# Findings From Workshops On Citizens' Concerns Regarding The Future Management of Walton County Coastal Dune Lakes

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Reported by:

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## Introduction

Walton County contains many ecological treasures, which attract visitors from all over the world, creating one of the fastest growing counties in the nation. There are 15 named coastal dune lakes in south Walton County along 26 miles of coastline. These coastal dune lakes are extremely rare. In Florida, they are found only in the Florida Panhandle. Around the world, coastal dune lakes also exist in Madagascar, Australia, New Zealand, the northwest Pacific Coast of the United States and South Carolina.

Coastal dune lakes are generally found within two miles of the coast and are typically shallow and irregularly shaped. The water is composed of both fresh and salt water obtained from groundwater seepage (in both directions), heavy rain, and storm surges. Most of the dune lakes around the world are called freshwater lakes with varying periods of saltwater intrusion. Lake water is generally colored (e.g., tea or black colored) due to watershed contributions of dissolved organic matter. While these lakes are exposed to normal weather conditions, coastal dune lakes are tremendously impacted by hurricane activity (i.e., storm frequency, strength and duration).

The coastal dune lakes of Walton County are unique in their intermittent connection to the Gulf of Mexico. This periodic connection serves as control for flood-level waters by opening a conduit to the Gulf. When a lake reaches a critical pre-flood level, breaching water forms an outlet through the dune system and empties the lake water into the Gulf. Depending on tides and weather conditions, salt water and biota from the Gulf fills the void left behind by the lowered water level of the lake until equilibrium is reached and the opening eventually closes. This exchange forms a brackish water-body, creating a temporary estuarine ecosystem. Each of the coastal dune lakes has individual outlet characteristics, with outlet openings varying in length, frequency and duration. These openings occur based on each lake's critical water level, which is driven by droughts and rainfall. As a result, some of the lakes can be completely freshwater, some brackish, and/some salty, with varying degrees between stages. The changing condition of water chemistry in the coastal dune lakes makes them biologically diverse systems with a dynamic nature.

Walton County's tremendous population growth, especially in the vicinity of the coastal dune lakes has raised much concern over the "health" of these exceptional systems. For this reason, the Walton County Board of County Commissioners extended provisions in the Walton County Land Development Code and Walton County Comprehensive Plan for the protection of the dune lakes. Additionally, the County Commission established the Coastal Dune Lake Advisory Board (CDLAB) in 2002. The mission statement for this advisory board is as follows: "To serve, protect and perpetuate the Coastal Dune Lakes of Walton County through mitigation of the effects of development." The CDLAB has several objectives, which fall under three major headings; 1) Action, 2) Education and 3) Perpetual Protection. One action item is development of an action plan (essentially a lake management plan) for each lake. This report is Phase One of the development of these management plans, which consists of identification of issues of concern for each of the dune lakes of Walton County from citizens living around and utilizing the lakes.

## Background

In January 2006, the Choctawhatchee Basin Alliance (CBA) and University of Florida/IFAS Extension Service (UF/IFAS), under the guidance of the CDLAB, began a series of meetings intended to define issues related to the management of coastal dune lakes. This is the first step in an approach to developing a lake management plan called “The TEAM Approach.” TEAM stands for Together for Environmental Assessment and Management (Canfield and Canfield 2002).

TEAM is a three-step process for developing comprehensive and integrative lake management plans and water resource policy. It involves "stakeholders," lay citizens, and technical "experts." In Phase One, these people identify, define, and prioritize their concerns and potential courses of action concerning water resource issues. Next, "pro" and "con" information is developed for each issue. Once this information is provided to everyone involved, they come together to discuss and ultimately vote on a course of action with regard to a lake management plan or water resource policy.

Prior to any of the citizen issues meeting, an initial lake management meeting was held with the following technical experts present and an additional 34 attendees: Chairman Mike D’ Autilia, Vice-Chairman Meg Nelson, Earl Day, Marsha Anderson, Mary Rosenheim, Phillip Ellis, Scott Jackson, Jeannie Wilson, Bill Horn, Walton County Planning and Development Director Pat Blackshear, Walton County Environmental Manager Billy McKee, Walton County Environmental Planner Anthony Austermann, and Walton County Beach Activities Coordinator Leslie Campbell. Chairman Mike D’ Autilia opened the meeting at 9:00 am.

After opening the meeting, Chairman Autilia welcomed everyone to the first public workshop sponsored by the Coastal Dune Lake Advisory Board. This workshop was held to showcase the four-year strategic plan of the Coastal Dune Lake Advisory Board, air potential concerns about the coastal dune lakes and gain support for upcoming individual lake management meetings.

Coastal Dune Lakes Advisory Board and Ex-Officio members were introduced to attendees. Scott Jackson and Phillip Ellis presented a PowerPoint presentation providing an overview of the coastal dune lakes. The large group of attendees was then divided into small break-out groups to identify the major concerns and issues that should direct the management of the coastal dune lakes. The groups came together again, and compiled a master list of all identified issues ranking them from one to 18, with #1 being the most important and #18 the least important issue. Their master list follows:

1) Outfall Management
2) Enforcement of Rules/Regulations
3) Water Quality
4) County Code and Comprehensive Plan
5) Invasive/Exotic Species
6) Development Encroachment
7) Watershed Protection
8) Private Property Rights vs. Preservation
9) Public Access

10) Function of CDLAB
11) Outstanding Florida Water Designation
12) Storm water Management
13) Hurricane Debris Management
14) Shoreline Restoration/Erosion
15) Septic Tank Management/Removal
16) Education and Outreach
17) Recreational Management
18) More Scientific Studies

In April and May 2006, Phillip Ellis with CBA and Scott Jackson with University of Florida –IFAS Extension Service hosted a series of community meetings with citizens from 13 individual lakes. (Two of the 15 lakes have been excluded from this Four-Year Plan because they are part of Topsail Hill Preserve State Park and thus are managed by the Florida Park Service.) These meetings were convened for citizens living around the lakes, to identify issues of concern. Unfortunately, after Phillip and Scott hosted these series of meetings, they each began to pursue other career opportunities and the development of the plan stalled. Therefore, Julie Terrell from CBA requested that Florida LAKEWATCH finish developing the management plans for Walton County's dune lakes. She selected Florida LAKEWATCH because LAKEWATCH has successfully used the TEAM approach to develop lake management plans for several Florida lakes, including the Tsala Apopka Chain of Lakes in Citrus County, Lake Wailes in Polk County and the Forest Hills Lakes in Hillsborough County.

## Florida LAKEWATCH's Proposed Course of Action

There is no need to reconvene all of the individual issues meetings since Scott and Phillip did an excellent job conducting Phase One of the TEAM process, and they kept thorough notes throughout the process. To accomplish the TEAM process as quickly as possible LAKEWATCH will proceed with the following five Tasks:

Task 1 and Task 2 - LAKEWATCH personnel were not present during the meetings, therefore, LAKEWATCH will consolidate all of the notes taken from the issues meetings and present a report to the original lake representatives and the Walton County Dune Lakes Advisory Board to make sure all notes are true to the actual meetings' concerns (e.g., words have meaning and we need to make sure everyone is using the same definitions). When these groups have read this report LAKEWATCH will meet separately with these groups and discuss any corrections and/or additional comments that need to be made to the final list of issues.

Task 3 - Use technical experts and all available science to write the pros and cons for listed issues and compose recommended strategies for managing Walton County's coastal dune lakes.

Task 4 - Present recommendations in a report to the original players (stakeholders, citizens, and technical experts), and convene a meeting for a vote on recommendations/actions.

Task 5 - Finalize the Walton County Dune Lakes Management Plan and provide it to citizens and those in charge of management decisions regarding the dune lakes.

N.B.: Florida LAKEWATCH received CBA's request to help complete the TEAM process for the Walton County dune lakes in December of 2007. They accepted this project on top of many other statewide commitments that LAKEWATCH has already made for 2008. Therefore, LAKEWATCH cannot guarantee a definite finish date, but will attempt to complete this project in the summer of 2008.

## Consolidated List of Previously Identified Issues

After reading all of the notes recorded at individual lake meetings, the notes were consolidated and prioritized for the development of the final lake management plan (See Table 1). Table 1 lists a short title for individual issues identified for each lake and shows a total list of issues identified in all lakes combined. For all of the lakes, more than 20 individual issues falling under eight major headings were identified. The major headings are as follows, with the number of lakes (out of 13) that identified individual heading listed in parentheses:

1) Who is in Charge? (13)
2) Outlet Management (13)
3) Water Quality (13)
4) Watershed/Inlet management (13)
5) Aquatic Plant management ((10)
6) Education (8)
7) Fish and Wildlife (7)
8) More Science and Studies (5)

The first four major headings which were identified as issues at all 13 individual lake meetings seem to be the primary areas of concern for the Walton County coastal dune lakes community as a whole. The readers of this document should carefully study Table 1 to make sure all issues on the lake they represent are present for consideration. Knowing that all issues are important, readers should also consider the order of the major headings listed above to see if they agree with the prioritization of the above list. This will greatly help LAKEWATCH when it convenes the meetings listed in Task 1 and Task 2.

Because Florida LAKEWATCH personnel were not present to ask questions and clarify statements of concern at the individual lake meetings, the readers are also asked to consider the following questions and convey their responses to LAKEWATCH at the meetings conducted to accomplish Task 1 and Task 2 [or any other way possible. Those individuals not able to attend should consider sending their comments via phone (352 392-9617 ext 227, Mark Hoyer, or email: mvhoyer@ufl.edu).

1) For the Outlet Management Heading:

a) Is the major point that water levels are too high at times and cause flooding or too low for lake recreation?

b) Is hurricane debris mostly man-made or natural?

c) What are natural and/or historical conditions?

2) For the Water Quality Heading:

a) Are storm water concerns due to potential nutrient and/or sediment additions?

b) Are septic tank concerns related to potential nutrient and/or bacteria additions?

3) For the Water Quality and Watershed/Inlet Management Headings:

a) Is the protection of wetlands intended to decrease nutrient load and/or simply preservation of the flora and fauna of wetland ecosystems?

4) For the Aquatic Plant Management Heading:

a) What are the invasive/exotic plant species and what problems are they causing?

After all issues are finalized (Task 1 and Task 2), another report will be written describing the pros and cons of each issue using the best available information and science.

Table 1. List of lake management issues identified in individual Coastal Dune Lakes by local citizens in meeting held the months of April and May 2006. The "x" represents an issue that was brought up for an individual lake and the number lists the total number of lakes out of 13 that had an individual issue.

| Issues | Number of Dune Lake With Issues | Allen | Alligator | Big Red Fish | Campbell | Deer | Draper | Eastern |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| Who Is in Charge? | 13 | x | x | x | x | x | x | x |
| 1) Enforcement of Rules/Regulations | 11 | x | x | x | x | x | | x |
| 2) County Codes and Comprehensive Plan | 11 | x | | x | x | x | x | x |
| 3) Development and Encroachment | 7 | | | x | x | x | x | |
| | | | | | | | | |
| Outlet Management | 13 | x | x | x | x | x | x | x |
| 1) Hurricane Debris | 11 | | x | x | x | x | x | x |
| 2) Bathymetric Maps/Hydrology | 5 | x | | x | | | | x |
| 3) Salinity of lake | 5 | | | x | x | | | x |
| 4) Leave Natural/Historical | 5 | x | | | x | | | x |
| 5) Water Levels | 4 | | | | | x | | x |
| | | | | | | | | |
| Water Quality | 13 | x | x | x | x | x | x | x |
| 1) Monitoring for Trends | 11 | x | x | x | x | x | x | x |
| 2) Non-Point Nutrient Load | 4 | | x | | x | | | |
| a. Storm water | 11 | | x | | x | x | x | x |
| b. Wetland Protection | 5 | x | | | | | | x |
| c. Septic Tanks | 5 | x | x | | | | | |
| Sewer System Hook up? | 3 | x | | | | | | |
| d. Lawn Care/Golf Coarse | 3 | x | | x | | | | |
| e. Chemical/Pesticide | 1 | | x | | | | | |
| | | | | | | | | |
| Watershed/Inlet Management | 12 | x | x | x | x | x | x | x |
| 1) Road Problems | 11 | x | x | x | x | x | x | |
| 2) Wetland Protection | 4 | x | | | | | x | x |
| 3) Fix Culverts | 2 | x | | | | | | |
| | | | | | | | | |
| Aquatic Plant Management | 10 | | x | x | x | x | | x |
| 1) Invasive/Exotic Plants | 8 | | x | x | x | | | |
| 2) Increase Natives | 3 | | | | | | | x |
| | | | | | | | | |
| Education | 8 | x | x | | | x | x | x |
| 1) Citizen Outreach | 4 | | | | | | x | x |
| 2) Youth and Schools | 1 | | | | | | | |
| 3) County Government | 1 | | | | | | | x |
| | | | | | | | | |
| Fish and Wildlife | 7 | x | | x | | x | x | x |
| 1) Recreation | 3 | x | | | | | x | |
| 2) Monitoring for Trends | 1 | | | | | | x | |
| | | | | | | | | |
| More Science and Studies | 5 | x | | x | | x | x | |

Table 1 (Continued).

| Issues | Number of Dune Lake With Issue | Fuller | Little Red Fish | Morris | Oyster | Stallworth | Western |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| Who Is in Charge? | 13 | x | x | x | x | x | x |
| 1) Enforcement of Rules/Regulations | 11 | | x | x | x | x | x |
| 2) County Codes and Comprehensive Plan | 11 | x | | x | x | x | x |
| 3) Development and Encroachment | 7 | | | x | | x | x |
| | | | | | | | |
| Outlet Management | 13 | x | x | x | x | x | x |
| 1) Hurricane Debris | 11 | x | x | x | | x | x |
| 3) Bathymetric Maps/Hydrology | 5 | | | | x | | x |
| 4) Salinity of lake | 5 | x | | x | | | |
| 5) Leave Natural/Historical | 5 | | x | | x | | |
| 2) Water Levels | 4 | | | | x | | x |
| | | | | | | | |
| Water Quality | 13 | x | x | x | x | x | x |
| 1) Monitoring for Trends | 11 | x | | x | x | x | |
| 2) Non-Point Nutrient Load | 4 | x | | x | | | |
| a. Storm water | 11 | x | x | x | x | x | x |
| b. Wetland Protection | 5 | | x | | x | x | |
| c. Septic Tanks | 5 | | x | | x | | x |
| Sewer System Hook up? | 3 | | | | x | | x |
| d. Lawn Care/Golf Coarse | 3 | | | | x | | |
| e. Chemical/Pesticide Contamination | 1 | | | | | | |
| | | | | | | | |
| Watershed/Inlet Management | 12 | x | x | x | x | x | |
| 1) Road Problems | 11 | x | x | x | x | x | |
| 2) Wetland Protection | 4 | | x | | | | |
| 3) Fix Culverts | 2 | | | | x | | |
| | | | | | | | |
| Aquatic Plant Management | 10 | x | x | x | | x | x |
| 1) Invasive/Exotic Plants | 8 | x | x | x | | x | x |
| 2) Increase Natives | 3 | | x | | | | x |
| | | | | | | | |
| Education | 8 | | | | x | x | x |
| 1) Citizen Outreach | 4 | | | | | x | x |
| 2) Youth and Schools | 1 | | | | | x | |
| 3) County Government | 1 | | | | | | |
| | | | | | | | |
| Fish and Wildlife | 7 | | | | x | | x |
| 1) Recreation | 3 | | | | x | | |
| 2) Monitoring for Trends | 1 | | | | | | |
| | | | | | | | |
| More Science and Studies | 5 | | | | x | | |

## Appendix I

# The TEAM Approach,

## "Together for Environmental Assessment and Management":
## A Process for Developing Effective Lake Management Plans or Water Resource Policy

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## ABSTRACT

Canfield, S. L., and Canfield, D. E. Jr. 1994. The TEAM Approach, "Together for Environmental Assessment and Management": A Process for Developing Effective Lake Management Plans or Water Resource Policy. Lake and Reserv. Manage. 10(2):203-212.

TEAM, "Together for Environmental Assessment and Management," offers a new approach for developing comprehensive and integrative lake management plans and water resource policy. TEAM is a three-step process, one ideally sponsored by a legislative or executive arm of government. It involves "stakeholders," lay citizens, and technical "experts" which may include academics, private professionals, and regulatory or management agency personnel. Using the TEAM approach, stakeholders and lay citizens together in a citizens' forum identify, define, and prioritize their concerns and potential courses of action concerning a water resource issue(s). Then, "pro" and "con" teams of professionals provide technical information and a peer-reviewed debate of technical aspects of citizens' concerns. Last, with this information citizens discuss and ultimately vote on a course(s) of action with regard to a lake management plan or a water resource policy. The recommendation(s) of citizens is provided to appropriate policy makers and the public.

The goal of the TEAM approach is to improve upon traditional modes of public participation and scientific peer review in order to more efficiently and effectively integrate them with the policy making process. TEAM does this with four basic strengths. First, unlike traditional approaches where lay citizens and professionals work as a single unit, TEAM provides citizen and technical experts with separate but complementary forums and responsibilities. Second, TEAM ensures that opinions of stakeholders as well as those of the public-at-large are fairly represented. Third, TEAM structures a timely, constructive debate of politically relevant technical issues using the familiar structure of scientific peer review. Through a pro versus con debate, it promotes identification and definition of points of scientific agreement, disagreement, and uncertainty. Last, TEAM can bring long-term cost-effectiveness to the policy making process, particularly in terms of saving the time of human resources.

Key Words: lake management, conflict resolution, water policy, citizen participation, peer review.

*"Significant changes in human behavior can only be brought about rapidly if the persons who are expected to change participate in deciding what the change shall be and how it shall be made."*
(H. A. Simon 1955).

Controversies related to how lakes should be managed increase in number as increasing numbers of people use lakes. Although the conflicts may seem diverse and often unrelated, they are nearly all rooted in conflicting values regarding what makes a quality lake and how lakes should be used. For example, riparian owners desiring relief from aquatic weed problems often clash with anglers who see the riparian owners' weeds as highly desirable habitat for fish. This type of conflict can also embroil different federal, state/provincial, and local agencies when one agency is charged with managing aquatic weeds and others with managing either water quality or fish and wildlife.

The North American Lake Management Society has suggested that such conflicts could be minimized if comprehensive, integrative management plans were developed for individual water bodies (Moore 1987). Many lake management plans, however, are either short-lived or dysfunctional when implemented because of disorganized citizen participation and disorganized input from the scientific community during the planning process. For example, the process can be frustrated and the plan ultimately compromised by various parties — such as regulatory agencies, homeowners, anglers, and business owners — unpredictably interjecting themselves into the process. Planning is further complicated when these parties are supported by experts (e.g., academics, private

professionals, or agency personnel) representing conflicting and seemingly irreconcilable opinions on technical issues. Unfortunately, sometimes such differences in opinion are not taken into account at all.

Lake management plans and water resource policy in general should be developed by combining input gathered systematically from *all* interests *and* the community-at-large with guidance from the scientific community. Such guidance should especially include delineation of points of scientific agreement *and* disagreement. We, therefore, present here a new approach for developing functional, comprehensive lake management plans for individual water bodies and general water resource policy. Our approach is called TEAM, Together for Environmental Assessment and Management. The overall goal of TEAM is to improve upon traditional modes of public participation and scientific peer review in order to more efficiently and effectively integrate them with the policy making process.

TEAM's four major strengths come from combining in a new formula the most democratic attributes of the public participation and scientific peer-review processes. At the same time, TEAM tries to minimize shortcomings of these processes which become apparent when they are used inefficiently, as they often are in policy making today. First, unlike traditional approaches where lay citizens and professionals work as a single unit, such as a task force or lake management committee, TEAM provides citizens and technical experts with separate but complementary forums and responsibilities. Citizens identify and prioritize issues and potential courses of action, and experts supply citizens with a discussion of technical information, including pros and cons, relevant to issues and potential courses of action identified. These complementary roles provide citizens with technical information necessary to make informed choices and rescue experts from the inappropriate and sometimes awkward position of making policy judgments.

Second, by balancing the selection of participants for a TEAM meeting, TEAM is designed to ensure that the opinions of stakeholders as well as those of the "nonattentive public" are fairly represented. Stakeholders are individuals or groups directly affected either by a lack of action or by one or more courses of action which could be chosen to address a lake management issue (Bonnicksen 1991). Examples of stakeholders include lakefront property owners, whether they be homeowners or businesses. Interest groups such as the Sierra Club or "Friends of Lake 'So-And-So'" as well as agency personnel at the policy making level may also be stakeholders. The nonattentive public generally refers to the community-at-large or all citizens other than stakeholders (Miller 1983).

Third, using pro and con teams of experts, TEAM offers a structure for a debate of technical issues which promotes identification of points of agreement and disagreement and of areas where more information is needed. The structure also promotes synchrony between the policy making process and development of technical information pertinent to that process. TEAM allows experts' peers, rather than citizens or elected policy makers, to judge the merits of their technical arguments. Ultimately, TEAM provides citizens and policy makers with the fruits of a timely, constructive debate of politically relevant technical issues.

Finally, in many ways TEAM is designed to facilitate development of lake management plans or water resource policies in a *timely, cost-effective* manner. For example, TEAM minimizes the time citizens and experts spend engaged in the planning process. Also, comprehensive participation from stakeholders, the community-at-large, and technical experts is intended to minimize potential delays and/or litigation.

## The TEAM Approach

Implementation of the TEAM approach, a TEAM meeting, is a three step process involving citizens representing a diversity of interests and technical experts (Fig. 1). First, citizens participating in a modified American Assembly Conference (e.g., Florida Atlantic University Institute of Government 1991) are responsible for identifying and prioritizing issues and potential courses of action related to the topic of concern. Then, participating in a Scientific Issues Forum, technical experts are responsible for not only providing technical information needed by citizens for decision making, but for discussing the scientific pros and cons of each issue or course of action identified by citizens. Finally, in phase two of their modified American Assembly Conference, the original group of citizens recommends a specific course(s) of action after careful consideration of information developed by the Scientific Issues Forum.

A TEAM meeting can be initiated for a public water body of virtually any size, whenever a need to develop a comprehensive lake management plan or to address a water resource dispute exists. A TEAM meeting can be initiated either by a request from citizens or by an arm of government such as a state legislature or a regulatory/management agency. Ideally, a meeting is sponsored singly by an arm of government or cooperatively with private groups. The sponsoring agent(s) should clearly define expectations for the meeting (Kathlene and Martin 1991) and issue(s) to be

addressed in order to maximize applicability of the meeting's recommendations.

Once the need and sponsorship for a TEAM meeting have been established, the meeting is organized and executed by a Steering Committee. Size and composition of the Steering Committee should reflect the scope and diversity of issues to be addressed. For example, if the TEAM meeting is to address issues for which there are known opposition groups, representatives from these groups should be invited to serve on the Committee. The Committee should be chaired by a neutral individual, if one exists; otherwise the Committee should be co-chaired or chaired by an individual elected by other members of the Committee.

The Steering Committee is responsible for handling logistics associated with executing a TEAM meeting. The Committee selects a meeting place and sends invitations to participants (see Step 1 for the participant selection process). The Committee also selects neutral facilitators and recorders to assist in running the TEAM meeting. Finally, the Committee ensures that all reports from the modified American Assembly Conference and the Scientific Issues Forum are completed and made available to the public and appropriate decision makers in a timely manner.

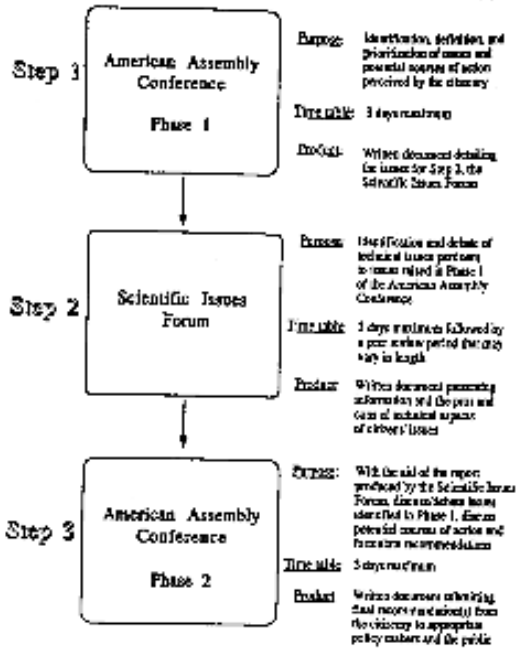


Figure 1.—An overview of the three steps of the TEAM approach.

## *Step 1: Modified American Assembly Conference—Phase 1*

Generally, an American Assembly Conference brings together people directly or indirectly involved with an issue to discuss possible remedies (Florida Atlantic University Institute of Government 1991). We describe, here, how the general model of an American Assembly Conference has been modified to serve the goals of the TEAM approach. The purpose of Phase 1 of the modified American Assembly Conference is to identify, define, and prioritize issues of concern and potential courses of action as perceived by the citizenry. Depending on the complexity and scale of the issue(s), this step may take 1-3 days and may involve as many as 100 people. For example, assume an important lake management concern, such as the herbicidal control of an invading exotic aquatic plant such as hydrilla or water milfoil, has developed into a statewide issue. Further, assume that two coalitions have formed, one supporting the use of herbicides and one opposed, and that these stakeholders are lobbying the state legislature for action. In this type of situation, a TEAM meeting would ideally be sponsored by the state legislature as a whole or by one or both of the houses' committees responsible for natural resource issues. Since the issue is statewide and complex, it probably would be best to have at least 100 citizens participate for 3 days in Step 1. We emphasize that for development of an individual lake management plan, especially for a small water body, it most likely will not be necessary to engage 100 individuals for 3 days. *The key is for the number of participants and duration of the meeting to reflect the diversity of the community and complexity of anticipated issues and potential courses of action.*

Selection of citizens is critical in terms of maximizing the probability that the outcome of the overall TEAM meeting will be efficacious. The Steering Committee, as noted previously, is responsible for inviting a diverse group of citizens to participate in the meeting. The Committee, however, does not necessarily select all participants themselves. For example, referring to the scenario described above, assume the state legislature is sponsoring a TEAM meeting to develop a specific course(s) of action regarding use of herbicides to control the invasion of hydrilla. For this situation, we recommend that for Step 1 the Committee invite the leaders of the two defined stakeholding groups to each select 10 of their members to participate in the meeting. This ensures that each stakeholding group knows that "their people" are participating in the process. We also recommend that the Committee invite the majority and minority leaders of the Senate and House of Representatives to each select citizens (a total of 20 individuals) who they feel best represent interests of the citizens of their state. This ensures that elected

officials from each house and party (assuming there are only two parties) know that their people are participating in the process. Finally, we recommend that 60 individuals be randomly selected (e.g., from the statewide Drivers' License Registry) to ensure that the interests of the community-at-large are represented. (Note that some of these 60 individuals may be professionals who on a separate occasion might be asked to participate in Step 2, the Scientific Issues Forum.)

Step 1 should be conducted over a weekend to ensure that all citizens can participate, not just those with the flexibility or means to take time from work. If money is available, we recommend that participants be paid a small stipend similar to that received by jurors to help defray individual travel and lodging costs. Also, donations of food and lodging garnered by the Steering Committee can help defray costs otherwise incurred by participants. Prior to convening Phase 1 of the Conference (Fig. 2), participants are mailed a description of the format and the explicit purpose of, and their role in, the Conference in order to dispel misconceptions regarding the process (Daugherty 1980).

At the beginning of the Conference, participants break into 10 working groups (assuming 100 participants) or "TEAM huddles." Each huddle is serviced by a facilitating team including a facilitator and a recorder. Membership in each huddle should reflect the composition of the whole TEAM group (i.e., a member from each stakeholding coalition, a member appointed by the Senate, a member appointed by the House of Representatives, and six randomly selected members).

During the first working session, each TEAM huddle independently begins to identify issues, *including potential courses of action,* that members consider important. We include potential courses of action with the issues because it may be important for those alternatives to be reviewed as to their technical soundness in Step 2 by the Scientific Issues Forum. In order to ensure that all participants feel part of the process and that minority views are heard, it is imperative that facilitators encourage every participant to contribute; any participant may enter any issue into the record for consideration. Furthermore, no issue can be removed from the list under consideration or changed unless the participant who originally offered it agrees to its removal or modification.

The first round of TEAM huddles ends as members agree they have no new issues to enter into the record. Then facilitating teams meet with the Steering Committee and produce a complete list of issues identified by the individual huddles. Participants return to their respective huddles to determine if the complete list of issues raises any new issues within individual

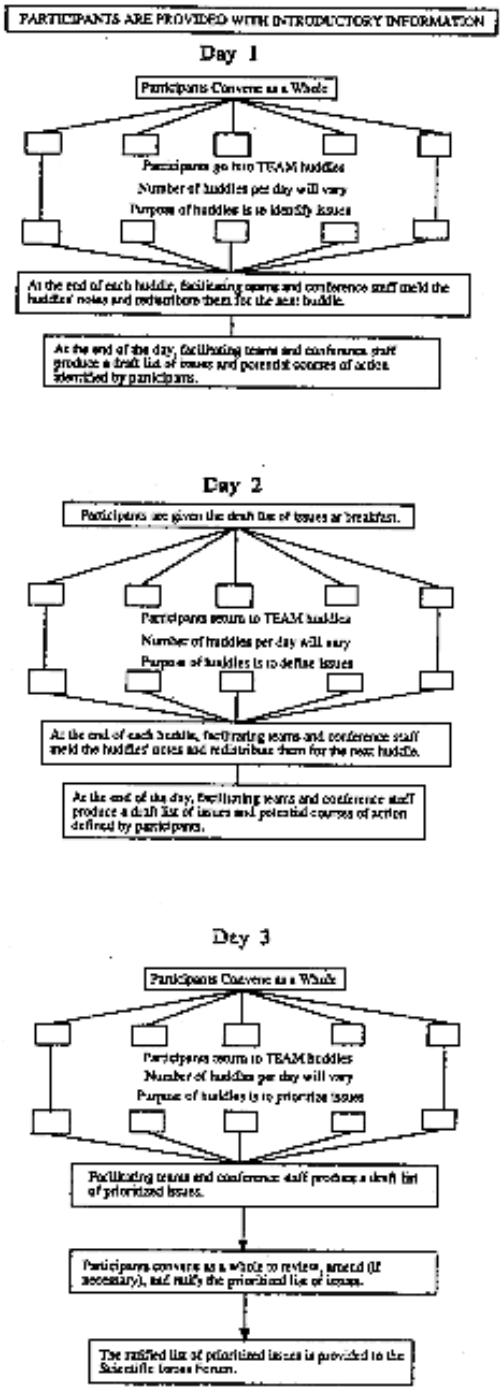


Figure 2.—The format for Step 1, Phase 1 of the modified American Assembly Conference.

huddles. This process of sharing issues among individual huddles should be repeated until participants agree that all issues that concern them have been identified and entered into the record.

Day 2 of the Conference is devoted to defining issues identified by participants the previous day. Working with the complete list of issues, in their huddles participants begin to define the issues, making sure everyone understands and agrees with the meaning of the words. As issues are defined, participants should work toward condensing issues down to a manageable number. Condensing the issues may involve rewording or merging issues. During this process, no statement can be reworded or merged with another issue unless the individual(s) who offered the issue agrees. Once one or several rounds of defining issues are completed, the facilitating teams and the Steering Committee compile a new complete list of issues.

At this juncture, all participants are brought together and a representative from each TEAM huddle explains the reasoning behind their group's condensed and reworded issues. Following explanations from all huddles, the full assembly has an opportunity to discuss any concerns or questions participants may have regarding why certain issues were reworded or condensed. Next, participants return to their huddles to further refine and condense issues. This process repeats until participants agree that it is no longer possible to further condense or wordsmith issues. Facilitating teams and the Committee again compile a complete list of issues once the task of defining issues is complete.

Day 3 of the Conference is dedicated to prioritizing issues. The Steering Committee provides each huddle with the complete list of issues agreed to by participants at the end of Day 2. Through discussion, huddles rank issues into three priority groupings: most important, moderately important, and minimally important. Once this task is complete, facilitating teams and the Committee produce a draft list of prioritized issues. This list is then presented to the full assembly where participants have an opportunity to make final changes and ratify the list of prioritized issues. Final placement of each issue statement into a priority grouping is determined by majority vote. Once participants rank by vote each issue statement, the full assembly recesses until it is reconvened for Step 3, Phase 2 of the modified American Assembly Conference. *Note, participants in Phases 1 and 2 of the Conference are the same.*

The Steering Committee publishes the final list of prioritized issues and passes it on to the Scientific Issues Forum, Step 2 of the TEAM approach. The Committee should consider asking several citizens from Step 1 to attend the introductory meeting of the Scientific Issues Forum in case any participants in the Forum have a specific question regarding the citizens' issue statements.

## *Step 2: Scientific Issues Forum*

The Scientific Issues Forum is intended to provide Step 1 participants with relevant technical information and a *written pro versus con debate* of technical aspects of the issues they identified. The Steering Committee invites both interested and disinterested professionals having technical expertise applicable to lake management or the water resource issue(s) identified in Step 1 to participate in the Forum. These professionals may be found in the academic and/or research community, in government agencies, or in private consulting firms. To ensure scientific breadth, the Committee should engage representatives from diverse disciplines, as appropriate, including the social sciences. The Committee should specifically ask leaders of stakeholding coalitions to identify professionals and/or members from the scientific community who they trust to represent them in the Forum. Participation by these individuals will ensure that each stakeholding group knows that "their experts" are participating in the process.

Participants in the Scientific Issues Forum are provided with the final list of prioritized issues (including potential courses of action) developed by citizens participating in Step 1. After a period for review of this list, the professionals participate in a 1-3 day meeting at which they discuss and decide which technical issues are pertinent to the larger issues identified by citizens (Fig. 3). Structure and operation of this meeting should mimic that used in Step 1.

At the conclusion of the meeting, the Steering Committee compiles a list of technical issues identified and asks the professionals to serve on either a pro team or a con team. Note that membership on a particular team does not necessarily have to correlate with an individual's professional opinion. Each team is permitted to consult with additional professionals to help better develop their position. The teams assemble evidence pertinent to their respective sides from whatever sources they choose, but they must *disclose* all of their evidence to the other team. After the "discovery and disclosure" period, each team prepares a *written* report supporting their respective side of the technical issues identified.

Written reports are exchanged between teams for peer review. Following peer review, the teams rewrite their respective reports, and they must *address any specific criticisms or concerns raised by the other team.* The review and rewrite stages can be repeated as necessary depending on the length of time allotted for Step 2 by the sponsoring agent(s). The length of time allocated

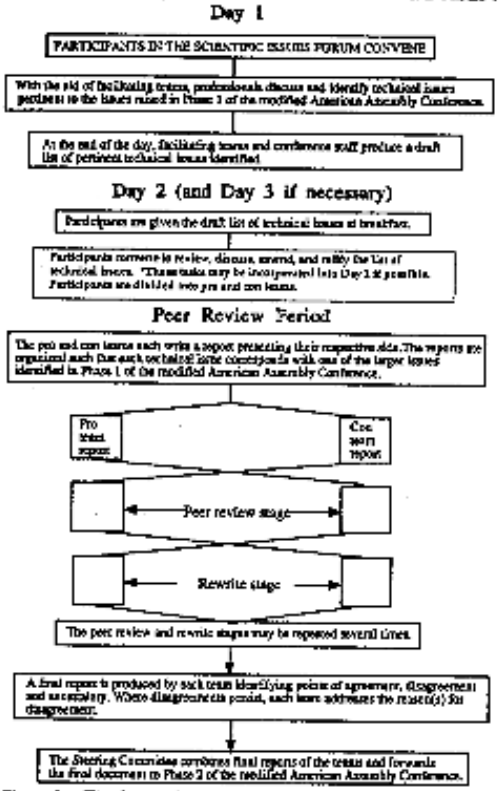


Figure 3.—The format for Step 2, Scientific Issues Forum.

for writing, reviewing, and rewriting reports should reflect the anticipated number and complexity of technical issues.

The Steering Committee should emphasize to authors of the pro and con reports that their final reports are ultimately being written for citizens who participated in Step 1. Each report should therefore be arranged so that technical issues directly correspond with citizens' issues. Authors should minimize the use of technical jargon to facilitate reading by citizens and ultimately policy makers and the public. Most importantly, the final report of each team should specifically identify for each technical issue: 1) points of agreement; 2) points of disagreement, if any, accompanied by explanations of *why* they disagree with the other team; and 3) areas where additional studies/information are needed, if any.

The Steering Committee combines final reports from each team into one document, which is provided to participants of Phase 1 for Phase 2 of the modified American Assembly Conference (Step 3). The Committee should consider asking professionals from the Forum, one or several from each team, to be present at the beginning of Step 3 in case any citizens have specific questions regarding the final report from the Forum.

## *Step 3: Modified American Assembly Conference—Phase 2*

Citizens from Step 1 are given time, possibly 1 or 2 months, to digest the final report from the Scientific Issues Forum. Then, the *same citizens* are reconvened for 2 to 3 days for Step 3, Phase 2 of the modified American Assembly Conference. Phase 2 involves two activities: 1) discussing and debating issues and potential courses of action identified in Phase 1, *now given the benefit of a pro/con debate of pertinent technical issues*, and 2) producing a final report that contains both majority and, if necessary, minority recommendations for courses of action (Fig. 4).

As in Phase 1, participants are presented with the format and the explicit purpose of, and their tasks for, Phase 2. Fortified with knowledge gained from the Scientific Issues Forum's final report, participants return to their TEAM huddles to discuss and debate issues or courses of action they identified in Phase 1. The huddles

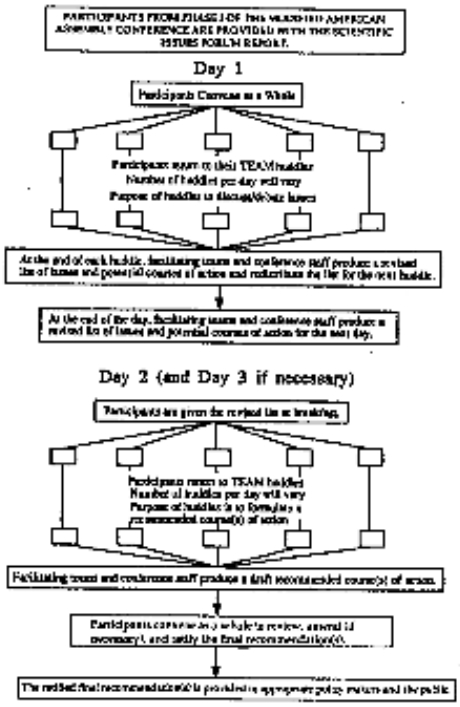


Figure 4.—The format for Step 3, Phase 2 of the modified American Assembly Conference.

craft proposed courses of action which address issues identified in Phase 1. Facilitating teams and the Steering Committee combine proposals from the huddles into a single list of proposals.

Working with the complete list, huddles next edit and refine the proposed courses of action if and where necessary. When participants within each huddle are satisfied with their choices, they vote for majority and minority (if any) recommended courses of action. Facilitating teams and the Steering Committee combine recommendations into draft majority and minority recommendations.

Finally, participants convene as a whole assembly, make modifications to draft recommendations as necessary, and vote on recommendations to determine the final majority and possibly minority recommended courses of action. A report containing a course(s) of action recommended by citizens is provided to the sponsoring agent and any other appropriate policy makers, and released to the public.

## Discussion

We, as a society, indirectly identify and prioritize issues when we vote for respective political representatives. Through advisory committees and task forces, citizens are sometimes given a more direct opportunity to participate in assessing a community's political and/or social priorities. In such groups, though, citizens are often not provided with support in terms of technical information they need and deserve in order to make informed choices.

The first strength of the TEAM approach addresses the need to support citizens with information. It is embodied in the separate but complementary roles given to citizens participating in the modified American Assembly Conference and to professionals with relevant technical expertise participating in the Scientific Issues Forum. As previously described, in Step 1 citizens identify, define, and prioritize issues and potential courses of action. In this first phase, any discussion of issues or speculation as to the most appropriate course of action is purposefully avoided because all citizens need to be working with the same information in order to have meaningful discussions. In Step 8, citizens have such discussions and are prepared to formulate sound recommendations for action because they all share the advantage of the peer-reviewed, pro/con discussion of relevant technical issues supplied by professionals. TEAM's role for citizens enables them to more responsibly participate in assessing a community's political and/or social priorities. TEAM's role for professionals rescues them from the inappropriate and sometimes awkward position of making policy judgments, but more importantly it secures their position as suppliers of information upon which responsible choices can be made.

Clearly, the relationship between citizens and professionals in any decision making process is important, but equally important are relationships among the citizens themselves. We believe balanced representation with respect to stakeholding groups and the community-at-large is crucial when making management or regulatory decisions, especially ones with a comprehensive, long-term perspective. We, therefore, highlight the deliberate inclusion of representatives from both stakeholding groups and the public-at-large as the second strength of the TEAM approach.

The public can be described as two distinct sectors: the "attentive" public, which for our purposes is synonymous with stakeholding coalitions, and the "nonattentive" public. The nonattentive public includes interested citizens who are not necessarily stakeholders, modestly interested citizens, and uninterested citizens. The nonattentive public is not mobilized for broad-based vocalization, i.e., it is not able to effectively take advantage of traditional public participation opportunities (Miller 1983). The attentive public, therefore, is often able to smother the diffuse voice of the nonattentive public by default, thus creating a "volumeocracy" rather than a democracy — rule *not* by the majority, but by the *loudest* (Foster 1980).

TEAM values, organizes, and focuses participation from both publics. TEAM encourages stakeholders to appoint *their* representatives to participate in the process. TEAM, however, also structures a place and time for hearing the voice of the nonattentive public through inclusion of randomly selected citizens. Because 60% of participants in the modified American Assembly Conference are randomly selected, TEAM enhances the probability that the voice of the majority will be heard.

Some may argue that it is a waste of time, unfeasible, or unimportant to try to capture and factor in opinions of the public-at-large, particularly those of citizens who are uninterested or apathetic. However, a citizen may be uninterested or apathetic simply because he or she is not aware of issues at hand, or because he or she has not been educated or has been misinformed with respect to issues. If, though, the majority of the public is *truly* apathetic with regard to issues at hand, this in itself should be an important consideration in the decision making process.

A major argument against public participation in environmental policymaking in general, whether from stakeholders or lay citizens, is that the general public does not have the capacity to understand technical

information upon which much environmental policy is based. Panem (1983), however, asserts that public understanding of, and confidence in, environmental regulation requires some familiarity with the scientific issues involved. The TEAM approach provides technical information for citizens and policy makers in a utilitarian format with language they are capable of comprehending. TEAM also maximizes the probability that all sides of scientific debate are fairly represented by documenting pro and con views. A system such as TEAM which facilitates public familiarity with technical issues in the context of public consideration of related social issues should yield more widely accepted and enduring environmental policies.

The third strength of the TEAM approach is found in the structure of the Scientific Issues Forum. The Forum focuses debate of technical issues, encourages scientific peer review, and integrates scientific opinion into the policy making process. Ideally, technical information is offered to the policy making process following peer review and consensus-building within the scientific community. However, in our less than perfect system presentation of such information is often limited to the opinion of a single expert or team of experts. In the existing system, there is neither opportunity nor time for any legislative or executive official or body to consult a variety of experts, let alone to singlehandedly sponsor constructive scientific debate (Wood and Chesters 1988).

But even consulting with a variety of professionals does not guarantee that information needed for the political process will be found. Pertinent technical information is often unavailable at the appropriate juncture in the policy making process because the policy process and the traditional evolution of scientific consensus do not work on the same time scale (Panem 1983). The "science court" developed in 1967 by Arthur Kantrowitz identifies and addresses the need to build scientific consensus more expediently than conventional peer review permits. Matheny and Williams (1981), however, note that the adversarial and judgmental setting of Kantrowitz's science court is inconsistent with the way in which the scientific community typically functions. The adversarial atmosphere encourages the "championing of hardline positions rather than the gradual development of consensus" (Panem 1983). Although the Scientific Issues Forum at first glance may appear to be adversarial in that there are pro and con teams, the tasks of the teams are to find points of agreement and define points of disagreement *without passing judgment*.

We stress that the Scientific Issues Forum does not attempt to meld agreement instantaneously nor does it force agreement where none exists. It does, however, provide a framework, timetable, and with peer review a familiar process for constructive debate over defined, politically relevant technical issues. Also, the Forum produces findings that can be integrated into the continuous and incremental processes of both policy making and ongoing scientific research.

To this point in time, the role of "science" and its associated professionals in policy making has been uncertain. Sometimes "expert testimony" causes unexpected drama and a change in policy, but other times it seems to fall on deaf ears. A variety of opinions exist concerning the degree to which experts should participate in the policy making process, from complete separation of science and state to regulation tied directly to quantitative technical information (Panem 1983). The role of science in public policy making probably lies between these two extremes. Technical information is an important variable in many public policy decisions, especially ones concerning the environment, but ultimately it must be woven into the context of societal values.

The foundation of TEAM's fourth strength, the potential for long-range cost-effectiveness in policy making, is in cooperative relationships among policy makers, professionals, and the public which a TEAM meeting is designed to foster. Given TEAM's emphasis on public participation and because it is commonly thought that public participation directly or indirectly increases the costs of a decision making process, one might not initially associate the approach with cost-effectiveness. Indeed from a short-term perspective, public participation may often increase costs, and admittedly, money is needed up front to implement the TEAM approach. The United States General Accounting Office, however, has stated that while public involvement may increase immediate costs, it may decrease long-term costs by reducing the number of legal challenges and delays created by such litigation or threats of litigation (Creighton 1980). Indeed, an implicit goal of the TEAM approach is to engender cooperation among policy makers, professionals, and the public in hopes of extinguishing or at least minimizing the need for litigation.

The TEAM approach can also save money in terms of saving the time of valued human resources. For example, frequently committees and task forces are created to address issues and controversies of all types. Unfortunately, many committees and task forces are often given little direction, scant support, hazy definition of the expected product, and a nebulous timetable. Consequently, the activity of these groups tends to languish, and months may go by with little or no action and with none in sight. In such situations, participants understandably become discouraged with the process and many often feel that their time has been wasted. This is particularly true of lay members who are not

paid to participate. For members from the professional or scientific communities, attending committee or task force meetings is generally part of their job, thus they are either directly or indirectly paid to participate. In these meetings, however, they are not generally doing what they were trained to do! The indirect cost of a committee or task force, therefore, is the time taken away from the participants' jobs or lives that might have otherwise been spent productively. In contrast, for a TEAM meeting the direction, expected product, appropriate roles for citizens and professionals, and point of termination are clearly defined.

## Conclusions

Franklin Delano Roosevelt once stated, "One thing is sure, we have to do something. We have to do the best we know at the moment. If it does not turn out right, we can modify it as we go along." Based upon past experience, we think now is the time to introduce a new process, the TEAM approach, to lake management and water policy making. We offer TEAM as an alternative to task forces and lake management committees frequently used today. Although these small groups often work diligently at defining problems and identifying possible solutions, their overall success in developing realistic, functional, and long-term lake management plans or water resource policy has often been limited by a couple of realities.

First, a group's success can be limited by the actual membership of the group. As discussed previously, membership is generally divided between citizens and professionals from regulatory or management agencies and academic institutions. Some lay members may represent concerns of special interest groups, but those concerns may not encompass interests of the community-at-large. If a lay member is not allied with any interest group and does indeed genuinely represent interests of the community-at-large, he or she frequently lacks the political clout, negotiating skills, or financial resources which other group members may wield (Crowfoot and Wondolleck 1990). With respect to presenting technical information to the group, the voice of the scientific community is frequently represented by select agency personnel, and too often little consideration is given to individuals' expertise and to potential or existing differences in professionals' opinions.

Second, task forces and lake management committees often fall short of their goals because of flaws in their modes of information and opinion gathering. Gathering input from "all" interests is typically accomplished through independent meetings, letters, and telephone calls. Too often this input amounts to overwhelming, unorganized piles of reports and memoranda sitting in the offices or homes of group members (Crowfoot and Wondolleck 1990). Also, many reports are written using either very technical or legal language, making them extremely difficult and time consuming to interpret, especially for true lay members of the group (Crowfoot and Wondolleck 1990).

In addition to private meetings, letters, and telephone calls, groups often attempt to gather input from the community-at-large by sponsoring public meetings. Unfortunately, such meetings are generally attended by the same individuals and become tedious and unproductive because they generally offer little opportunity for constructive discussion. Some members of the public reject public meetings altogether because they feel the "decisions" have already been made and that the meetings are primarily for show.

The TEAM approach can gather public opinion more efficiently than task forces and lake management committees. It structures an opportunity for identifying needs and desires of both pockets of the community and the community-at-large and for finding common ground through discussion. These are necessary steps in developing lake management plans and water policy because the fate of any plan or policy is inextricably linked to human behavior. Significant changes in human behavior can only be brought about rapidly if the persons who are expected to change participate in deciding what the change shall be and how it shall be made (Simon 1955).

Advocates of public participation assert that when making decisions that will change the way people live their lives, the most effective weapon is public approval and consensus (Wood and Chesters 1988). TEAM cannot guarantee consensus, but it is designed to maximize the probability of achieving it through careful selection of participants and by supplying every participant with technical information with which decisions regarding our water resources should be made. Realizing that consensus is not always possible, TEAM allows for both majority and minority opinions when no consensus exists.

With respect to the role of professionals in the decision making process, TEAM offers a familiar mechanism for discussion of politically relevant technical issues, and it ensures that pros and cons of each issue will be represented. As in the citizens' arena, in the professionals' forum TEAM does not force consensus when none exists. In addressing the interdependent roles of stakeholders, the public-at-large, and professionals in developing lake management plans and water resource policy, TEAM secures the role of professionals and of science in general as the

foundation within the context of broader social issues. Using the TEAM approach can heighten public confidence in lake management and water resource policy decisions, and in the role of the scientific and academic community and regulatory or management professionals in such decisions.

Lakes are going to be managed and water policies developed throughout North America and the world. People will be called upon to do the best they can at a given moment, and to be open to later modifying decisions. But, who will make the decisions and how will they be reached? Will the process be fair to all parties? TEAM may not be the last missing piece to the water resource management puzzle, but at least it is more fair than many decision making processes currently being used. Perhaps, TEAM can make it more clear where all the pieces of the puzzle should fit.

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