probability of a program achieving its goals), and questions of coordination. It is the questions of coordination that will concern us here.

Coordination:

Pressman and Wildavsky rightly note that no complaint about governmental programs is more frequent than "lack of coordination" and no call is more common than "what we need is more coordination". Yet "poor

coordination" persists in one policy area after another and coordinating agencies are continually being designated. Why is this and what does it imply for consensus management?

Coordination is a complex process, not a simple one, but the word "has a deceptively simple appearance". (Pressman and Wildavsky, 1973.) It seems clear enough that actors should be mutually supportive and should not work at cross purposes, people should cooperate to achieve a common purpose, policy should not be mutually contradictory, "A should facilitate B in order to achieve C". This is a common sense understanding of coordination but, as Pressman and Wildavsky point out, two significant and possibly contradictory meanings emerge from it.

First, actors involved in a common policy may behave in contradictory ways because of ignorance; when they are told what it is they are supposed to do and where they fit in the arrangement of things, "they may be expected to change their behavior accordingly". This assumes the actors share a common purpose and some are merely straying from it. If, however, the assumption of a common purpose is relaxed, and the likelihood of conflict over purposes, among other things, is admitted, then coordination becomes another word for coercion. Since actors A and B disagree with goal C, they can only be 'coordinated' by being told what to do and doing it. Coordination thus becomes a form of power. (Pressman and Wildavsky, 1973.)

In a second sense, when one actor tells another to coordinate a policy, "what is meant is that it should be cleared with other official actors who have some stake in the policy. Since other actors have independent mandates and their own authority, they cannot be coerced; their consent must be obtained". (Yarbrough, 1984.) Negotiations to reconcile the disagreements must take place. As a consequence the program may be modified, "even to the point of compromising its original purpose". (Pressman and Wildavsky, 1973.) In the second sense of the term, coordination and consent are synonymous.

The call for coordination, therefore, does not offer any operational values; it does not tell anyone what to do. "Are actors to bargain or to coerce, to secure consent or exert power?" (Yarbrough, 1984.) The call for coordination:

...covers up the very problems--conflict versus coordination, coercion versus consent--its invocation is supposed to resolve.

Everyone wants cooperation - on his own terms. Invocation of coordination does not necessarily provide either a statement or a solution to the problem, but it may be a way of avoiding both when accurate prescription would be too painful. (Emphasis in original.) (Pressman and Wildavsky, 1973.)

The call for coordination thus can take the form of symbolic politics. "Consent to a common purpose is unobtainable, actors will not

behave in the desired manner at the right time, so coordination is invoked when achieving coordination is precisely what cannot be achieved". (Pressman and Wildavsky, 1973.) It is symbol rather than substance.

6. Irvine, California:

"The other side of the story" is offered in a case study of the Irvine, California coastal area and California coastal planning. (Belknap, 1980.) The study examines the corporate response to governmental resource regulations and suggests lessons public agencies need to consider in the development and implementation of environmental policy. The lessons are three:

(a) The importance of political support:

Corporations give close political scrutiny to any agency charged with resource management or regulation and the corporate response to such management will be the result of a "very serious political assessment of the stability of the people on the...(management agency) and the policy direction..." of the agency. The corporation will assess the degree of distribution of public support for the management policy and, of major importance, the perception of legislative support for the policy. Belknap suggests that if the corporation perceives that an environmental management policy is likely to be supported by permanent legislation, its response will likely be more accommodating. If, on the other hand, the corporation perceives an agency to lack legislative and public support, it will "stop and wait". The basic decision to accommodate itself to policy or to wait "is the most important decision the corporation makes" and, Belknap argues, this is not given proper consideration by public agencies. In particular, a corporation will choose to wait if it perceives the immediate cost to be too high and the long-term objectives to be too vague. Belknap writes that the effect, on private firm and public policy alike, of waiting "is not given adequate weight and consideration in regulations that require too much detailed commitment for projects to cover large areas of land or require a long time period for completion." (Belknap, 1980).

(b) Regulations as hostile constraints:

"While environmentalists see rehabilitative policies as the 'right thing to do', and public officials may view them as 'reasonable compromises of competing demands', the corporate view is that such policies are 'only the latest in a series of constraints that need to be solved'. This is so in a double sense. The corporation does not adopt the purposes and strictures of resource regulation as its own; rather, it adapts to them as hostile constraints in the environment around which it must maneuver in order to continue to base its decisions on sound business criteria."* (Yarbrough, 1984).

*This is an interpretation of Belknap's argument. In fairness it should be said that he might disavow it.

The corporation sees resource policies as constraints in a second sense. Most policies "facing the corporation", even newly enacted ones, are not new to the corporation. Rather, they are only the latest in a "series of constraints" which are in many ways redundant to requirements already imposed by state and local governments. "They constrain the corporation in that it must integrate the strictures of the policy into the other requirements it faces while anticipating future policy demands. The corporation is constrained by the actual policy requirements and by uncertainty as to future policy requirements." (Belknap, 1980).

(c) The corporation as integrator:

An often overlooked fact is that the private sector is an integrator and a coordinator of divergent public policies. Private firms have a vested interest in coordinating the policies and objectives of public agencies at all levels of government, federal, state, and local. Belknap makes the interesting speculation that the corporation is frequently the only institution with an interest in pulling together an internally consistent and tight set of policies that can serve as performance standards. "The range and volume of policies on any one resource...(are) amazing in their divergence as they (effect) the same resource.

In sum, the corporation must monitor public agency behavior and assess political strength and must integrate divergent public policies as a condition of its successful operation and continued existence.

Summary

The propositions of the conceptual and theoretical literature are borne out in the case studies. In theory and in practice, it appears, the probability is slight that ecosystems can be successfully managed through consensus. Consensus management is not a feasible strategy for achieving ecosystem rehabilitation because the bias in the existing structure is against successful consensus management and the bias cannot be overcome by means of consensus. This does not mean that there is no role for consensus strategies in ecosystem management. It is reasonable to speculate that such strategies might prove useful in building support and legitimacy for programs of ecosystem rehabilitation. The Green Bay FOB experience suggests that this may be so, as do the other case studies. In this sense, consensus has potential that should be explored.

Another chief lesson that should be underscored is that efforts at multi-institutional resource management "...were successful where such (a) process incorporated legislative mandates to enforce the development control and were less meaningful where the effort was solely advisory and unable to withstand the pressure of conflicting demands". (Emphasis added). (Caplenas, 1982). In short, the literature leads to the conclusion that legislative strategies which aim to make ecosystem rehabilitation the context for management--the constraint around which interest and institutions should work--are a necessary but not sufficient part of any comprehensive approach to ecosystem rehabilitation.

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Part III

Conceptual Scheme of Ecosystem Management and Policies

What is presented here (Figure 2) is a generalized model of the relationship between the Green Bay ecosystem resource base and the political and economic control system that determines its use, alterations, and allocation. The model is characterized by mutual interactions among a number of components in a dynamic system. It is intended as a descriptive tool, as an aid in comprehending the many interrelated forces that work to determine what ecosystem management will be and what the type and pattern of ecosystem resource use will be. In addition, the model is intended to stimulate the imagination toward discovering important general problems and possible avenues toward resolution. For these reasons the model is general (highly aggregated) and emphasizes, in a broad way, the most salient features of the complex resource management system.

The most important characteristic of the model is the identification of the primary system components and the specification of the nature of their interactions. Note that ecosystem management and politics is influenced by both the flow of influence among the components and by the status and condition of the components themselves. Said another way, the decisions with regard to policy, user and market activity, implementation, and so on, are influenced by both the flow of influence and by the status and condition of the components at a given point in time.

Ecosystem management and politics depends on five sets of variables: (1) the ecological status and dimensions of the ecosystem resource base; (2) user interaction and market forces; (3) affected publics and their identification of problems; (4) the general political setting, and (5) the policy areas and intergovernmental management context. These five sets of variables are the components of the model.

In the model a circle represents the nature and status of a model component. By nature is meant the relatively enduring characteristics of the components; by status is meant the current "level", "state", or "operational propensity" of a particular model component. Status changes over time as a function of the status of other components in the system. An arrow represents the flow of influence and information (a form of influence) between the model components and the characteristic forms of the relationships between the components. Flows of influence determine the relationship between system components and how the status of one affects the status of others. Each of the model components will be discussed in turn, followed by a discussion of the flow of influence and information between model components.

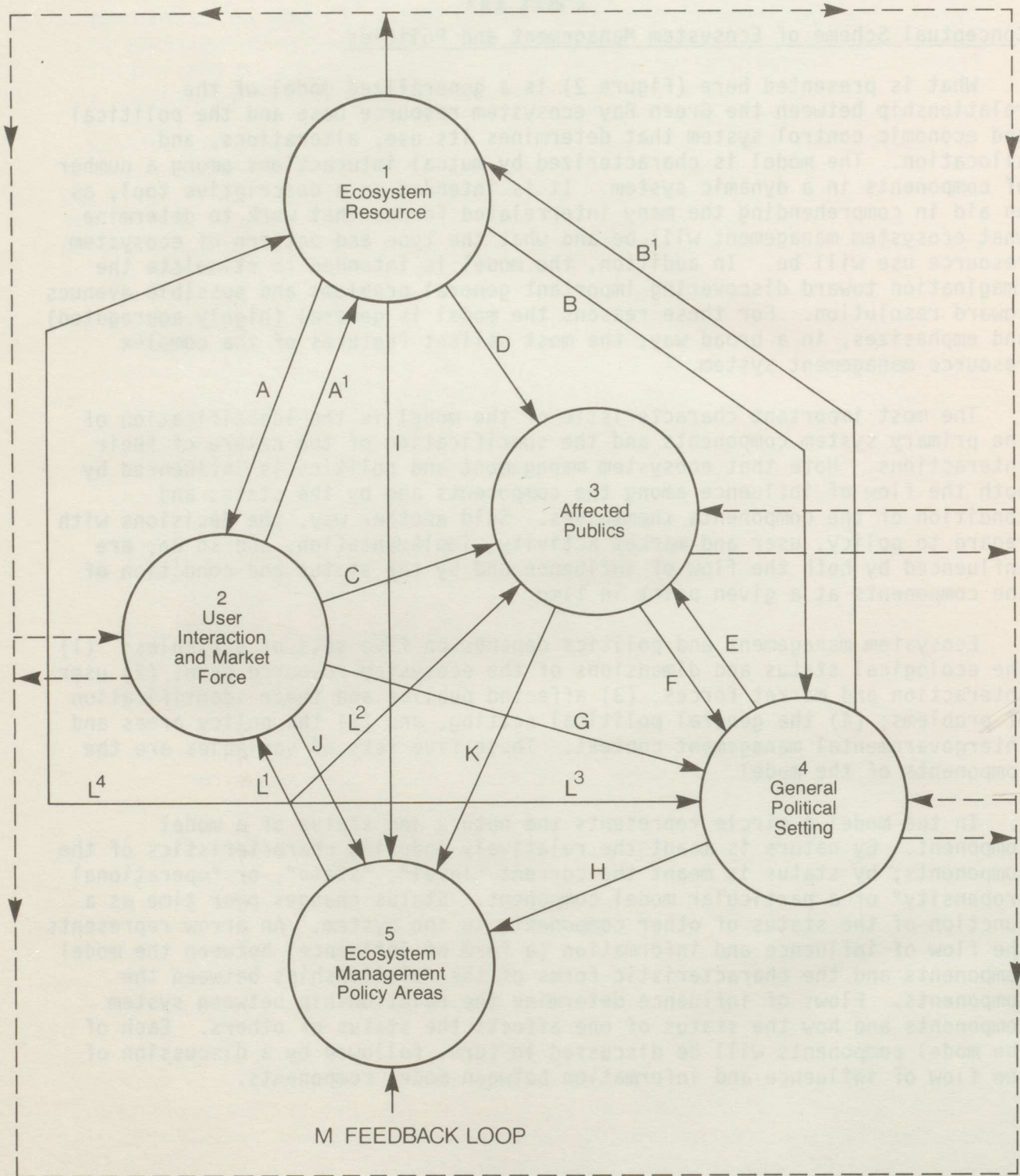


Figure 2. Conceptual Scheme of Ecosystem Management and Politics

Model Components

1. Ecosystem Resource:

- a. This set of variables has to do with the nature and status of the resource in question, its basic nature, i.e., the fundamental characteristics associated with the type of resource it is, and its present status, i.e., its condition, availability, and other relevant characteristics. The nature and condition of the ecosystem resource influences its present and potential use. The status and condition of the resource base and the particular resource in question also influence publics and their perceptions of benefits or problems.

b. Green Bay:

Nature: Green Bay is a fresh water "estuary" about 120 miles (193 km) long with an average width of 14 miles (22 km) and a mean depth of 52 feet (15.8 m). The Green Bay watershed drains some 40,000 km² of land surface in 24 counties in both Wisconsin and Michigan, or about 1/3 of the total Lake Michigan drainage basin. (Harris, et al., 1982). "Biologically, it is one of the most productive and important ecosystems in Lake Michigan." (Francis, et al., 1979).

Status: The modern history of Green Bay has been one of ecosystem degradation. Forest exploitation in the nineteenth and early twentieth century, agricultural land clearing and human settlement in the drainage basin have significantly contributed to the degradation of environmental quality. "In more recent times the Bay continues to be impacted by industrial developments along the lower Fox River, the main tributary river entering the Bay, and to a lesser extent by shoreline developments for recreational purposes. In general, the southern end of the Bay remains heavily polluted from excessive nutrients, industrial waste, and heavy sedimentation. Overfishing has been common and stocks of several preferred species have collapsed. Exotic fishes are now abundant. The quality of the recreational opportunities in the lower Bay remains low." (Francis, et al., 1979). In short, the status of the resource is that of an ecosystem in trouble.

2. User Interactions and Market Forces:

- a. This set of variables includes the interactions of the users of the resource and the nature and status of market forces. Examples of user groups are commercial fishermen, sport fishermen, wet industries, farmers, energy utilities, municipal sewage, and so on. (See Table 3, p. 48, for completed listing) The user groups promote the stresses (e.g. nutrients, toxics, suspended solids and sediments) that affect the ecosystem.

Market forces are a set of variables that structure user interactions. They may include the existing institutional structure of the market, market demand and need for ecosystem resources, and the

present and potential pattern of market use, alteration, and allocation of ecosystem resources.

- b. Research has produced a list of fourteen "User" groups for Green Bay. (See Table 3)

Market forces that structure and influence the interactions of users of Green Bay are not clearly understood. Although some economic studies have been done, for example, on shipping in the Port of Green Bay, this is an area where research is needed.

Table 3. "Users" of Green Bay

1. Sport fishermen	8. Bay and tributary shoreline residents
2. Commercial fisherman	9. Recreational boaters
3. Wet industries	10. Waterfowl hunters
4. Farmers	11. Swimmers
5. Municipal sewage	12. Enjoyers
6. Energy utilities	13. Land developers
7. Commercial shippers	14. Land fillers

3. Affected Publics:

- a. This set of variables refers to the user groups who are affected by the stresses placed on the resource. It includes all who are objectively affected and focuses on the subset of those who perceive themselves to be affected by the current and potential status of the resource base.
- b. Affected publics are a potential source of political support and legitimation for ecosystem management. It is these publics who, when aroused, can transform ecosystem issues into demands for government action. Who these publics are, what their present status is, their levels of perception of the issues and how they might be mobilized, are all areas of needed research.

4. General Political Setting:

- a. The fourth set of variables refers to the institutional, legal, and behavioral characteristics of the American federal system. The institutional structure is fixed in the sense of being established,

but it is dynamic. The legal variables include constitutional law, statutory law, administrative law, and case law. The behavioral characteristics are, first, the operational propensities of the American federal system, including the nature and operation of the processes through which policy is formulated and, second, the general political environment that influences the management process. At any given time certain issues are so predominant in American politics that they penetrate the politics of each particular policy area. These may include movements of social reform, conflict over wartime mobilization, ideological crusades over one issue or another, and so on. Whatever they may be, they so transcend the specific issues of their policy area as to become a political factor in other policy areas.

- b. Nature: The givens are a basic constitutional structure (separate institutions sharing powers, and so on), federalism, and the political culture.

Status: The status changes as a result of changes in personnel--a new administration, a different Congress--changes in policy, and the conflicts of the times.

Political actors are attuned to these changes because they must adapt to them; witness the FOB process which was catalyzed by a change in the national administration and threat of new policies. Scholars, however, have not paid enough attention to the connection. More work needs to be done on examining the impact of the general political setting on ecosystem management.

5. Ecosystem Management/Policy Areas

- a. This set of variables includes the inter-governmental management arena in which management strategies are formulated and the policy areas of ecosystem management. Ecosystem management and politics is here divided into four policy areas, each grouped around one notable stress on the ecosystem: nutrients, toxics, suspended solids and sediments, and fisheries.* Grouped around each stress is what is here labeled a policy area. Each policy area has its own particular political characteristics, its own "politics of the stress", as it were. The biophysical characteristics of the resource, user interactions and market forces and affected publics interact to produce a particular political morphology that is termed the politics of the stress. Each stress requires different technical management strategies and involves different sets of political actors. The separation is not absolute, however. Issues in one area do spill over to affect other areas. Different stresses may share the same regulatory agency. The same court decisions or statutes may govern them. Allies and opponents may be held in common. Nevertheless, the four policy areas do differ and are subcomponents of ecosystem management and politics.

*Policy areas are not absolute categories. They correspond to the types of stresses and the kinds of issues relevant to a particular ecosystem.

- b. Nature: The institutional context for ecosystem management is fragmented. It can be characterized (see page , above) as a setting in which there is a broad distribution of discretion; many agencies possess independent mandates and have their own agenda and goals as do commercial users of the Bay. Seven cities, five villages, thirty towns, seven counties, and two states, for a total of fifty-one governmental units, bound the Bay. In addition, at least seventeen federal, state, and regional agencies have regulatory, management, planning and/or information responsibilities within the watershed.

Preliminary research has been done on the "complex mosaic" of agencies and institutions with responsibility for the Bay of Green Bay (Harris, et al., 1982). A matrix of management roles was developed by GLER II researchers which allowed them to summarize in two ways the institutional interactions with the Green Bay ecosystem. First, they determined "the distribution of the various kinds of functions undertaken by institutions across all of the stress categories" (Harris et al., 1982), e.g., toxics, nutrients, suspended solids and sediments, fisheries). Second, they examined "the frequency with which agencies or institutions address the four specific ecosystem stress categories". (Harris, et al., 1982).

This is a useful first step. Its virtue is that it allows one to see what is out there; its limitation is that it is static. Research that is aimed at providing "a foundation for institutional improvement must be directed to institutional behavior". (Fox, 1970). The next step, then, is to move beyond the specification of functions to an examination of how such functions are performed. The move must be from the static to the dynamic. In this light, it should be kept in mind that the institutional functions identified in the GLER research will be "...exercised by one or more determinant persons, who, whatever else they might be, play the role which the function implies". (Friederich, 1963). In other words, institutional functions are not mechanical ones; rather, they consist of the activities of persons performing conscious roles and must be understood in relation to conscious purpose or objective. Institutional actors adopt purposes, and change them, as well as serve them.

Status: Status of this component has to do with the dynamics of institutional behavior and the politics of the policy areas as well as with the dynamics of what is termed here the politics of the stress. These are promising areas for research.

The Flow of Influence and Information

Line A. Represents the influence on users and markets of the nature and current status of the ecosystem resource. Influence is transmitted via: (a) supply; (b) general condition; (c) stresses influencing user groups; (d) geographical location.

Table 4. User Group and Stress Interactions

High No. of Stresses		High No. of User Groups	
User Groups Influencing Stresses	User Groups Influenced by Stresses	Stresses influenced by User Groups	Stresses Influencing User Groups
Wet industries Energy utilities Land fillers Mun. sewage Land developers	Enjoyers Sport and comm. fishers Rec. boaters Waterflow hunters Shoreline residents	Fishing SS & S Nutrients Toxics Shoreworks	SS & S Water level management Nutrients BOD Petroleum
Low No. of Stresses		Low No. of User Groups	
Swimmers Enjoyers Waterfowl hunters Shippers Sport and comm. fishers	Farmers Shippers Land developers Wet industries Land fillers Energy utilities	Exotics PCBs Dams Entrain./Imp. Shipping	Thermal mod. Heavy metals Shipping Entrain./Imp. PCBs

Source: H.J. Harris, et al., "Green Bay in the Future - A Rehabilitative Prospectus", Technical Report No. 38, Great Lakes Fishery Commission, Ann Arbor, Michigan (September, 1982), p. 21.

Example: GLER II has identified the stresses that influenced the most users (SS & S and Water Level Management) and the users affected by the most stresses (Enjoyers, Sport and Commercial Fishers, and Waterfowl Hunters). They find that "although these users are influenced by numerous stresses, they directly influence few stresses themselves. Conversely, Wet Industries and Energy Utilities influence more stresses than any other group, but they are affected by relatively few stresses". (Emphasis added). (Harris, et al., 1982). Table 4 is a representation of user group and stress interaction.

The behavioral, political, and management implications in this flow of influence from resource to users need to be more fully understood. One could, for example, simply by looking at the face of these relationships, postulate that the more an actor is insulated from the influences of stresses the more likely is the actor to resist ecosystem management by engaging in hold-out strategies, or by actively opposing rehabilitative strategies, or in other ways. The point is, these relationships are suggestive. The questions are, what do they mean and what are their consequences?

Table 5. Primary Stresses Affecting the Green Bay Ecosystem

1. PCBs	10. Suspended solids and sedimentation
2. Nutrient loading	11. Dams and dam removal
3. Fishing	12. Heavy metals
4. Manipulation of fish associations (stocking)	13. Shoreworks and offshore development
5. Accidental introduction and invasion of fish species.	14. Petroleum waste
6. Dredging	15. Entrainment/impingement
7. Landfill operations	16. Shipping disturbances
8. BOD loadings	17. Water level management
9. Other toxics and hazardous substances	18. Thermal modifications

Line A¹ Represents the impact on the resource base and the ecological consequences of types and patterns of resource use. Influence is transmitted via: (a) user groups influencing stress; (b) stresses influenced by user group.

Example: What is represented here is the flow of influence of the primary stresses affecting the Green Bay ecosystem. Table 5 represents the eighteen primary stresses identified in the GLER research. (Harris, *et al.*, 1982). Of these, GLER has begun "thinking about technical rehabilitation in terms of a group of four notable stresses; toxics, nutrients, suspended solids, and fisheries". (Harris, *et al.*, 1982). These stresses change the status of the ecosystem resource.

Line B Represents the influence on the general political setting of the nature and current status of the ecosystem resource. Influence is transmitted via: (1) supply; (2) general condition; (3) number and variety of stresses on ecosystem; (4) geographical location; (5) perceptions of resource status.

Example: The changing status of the resource--for example, an ecosystem in decline--may have an independent influence on the general political setting. Institutional actors may perceive the general degraded condition of the resource or may become aware of the decreasing availability (supply) of the resource and may seek legislation or some other remedy to reverse the degradation. This flow of influence may be necessary for political action, but it is not sufficient. This requires, in addition, the influence of affected publics on the political setting.

Line B¹ Represents the impact on the resource base and the ecological consequences of types and patterns of governmental use and controls. Influence is transmitted via: (1) general political milieu; (2) governmental actions influencing stresses; (3) stress influenced by governmental actions.

Example: The general political milieu may be one of indifference to or ignorance of the nature and status of the resource. The political culture may place small value on the quality of the natural resource. The ecosystem, a common pool resource, may be subject to "the tragedy of the commons". Or the flow of action may be direct. Governmental action, dredging, for instance, may place stresses upon the ecosystem.

Line C. Represents the indirect impacts of user and market interactions on affected publics. Influence is transmitted via: (1) externalities (external costs and benefits); (2) perceptions of externalities.

Example: Publics are affected indirectly by user interactions and market forces and by the stresses these two sets of variables place on the resource. The flow of influence is by means of externalities and perceptions of externalities. Externalities (external diseconomies) are "...economist's terms for the social costs of production that are not accounted for in the price mechanism". (Ophuls, 1977). They are costs imposed on parties external to the transactions. For example, a downstream user of a degraded river pays an external cost if the degradation is the result of an upstream wet industry's use of the resource.

To paraphrase John Dewey, externalities become public problems when publics perceive them, seek ways to do something about them, and find that the problems of externalities cannot be solved privately. The public(s) consists of all those who are affected by the indirect consequences of transactions to such an extent that it is deemed necessary to have these consequences systematically cared for.

Affected publics are the fundamental political resource for comprehensive ecosystem management. Programs of ecosystem rehabilitation need support and legitimacy and the primary source for both is affected publics. What needs to be studied is the processes by which externalities are translated into political demands. This does not happen automatically, so research is needed into deliberate strategies for promoting the perception of externalities. For example, if affected publics perceived the degradation of the Green Bay ecosystem as an external cost requiring a public solution this could enhance political support for ecosystem management. It may be that such a holistic perspective may have to be built up piece by piece through perceptions of lesser externalities such as lost recreational opportunities or a deteriorating fishery. The point is, affected publics are a great potential resource for ecosystem management and we do not know a great deal about them.

Line D Represents the impact on affected publics of the nature and current status of the ecosystem resource. Influence is transmitted via: (1) influence of stresses on publics; (2) perceptions: (a) perceptions of the nature and status of the ecosystem, and (b) perceptions of the effects of stresses on publics.

Example: The flow of influence from user interactions to affected publics is indirect (Line C). The flow of influence here is direct; stresses such as SS & S, Nutrients, BOD, Water Level Management, and so on affect publics who would use the Bay. The stresses are the actual social costs borne by affected publics. Again, the influences are transmitted via perceptions so the discussion above (Line C) applies here.

Line E Represents the direct and indirect impact on affected publics of the general political setting. Influence is transmitted via: (1) macroeconomic and macropolitical policies; (2) current issue agenda; (3) orientation of current administration; (4) political culture; (5) electoral politics; (6) law: constitutional, administrative, statutory, case; (7) externalities.

Example: The general political setting is pervasive, but its influence on affected publics is not uniform over time, either in direction or content. For example, the orientation of a current national administration may be toward deregulation, the reduction of funding for environmental programs, and reducing inflation rather than unemployment. Such policies may affect the willingness of publics to support ecosystem management.

Political culture affects publics in more subtle ways. We all "partake of it", so to speak, and if the culture is a libertarian one, as is that of the United States, then difficulties of getting public support for comprehensive management are increased, although to what degree is uncertain. What needs to be studied is the influence of political culture on the support of publics for comprehensive ecosystem management. Just what kind of a constraint is culture, and does culture offer opportunities as well as barriers?

Line F Represents the influence of affected publics on the general political setting. Influence is transmitted via: (1) direct lobbying; (2) indirect lobbying; (3) litigation; (4) partisanship: (a) financial support of candidate or party, and (b) electoral politics.

Example: The flow of influence from the affected publics is of two kinds, direct and indirect. Direct influence occurs when publics are aroused and mobilized around some issue and it takes the form of overtly trying to get the government to do something or to stop doing something, for example, enforcing water quality standards or reducing shipping disturbances. The techniques of direct influence range from lobbying to litigation. Questions revolve around methods of arousal, motivation, and organizations and the strategies and tactics of influence.

Indirect influence refers to one of the important links between elected officials and publics. Elected officials, if they desire to remain elected, must anticipate the reaction of publics to their political behavior in office. By behavior is meant from words to blows and everything in between, including most particularly the elected official's positions on issues of importance to constituents (publics). This "anticipatory influence" (Friederich, 1963) is institutionalized by means of the electoral process. It is, however, an often neglected source of deliberate political influence. Its potential needs to be considered.

Line G Represents the mutual adjustment between public and private sectors. Influence is transmitted via: (1) dual leadership; (2) the distribution of discretion; (3) mutual need for economic productivity; (4) legal nexus; (5) macroeconomic role of government; (6) calls for help from user groups to public sector.

Example: In a society with a private enterprise market economy, relationships between governments and market institutions are those of mutual adjustment and compromise. For constitutional, economic, and political reasons, governments cannot command businesses to perform economic functions. This has an effect on public policy because it gives businesses a say in governmental policymaking. Lindblom (1980) characterizes it this way:

Many of the functions performed by business managers in the market are essential to society in that, if not performed, widespread discontent and--at an extreme--disorder would follow. Housing must be built, food processed, people and goods transported, factories built and operated, and jobs made available. If these and other similar activities falter, widespread distress will follow.

Government officials recognize this. They also know that widespread failure of business to perform these functions will bring down the government. A democratically elected government cannot expect to survive in the face of widespread or prolonged distress. Extreme economic disorganization would not just evict officials in power but also would overthrow the entire regime or form of government. Consequently, government policy makers show a constant concern about business performance.

By rules of the private enterprise market system, however, no one--not even governments--can command business managers to perform the functions assigned to them. Although governments can prohibit, they cannot positively command business managers to perform their functions. A business manager produces or offers jobs only if he or she voluntarily decides to do so.

How then can a government official be reasonably confident that managers will discharge their necessary functions? My making sure that they will find it advantageous to themselves to do so. They will perform only if induced by benefits, gains, or advantages offered them.

One might think that, because opportunities for profit lie about everywhere, business managers will certainly find inducement to perform their functions. Yet not even Adam Smith believed that they would inevitably do so if left to their own devices. In many parts of the world, they do not, as in India, for example. They perform their functions only when governments develop and maintain business profitability through supporting policies.

This need to develop policies supportive of business profitability can function as a constraint on comprehensive ecosystem management.

Mutual adjustment between public and private sectors has been much studied. What needs to be done is to apply what has been learned to the understanding of a particular ecosystem. The question is, what are the consequences for ecosystem rehabilitation of the mutual adjustment between public and private sectors.

Line H Represents the direct and indirect impact of the general political setting on ecosystem management and policy areas. Influence is transmitted via: (1) macroeconomic and macropolitical policies; (2) current issue agenda; (3) grants-in-aid; (4) resource competition; (5) orientation of current administration; (6) political culture; (7) electoral politics; (8) law: constitutional, administrative, statutory, case.

Example: The Green Bay Future of the Bay experience is an example of this flow of influence. A change in national administrations accompanied by a change in public policies changed the context of environmental management and served as a catalyst for intergovernmental cooperation.

The United States is a federal system (as is Canada), and this constitutional fact creates problems for comprehensive ecosystem management. States play at "beggar thy neighbor" resource competition by giving tax breaks or by relaxing the strictures of environmental regulations in order to woo industry and business away from sister states. This may pressure states that want to keep their industries into easing up on environmental constraints. In short, the impact of federalism on the policies of ecosystem rehabilitation needs to be assessed.

In addition, this flow of influence offers opportunities to promote comprehensive ecosystem management. For example, macro controls in the form of statutory law could change the content of ecosystem management by making the ecosystem a constraint around which others' interests must work.

Line I Represents the influence on ecosystem management and policy areas of the nature and current status of the ecosystem resource. Influence is transmitted via: (1) number, variety and intensity of stresses on the ecosystem; (2) stress/stress interaction; (3) stress/institutional interactions: (a) management institutions influencing stresses, and (b) stresses influencing management institutions.

Example: The nature of the resource influences management because the ecosystem supports a wide range of human enterprises. Over the years, the Green Bay ecosystem has supported, among other activities, agriculture, fishing, logging, and industrial development. These enterprises inflict stresses on the ecosystem and, in turn, the stresses, their consequences, and the economic and political interests connected with them (the politics of the stress) become the immediate environment of management and the subject with which management must deal.

Valuable research has been done on the number and variety of stresses influencing the ecosystem. More research needs to be done on "stress/institutional interactions" and their consequences for management.

Line J Represents the impact of user groups and market forces on ecosystem management and policy areas. Influence is transmitted via (1) legal nexus; (2) participation in management; (3) bargaining, negotiation, mediation; (4) hold-out strategies; (5) direct lobbying; (6) indirect lobbying; (7) litigation; (8) partisanship; (9) electoral politics.

Line K Represents the influence of affected publics on ecosystem management and policy areas. Influence is transmitted via: (1) direct lobbying; (2) indirect lobbying; (3) litigation; (4) partisanship: (a) financial support of candidate or party, (b) electoral politics, (c) public participation in management.

Example: Along with Line H (the impact of the general political setting on ecosystem and policy areas) these two flows of influence represent the "input" side of ecosystem politics and management. They have to do with who (participants) wants what (policies), when, and how (organization, political strategies, tactics, and techniques). The flow of influence is also part of the story of institutional behavior, the rest of the story being the mutual interactions of institutions and the "output" side of ecosystem management and politics - the implementation of policies.

The impact of user groups, market forces, and affected publics on ecosystem management and politics includes both intended and unintended influences; that is, it includes both the deliberate attempts to influence management through political pressures, lawsuits, and so on, and the indirect impact at any given time of the status of users, market forces, and affected publics.

Lines L^{1,2,3} Represents the implementation of ecosystem management strategies on L¹, user interactions and market forces, L² affected publics, and L³ the general political setting. Implementation is the application of policies to the problems. Influence is transmitted via: (1) the form of management; (2) the decision rule(s) used in management; (3) bargaining, negotiation, and mediation; (4) incentive structures; (5) legal control measures in policy areas; (6) technical control measures in policy areas; (7) perceived benefits and costs; (8) general legal nexus.

Example: These flows of influence represent the control of human behavior in relation to the ecosystem.

Here the direct concern is not with physical nature in the conventional sense, but with people. It is not that the environment is 'administered'; it is that the actions of people as they impinge upon the environment become the direct focus of attention. It is not the environment that is managed, but rather people. Environmental change or protection is the primary object (but secondary effect) of this action. We change or protect the environment through directing or constraining the behavior of people. Principal among the formal social arrangements and processes through which human behavior is controlled are those called government and public administration. But the processes through which decisions are made as to what is done

are called politics. All these terms, however, are interrelating aspects of a total system of social decisionmaking and control. Politics may be described as the art of implementing values through the actions of people...(Emphasis in original). (Caldwell, 1970).

In sum, these flows of influence represent value implementation in relation to the human and natural (ecosystem) environment.

Line L⁴ Represents the impact of ecosystem management on the ecosystem resource. Influence is transmitted via: (1) changes in human behavior in relation to the ecosystem; (2) technical management strategies: (a) nutrient management; (b) toxics management; (c) suspended solids and sediments management; (d) fishery management.

Example: The influence of management on the ecosystem will vary depending upon the management strategies adopted and implemented. But whether they be ad hoc reductionist policies or comprehensive rehabilitative ones, the influence will be a result of human behavior in relation to the ecosystem. This highlights the fact that management can control the primary stresses on the ecosystem only by controlling the human conduct that produces them.

Line M Represents the feedback of information about ecosystem management and policy areas. Information is transmitted about the impact of the application of policy on behavior and the impact of technical management on the ecosystem. Information is transmitted via: (1) formal scientific monitoring; (2) formal socio-economic studies; (3) mutual interactions and networking; (4) partisan political activities; (5) information systems.

Example: The feedback of information will influence the behavior of each of the parties in the management arena: users, affected publics, and governments. Feedback also serves as the basic information in program evaluation. Information is useless, however, and management cannot succeed without goals against which to judge the implementation of policies. There must be a starting point for management - goals and initial conditions - and an end point - the achievement of goals, the resolution of problems. As with all public policies, ecosystem management can be considered as a "...hypothesis containing (goals), initial conditions, and predicted consequences. If x is done at time₁, then y will result at time₂...Implementation...constitutes, the ability to achieve predicted consequences after the initial conditions have been met". (Pressman and Wildavsky, 1973).

Research is therefore needed on how to measure success or failure in both technical and programmatic terms. In a technical sense, measures common to the ecosystem are needed against which to gauge rehabilitation. In the programmatic sense, criteria need to be established by which the results of institutional behavior can be judged.

Part IV

Promising Areas for Research

A. General Propositions:

The research program presented here rests on two general propositions:

1. First, research aimed at providing a basis for the improvement of institutional performance must be directed to the study of institutional behavior as well as institutional structure. (Fox, 1970)
2. Second, research aimed at assessing institutional performance must do three things:
 - a. Establish the criteria by which the results of institutional behavior are to be judged. This is a distinct research need. The question is, if ecosystem rehabilitation is the goal, what criteria should be used to judge success or failure? Put more modestly, and perhaps more realistically, what criteria can be used to judge movement toward the goal of ecosystem rehabilitation?
 - b. Research revealing how existing institutions behave must be pursued.
 - c. The criteria for judgment should be applied to the findings of institutional behavior (and structure, where appropriate) to identify inadequacies in performance. These inadequacies in performance should be viewed as areas deserving additional research attention.

The goal is to find ways to translate ecological criteria into institutional measures of success; to have the established criteria for judgment become an institutionalized element in a program of ecosystem rehabilitation.

B. Research Outline: Ecosystem Management and Politics

The framework for the research program is the Conceptual Scheme of Ecosystem Management and Politics developed in Part III. It sets the essential terms and conditions of the research and serves as a guide to the details. The scheme suggests the following outline:

I. Ecosystem Resource

- A. Nature of Resource: Fundamental Characteristics
- B. Status of Resource: Current Condition, Level, State, or Operational Propensity

- C. Technical Strategies for Ecosystem Rehabilitation
- D. Ecological Criteria for Judgement
- II. User Interactions and Market Forces
 - A. Number and Type of Private Users and Institutions
 - B. Market Forces and their Characteristics
 - C. Behavioral Implications of Flows of Influence. Influence of:
 - 1. Market Forces:
 - a. Investment policies and practices
 - b. Pricing policies and practices
 - c. Taxing policies and practices
 - d. Fiscal transfers, grants-in-aid, other fiscal policies
 - e. Inflation/recession
 - f. Employment practices and levels
 - 2. Supply of Resource
 - 3. Ecosystem Stresses Affecting User Groups
 - 4. User Groups Affecting Ecosystem Stresses
 - 5. Technical Rehabilitation in Stress Categories
 - 6. User Groups Unaffected by Ecosystem Stresses
 - 7. Mutual Adjustment between Sectors
 - D. The Politics of the Stress

III. Affected Publics

- A. Publics Objectively Affected by Stresses Placed on Ecosystem
 - 1. Who Are the Affected Publics
 - 2. What is their Present Status:
 - a. Objective impact of externalities
 - b. Subjective impact of externalities:
 - (1) Type and distribution of perceptions of ecosystem issues
 - (2) Levels of perception of ecosystem issues
- B. Behavioral Implications of Flows of Influence. Influence of:
 - 1. Externalities
 - 2. Market Forces:
 - a. Economic climate
 - b. Market (industrial, commercial, service) policies
 - 3. General political constraints
 - 4. Political culture: cultural constraints/opportunities for comprehensive ecosystem management
 - 5. Ecosystem stresses affecting publics
 - 6. Publics affecting ecosystem stresses
- C. Processes by Which Externalities Are Translated into Public Problems and Political Demands:
 - 1. Potential political support for ecosystem rehabilitation

2. Potential for legitimation of ecosystem rehabilitation
3. Strategies and tactics for promoting the perception of externalities

D. The Politics of the Stress

IV. General Political Setting

A. General Structure of Political Authority

B. Jurisdictional Authority and Regulatory Conditions

C. Legal Variables: Constitutional, Administrative, Case, and Statutory Law

D. General Political Environment:

1. Predominant issues
2. Ideological constraints
3. Orientation of present administration

E. General Political Culture

F. Mutual Adjustment between Sectors

G. Behavioral Implications of Flows of Influence. Influence of:

1. Number and variety of stresses on ecosystem
2. Perceptions of resource status
3. Political demands
4. Litigation
5. Mutual adjustment between sectors

H. The Politics of the Stress

V. Ecosystem Management/Policy Areas

A. Political Morphology: The Existing Structure of Management Authority

B. Policy Areas: Correspond to the Types of Stresses and Kinds of Issues Relevant to a Particular Ecosystem

C. Distribution of Functions Undertaken by Institutions Across Stress Categories and Policy Areas

D. Legal Context of Ecosystem Management

E. Behavioral Implications of Flows of Influence

1. Politics of the stress: Behavior of institutions and political actors with regard to a particular stress:
 - a. Who wants what and why
 - b. Who tries to get what and how
2. Management policies: content of management policies and the implications for ecosystem rehabilitation

- F. Strategy and Tactics:
 - 1. Political strategies of ecosystem management
 - 2. Legal strategies of ecosystem management
 - 3. The interface of political and legal strategies

VI. Implementation

- A. Preconditions for Successful Implementation:
 - 1. Primary obstacles to successful implementation
 - 2. Critical factors in implementing ecosystem policies

VII. Evaluation

- A. Development of Criteria of Success
 - 1. Technical criteria: measures common to the ecosystem
 - 2. Programmatic criteria: measures by which the results of institutional behavior can be judged.
- B. Application of Criteria to Behavior

Summary and Conclusion

The outline identifies areas where research is needed. Each of these has been discussed in Part III and elsewhere in the text in terms of the nature of the questions that need to be asked and the content of the research that needs to be conducted, to review them again would be unnecessarily redundant. What the outline and the previous discussion do not touch upon are the ways - the methods - that can and should be employed to carry out the research. Methods of research, however, are not the subject of this paper. The necessary scientific methods are available, should the decision be to use them.

Finally, the research program represented in the outline is a bit overwhelming in the sense of what it would take in terms of time, effort, and money to implement it. Nevertheless, its scope and complexity are no argument against demonstrating what would be required to understand in a comprehensive way ecosystem management and politics. Further, not all of the items on the outline require original research. Sound work has been done in many areas, for example, political culture or the behavioral propensities of the American federal system. What is required in these areas is a synthesis with an eye toward applying established knowledge to the particular circumstances of the Green Bay ecosystem. In other areas original research is needed. This necessitates the establishment of priorities. The following is, therefore, a list of initial research priorities abstracted from the research outline.*

- Establish criteria for successful ecosystem rehabilitation
 - Technical criteria
 - Programmatic criteria
- Describe existing institutional behavior: General

*The priorities are unranked, but they have a logical progression.

- Describe existing behavior of affected publics
- Discover the politics of the stress: the particular behavior of institutions and political actors with regard to a particular stress
- Apply criteria to findings on institutional behavior; identify inadequacies in performance
- Explore strategies and tactics for the implementation of policies of ecosystem rehabilitation
 - Political strategies (includes Political Economic, i.e., market strategies)
 - Legal strategies (e.g., the adequacy of existing law to deal with ecosystem rehabilitation; constitutional restraints in the design of alternative management programs; and analysis of the legal environment)

Research on these priorities would represent an important extension of the state-of-the-art in the analysis of ecosystem management and politics, and would be applicable to the study of ecosystem rehabilitation in Green Bay, elsewhere in the Great Lakes, and beyond.

Describe existing behavior of affected population and identify
Discover the nature of the stress in the population
Institutions and patterns of behavior with respect to particular stress
Apply current knowledge on environmental stressors to identify
Institutions and factors for the implementation of environmental
ecosystem rehabilitation
Political structure, economic, political, economic, and
environmental institutions of the region
Legal structure and the role of government in the design of
ecosystem rehabilitation; constitutional provisions in the design of
alternative management programs; and analysis of the institutional
structure to assist in the design of the program
Research on these subjects will be necessary for the extension of the
state to the local level in the management of the river, and
would be applicable to the design of ecosystem rehabilitation in many
places in the Great Lakes, and beyond
related to efforts to mitigate

Environmental Stressors

The Great Lakes basin is a natural resource of international
importance and is subject to a variety of stresses. The most
serious of these are the effects of human activities, particularly
the discharge of pollutants into the water. The discharge of
pollutants into the water has led to a variety of problems, including
the degradation of fish and wildlife resources, the impairment of
recreation and aesthetic values, and the potential for adverse
effects on human health. The discharge of pollutants into the water
is a major environmental problem in the Great Lakes basin, and
it is essential that effective measures be taken to reduce the
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Environmental Stressors
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Environmental Stressors

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**Multi-Institutional
Management:
The Green Bay Experience**

Appendix I

Committee Comments to Report

President, Jeffrey L. and M. Jerry, Karen B. (1985). Environmental Science and Technology. California State University, Sacramento, California.

W. A. A. (1981). Practical Strategy and Tactics for Environmental Policy Development. Institute for Environmental Studies, University of Toronto, Toronto, Ontario, Canada.

W. A. A. (1981). An Assessment of a New Institutional Organization. (Unpublished paper). Virginia Polytechnic Institute, Blacksburg, Virginia.

W. A. A. (1981). Environmental Policy and Planning. (Unpublished paper). Virginia Polytechnic Institute, Blacksburg, Virginia.

Multi-Institutional

W. A. A. (1981). Environmental Policy and Planning. (Unpublished paper). Virginia Polytechnic Institute, Blacksburg, Virginia.

The Green Bay Experiences

W. A. A. (1981). Environmental Policy and Planning. (Unpublished paper). Virginia Polytechnic Institute, Blacksburg, Virginia.

Appendix I

W. A. A. (1981). Environmental Policy and Planning. (Unpublished paper). Virginia Polytechnic Institute, Blacksburg, Virginia.

Committee Comments to Report

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W. A. A. (1981). Environmental Policy and Planning. (Unpublished paper). Virginia Polytechnic Institute, Blacksburg, Virginia.



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1984.06.19

file no.- 8502-1

Ms. Patricia Bonner
International Joint Commission
Great Lakes Regional Office
Science Advisory Board
100 Ouellette Ave., 8th Floor
Windsor, Ontario
N9A 6T3

Dear Pat:

Re: Comments on "Multi-Institutional Management: The Green Bay Experience"

I have now belatedly had the opportunity to review the above report and intend to offer several comments on it. I found the exercise very useful but also found myself approaching the issue of consensus type management from a totally different perspective than did Mr. Yarbrough. I suppose this relates to my own set of prejudices as a government agency manager. Too often governments are criticized for establishing new agencies to deal with new problems, rather than try to work within existing institutions. I found the Green Bay effort laudable in this respect, and was pleased at a partial set of accomplishments rather than shortcomings to total rehabilitation. The comments which follow reflect this view.

The examination of the Green Bay experience was undertaken through comparing the actual process to a theoretical model only implicitly stated, that being that direct administrative control and regulation are necessary in order to achieve adequate ecosystem management. If one accepts the model's view, then the evaluation of the Green Bay work follows from it. However, if an alternative view on this form of management is considered preferable, then the whole review of the Green Bay program becomes suspect.

On considering this, some positions should be established which clarify my thinking on the issue.

1. There is a general public dislike for expanded regulation in North America.
2. Direct administrative control is another way of saying management by one set of prejudices and approaches.
3. Management of an ecosystem (i.e. a multi-parted system) requires involvement by multi-faceted program managers.
4. Any monopoly over time becomes less efficient over time through complacency or single minded thinking.
5. Partial success is better than no success at all.

Page 2
Ms. Patricia Bonner
International Joint Commission
File NO. 8502-1
1984.06.19

In the case of Green Bay, what was accomplished was moving from no management strategy to one of consensus and public input and an improvement in the resource. It is fair to say that this might have happened more quickly under a single agency mandate, but at what level or agency or public co-operation is unknown.

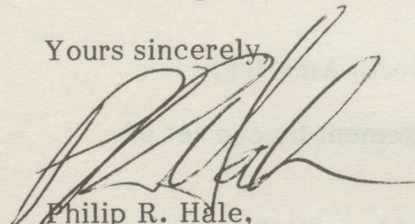
The author spends much time talking to the issue of the weak sister in an inter-agency consensus management setting. I should point out that even in single agency situations, individual program components have relative strengths and weaknesses which might influence the outcome of a management program. For example, if the engineering section is stronger and traditionally better funded than are the fisheries managers, program alternatives will probably end up with a structural bias. At least by involving several agencies and the public, the debate is more public and subject to greater accountability. It is also worthy of note that a single agency is subject to a variety of external forces to which it is vulnerable - press, political comment, criticism by other agencies, and public comment. These tend to make public bodies more careful and conservative when acting singly than when acting as part of the management team.

Much is made of the "weak sister" in a consensus management framework. It is an accurate statement of a problem with this approach, but with careful management the weak sister can be managed into greater involvement, embarrassed to less of a negative role or through public visibility, encouraged to be seen as part of the management process.

Although I could go on at length to expand the view expressed above, there seems little point. In my view, the approach of consensus management was evaluated using Green Bay as the test case instead of evaluating the strengths and weaknesses (i.e. accomplishments vs. failures) of the approach. The fact that rehabilitation was begun outside a rigorous institutional framework within which to hide, is a credible accomplishment. Perhaps the consensus building will lead to the formation of a new agency with administrative and regulatory powers. Perhaps not. The bottom line is that progress is being made. For this reason, it is a model to be admired, not unequivocally criticized.

I would be prepared to expand on this at the S.E.C.C. meeting on July 16, 1984.

Yours sincerely,



Philip R. Hale,
General Manager

PRH/jmcl

GREAT LAKES COMMISSION

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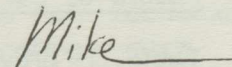
Ms. Patricia Bonner
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Canada

Dear Pat:

Over the past few weeks I have had the opportunity to review, in some detail, the report by C. Jarrell Yarbrough entitled, "Multi-Institutional Management: The Green Bay Experience." My comments are attached. I found the report well written and insightful, and most significantly, thought-provoking. Hence, my comments are in the form of observations and insights as opposed to critical statements. I offer them to you for your consideration, and if appropriate, for the consideration of the Social and Economic Considerations Committee (SECC).

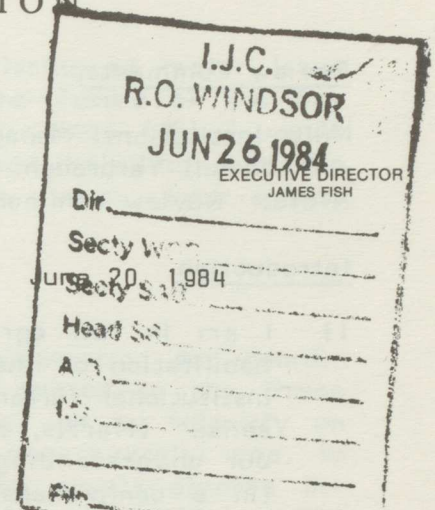
I would suggest that SECC carefully review and discuss the listing of "Promising Areas for Research" identified in Part IV of the report. I would also support any effort to apply this type of institutional/management analysis to another sub-basin in the Great Lakes region in the interest of both 1) refining the Yarbrough model for ecosystem management; and 2) developing substantive recommendations for consideration by the institutions in the sub-basin selected. Perhaps these ideas can be discussed at a future Committee meeting.

Sincerely,



Michael J. Donahue
Natural Resource Specialist/
Administrative Officer

MJD:pam
enclosure



Review Comments

Multi-Institutional Management: The Green Bay Experience

- C. Jarrell Yarbrough, Ph.D., April 1984

[Note: Review comments are organized on the basis of report format.]

Introduction

- 1) I am in full agreement with the observation that "A limitation to rehabilitation of the Great Lakes appears to be more of an entanglement of institutional arrangements than knowing what to do in an ecological sense" (Harris, et al., 1982). It should be emphasized, however, that our understanding of the ecological processes of the Great Lakes system (in a comprehensive sense) is limited as well. Successful ecosystem rehabilitation would not be guaranteed even if an opportunity existed to disband entirely the present "entanglement" of institutional arrangements and create those more conducive to ecosystem rehabilitation strategies. Political/institutional and ecological uncertainties are a "given" for an ecosystem rehabilitation approach. Any approach - consensus management or otherwise - must have the capacity to cope with these uncertainties and reduce them, when possible, to acceptable levels.

Part I

A. Great Lakes Ecosystem Rehabilitation (GLER)

- 1) Based on my limited familiarity with the GLER effort, it appears that existing institutional arrangements were regarded in that study as a "constant," and something of an impediment towards the rehabilitation of the Green Bay ecosystem. Consensus management appears to have been viewed as something of a "medicinal application," that when applied to existing institutional arrangements, would have a "healing" effect.

A more fundamental issue, correctly identified by Yarbrough, is whether existing institutional arrangements can adequately conduct ecosystem rehabilitation strategies (with or without consensus management), or whether alteration of the institutions themselves is required. Consequently, I believe the Yarbrough investigation is not only a logical, but necessary extension of the GLER process.

B. Future of the Bay

- 1) Table I provides a reasonably comprehensive list of objectives associated with the Future of the Bay effort. (Bay Lake Regional Planning Commission Annual Report, 1981). I would be most interested in how these objectives are being operationalized (tasks, assignments, etc.). Also, I believe it is important for "measures of success" to be developed as a benchmark for evaluating attainment of objectives. This is particularly critical because the majority of the stated objectives are ongoing ones; the various programs can be "fine tuned" over time if measures of success are applied and results fed back into the process.

- 2) It would also be interesting to know whether the listing of major issue areas (Table II) has evolved over the existence of the Future of the Bay program, or whether the list has remained unchanged. Since 1981 I would think that additional issue areas may have surfaced, including those in the general areas of resource management, public input, inter-agency coordination, etc.

The Formation of Future of the Bay (FOB)

- 1) The FOB program seeks "to promote greater agency cooperation and coordination in the planning and management of activities related to the Green Bay ecosystem." One of its early substantive charges was to "identify an issue which is regarded as a meaningful, even if controversial one, in the Bay, and then within a year bring together the area's diverse interests and come to a resolution of that issue..." (Bergman, 1984). The issue of dredging and dredging alternatives was selected.

From my perspective, it is clear from this charge that the FOB is not undertaking comprehensive ecosystem rehabilitation. The FOB mandate, at least in this case, is an issue-specific one. As indicated in the Yarbrough report, this initial FOB endeavor was successful. Whether the FOB process is capable of addressing ecosystem rehabilitation in a multiple issue (as opposed to piecemeal) manner remains an open question. A question that would test the FOB process from an ecosystem perspective might be: "Develop a set of policies designed to protect and enhance the water quality of the Bay via balancing the various water and related land resource uses impacting the resource." The point is this: comprehensive ecosystem rehabilitation has multi-institutional and multi-issue dimensions. FOB may be well served by attempting to embody this broad concept in its future effort.

- 2) It is significant to note that the Bay Lakes Regional Planning Commission was not provided (at least initially) with "special funding" for its role as the FOB lead agency. Yet, it was nonetheless able to perform a credible job in that capacity.

In the Great Lakes region, proposals for a comprehensive regional coordination efforts has been dismissed by many as a cost-prohibitive venture. I believe, albeit in a limited sense, that the FOB experience demonstrates that resources within an existing institutional framework can be allocated to address regional needs as well as those of the individual components of that framework. The concept of reallocating institutional resources rather than automatically advocating more resources for planning and management at the regional level would seem to be both economically efficient and politically palatable.

Deciding "What to Do"

- 1) I am struck by the "openness" of the FOB experience; it appears that all interested agencies, organizations and individuals were invited to participate in some fashion in the process. One must wonder when such openness becomes unwieldy. For example, what participatory decisions would

have to be made if the FOB approach were applied to a larger area (i.e. Great Lakes Basin)? This is a critical question, as public acceptance of a plan or program initiative is largely a function of the level of public involvement in the preparation and implementation of that plan or program.

Future of the Bay: An Operational Model

- 1) The discussion of motivations for institutional participation in collaborative planning and decision-making efforts is insightful; many of the important catalysts are identified.

I believe it is necessary, however, to further elaborate on the self-interest concept. Participation by institutions is induced not only by a perception of the desirability of sharing in the collective benefits of the cooperative effort (as is stated), but also by a perception of the disbenefits associated with decisions that may be made in the institution's absence. Simply put, the issue is one of "protecting one's turf." In the Great Lakes region, states and other entities often assume a "watchdog" role during "collaborative" planning/decision-making efforts. They will participate, not necessarily to contribute to the collective progress of the group, but to "raise flags" when their self interest is threatened. It is a defensive posture entailing reactive reflexes rather than proactive idea-sharing. This is most certainly not the dominant motivation for participation in collaborate ventures, but is undoubtedly a prevalent one.

- 2) It is noted that the "number, the variety, and the heterogeneity of institutional factors are potentially negative factors in the cost-benefit structures of collaborative planning." I think this statement might be phrased in a more positive light. The diversity of players, power-structures and perceptions in a collaborative process is undoubtedly a complicating factor, but can have positive benefits as well. For example, it can be important in building a constituency and power base. The desirability of multidisciplinary planning approaches and multi-institutional involvement in regional planning efforts is well established. In any event, this heterogeneity is a "given" in any ecosystem-oriented planning approach, and will increase proportionately with the size of the area of interest.

- 3) I believe that establishing the legitimacy and political credibility of a leadership entity (such as the Bay Lake Regional Planning Commission) is as much a function of the personality and professional capabilities of the entity's staff as it is of the structure and organization of that entity. A capable administrator can overcome (or accommodate) structural inadequacies in an organization. However, even the most desirable organizational structure cannot flourish with inept leadership. I believe this is one of the "great uncertainties" in regional planning today.

- 4) While "overcoming the structural tendency towards weak leadership" should be a goal of a lead agency such as BLRPC, it should be noted that excessively strong leadership roles can have equally negative impacts. Case study analyses of regional planning agencies throughout the U.S. indicate that constituent (i.e. member agency) support erodes when a planning entity begins to develop an excessive degree of autonomy in

relation to the individual institutions (i.e. governmental units) it purportedly serves. The leadership agency must maintain a fine balance to ensure that the collaborative planning effort is both 1) firmly and decisively directed; and 2) open to, and reflective of the input of all members.

Part II

A. The Call for Consensus

- 1) The Yarbrough paper presents a very fundamental and perplexing dilemma. In seeking an ecosystem rehabilitation strategy, it suggests we have two choices: a) select a consensus management approach that operates within the constraints of current institutional arrangements; or b) restructure the institutional framework. The first choice is more readily implemented, but will fall far short of desired results. The second is more likely to achieve desired results, but less likely to be implemented. It would entail the abandonment of consensus management in favor of authority and enforcement.

I do not believe these are mutually exclusive choices. Perhaps consensus management processes can be employed while institutional change is encouraged. In fact, it would be interesting to explore the utility of consensus management as a means to effect institutional change. It would also be useful to explore techniques other than consensus management that both operate within the existing institutional framework and yet may hold promise for advancing ecosystem rehabilitation approaches.

B. Case Studies

- 1) As illustrated in the case study of the Oakland project (Pressman and Wildavsky), "coordination" is indeed an ambiguous, yet often called for activity in regional planning. The Great Lakes management arena is no exception. Unfortunately, those demanding "more coordination" seldom define the term or suggest the approach. If we define coordination as "information sharing," I believe consensus management would yield some benefits.
- 2) Yarbrough states, "Consensus management is not a feasible strategy for achieving ecosystem rehabilitation because the bias in the existing structure is against successful consensus management and the bias cannot be overcome by means of consensus." He further states that "legislative strategies which aim to make ecosystem rehabilitation the context for management....are a necessary but not sufficient part of any comprehensive approach to ecosystem rehabilitation." Perhaps a combination of the two-legislation sensitive to, and implemented by consensus management techniques - holds some promise. I believe this idea warrants further examination.

Conceptual Scheme of Ecosystem Management and Politics

- 1) I find the conceptual scheme to be an effective means of displaying the principle variables in ecosystem management. Its strength is in its recognition of the extent to which the dynamic nature of politics, institutions and policies determine management orientation.
- 2) I agree that "more work needs to be done on examining the impact of the general political setting on ecosystem management." Altering the political setting (i.e. institutional arrangements) is a time-consuming activity. If this is an important step in moving towards an ecosystem rehabilitation management approach, as the author seems to suggest, concerted attention to the "general political setting" component of the model is needed.

Model Components

- 1) In discussion of the model, it is noted that "affected publics" are the fundamental political resource for comprehensive ecosystem management, and a "great" potential resource. While this is certainly true, I would think that "affected publics" can also be a great potential obstacle and source of political opposition if their role and level of participation in an ecosystem management effort is not very carefully designed. The ecosystem management concept I believe, is a new and rather foreign idea to "affected publics" which have historically responded to single issue controversies via special interest, advocacy modes. Hence, fostering public acceptance and understanding of ecosystem management principles is an important and in fact essential undertaking.

The Flow of Influence and Information

- 1) It is noted that a feedback loop encompasses all components of the model. The author identifies a need to better use this feedback loop to develop measures against which ecosystem rehabilitation can be gauged. Such measures might include criteria upon which institutional behavior can be judged.

I fully agree with this statement. Taking it a step further, I believe that the absence of "built-in" performance evaluation mechanisms is a serious flaw in the design and operation of most regional resource management entities. Coupled with broad or otherwise abstract institutional goals, as is often the case, institutional evolution is discouraged or precluded. Much research needs to be done to integrate performance evaluation measures into the feedback loops associated with institutional processes.

Part IV

Promising Areas for Research

- 1) This section of the report adequately summarizes the thrust of the discussion by presenting an extensive listing of research needs. I have but one suggestion - that additional work on the strengths and weaknesses of consensus management techniques in a variety of settings be undertaken to expand upon that which has been done.
- 2) I concur, in general, with the research priorities generated. Perhaps one could be added - "Describe the structure and behavior of an institution ideally suited to undertake ecosystem rehabilitation." Such an exercise could provide a benchmark for evaluating the performance and organizational structure of existing institutions.
- 3) I suggest that any research undertaken have a strong element of application to existing Great Lakes management needs. Perhaps another sub-region can be selected for study, and the FOB report (particularly its model) used for guidance.
- 4) The past couple years have brought a surge of interest in Great Lakes management - from the individual citizen to Governors' offices. Management institutions and strategies - present and potential - have engendered much discussion. I believe that the types of research priorities identified can have a substantive impact upon the future direction of resource management efforts if the studies are carefully designed and results vigorously applied.



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serving communities within the counties of:

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August 8, 1984

Ms. Patricia Bonner
International Joint Commission
Informational Services
Box 32869
Detroit, MI 48232

Re: Multi-Institutional Management: The Green Bay Experience

Dear Pat:

Thank you and the SECC for providing us with a copy of the report and for the solicitation of our comments. Although we do support many of the observations and conclusions which Dr. Yarbrough presents, there are some others with which we differ. Perhaps our close association with this effort has "conditioned" our perspective of the issue, nevertheless we submit the following comments for consideration:

Pages 11 and 17: ... "A shared perception of a threat to agency accomplishments"... "Perceived threat to the mission and well being of the agencies"... - Although concern for budget reductions of various agencies was real, a greater incentive to participate in Future of the Bay was the knowledge the agencies had valuable information which should be shared. In addition, and in the course of program development, agencies came to realize that the issue was legitimately bigger than any one single agency and the need for establishing Future of the Bay for promoting greater understanding cooperation between agencies existed.

Page 14: Selection of the dredge spoils issue for the second year Future of the Bay activities - The dredge study grant was made available to the BLRPC before the selection of this issue by the Future of the Bay Committee. The fact that the issue was important and that resources had become available to address it, was the reason it was selected.

I.J.C.
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Ms. Patricia Bonner
August 7, 1984
Page 2

Page 31: Political and financial support issues - Support must be stated for Dr. Yarbrough's observation of the practical impact on Future of the Bay's ability to sustain its operations. Without funding support, solutions to important problems which exist will continue to go unanswered. In the presence of the positive attitudes of agencies to participate in the Future of the Bay, the absence of a minimal level of funding for ongoing operations is without question, the most serious threat to the program.

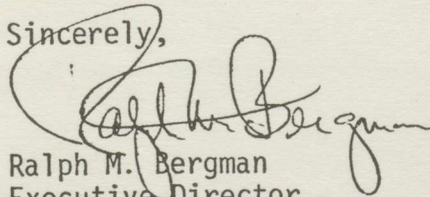
Even with this position, it must be stated that Future of the Bay and its consensus management function continue to provide a very valuable service which includes among others;

- . Greater understanding and broader perspectives for agencies with specific administrative responsibilities.
- . Promotion of cooperation between agencies on controversial issues.
- . Encouragement to establish more rational positions by agencies on issues involving various legitimate positions.

As an observation it should be noted that given the reluctance of our society to endorse greater centralization and control of management issues, organizations like Future of the Bay may very well be the best form of improvement in governmental operations than we can expect to achieve at this point in time.

An intangible but important factor in Future of the Bay type activities is the need of some individual or agency to become the strong visible advocate for the position. Although many people might have an interest in an issue, most are reluctant to initiate an effort much less coordinate it. On the other hand most people are very willing if not anxious to participate. Subsequent participation in a program which is properly orchestrated, will create increased interest and support.

Sincerely,



Ralph M. Bergman
Executive Director

RMB:sp

cc: J. Yarbrough



BAY-LAKE Regional Planning Commission

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Ralph M. Bergman, AICP, Executive Director

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R.O. WINDSOR

AUG 10 1984

August 10, 1984
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Even with this position, it must be stated that the Bay Area and its numerous management functions continue to provide a very valuable service which includes among others:

Greater understanding and broader perspectives for agencies with specific administrative responsibilities.

Encouragement to establish new regional positions in agencies on issues involving various technical matters.

As an organization, the Bay Area has a long history of providing a valuable service to the region. This service is provided through the various technical and administrative functions which are performed by the staff of the Bay Area.

It is the hope of the Bay Area that the various technical and administrative functions which are performed by the staff of the Bay Area will continue to provide a valuable service to the region.

The Bay Area is a unique organization which provides a valuable service to the region. This service is provided through the various technical and administrative functions which are performed by the staff of the Bay Area.

The Bay Area is a unique organization which provides a valuable service to the region. This service is provided through the various technical and administrative functions which are performed by the staff of the Bay Area.

cc: J. Yarbrough

Report to the

Great Lakes Science Advisory Board

**Multi-Institutional
Management:
The Green Bay Experience**

Appendix II

**Author's Responses to
Committee Comments**

RESPONSE TO COMMENTS

Mr. Phillip R. Hale
General Manager
Essex Region Conservation Authority
Essex, Ontario

Mr. Michael J. Donahue
Natural Resource Specialist/Administrative Officer
Great Lakes Commission
Ann Arbor, Michigan

Mr. Ralph M. Bergman
Executive Director
Bay-Lake Regional Planning Commission
Green Bay, Wisconsin

Mr. Phillip R. Hale

I. Mr. Phillip R. Hale is correct, we do approach consensus management and the Green Bay experience from different perspectives, and certainly differing perspectives yield differing measures of success. We could just leave it at that had he correctly characterized my perspective. He did not, so I am obliged to comment.

I do not compare ". . . The Green Bay experience to a theoretical model only implicitly stated, that being that direct administrative control and regulation are necessary in order to achieve adequate ecosystem management." I do not for a variety of reasons, not the least of which is because I do not think "management by one set of prejudices and approaches" will work. My approach is more modest and more explicit.

I begin with a standard of judgment drawn from the Great Lakes Ecosystem Rehabilitation research, what might be termed The GLER standard, i.e., ecological rehabilitation through comprehensive ecosystem management. This standard rests on three propositions drawn from the research:

1. "holistic" systems perspectives are needed to guide research for policies capable of reversing the continual deterioration across much of the Great Lakes ecosystem.
2. Ad hoc reductionist policies, that is, policies determined on an individual parameter by parameter basis, do not promote ecosystem rehabilitation. Such reductionist policies are of some help in dealing with the issues but ad hoc policies do not promote rehabilitation.
3. Successful rehabilitation of Great Lakes ecosystems, including Green Bay, will require SYSTEMWIDE ECOSYSTEM approaches to management.

What is meant by comprehensive or holistic or systemwide management is that the ecosystem should be considered as an ecosystem; the management unit, so-to-speak, should be the ecosystem. This neither dictates nor implies a particular organizational form. It does not mean that the authority to manage the ecosystem should be concentrated in a single set of hands. On the contrary, I take as given the existing pluralistic structure of authority and understand that structure to be the constraint within which ecosystem management must work.

From these two points of departure, the GLER standard of comprehensiveness and the given pluralistic structure of authority, the paper, in Parts I and II, does two things.

First, (Part I) it examines The Future of the Bay (FOB) program as an experience in multi-institutional management. I ask if the FOB experience has anything to teach us and find that it does; a number of positive lessons can be drawn from it. I ask also if FOB is a means of meeting The GLER standard and find that it is not. I find, as I say in the paper, that FOB is a worthwhile effort that should be continued with a higher level of financial and political support. But, and this too is an important finding, FOB is not a means of meeting the GLER standard; it is not a means to comprehensive ecosystem management based on rehabilitative strategies.

Second, (Part II) the paper examines the idea of consensus management as a strategy for comprehensive ecosystem management. Consensus is explored because it is so often proposed as a way of transcending the particularistic perspectives and ad hoc policies that are an integral feature of multi-institutional management. The starting points are the same: The GLER standard and the existing institutional structure. The question is, given the pluralistic institutional structure which can neither be replaced nor essentially altered, is consensus management a feasible way of meeting the GLER standard of ecosystem management? The question is examined both conceptually and experientially by examining in turn the theory and the practice of consensus management. This is done by means of a selected review of the theoretical literature and by means of selected case studies. The conclusion of both approaches is the same: consensus management is not a means to comprehensive ecosystem management. Consensus strategies in some form are a necessary component of multi-institutional management but are not sufficient if the goal is ecosystem management. In short, consensus has its limits.

The theoretical literature and the experiential (case) studies each confront one with the limits of consensus. The theorists argue that because of the limits of consensus some form of authority must be the means to comprehensive management. The case studies teach that efforts at multi-institutional management had greater success where legislative mandates supported such efforts and were less successful in the absence of such support. I look at the logic of this information and infer that legislative strategies or their equivalent which aim to make ecosystem management the context for management are a necessary but not a sufficient component of any comprehensive approach to ecosystem management.

In sum, my perspective and approach are as I have just described them and are not as they are characterized by Mr. Hale.

II. If Mr. Hale means by the "weak sister" what I mean by the "free rider," then he is right, I spend time "talking to the issue." My fundamental point is that the free-rider problem challenges the logic of consensus management theory, not merely the correspondence of the theory with actual events. I stand by the point. If Mr. Hale means by the weak sister something other than what I mean by the free-rider, then we are talking past each other and comment is unnecessary.

III. Mr. Hale would exempt The Future of the Bay (FOB) program from scrutiny. He writes that ". . . the bottom line is that progress is being made. For this reason, it is a model to be admired, not unequivocally criticized." I think our disagreement centers on what it means to criticize.

It is his view, as I interpret it, that I have in a captious way found fault with a program that would better be praised. Criticism is in this sense a disservice and may be a harm to a program that is making progress. One should accentuate the positive.

My view is that criticism is a tool by which to appraise FOB and learn what it has to teach us. Criticism in this sense requires a detached, disinterested, conceptual approach. The critical posture is a scholarly not a partisan one and it neither serves nor diserves FOB.

Mr. Michael J. Donahue

I agree with Mr. Donahue's reading of my paper, and welcome his insights. Detailed comments would be redundant. I would, however, like to highlight two points.

1. I agree, consensus strategies and changes in the existing institutional structure are not mutually exclusive. What we need to find, it seems to me, are ways to displace doctrines and alter behaviors of and within the given institutional structure. Consensus may have a role to play.
2. Mr. Donahue's point that "affected publics" can be "a great potential obstacle and source of political opposition" as well as a political resource is a well taken one. His insight adds an important element to this model component.

Mr. Ralph Bergman

Mr. Bergman correctly points out where we differ. I have no quarrel with his observations.

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