Sea Grant

Fundamentals of a Sea Grant Extension Program

Acknowledgments

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Foreword

The genius of the land-grant system has been the effective transfer of science-based information from universities to user constituencies through an extension service. When Athelstan Spilhaus first proposed the Sea Grant concept almost four decades ago, he was emphatic in acknowledging the close relationship of his new idea to the land-grant paradigm.

From Sea Grant's inception, an extension service has been an integral part of the program's infrastructure. Today, over 300 staff members throughout coastal America continue that tradition of strong commitment to information transfer, service to users, and focus on outcomes that has allowed Sea Grant Extension to make such strong contributions to the public interest over the years. It is this integration of knowledge creation and knowledge transfer through outreach that sets Sea Grant apart from other federal ocean or coastal programs and makes it so effective.

Looking to the future, the projected pace and magnitude of population growth and economic development in the nation's coastal regions are well documented. Associated with that growth is a host of environmental and economic issues, many of them new to Sea Grant, that will occupy this country's social and political agenda well into the next century. Addressing these complex issues will create an unprecedented demand for knowledge and understanding of physical, ecological, and social systems. The ability to get science-based information synthesized and promulgated to users will be at a premium. The number and diversity of constituencies and opportunities that Sea Grant is asked to respond to is likewise growing exponentially. With the advent of ecosystem and integrated approaches to natural resource management, solutions to problems will be increasingly distributed both regionally and locally while requiring resolution to complex multiple-use conflicts. That future portends exciting and unprecedented opportunities for Sea Grant Extension.

We are entering a century of new challenges, needs, and technologies with more at stake in a shorter period of time for every coastal community than ever before. This book's purpose is to introduce you to and help you with making a difference in this emerging new world of Sea Grant Extension.

Ronald C. Baird, Director, National Sea Grant College Program
Silver Spring, Maryland
August 2000

Preface

For over a quarter of a century, a group of the Sea Grant Extension (SGE) program staff and their host institutions have committed themselves to providing information about coastal ecosystems and about the people and businesses influenced by marine and Great Lakes waterways to individuals who then apply that knowledge, often new to them, in extension activities. These SGE educators, typically university staff, have exciting, interesting positions that, while difficult at times, are usually very stimulating!

I am proud and pleased to say a few words as preface to this book, having helped produce related publications in the 1970s with SGE pioneers Bill Wick and Dan Panshin. It is heartening that so many others who share a related philosophy have taken the time to develop this description of elements critically important in conducting SGE work in a wide variety of communities.

The tasks and tools of extension educators have been modified and aided by new communications technologies and recent understandings about people. But many truths about people and how to help them learn to apply new knowledge have remained the same over the long term. The satisfaction that comes from helping another, the fun in learning about new approaches, the joy of sharing information that can aid others with a publication—through the web or in person—remain a hallmark of those who enjoy SGE work. Those folks may go by many names, but I still think they are best described as "county agents in hip boots," and many of us have come from that tradition.

We do not hold that all Sea Grant Extension programs in the nation are similar in all regards. We do believe the vast majority of program efforts are based on a concern for the individual and the community and a belief that using research and existing knowledge to advance such work is critically important in our task. I hope this publication can aid a new generation in this important work.

Bruce T. Wilkins
Cornell University
Ithaca, New York
July 2000

The Philosophy
What do we do?

Jim Murray and Bruce Wilkins

Welcome to Sea Grant
Extension. As you begin sorting out your
responsibilities and plan of work as an
extension professional, you may be won-
dering how it all began and the guiding
philosophy of university extension.

A Brief History

The National Sea Grant College Program
was born during the 1960s in a national
climate of rapid social and technological change, an emerging environmental conscious-
ness, and faith in our abilities to harness new wealth from marine and Great Lakes resourc-
es. During the sixties, Rachel Carson, in her classic environmental book *Silent Spring,* raised
serious national concerns about the ecosystem effects of pesticides. The Cuyahoga River
near Cleveland, Ohio, was so polluted that it caught fire, and noted reporter Edward R.
Murrow produced the revealing television documentary *Who Killed Lake Erie?* Such events
ultimately led to the first Earth Day in 1969.

That same year Neil Armstrong walked on the moon, the culmination of the country's
heavy investment in scientific research triggered by the "space race" with the Soviet Union.
America's farms produced a vast supply of crops needed to feed the world's growing popula-
tion. The public's trust in science to solve problems was at an all-time high, but compared
with space exploration, support for ocean science lagged significantly behind.

That changed at the keynote address of the 1963 meeting of the American Fisheries
Society, when Athelstan Spilhaus, a University of Minnesota professor, first suggested the
idea of establishing "Sea Grant colleges" in existing universities that wished to develop
oceanic work. He drew parallels with the land-grant college system, which he claimed
was "one of the best investments this nation ever made. The same kind of imagination
and foresight should be applied to the exploration of the sea" (*Science,* September 1964).

The Senate and House of Representatives, led by Senator Claiborne Pell of Rhode
Island and Congressman Paul Rogers of Florida, passed the National Sea Grant College
and Program Act of 1966. The act delegated administrative responsibilities for Sea Grant
colleges to the National Science Foundation (currently under the U.S. Department
of Commerce). The National Science Foundation (NSF) had authority to initiate and

support education, research, and extension—which at that time was referred to collectively as marine advisory programs. The act allowed NSF to exercise its authority by:

Encouraging and developing programs consisting of instruction, practical demonstrations, publications, and otherwise, by Sea Grant colleges and other suitable institutes, laboratories, and public and private agencies through marine advisory programs with the object of imparting useful information to persons currently employed or interested in the various fields related to the development of marine resources, the scientific community, and the general public.

Today the program, now called the Sea Grant Extension Program, consists of roughly 300 people who conduct extension educational programming throughout the coastal and Great Lakes states.

What Is Sea Grant Extension?

Over the years, thousands of extension professionals laid Sea Grant's foundation and contributed to its success. Some have made profound contributions to society or have left Sea Grant to assume political office. Retired Alaska Sea Grant agent Hank Pennington conducted award-winning fishing vessel safety programs that led to saving dozens of fishermen's lives. Former New Jersey Sea Grant coastal law specialist Frank Pallone became a New Jersey congressman, and former Hawaii Sea Grant agent Jeremy Harris became mayor of Honolulu.

These individual successes were built on relationships—with universities, industries, organizations, and governments—that took decades to build but could be destroyed rapidly by ignoring fundamental principles. It takes most outside observers, and indeed most new extension staff, a period of exposure before they gain a clear understanding of SGE's philosophy and techniques. Extension education is a discipline (some would even call it a science) that is awarded advanced degrees at some universities, but it is also an art. If you are relatively new to university extension, this guide will provide you with some of the basics so that the tradition of success established by the program's founders can be maintained.

Sea Grant Extension programs appear in many forms and shapes. Typically they are university-based educational programs that seek to apply knowledge and understanding gained through research to aid individuals and groups. Programs that extend university knowledge require a dedicated group of individuals whose advanced education, training, and expertise may involve many segments of biology, sociology, economics, public policy, and engineering and a host of related fields. An SGE professional is known by many names—specialist, educator, marine adviser, agent. Each professional works directly with people in coastal-related communities. Extension professionals are also schooled in approaches that can be used to facilitate information transfer.

Assume that the overall goal of extension education is to effect change by having individuals, groups, or institutions use science-based information. Within Sea Grant several mechanisms available to disseminate science-based information. Collectively, these mechanisms can be referred to as outreach. Outreach can be defined as those activities that extend Sea Grant and other relevant coastal and marine information to people. Note that any activity may be included in this definition. Responding to a web inquiry or a telephone call with information is a legitimate outreach activity. Producing reports of Sea Grant research, teaching educators who will, in turn, teach their students, and demonstrating a new device to commercial fishers to reduce by-catch are all techniques to extend university knowledge.

What Defines a Sea Grant Extension Professional?

Within the Sea Grant community are people who have special skills to use different delivery approaches. They may be science writers, graphic artists, audio/video experts, or editors in Sea Grant communications offices. In some cases, people trained in formal education processes and techniques for K–12 teacher education may be organized as a separate unit.

Extension work might be defined as *designing activities* that effect *behavior change* through constituent-driven *programs* focused on *outcome-based objectives* using a variety of *educational processes* and techniques *over a continuum of time.*

The term "designed activities" suggests that the specialists did not "wing it" as they went about their work, but rather approached their positions with some plan in mind. Almost all extension staff have some type of advisory group to help plan activities and provide overall direction. Obtaining input on the extension staff's plan of work provides a "bottom-up" or constituent-driven approach to programming that distinguishes extension education from most other public education programs.

"Behavior change" suggests that extension professionals want their audiences or stakeholders—individuals, groups, or institutions—to do something differently as a result of the information SGE has provided. A good example is for stakeholders to make a more informed decision. The term "program" implies that extension education is more than an isolated event. "Outcome-based objectives" mean that extension staffs have certain measurable outcomes in mind when they decide to conduct a program. "Educational processes" suggest that a variety of techniques may be necessary to achieve the desired outcome. Some examples are one-on-one consulting, workshops, conferences, demonstrations, fact sheets, videos, web pages, or radio shows. "Over time" implies that extension work is not a single event, but usually a series of events that may take several years to achieve.

An Example:
Reducing Finfish By-catch

In the southeastern shrimp fishery, shrimp trawlers routinely caught between two and four pounds of by-catch, typically in the form of juvenile finfish or crabs, for each pound of shrimp caught. Much of the by-catch was discarded as dead, with mortality rates contributing to reduced populations of important commercial and recreational species of fish such as red snapper and weakfish. So great was the problem that fisheries managers at the regional and state levels had to develop some timely solutions.

The university hired an extension specialist with expertise in fisheries science. With an advisory committee of industry and agency leaders, the specialist held meetings to establish that reducing by-catch was an important goal, thereby gaining "bottom-up" support. The specialist developed a plan of work (designed activities), which included a 50 percent by-catch reduction goal (outcome-based objective) four years from that point (over time). To achieve the objective, shrimp fishermen needed to be convinced that their shrimping practices needed modification (behavior change). Various activities were developed to change their behavior: applied gear development that involved shrimp fishermen and net makers, presentations at commercial fishing meetings and shows, articles in coastal newspapers, fact sheets, booklets, videos, and one-on-one training on how to install by-catch reduction gear (a variety of educational processes).

The by-catch issue was at first greeted with suspicion by shrimp fishermen, in part because the issue closely followed the highly controversial requirement for shrimpers to use turtle excluder devices.

A high degree of mistrust had developed between shrimpers and the regulatory agencies that mandated this device. However, the SGE professional had credibility with these issues for at least two very important reasons. First, he had worked locally in the fishing community for a number of years and had achieved a high degree of trust with the industry. The trust garnered from the shrimpers was based on his years of nonadvocacy. Second, he worked for a university and not a regulatory agency. Shrimpers recognized that his only goal was to help the industry solve the problem in an unbiased way using science-based information.

Summary

Throughout its rich history, thousands of Sea Grant Extension professionals have conducted hundreds of successful programs that have educated stakeholders and led to significant environmental and economic improvements within coastal and Great Lakes states. In the future, as coastal populations expand and environmental pressures increase, the unique capabilities of Sea Grant Extension will be needed more than ever.

Administrative Structure
Where do we fit?

Dale R. Baker

The Sea Grant

Extension Program is part of a larger complex of
programs at both the state and federal levels. Now that you are a part of SGE, you may need to know just how your program fits into the local, state, and federal government.
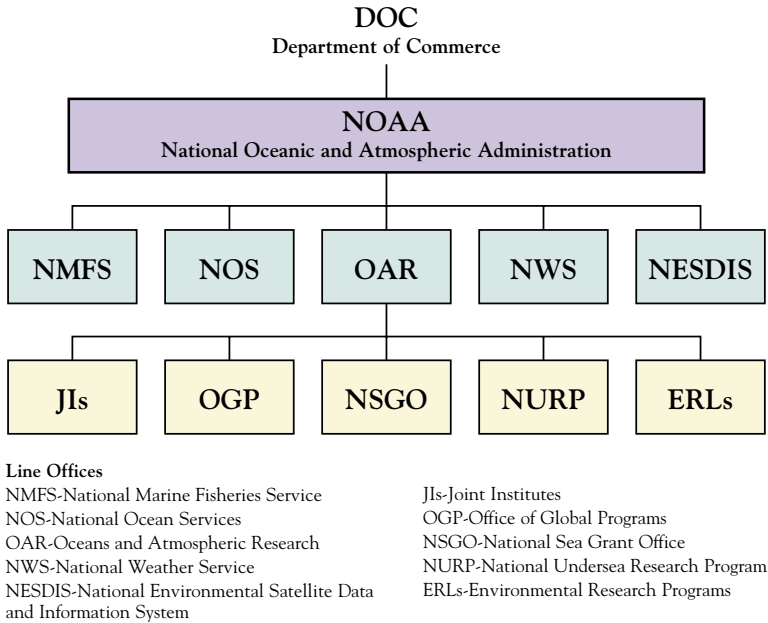
Federal Level

The National Sea Grant College Program (NSGCP) is a part of the National Oceanic and Atmospheric Administration (NOAA) within the U.S. Department of Commerce. Sea Grant has been part of NOAA since the early 1970s. Within NOAA, Sea Grant is part of the Office of Oceanic and Atmospheric Research, which is one of five line offices (see organizational chart on page 14).

The National Sea Grant College Program, a partnership among the federal government, state government, and academia, is administered by the National Sea Grant Office (NSGO) located in Silver Spring, Maryland. The NSGO supports fewer than a dozen professionals—a relatively small staff compared with offices in most federal agencies. Each of these professionals has multiple responsibilities within the national Sea Grant program, such as developing budget initiatives, monitoring individual Sea Grant programs, and communicating their activities to the National Oceanic and Atmospheric Administration and other federal offices. Each national office professional is responsible for monitoring three or more Sea Grant programs. As an extension professional, you would interact with National Sea Grant Office professionals when they perform their duties as Sea Grant program officers.

When fully staffed, three professionals from the National Sea Grant College Program Outreach Division have administrative and managerial responsibilities for extension and communications in addition to monitoring SGE programs. As an extension professional working on outreach projects, you would likely work with your own program's communications staff and sometimes with national office professionals who have responsibilities for your program.

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                         DOC
              Department of Commerce

                        NOAA
       National Oceanic and Atmospheric Administration

   NMFS      NOS      OAR      NWS      NESDIS

    JIs      OGP      NSGO     NURP      ERLs
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Line Offices

NMFS-National Marine Fisheries Service
NOS-National Ocean Services
OAR-Oceans and Atmospheric Research
NWS-National Weather Service
NESDIS-National Environmental Satellite Data
and Information System

JIs-Joint Institutes
OGP-Office of Global Programs
NSGO-National Sea Grant Office
NURP-National Undersea Research Program
ERLs-Environmental Research Programs

National Sea Grant Committee Structure

 An array of national associations, panels, assemblies, boards, and committees has helped make SGE the local, regional, and national program it is today. The following organizations have had the most impact:

Sea Grant Association (SGA)—This major association of Sea Grant programs usually meets twice annually. Most member programs support at least one delegate (typically the director) at a cost of several thousand dollars a year. Through its committees and elected officers, SGA provides leadership and a national direction for Sea Grant programs. The association employs staff in the nation's capital to ensure effective communication among the federal legislature, the National Sea Grant College Program, and individual Sea Grant programs.

National Sea Grant Review Panel (NSGRP)—The NSGRP was created by the same legislation that began the National Sea Grant College Program. The secretary of commerce appoints 15 panel members to a three-year term that can be extended into a second three-year term. Working closely with national SGE and the Sea Grant Association, the panel sets overall policy, establishes direction, and conducts reviews of the national Sea Grant program. Panelists are paid for their services.

Assembly of Program Leaders—One SGE program leader represents each Sea Grant college institutional program at a formal assembly. For multistate SGE programs, one individual from each state is asked to be a member. The assembly has five elected officers: assembly chair, chair elect, past chair, secretary-treasurer, and one at-large delegate. The chair of the assembly is an ex officio member of the Sea Grant Association. The following are the primary functions of the Assembly of Program Leaders:

- Provide a mechanism for SGE program leaders to respond to network issues or needs and to provide a forum for sharing related professional knowledge.

- Foster ongoing communication with Sea Grant Association, National Sea Grant Office, and other SGE outreach and research components.

- Develop mechanisms to increase cooperative programming, outreach innovations, and talent sharing.

- Encourage national and regional professional recognition for outstanding performance for appropriate SGE professionals.

- Foster effective liaisons with various groups interested in collaborating with SGE program leaders in concert with the Sea Grant Association.

- Support and encourage regional SGE program networks.
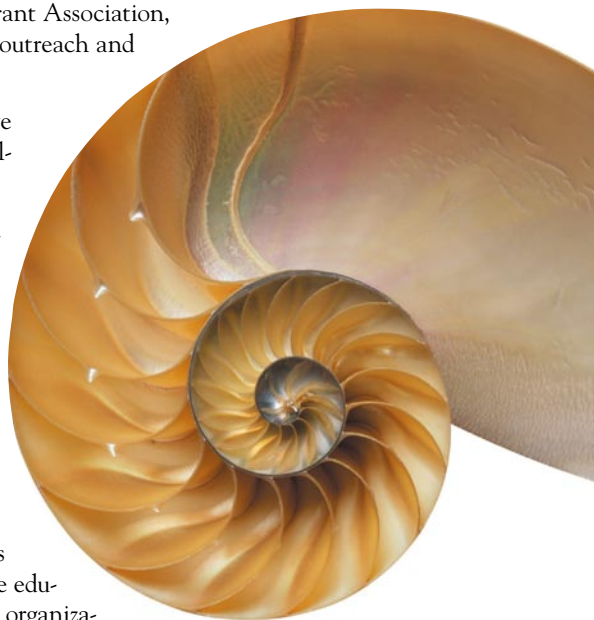
Across the Sea Grant programs, professionals with similar jobs such as communicators, marine educators, and fiscal officers have formed their own organizations. These groups usually get together during Sea Grant Week, a biennial meeting of the entire program; they may also hold other formal meetings. In addition, the extension educators within SGE have formed a number of informal program-based networks such as MarinaNet and Haz-Net (see "Regional and National Networks," pages 49–53).

State Level

There are as many different relationships between SGE programs and their states and between SGE programs and their Sea Grant programs as there are programs. One of Sea Grant's strengths is that it allows and encourages program diversity. In most cases, the Sea Grant program is part of one or more universities, or university systems, within its state. Some SGE outreach programs are part of a state agency, while others are members of state and multistate consortia. A number of Sea Grant outreach efforts exist solely as part of the state SGE program without relationships to other programs within the state.

The relationship between an SGE program and its state may go back to the development of the SGE program within that state. In a number of coastal states, the land-grant university initiated or assisted in the development of SGE outreach efforts because of the similarities between the Sea Grant and land-grant missions. For those programs, SGE retains a close relationship and partnership to the state Cooperative Extension program.

Although a 1999 SGE management survey highlighted the diversity among all the SGE programs, some general patterns emerged. The majority of programs are administratively linked to the state Cooperative Extension System (CES). This is especially true if the Cooperative Extension program had an interest in natural resources, environmental issues, and fisheries outreach when the SGE program was formed and provides matching state and local resources for the development of SGE outreach efforts.

A Word about Funding

Sea Grant Extension is a matching funds program. Up to two-thirds of the total operating funds for an entire SGE program can come from the national program. SGE programs receive a portion of those federal dollars, but there is no mandated percentage. Generally, SGE program efforts receive between 20 and 40 percent of the federal resources coming to the individual Sea Grant program.

SGE programs traditionally receive financial support from a variety of sources. Most often the state legislature invests resources into a state's Sea Grant program with a percentage of those dollars going to extension. Other state and federal agencies can often be major financial supporters of SGE efforts. States that are part of CES often will use county or parish funding to operate their county offices and pay a portion of an SGE professional's salary. Many sources of funds are available to operate an SGE effort, and programs have become very creative in identifying and utilizing financial resources from grants, contracts, industry, private gifts, and endowments.

The traditional CES approach employs a network of county-based agents who work closely with research specialists at the supporting university. In many CES-affiliated programs, a network of coastal agents is located in area county offices that provide some type of financial support or service. The CES agents have subject-matter expertise but are expected to respond to many issues that may surface in their locale. In CES-affiliated systems, the agents may report to two or more different administrators, typically the SGE program leader and the CES district director, providing input from the county extension leader. Specialists often report to academic department chairs with input from the Sea Grant program leader and/or the Sea Grant director.

Each arrangement has advantages and disadvantages. The CES-affiliated Sea Grant programs benefit by being part of a larger organization and its concomitant infrastructure and resources. The non-CES-affiliated programs have the advantage of smallness, independence, and an ability to respond quickly to changing issues.

Although each structure has unique attributes, a strong relationship between the SGE program leader and the Sea Grant director is a key ingredient for a successful program. In many cases, the SGE program leader acts as the assistant or associate director of the Sea Grant program and is a key member of the program's management team. Although not always the case, the survey shows that linkage of the SGE program to the management structure of its Sea Grant program is considered a preferable management style.

The 1999 survey also showed that while some program leaders report to the Sea Grant director (most often in programs not linked to CES), others do not report to the Sea Grant director at all. Similarly, extension staff may or may not have a reporting relationship to the program leader. Extension specialists in university academic departments most likely would report to a department chair.

Whatever the genesis of your particular program, the national office does not normally dictate the relationship of an extension program to its Sea Grant program or to other organizations within the state. That is a local decision. Program results and accomplishments are perceived as the ultimate test of an effectively functioning program.

Relationship with the University

Although many models for an SGE program have evolved over the 30-plus years Sea Grant has been around, most Sea Grant programs are part of a higher education system within their home state. A program may be a member of a single university, a statewide university system, or multiple universities throughout the state. If the Sea Grant program is a member of a multiple university system, there may be formal governing boards, councils, or consortia with direct management authority over the SGE program.

It is not uncommon for the extension portion of the Sea Grant program to have a different relationship to higher education within the state than the research side of SGE has with the university. SGE may have a relationship to one part of an academic institution, while the program director is affiliated with another institution. This is sometimes the case when SGE is part of a state CES. There are also Sea Grant programs that subcontract the extension program to another university or state agency.

Sea Grant Extension personnel have unique employee/employer relationships with their host institutions. In some cases, SGE personnel are tenured faculty members, especially where SGE is part of Cooperative Extension or academic departments. In some programs, SGE personnel are considered faculty but not tenured, while in other programs SGE personnel are considered staff. Some SGE staff may have federal appointments that carry federal retirement and health insurance benefits if that policy is in place in the state Cooperative Extension program. In most other cases, extension professionals receive whatever benefits come from the organization acting as the employer. In no cases does NOAA or the Department of Commerce grant federal appointments to SGE personnel.

Summary

Many different models are available for guidance on how to run a successful SGE effort. The model used in a particular program depends on how the Sea Grant program came about in that state and which institutions had early leadership for the program. It is difficult to say which model is the best. We can only spell out the pros and cons of the different SGE programs that have been created. Much of the success depends on how effectively individuals within the program interact and get along with one another. If the communication is poor and relationships are strained between extension and the Sea Grant director's office, the program will not work well.

Planning the Extension Program
How do we decide what to do?

Brian K. Miller, Bruce T. Wilkins, and Mike Spranger

Planning is a fundamental step in any successful program. We use principles of planning in most things that we do. We plan for our careers, our families, and our vacations. Planning is simply identifying what we want to accomplish, then developing a strategy that will allow us to accomplish it. In some cases planning is very detailed and formal; in other cases it is informal, flexible, and fluid. Agencies at all levels have embraced planning, and it is now an integral part of most organizations.

Planning Starts at the National Level

The National Oceanic and Atmospheric Administration (NOAA) and the National Sea Grant College Program network have a general framework for planning and evaluating activities. As an SGE professional you will find that planning your activities within a general framework will ease your task in preparing proposals and reporting annual activities. Proper planning will help you not only determine what you should do, but also identify what evaluation steps may be needed and when these should be initiated.

Periodically, NOAA develops a strategic plan. This plan identifies the broad goals and objectives NOAA wishes to accomplish. The National Sea Grant Office then develops a strategic plan and an implementation plan that identify which of NOAA's goals and objectives Sea Grant programs will concentrate on nationally. These topics can then become the basis for the priorities identified by each Sea Grant college program and applied to address local and regional issues.

It is important to understand the framework in which the SGE program operates and the importance of our activities to the overall Sea Grant program and to our stakeholders. Regardless of procedural and subtle differences among programs, SGE professionals share these activities:

- We identify four-year goals and objectives that fit our program's strategic plan for the important thematic areas.

- We develop an implementation plan that describes how goals and objectives will be accomplished.

- We focus on having an impact in everything we do.

- We write annual work plans that identify specific activities that help us achieve our goals.

Although the format may vary, each extension professional should address these components to develop programs that are productive, stakeholder driven, and impact laden. To plan an effective extension program, all staff will benefit by developing goals and objectives and by specifying both the short- and long-term actions that it will take to attain those goals.

Strategic Plan

The strategic plan is the foundation of a planning process. This plan sets a program's direction, goals, and objectives. It should be based on broad input from stakeholders, administrators, and staff. A good strategic plan identifies a program's priorities, defines where it will focus staff and financial resources, and responds dynamically to changing conditions and opportunities.

A long-range strategic plan is an essential, ongoing process that helps identify and address relevant issues of the future. A good strategic plan anticipates the information, research, and technology needs of the local and state stakeholders and is usually built around the priorities and strategic interests of the National Sea Grant College Program, the National Oceanic and Atmospheric Administration, and other regional and national partners. The plan is tempered by financial constraints and institutional strengths within universities and related institutions.

A Sea Grant program's strategic plan usually emphasizes four major components:

1. A vision and focus—where the program is headed and why

2. Some background on issues and mechanisms for establishing priorities for the investment of staff and financial resources

3. The program's goals and objectives

4. Impediments—organizational, resource, or procedural—to program growth and performance

Goals and Objectives

Goals and objectives are the components of the strategic plan that guide extension activities. In some cases, an extension professional will operate directly under these objectives. In other cases, the professional must develop personal objectives that focus on smaller components of the problems but help the overall Sea Grant program achieve the objectives identified in the strategic plan.

Goals

A goal is a broader and more long-term statement than an objective; objectives are the intermediate steps needed to accomplish any given goal. As you consider the impact your SGE program needs to demonstrate, the purpose of a goal becomes clearer. A goal should be worded so that you and the reader can identify the resulting impact when a goal is ultimately accomplished.

Goals that contain obscure or abstract statements like "increase awareness of," "enhance appreciation of," or "increase quality of" make it difficult to determine what the impact would be if the goal were achieved, or if you had any influence on achieving it. The best way to develop a goal or to revise one that is ambiguous may be to first write down the impacts that will result if the goal is achieved. When the resultant impacts are identified, it becomes easier to incorporate indicators of these impacts into a goal statement that identifies what will result when your program is successfully completed.

As you begin, write down key components that come to mind. This process can be enriched if you ask co-workers and stakeholders to assist you in compiling this list. The final goal statement can be tested by asking yourself, your group, and other stakeholders outside your working group,
If these impacts were achieved, would they agree that the goal has been met? If the answer is yes, then your goal statement is complete. If there is disagreement, then further refinement is needed (Dick and Carey 1996).

Objectives
Generally, objectives are to be accomplished over a shorter term than goals and constitute steps that must be taken for a goal to be reached. If you word an objective so that it identifies milestones you expect to reach, then the objective serves its purpose in identifying what steps must be achieved to reach the goal.

Objectives that contain self-directed statements like "to help," "to provide," "to develop," "to study," "to hold," and "to inform" tell us a little about what to do but say nothing about what change will occur or which milestone will be reached if the objective is achieved. At this point you have already identified the impact you want and have developed your goal statement. Now ask: What must happen if this impact is to be achieved? What smaller benchmarks or milestones would signal progress toward reaching this impact? In what order should these occur? Again, as in the goal-setting process, have co-workers and stakeholders assist you in compiling this list.

Objective statements should generally identify (1) the audience, (2) the audience's change in behavior because of your effort, and (3) some measurable component that indicates the magnitude of change you intend to achieve. Using statements like "anglers" or "coastal residents" defines huge audiences. Unless you intend to design actions that will reach all anglers or all coastal residents, a refinement of this audience is needed, such as "subsistence anglers fishing from shore" or "shore property owners." Since it is probably unrealistic for you to expect to influence all subsistence anglers or all shore property owners, the objective statement or the milestone statement needs to identify even further the quantity or percentage of this audience that will be influenced. Statements like, "60 percent of subsistence anglers will take steps to reduce exposure to contaminants," will further quantify the percentage of people you expect to influence. Also remember that your role is to influence some type of change (e.g., to make something happen, or to make the world a better place because of our actions) and not simply to disseminate information or inform people about issues. Therefore, objectives and the corresponding milestone statements need to be worded to communicate the changes you intend to effect.

The final objective statement can be tested by asking yourself, your group, and other stakeholders outside your working group: If these milestones were achieved, would they agree that the objective(s) has been met? If the answer is yes, then your objective statement is complete. If there is disagreement, further refinement is still needed.

Implementation Plan

The implementation plan is an intermediate step between the strategic plan and the annual work plan.

The strategic plan identifies the general direction a Sea Grant program will take over a four-year period. The implementation plan identifies what expected milestones and impacts will result from an extension program, what resources and approaches are necessary, and what data will be collected to measure progress and success. The work plan lays out specific actions that will be taken over the next year to achieve the identified goals and objectives. In order to develop the work plan, one must think critically about what steps are needed to achieve a desired impact and in what order these steps must be accomplished. The work plan, then, is ultimately a prioritized list of steps and actions that must take place in order for the desired impacts to be realized.

Each action is designed to meet four criteria when possible:

1. A product will result from the activity or action.

2. Efforts to cooperate with appropriate organizations or agencies will be made.

3. The action will make major contributions toward achieving an expected milestone or impact and can be evaluated.

4. The stated action and evaluation (if needed for this particular action) will be designed so that all resulting milestones or impacts are measurable.

Implementation plans used by most Sea Grant programs should flow from and coincide with the strategic plan and describe how you expect your goals and objectives to be accomplished and measured. The implementation cycle is divided into two biennial intervals that correspond to the program's omnibus proposal cycle. The omnibus proposal describes in detail the planned research, outreach, and administrative actions planned for a two-year period. This approach to strategic implementation provides an opportunity to reprioritize objectives and redirect program activities every two years. In addition, program staff should review activities on an annual basis and, with approval from their director or their program leader, re-order outreach activities appropriately in their annual work plans. This provides further opportunities for a mid-course adjustment during a particular implementation interval.

The implementation plan focuses on the stakeholders who will be served, the alliances that will be formed, and the resources that will be used to accomplish the stated goals and objectives. This is where you identify what will be measured to determine if the goals and objectives are accomplished. The implementation plan identifies performance targets that provide benchmarks for evaluating program performance.

In developing an implementation plan and the resulting work plan, keep in mind that Sea Grant is a science-based, issue-oriented program. Each implementation plan should be based on a good strategic plan and integrate policy, planning, outreach, research, education, and management.

After expected milestones and impacts are identified, the rest of the implementation plan can be finalized. The body of an implementation plan contains strategies, procedures, and performance measures for each objective listed in the strategic plan. These do not need to be lengthy statements—one paragraph may do—but they do need to set a clear direction for accomplishing objectives.

Annual Work Plans

Annual work plans are the most detailed step in your planning process. Work plans detail specific actions that will be taken and products that will be produced in working toward an expected milestone or an expected impact. A work plan should provide a mechanism that is flexible enough to allow you to make mid-course corrections to address change or to take advantage of unique opportunities.
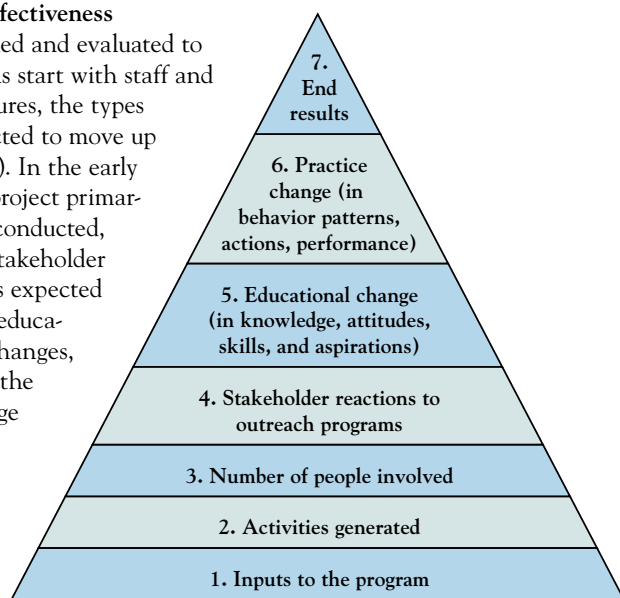
A work plan is often more than just a list of proposed actions. It may be helpful for you to list the objective from the strategic plan that is being addressed, the expected milestone or impact that will result from this action or associated group of actions, the action that is proposed, and the rationale for why this action is needed and why it is the logical next step toward accomplishing the desired impact (or goal). By taking this approach, the work plan makes a specific reference to the portion of the strategic plan being addressed, identifies what part of the implementation plan is being conducted, and reaffirms the expected milestones or impacts that are desired.

Designing a Program That Achieves Impact

In light of tightening budgets, it is imperative to demonstrate that the impact from a program effort is greater than its cost. It is no longer enough to select only projects you feel comfortable with or have ready capabilities to address. You also need to plan your programs so that you can measure and demonstrate the impact you have had. This may be a change from the way your extension programs have been evaluated in the past, where proving impact was encouraged but never required. Is your program worth its cost? This is not easy to determine. A program developed with our suggestions can help you and others respond effectively to such questions.

Increase Your Program's Level of Effectiveness

Your extension program can be planned and evaluated to increase its effectiveness. All programs start with staff and financial inputs. As the program matures, the types of results and impacts made are expected to move up a hierarchical pyramid (Bennett 1978). In the early stages of development, an extension project primarily can measure and report activities conducted, number of people participating, and stakeholder reactions. As the project matures, it is expected that programming will reach beyond educational change and result in practice changes, ultimately permitting you to measure the impact of your program. Your challenge in planning your extension program is to decide how you can move the effectiveness of your program up this pyramid each year. Strive to reach the highest level possible with all of your planned program areas.

7. End results

6. Practice change (in behavior patterns, actions, performance)

5. Educational change (in knowledge, attitudes, skills, and aspirations)

4. Stakeholder reactions to outreach programs

3. Number of people involved

2. Activities generated

1. Inputs to the program

Assessing and Meeting Needs of Stakeholders

One challenge for all extension professionals is identifying the stakeholders with whom they will work. The possibilities are endless, and you will likely be approached by stakeholders with more ideas and suggestions than you could ever meet. The most important thing to remember when getting input from stakeholders and advisory groups is to distinguish between wants and needs and between perceived and actual solutions that will achieve the desired outcome. The purpose of a needs assessment is to identify the exact nature of an identified problem and to decide how it can best be resolved (Dick and Carey 1996).

Formal Mechanisms

Advisory committees: Most effective extension programs seek stakeholder input. Each program does this differently, but all establish some form of user advisory committee and research advisory committee at the program level. Some programs use an advisory committee as their only formal mechanism to solicit stakeholder input for all staff. Other programs allow individual extension professionals to form their own advisory committees composed of key stakeholders. Either approach can provide an effective mechanism for regularly seeking stakeholder input. One must be careful, however, to remember that these groups are advisory and are not a board of directors.

Evaluation of publications, products, and services not only helps assess the quality and effectiveness of the program but can also be used to determine additional stakeholder needs. We often ask participants to complete evaluation forms. If you are creative, you can use these forms as opportunities to assess stakeholder needs, to gain input in prioritizing issues or actions, or to help select between options you are considering.

Informal Mechanisms

Most extension professionals make judicious use of informal methods for assessing stakeholder needs and conduct this analysis on a daily basis. Undoubtedly you have daily contact with user groups, resource users, and scientists in your area of specialty and receive information on problems and needs on a continuous basis. Contacts occur through phone calls from stakeholders, interaction with other government agencies and institutions, interaction with stakeholders at meetings and workshops, interaction with the general public at large, and one-on-one interaction with stakeholders. These contacts give you a comprehensive understanding of how science is currently being applied by stakeholders in your thematic areas, help you lead efforts to apply existing science and technology to current needs, and enable you to develop a clear understanding of stakeholder needs not being addressed by ongoing research and outreach activities. Informal conversations with stakeholders can be used to clarify your understanding of an issue from their perspective and to assist you in identifying true causes for problems or "gaps" that you've identified in your needs assessments.

State of science and future trends: Extension professionals also strive to keep in close contact with researchers in their thematic area, participate in research projects when possible, conduct scholarly work, and continue to grow in their disciplines.

Proactive assessment of future needs and trends: As an extension professional, you are in a unique position not only to understand the current state of the science in your focus area and future research trends, but also to assess how this science is being applied and where stakeholder needs are unmet. Extension personnel can assimilate this information and may anticipate the future needs of the stakeholders. You may identify present and future barriers to achieving expected impacts and milestones and take proactive steps to remove them. Proactive steps may include identifying research needs and participating in developing future research proposals. (See "Sea Grant Extension and Research," pages 41–47.)

**Incorporating Stakeholder Needs into Program Plans**
Stakeholder needs that you've identified should be incorporated into the program's strategic plan and corresponding implementation plan, the biennial omnibus proposal, and annual work plans. The objectives developed in the strategic plan articulate the direction best suited to meet present and future stakeholder needs. If you anticipate barriers and future trends, then research and technology can be developed before the stakeholders' needs arise. The implementation plan identifies milestones that signal progress in accomplishing goals, articulates the impact program activities are expected to have, and recognizes partnerships and mechanisms needed to accomplish the program objectives. The two-year omnibus proposal and annual work plans you submit describe actions over the year to address stakeholder needs and to achieve expected milestones and expected impact.

All feedback from users can be incorporated into your extension planning process and used to formulate and modify program activities at five points:

1. Strategic planning (four-year intervals)

2. Implementation planning (two two-year intervals)

3. Omnibus proposals (two-year intervals)

4. Work plans (annually)

5. Anytime opportunities or problems arise

Nine Important Questions

1. Will your involvement in the activity help achieve an identified/expected milestone/impact?

2. What is the link between this outreach activity and relevant research?

3. What change in partnerships with government agencies, industry, and private organizations might result in a more efficient accomplishment of your objectives? Would greater impacts be achieved as a result of this partnership?

4. Is each project designed for long-term impact and for short-term Sea Grant support?

5. What communication tools (e.g., publication, video, workshop, web site) will result from this activity?

6. Has your overall program visibility and outreach productivity increased over the previous year? Will this activity contribute to a further increase?

7. Will your proposed work plan result in a higher level of effectiveness and/or a higher level of program users than in the previous year?

8. Does your work plan contain projects with regional or national impacts?

9. Has your outreach program grown in size, or has the level of outside funding and stakeholder support increased?
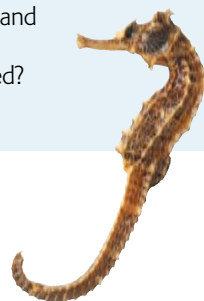
Design and Marketing of Extension Products

Any products that you have designed and marketed have no value or impact if they do not get into the hands of stakeholders or if the products are not used by them. Every Sea Grant program has a communications program staffed with professionals trained in developing, designing, and marketing products. Your program's communications professionals—writers, editors, web designers, and videographers—can be invaluable resources, and the proper time to enlist them is at the product's conception, not after its development. Many universities also have communication departments with staff who can assist with product design, development, marketing, and distribution. Incorporating these individuals into your product-planning efforts will not only result in better products, but also better target stakeholder needs.

Summary

Planning is one of the foundations upon which SGE programs were built. Planning identifies both short-term and long-term courses of action and identifies milestones that can be used to measure if your activities have met their target. Proper planning and self-evaluation will allow you to reflect regularly on your program and determine if you are doing all you can to have positive impacts for your stakeholders. A great time to do this is when you are developing your annual work plan or preparing for your annual performance evaluation. Asking yourself the "Nine Important Questions" (page 25) may ensure that you are following sound planning procedures and conducting an effective extension program designed for impact. If you want to be successful, make planning a key component of your extension activities.

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Evaluation
Why bother?

Mike Spranger and Bruce T. Wilkins

"What have you done for me lately?" This refrain is today's new tune of Sea Grant stakeholders. Funding agencies are also asking SGE professionals what we are doing with the funds they are providing for our projects. In order to answer these questions, we need to show the impact our programs and projects are having on the people and resources we target. This is what evaluation is all about. It is a process that measures whether our program or project accomplished what we hoped for or intended. Evaluation also shows us what we did to achieve our goals, what worked well, or how things could have been done better (Wilkins 1980).

Sea Grant Extension has always been known for its evaluation of programs and projects. We have a strong reputation for and history in conducting evaluations that demonstrate how we are making a difference. As an action-based arm of a national program, we have numerous examples of success that others value and want to emulate. Each SGE program has examples that show how we aid the lives of individuals, reduce negative environmental impacts, reduce business costs, and increase the sustainability of the marine and aquatic resources. But how do we ensure that others get this information? Evaluation is the name of the game!

In the past, evaluation was a "seat of the pants" exercise. Today, SGE professionals have many resources to aid in the process of evaluation. A growing field of research is now available that wrestles with the topic of extension program evaluation. Individuals exist on every university campus who are well versed in evaluation theory and methodology that SGE professionals can use. We are no longer operating in a vacuum in the planning, delivery, and evaluation of our programs.

A Case for Evaluation

In conducting evaluations, we need to define what it is, because program evaluation means different things to different people. To some it means determining if the program's goals and objectives are achieved. To others, it means judging the overall worth and value of the program. Still others view evaluation as providing information to funding agency staff, elected officials, and key stakeholders so that they can make important decisions about SGE's present and future status. Others take a more blasé attitude of evaluation, shaped by a belief that it really does not make any difference because they feel that decisions are usually not based on the results of the evaluation but, rather, on other considerations such as political expediency.

In some way all of these responses are correct. Morris and Fitz-Gibbon (1978) define a number of successful stages of formal extension program evaluation. These include (1) needs assessment, (2) program planning, (3) formative evaluation, and (4) summative evaluation. Every SGE program follows these basic stages of evaluation in some form.

As stated in the section "Planning the Extension Program" (pages 19–26), planning and evaluation go hand-in-hand. Planning not only determines what you should be doing but also helps identify what evaluation steps are needed and when to apply them. Evaluation in a good SGE program takes place throughout all planned activities. In fact, needs assessment (or pre-activity evaluation) takes place long before the program begins and is one of the primary techniques used to determine your program efforts.

After stakeholder or resource needs are determined, the SGE activity is planned, organized, and delivered to the respective stakeholder group. Formative evaluation takes place during the activity and measures immediate impact. Summative evaluation takes place after the program is completed and measures the total impact and overall value of the extension education program. The main question in the summative evaluation is what logic and facts were utilized to determine if, and to what extent, there is a connection between the educational program and action taken by the recipient of that program. For example, were there economic changes, increases in knowledge, or changes in personal or organizational practices?

It is important that SGE professionals consider evaluation a continuous process of inquiry by constantly asking questions about what they are doing, what impacts and benefits are occurring, and what the social, economic, and environmental conditions and circumstances are within which the SGE program is being developed. With these questions in mind, SGE professionals can better assess the needs, goals, and objectives that they are attempting to achieve. SGE staff may also ask questions about whether or not the program is reaching the intended stakeholder groups. Finally, SGE professionals may also ask questions about whether or not the program is producing desired results (Douglah 1998).

Demonstrating Impact

Because of the Government Performance and Results Act (GPRA) and other accountability initiatives, federal and state agencies are increasingly being asked to quantify the results of their efforts with economic impacts. Decision makers are increasingly evaluating programs by linking future budget allocations to program accomplishments and a return on the public investment (Boyle 1997).

The dilemma in SGE program evaluation is that this emphasis on return on public investment may not fully show the impact of our programs. SGE programs also deliver noneconomic benefits. SGE programs may change peoples' lives, their attitudes, or their behaviors. SGE programs may also benefit society in other ways, such as reducing pollution, creating better community leaders, or developing more sustainable coastal communities (Diem 1997). Thus, increases in knowledge, along with changes in personal and organizational behavior, may or may not have an economic impact; they are also difficult to quantify.

Additionally, decisions made by SGE stakeholders not to do something that may have large economic consequences are often not factored into determinations of "success." For example, saving dollars for marine businesses because a poor investment was not made based on information gained at an SGE meeting is hard to quantify. Similarly, the saving of a life or vessel because a boater knew what to do in a hazardous situation as a result of information gained at an SGE fishing vessel safety program is difficult to measure in economic terms. Likewise, determining the economic impact of providing training to coastal planners on alternatives in coastal shoreline mitigation, which they incorporate into local planning ordinances that preserve and enhance shorelines, decrease erosion, and reduce other coastal hazards, is complicated. Each SGE program leader can provide examples of successful programs where impacts may be difficult to measure in economic terms but are extremely important to their program as well as to their stakeholders.
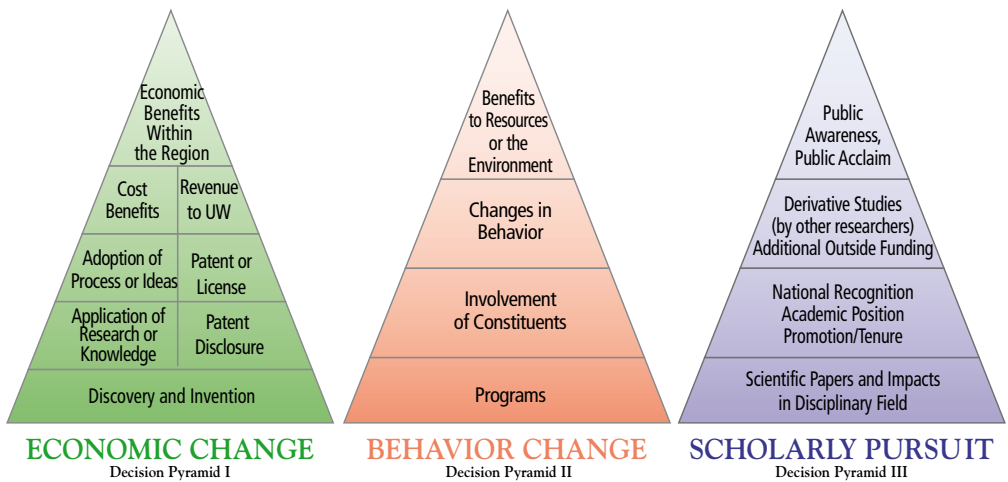
Similarly, we should not be too concerned over the initial number of stakeholders that we serve. The adage of quality over quantity is applicable here. SGE professionals often use the

adoption-diffusion model in their work. In this model, we work with key leaders and innovators who are respected by their peers. By having these individuals learn and adopt new skills and knowledge and then apply them in their home and workplace, the new skills and knowledge are gradually diffused throughout the stakeholder groups that we have targeted (Rogers 1983).

In addition to effecting economic or behavioral change, SGE programs or activities may have scholarly impacts and benefits. Increasingly, SGE staff conduct applied field projects that contribute to research literature. As members of universities, SGE staff have the opportunity to present papers at professional meetings as well as publish the results of their research and extension activities in peer-reviewed journals. Although not a major thrust of SGE staff activities, scholarly pursuit is another "indicator of success" that is often overlooked in the evaluation of SGE activities.

In 1999, the Washington Sea Grant Program developed "Decision Pyramids," a conceptual model to help monitor impacts in three areas: economic change, behavior change, and scholarly pursuit. Similar to the Bennett "Hierarchy of Effectiveness" that is explained in the section "Planning the Extension Program" (page 23), SGE program activities should show progress over time toward higher levels of impact on at least one of these pyramids. Progress by SGE professionals in more than one pyramid is preferred.

Washington Sea Grant Program Decision Pyramids

ECONOMIC CHANGE
Decision Pyramid I

Economic Benefits Within the Region

Cost Benefits | Revenue to UW

Adoption of Process or Ideas | Patent or License

Application of Research or Knowledge | Patent Disclosure

Discovery and Invention

BEHAVIOR CHANGE
Decision Pyramid II

Benefits to Resources or the Environment

Changes in Behavior

Involvement of Constituents

Programs

SCHOLARLY PURSUIT
Decision Pyramid III

Public Awareness, Public Acclaim

Derivative Studies (by other researchers) Additional Outside Funding

National Recognition Academic Position Promotion/Tenure

Scientific Papers and Impacts in Disciplinary Field

© University of Washington

Evaluation That Serves Many Masters

In addition to measuring economic indicators in evaluating SGE programs, increased emphasis is being placed on SGE programs to be evaluated against national objectives. In 1998, the National Sea Grant Office (NSGO) instituted the Program Assessment Team (PAT) process, a quadrennial assessment of the 30 SGE programs. The purpose of the PAT is to evaluate each SGE program's success in order to make merit-based allocations to the core program. In other words, SGE programs that rate highly are most likely to receive the best budget increases in years when NSGO has available funds. Other criteria used by the evaluation team to determine funding include how well the program meets national goals and how effectively it provides "return on the public investment."

Although a large portion of SGE funds do come from NOAA, SGE programs increasingly augment their budgets from other federal, regional, state, and local sources. As a result, SGE programs may also reflect regional, state, and local needs that may or may not be in the national strategic plan. Hence, SGE programs may be required to show not only how they meet national goals, but also how they are meeting the expressed needs of the stakeholders that they serve, as well as those who are providing funding!

What is important is that all SGE programs should have strategic plans that reflect the needs of the people and resources with which they work. SGE programs and activities should then be measured and evaluated against what has been proposed in the strategic plans to determine impacts, benefits, and successes.

Evaluation Mechanics

Although there are many questions about the mechanics of program evaluation, the process can be condensed into six basic questions:

Who should evaluate the program? Anyone who wants to know the strengths, weaknesses, successes, and failures of the program may be involved in evaluation.

What is program evaluation? Evaluation is a planned process that determines whether or not a program or activity has accomplished what had been hoped for or intended. Evaluation also enables SGE programs to review what things were done to achieve the goals and objectives. It also reveals what did not work or what could be improved for future programs and activities.

When should you conduct a program evaluation? Program evaluations should be a natural part of doing business in SGE activities. Informally, SGE professionals are continuously making gut-level decisions about the value of their program activities. These decisions are likely the outcome of informal evaluations through personal observation and communications with their stakeholders. However, administrators and funding agents generally expect more formal program evaluations. Formal evaluations are considered more accurate and objective because they rely on standards, goals, objectives, and data collection and analysis in order to determine the value of the SGE effort. This kind of evaluation adheres to the standard planning process outlined in the section "Planning the Extension Program" (pages 19–26).

Keep in mind several caveats in conducting formal evaluations. For example, it may not be appropriate to expend time and energy in evaluations if no one is going to use the information to improve or make decisions about the program. Second, if the program is a "one-shot activity," you do not have to worry about collecting information about changing the program. Third, if you have limited time, money, or resources to conduct the evaluation, make sure you choose tools and techniques that fit your resources. Last, if there are no clear goals and objectives for the program, it will be hard to measure the program's effectiveness if you cannot agree on what "effectiveness" means. Clear goals and objectives of a program become the chief criteria on which success is determined.

Where should you evaluate a program? This does not refer to location but to where in the program's life you should evaluate. Program evaluation should take place during all phases of the program.

Why evaluate a program? The bottom line of evaluation is to show that you are making a difference in your program or activity that provides a positive impact or benefit to your stakeholders.

How do you evaluate a program? Many methods and techniques are available to evaluate SGE programs. They may involve social science research methodologies (surveys, case studies). Others may focus on collecting quantitative (numeric) data; others may focus on collecting qualitative (narrative) data. Additionally, the process may be a very formal, statistically oriented process or an informal anecdotal process. There is no single approach or technique in SGE program evaluation. It depends on the audience, the program being conducted, and the resources that are available to conduct the evaluation.

Approaches to Evaluation

Program evaluation is both an art and a science. It involves taking evaluation theory and methodology and applying it to real-world, real-time situations. There is no single method, approach, or evaluative instrument that can be taken off the shelf and used to measure SGE programs. Evaluation can be as simple or as complicated as you like. Likewise, it can be used for multiple purposes. It can provide information to design, implement, and improve a program. It can provide information that can increase funding or determine whether a program needs to be terminated. Evaluation can be used for accountability purposes—to justify the existence of a program. It can also be used to improve a program. Strengths can be emphasized, and weaknesses can be identified and improved.

Both economic and noneconomic indicators should be used to determine if the program has met stakeholders' needs. The effectiveness can be ascertained through quantifiable measurements as well as qualitative measurements obtained by unobtrusive methods.

SGE program performance also needs to be based on both short-term and long-term benefits and impacts. An SGE program may not show results for several years. Research indicates that it takes time for new information to be diffused throughout a resource user group. This needs to be acknowledged in any evaluative process. Thus, short-term and long-term evaluation tools may be used.

SGE program leaders need to put more emphasis on and think more thoroughly about program evaluation and the funds to support it. Thinking about evaluation should begin in the needs assessment and planning phases, not after the program is completed. Evaluation is an activity that should be conducted throughout a project. SGE programs should also have clear ideas about what is to be accomplished in their programs and what measurements will be used to determine if their programs are successful.

Summary

Evaluation of programs should be seen as an opportunity, not as a threat to SGE staff. Documenting the impact and benefits of SGE programs demonstrates not only program success but individual success as well. Documentation of successful programs increases a sense of accomplishment among SGE staff. Evaluation also provides information that can lead to greater professional competency by learning what worked and what did not work. In the end, both SGE programs and individuals benefit by the evaluation process.

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Outreach Collaborations and Partnerships
Whom do we work with?

Robert H. Bacon

It is difficult to imagine
a successful Sea Grant Extension pro-
gram professional who does not develop
and conduct collaborative programs with
partners inside and outside the Sea Grant
network. Collaborations with other SGE
professionals, particularly those involving
communications and education, are a given
in any well-integrated SGE program. You
will establish your own internal collabora-
tions, and they will not be dealt with here.
External collaborations—those with out-
side partners—are especially beneficial when a problem is too large, complex, or diverse to
be addressed by SGE alone. Collaborators may also provide additional expertise to address
problems as well as access to additional sources of funding.

External Collaborations

SGE professionals, to one degree or another, have always collaborated with agencies and
organizations outside the Sea Grant network. Today, however, the need to collaborate in
program development and delivery is becoming even more critical. The rapid growth of
coastal populations has greatly expanded the potential audience for SGE outreach messages.
As the audience expands, the ability to reach it with limited staff and financial resources
diminishes. Effective collaborations—by capitalizing on the different strengths of the part-
ners—create opportunities to reach a wider audience more credibly and with greater
efficiency than programs developed and conducted by any of the partners acting alone.

However, there are several issues that you will need to address in order to build successful
program partnerships. The greatest of these involve compatibility of goals, program coordi-
nation, taking or sharing credit, and, for SGE in particular, advocacy. When developing a
collaborative project, early planning and organization will help you overcome many potential
obstacles.

Selecting a Partner

SGE professionals can identify potential program collaborators in several ways, including via the Sea Grant strategic planning process, local SGE advisory committees, interagency meetings, conferences, and one-on-one interaction with citizens. Of course, potential collaborators may also approach SGE professionals. Almost any agency or organization may be a potential SGE collaborator, including other NOAA units, other federal agencies, local and state government agencies, businesses and business organizations, private and nonprofit organizations, and citizen groups.

SGE professionals who work with state and federal legislators form a special kind of collaboration. A program should have a plan and a process that is mindful of the rules and policies of the supporting university or universities and/or the SGE program director. In addition to following the appropriate process, being a team player, and working with your director, contact with the legislature can be a powerful mechanism for affecting coastal decisions through improved information. Legislative collaborations can present opportunities, particularly in a nonadvocacy role.

Compatibility of Goals

One mission of Sea Grant Extension is to further the wise use and conservation of coastal natural resources in ways that benefit current and future users of those resources. Almost any agency or organization can be an appropriate SGE partner if there is sufficient compatibility among the missions and goals of the partners as they relate to the specific collaboration. For example, SGE program goals in water quality are highly compatible with those of most states' environmental regulatory agency. There are many examples of SGE agents' collaborating with state environmental agencies on nonpoint source water pollution educational and outreach programs.

Nonpoint Source Pollution Issues Surface at Sea Grant

Nonpoint Education for Municipal Officials (NEMO) is an educational, nonregulatory project of the University of Connecticut's Cooperative Extension and Connecticut Sea Grant programs. NEMO uses information and technology to educate local decision makers about the connection between land use and water quality. Funded by the USCDA/ Water Quality Initiative and other federal and state agencies, the success of NEMO is exemplified by the emulation of the program in 30 states across the country, including many Sea Grant Extension programs. The result is a national NEMO network that promotes the NEMO educational model of partnership among water quality experts, agencies, and local officials.

The Product and the Process

There are several roles SGE professionals can play both in solo outreach projects and in collaboration with others. These can be divided roughly into two categories: product and process roles. The most common product roles are those of neutral information provider and direct technical assistance provider. The process roles of facilitator, information broker, convener, or catalyst are a little less straightforward. All outreach projects create opportunities for things to happen. SGE professionals often have a perspective that is broader than that of others who have more highly focused goals, allowing extension staff to make connections between parties who may not be taking full advantage of the potential for mutually beneficial collaborations.

One such example is the important role the South Carolina SGE played in the creation of the South Carolina Hazard Mitigation Roundtable. While South Carolina Sea Grant and other agencies in the state had long been working to mitigate the impacts of flooding and other natural hazards that are typical along the southeast coast, little direct interac-

tion existed among the various groups. At a 1995 South Atlantic and Gulf Coast Coastal Hazard Mitigation Workshop, co-sponsored by NOAA and the Federal Emergency Management Agency (FEMA), representatives from SGE, the state's coastal zone management agency, the state's National Flood Insurance Program, and the state's emergency preparedness agency began discussing ways to better share information and perhaps collaborate on programs. The SGE representative, who had experience with another informal statewide community development group, suggested creating a similar group to share program information on natural hazards and to establish collaborations.

The South Carolina Hazard Mitigation Roundtable began meeting every other month at rotating locations around the state. Participation was open to all interested parties and grew to include representatives from the state department of insurance, town managers, planners, property insurers, building and zoning officials, emergency managers, and local floodplain managers. In 1996, the South Carolina Association for Hazard Mitigation was formed as a product of the roundtable, and in 1997 the association became the state's chapter of the Association of State Flood Plain Managers. Since then the roundtable has continued to meet under the auspices of the association, and annual conferences have been held to educate the association's members.

As was the case in the creation of the roundtable, there is always plenty of credit to share among all collaborators for successful programs. While getting the job done is the main goal, sharing program credit is important to document the program's success. However, focusing solely on "getting credit" in collaborative program efforts can create a parochialism that works against accomplishment. It is important to remember that in a collaborative program that produces good outcomes, there are always plenty of kudos to go around for all the collaborators. A program is strengthened when it can demonstrate that many have recognized a need for it, shared in its objectives, and contributed to its successes.

Neutral Brokers of Information

Maybe the trickiest and potentially most dangerous pitfall of outside collaboration in SGE outreach programs is that of advocacy. The SGE ideal of being a neutral source of science-based information is very difficult to achieve in actual practice. Working in close connection with a client group can easily lead to identification with that group's point of view. It is a problem that has and always will exist in SGE.

Every SGE agent, specialist, and leader has personal views about the issues we deal with in our jobs. It goes without saying that we should all strive to set these aside in the conduct of our programs. SGE also has a bias, or institutional agenda. But as neutral providers of science-based information to decision makers, we do not suggest what those decisions should be. We help them understand their choices and the implications of those choices. We do not take positions on issues of public debate. It is important for our collaborators to know this. It is equally important for us to be aware of their particular agendas.

Arguably, the most important asset of SGE is its credibility as an objective source of scientific information. As Bruce Wilkins pointed out in *Views on Sea Grant Advisory Service Work* (1980), "[SGE] workers are frequently tempted to take on the role of advocate. Urging people to take a particular action or adopt a particular idea, although alluring, should generally be avoided in [SGE] work."

There are at least four reasons advocacy can be so seductive.

1. The advocate gains support. Taking a position naturally wins favor among those who agree with the position.

2. Advocacy is easy to do. Taking a position doesn't require all of the facts or even a full understanding of the situation.

3. Advocates may be seen to be more helpful. Answering the "should we?" question helps the questioner carry the burden of the decision.

4. More can be achieved in a shorter time. Advocating a single solution rather than fully examining the advantages and disadvantages of several alternatives makes it possible to move toward a solution more quickly.

Although advocacy can be seductive, there are many reasons SGE professionals avoid it at all costs.

1. Advocacy of one position alienates those on the other side(s). That in itself may not be bad (after all, they may be wrong!), but we may lose our credibility with those clients who in good faith come to a different decision. There are few absolutes in much of science, and none in matters of public policy.

2. We—SGE—don't know the proper decision. The improbability of knowing with certainty the value of change to any individual or group means that we can seldom say what decision is best for someone else.

3. Research is not needed for advocacy. This is, of course, the flip side of "advocacy is easy to do." Exhortation, misinterpretation, and misrepresentation are all techniques frequently used in strong advocacy situations. Indeed, science-based information can often be an impediment to an emotional advocate's role.

4. We lose objectivity. Rejecting research findings that conflict with a given position, and even distorting research to generate desired results, has historically been problematic for groups or individuals who are advocates.

5. We are blamed for failure. If an idea that we advocate is adopted and fails, we receive, and deserve, the blame for its failure.

Effective SGE professionals avoid the trap of advocacy by striving to provide the best information available while recognizing that the persons who will benefit, or lose, must make the decisions.

What Can Happen

The following real example illustrates problems that can arise when SGE professionals assume a role of advocacy, or in this case, are perceived as advocates. In the late 1970s, a new SGE program was established in an East Coast state. The program had recently employed a fisheries extension agent and an SGE program leader, who had begun discussions about educational programming with leaders of a commercial fishing association. About one week into the job, the association president requested that Sea Grant help with a meeting they were planning to discuss the future of fisheries management in the state. Wanting the association's support, the agent quickly agreed to assist with the meeting, to be listed as a co-sponsor, and to place posters about the meeting at fish houses around the state. The SGE program leader also offered the local county extension office as the location for the meeting. The meeting was subsequently held, and more than 100 fishermen and the television media attended. As it turned out, the fishermen used the meeting to berate the state fisheries management agency and a new fisheries management structure that had been developed by the state over several years. The press was very detrimental to the state, and by the next morning, the governor's office and the state fisheries director were angrily calling the SGE office. Some years later, the SGE program leader found out that a meeting convened in the governor's office that very day to discuss what the state could do to eliminate the SGE program. What went wrong?

With almost all public issues there are different perspectives from a variety of constituents. In this case, the fishermen's association had legitimate concerns about the impending legislation, and their concerns deserved a public forum. However, Sea Grant made several major mistakes. The most important was that the meeting was not balanced among differing points of view. The state fisheries agency (and other fisheries groups that supported the legislation) should have had equal time on the program to express their views. By listing Sea Grant as a co-sponsor on the meeting flyer, it was perceived that Sea Grant (and the university) tacitly endorsed the association's opinion. In addition, as a meeting co-sponsor, it was Sea Grant's responsibility to make sure that the planning for the meeting was properly balanced. The bottom line was that Sea Grant did receive kudos from the association, but it quickly made enemies with the other parties that also had legitimate opinions on the issue.

This example illustrates how extension professionals can find themselves in a conflict, or wishing they could help ameliorate its effects. Conflict resolution skills may prove valuable for program leadership in these instances, and effective training in technique may be an aid to addressing the needs of stakeholders.

Cooperative Extension

As mentioned in the section "Administrative Structure" (pages 13–17), Sea Grant is based on the land-grant model of the Cooperative Extension System (CES). Approximately two-thirds

of SGE programs are formally affiliated with Cooperative Extension programs in their state. Whether your program has this formal affiliation or not, it makes a lot of sense for SGE professionals to collaborate with Cooperative Extension.

That collaboration can take many forms, including

- in-service training on coastal water quality, aquaculture, etc.
- information packets in CES county files, e.g., zebra mussel information and identification.
- joint water quality programs that serve communities on both marine and freshwater issues

Other Examples of Sea Grant Extension Collaborations

Aquaculture Permitting

An SGE aquaculture specialist, working closely with her state's environmental regulatory agency and the aquaculture industry, played a leading role in the development of a regulation that created a general National Pollution Discharge Elimination System aquaculture permit in the state. Creating a permit specific to aquaculture discharges streamlined the permit application process and reduced permit costs dramatically. The effect of the regulation was to create a more favorable climate for aquaculture as well as help protect the health of the state's natural resources. Under the streamlined system, the permit cost was substantially reduced from almost $2,000 per discharge to $300.

African American Heritage Map/Guide

An SGE coastal recreation and tourism specialist was advised by a representative of the state's Heritage Corridor program in the coastal region that the state's African American Heritage Council (AAHC) was seeking collaborators in a project to develop and publish an African American Heritage Guide for several coastal counties. Its purpose was to help residents of the state and tourists learn more about the area's African American heritage and to promote community economic development in rural areas and small communities through tourism. The idea for the project had been around for some time, but it was the collaboration that finally got the project off the ground.

With each partner making significant contributions, the SGE collaborated with the AAHC and the Heritage Corridor program to produce and distribute a map/guide. The AAHC representative worked with people from the communities to identify points of interest and businesses to include in the guide and wrote descriptions of them; representatives of the Heritage Corridor project and SGE edited them. The team recruited a history professor from the state's predominantly black land-grant institution to help verify the facts in the guide. The SGE specialist applied for development funds from his Sea Grant program for the design and printing of

the map/guide. The Heritage Corridor project representative took the lead in distributing over 40,000 copies of the guide to the state's welcome centers along interstate highways, local chambers of commerce, county parks, and local businesses. Each of the collaborators was credited with printed logos on the guide.

Publication of the guide received attention on several local television broadcasts in the region. Two of the state's major newspapers ran articles on the map/guide. One newspaper editorial said the guide filled the need to educate citizens about this often overlooked aspect of the state's history. Similar map/guides were soon developed for other regions in the state.

Marine Ecological Reserve Working Group

One of the issues facing the National Marine Sanctuary Program, and more specifically the Channel Islands National Marine Sanctuary Program (CINMSP), is the realization that the level of sanctuary restrictions may not be appropriate for a sanctuary's goal of resource sustainability. Currently, the CINMSP imposes no fishing restrictions on either recreational or commercial fishermen. Recent allegations of the decline of fisheries have prompted a review of the status of the resources as well as consideration of the use of marine reserves (no-take areas) in conjunction with the California Department of Fish and Game. A California Sea Grant marine adviser serves on the CINMSP Marine Ecological Reserve Working Group, made up of commercial and recreational fishermen, kelp harvesters, tourist industry representatives, fishery managers, and nongovernment agency representatives; the group provides research-based information on design criteria for reserves and the status of existing Channel Islands reserves and their levels of restriction. In addition, to facilitate communication and decrease the chance of duplication or contradiction in efforts among interested parties working statewide, the adviser initiated an e-mail listserv known as the California Marine Protected Area Network (CMPAN) as a forum for discussions about reserves.

Summary

Collaboration has always been an integral part of any successful SGE program. As coastal populations have increased, so has the number of agencies that deal with coastal issues, making effective collaboration even more critical. Obstacles to effective collaboration must be overcome to build successful program partnerships, the greatest being the compatibility of goals, program coordination, credit sharing, and advocacy. When effective, the benefits of collaboration greatly outweigh the inconveniences or extra effort that might be required at the outset. Numerous opportunities exist for collaboration with a wide variety of organizations or agencies, and SGE professionals can participate in both product- and process-driven roles.

Sea Grant Extension and Research
Where do we get our information?

Judy Lemus and Judy Pederson

Sea Grant Extension program professionals interpret scientific knowledge for policy makers, managers, the media, and the public. Within this role, it becomes our responsibility to distinguish scientific and technical facts from interpretations of a biased constituency. In this day of instant media accessibility, it is important to review the types of data available and the reliability of the information being conveyed.

Sources of Information

To scientists, primary sources are papers published in peer-reviewed journals. These papers are considered to be good-quality scientific data because two or more peers have reviewed each paper. Reviewers comment on the sampling design used, the quality of the data, the validity of the analyses, and the interpretation of the data by the researchers. Some of the scientists are asked to conduct additional experiments, add controls, or recalculate the data before papers are published. Although not perfect—and there may still be some uncertainty regarding scientific information—this process is thorough, and it is accepted practice to assume the data are of high quality.

Other sources of original data that you may come upon are reports from government, consulting companies, or other agencies, which are often referred to as "gray literature." These studies may be based on specific questions, although many states, agencies, and organizations publish monitoring reports. These reports may be peer reviewed, but because the source is a government or private/public agency, there is concern that politics or internal agendas could influence the scientific conclusions. Also, government reports are often written about controversial topics that can cloud the perception of credibility. However, even though the issue may be controversial, the data may very well be good and useful, because most government scientists are well trained and produce quality research.

How do you distinguish the quality of the gray literature report? In general, federal government research laboratories produce peer-reviewed reports that are reliable and follow good scientific protocols. At the state level, these gray literature reports are less reliable, and thus, each SGE professional should determine the extent to which data are col-

lected by qualified scientists and technicians and reports are reviewed by outside reviewers. The reliability of reports from consulting companies also varies widely. By discussing the information with the primary author and asking questions about how data were collected, who reviewed the information, and whether the report was "sanitized" by higher-level administrators or the project proponent, you may gain information regarding the quality of the information. Proceedings from conferences are often not peer reviewed and, therefore, are less reliable than published papers.

Many states have encouraged citizen monitoring associations to collect water quality and other types of environmental data. Often these reports are published and, with the advent of desktop publishing and computer-generated maps, can have a professional look. While these are useful long-term records, many scientists question the reliability of these data because volunteer training and oversight of sampling methods are often minimal. You should interpret these reports cautiously and have them confirmed by other reliable sources. On the other hand, there are exceptions, and citizen monitoring programs that use training programs, field supervision, and academic laboratories for analyzing nutrients may obtain quality data.

Secondary sources are those in which original data are interpreted by others. Again, the range of acceptability and reliability is broad. Reviews written by scientists are usually peer reviewed before publication. Newspaper articles vary; a general rule of thumb is that the more carefully written articles are found in newspapers with a greater circulation. Their writers often attend annual science writers conferences and will present differing points of view on the issue. Scientific articles such as those published by Audubon, the Sierra Club, the World Wildlife Foundation, the World Watch Institute, and others often reflect the bias of the organization. Their articles should be read with the potential bias of the publisher in mind and not treated as primary sources of information.

What about the Internet as a source of information? More and more, scientists, the public, and students are using the Internet to obtain information about fisheries, marine bioinvasions, biotechnology, pollution, eutrophication, toxic effects, endocrine disrupters, and so on. Unfortunately, there is very little oversight on what is on the Internet. We can't be sure what is fact and what is fiction. We can access an individual's home page, government reports, peer-reviewed journal articles, newspaper articles, and press releases from everyone that informs us on virtually (no pun intended) every topic conceivable. The same standards that we apply to other forms of information apply here as well. If the work is peer reviewed, if good scientific practices are followed, then we have more confidence in the report and conclusions than if we have little insight into where the information originated.

Another challenging area is the information that stakeholders or others outside academia have on topics of interest to Sea Grant constituents. Much of the information that has practical value to our stakeholders may not come from academic research but, rather, may include anecdotal evidence, life experiences, and practical knowledge. Sometimes information from different sources, including academic research, may be conflicting. Your aim should be to provide the best information from all sources.

Evaluating the Information

We believe that SGE program specialists should seek to be neutral brokers in providing scientific and technical information. As such, we as SGE professionals need to maintain a high standard in delivering information to our constituents. Most of us write articles for the lay public, provide written materials for our newsletters and publications, have a home page, and provide information for our respective web sites. We may even be interviewed on the radio or television. How can we be the neutral brokers of information when the sources are so varied in quality?

To help us evaluate reliability, we can ask several questions about the information that we may share with our audiences:

- What is the source of the facts?

- Were scientific methods used to generate the data?

- How reliable are the data?

- Were there adequate controls, numbers of samples, good sampling designs?

- How were conclusions reached?

- Is there a built-in bias in the interpretations?

These questions can apply to articles in the media, scientific journals, progress reports, and gray literature. Our challenge is to report accurately the findings and provide alternative interpretations, as appropriate, to ensure that all sides are heard. This helps us develop a reputation for being reliable in our reporting.

Here are some red flags that suggest care should be used in reporting results:

- NEVER believe statements that are made in absolutes. (Well, almost never believe statements that are made in absolutes.)

- Look for adequate controls and numbers of samples in data.

- Remember the adage, "Statistics, statistics, and more darn lies." Learn how to interpret statistical analyses.

- Relationships between two events do not mean they are cause and effect.

A Lesson in Decision Making

Academic scientists, agency scientists, engineers, and decision makers convened at a workshop to discuss the adequacy of the biological testing protocols currently used in managing the disposal of dredged material in a coastal community. At the workshop's end, the participants were asked to act like managers and to decide about the quality of dredged materials based on actual values from a recent dredging project. After a group discussion, each person was asked to make a decision about the level of sediment contamination—whether it was unsuitable for open ocean disposal or whether it would require special handling and, therefore, add significantly to the cost. Participants were not given the option of saying more data were needed. Without exception, all academic scientists refused to make a decision. But agency scientists were more likely to evaluate the sediments as "clean" or "dirty," and all managers made a judgment about sediment quality. This scenario could have just as easily taken place in any regulatory board meeting. The lesson: different professionals will have different approaches to data and information.

Working with Researchers and Sea Grant Scholars

Working with researchers and scientific scholars is an integral part of Sea Grant extension work. Without research, there is little need for extension. And from a Sea Grant perspective, there is little need for research without extension. Indeed, many extension professionals are researchers themselves. Either way, to be effective you must be acquainted with current research and research in progress to communicate accurate and useful information to a target audience. A familiarity with research also arms you with certain appraisal skills necessary for discriminating between fact and folklore (Dow 1969).

While reading research articles and reports is necessary and advisable, the best source of information about current research projects, practices, and trends is often "straight from the horse's mouth." Researchers are motivated to do good science and are, therefore, generally cooperative about sharing information with those who are interested and will make use of their knowledge and expertise. When you speak one-on-one with a scientist, you gain a better sense of how confident he or she is in the data, how it might best be used by a particular audience, and its historical and scientific context. Often the research that you use for extension information will be a Sea Grant–funded project in which the researchers involved will probably be very approachable and open to discussion. It may even be possible to visit a researcher's laboratory or field site to learn more about the techniques and protocols they use. Likewise, graduate students, who often perform much (if not all) of the actual research and data collection for a project, should not be overlooked as a valuable resource for firsthand information. Graduate student presentations and symposia are excellent forums for keeping abreast of research.

Information that you can use immediately with your target audience is the most satisfying to both you and your audience. This is likely information that has come from research initiated and designed to address a specific practical problem in some arena of the coastal community. Research generated from this sort of directed approach, often called applied research, is a vital element because it is responsive to the local communities' needs. However, even applied research may not yield immediate results. Likewise, basic research can (and does) yield information that is valuable to a particular audience, although perhaps over a more protracted time scale. One dilemma that may arise is the question, "Is it done yet?" (or, "How much is enough?"). As a group, scientists tend to focus on long-term issues and are reluctant to make decisions in the face of uncertainty. In such cases where decisions are required (as often occurs in resource management issues) but data are either incomplete or unresolved, it becomes the task of the SGE agent, in cooperation with the researcher(s), to determine whether the information carries enough merit for extension or transfer into the community. Maintaining an open line of communication with scientists throughout the research process will help you address this question, should it become an issue.

Integration of Extension into Research Proposals

The mission of Sea Grant is to apply university-based research and technologies to issues relating to the responsible use of marine resources. In this role, extension professionals serve as the messengers. Our job is to make sure that information generated within the research community makes its way into the hands of those who need it. From this perspective, then, an ideal research proposal would incorporate a well-defined extension plan. In fact, other granting agencies outside of Sea Grant, at both the local and the national levels, have lately begun to recognize the need for consolidated research/outreach proposals.

While this premise sounds fairly simple to apply, it is not always put into practice. Research proposals are reviewed primarily on the quality of their research, and rightly so, for poor research is of little use to anyone. But by the same token, a good research project can only be strengthened by a well-developed outreach plan (besides, it's our mandate!). It falls to extension professionals, as the liaison between research and the community, to foster that alliance. As discussed earlier, a good working knowledge of both research and community needs will go far in this regard. In bringing the needs of the community to scientists, whether through informal communication or an RFP, try to discuss potential outreach activities with prospective researchers as early as possible. Not only do scientists want their research to be useful, but as recognized experts in their field, they may rightly expect to be consulted. It's likely that your interest will be appreciated.

SGE professionals also may be involved in the proposal review process. Specialists and leaders, in particular, are often asked to provide feedback on preproposals regarding relevance, appropriateness, and prospects for outreach. This initial screening affords another opportunity to familiarize yourself with upcoming research projects and initiate working relationships with scientists working in areas applicable to your stakeholders.

In many programs, senior level extension professionals may be required (or desire) to develop their own applied research proposals. In this scenario, the SGE researcher is closely involved with a particular issue, and the research is generally directed toward addressing a specific problem or need within an industry or audience group, affording a high probability of direct benefits to the community. However, the SGE researcher should take care to assess his or her own data and methods as critically and carefully as any other research project. Peer reviews by both researchers and other SGE professionals are advisable for maintaining objectivity and credibility.

Research-Extension Interactions with State and Other Agencies

Obtaining data from researchers and extending it to a particular audience is only one direction in the exchange that occurs between research and extension. Another is the communication of information from SGE staff to researchers regarding problems or issues that have been identified by industry and agencies. A third dimension to this exchange is providing feedback from users to researchers regarding the efficacy of applied technologies and information as well as the shortfalls and remaining needs. A complete SGE program should take into account the full circle of information transfer.

Because each SGE program is supported, often substantially, by state dollars, this transfer will include information regarding research priorities from resource agencies at the state level. Likewise, part of your responsibility is to help inform state and local resource managers and policy makers of information and technologies that address relevant research needs or information gaps. You may find that your audience is not even aware of a need for this information, so you should be prepared to explain the relevance of the data or technology. This flow of information from Sea Grant to state can then help resource managers make better-informed decisions regarding regional or statewide research agendas, thus completing the cycle of information transfer. It should be noted, however, that advocating the use of certain information in decision making is very different from advocating a position regarding what action should ultimately be taken.

Summary

The Sea Grant model is built on the extension of research information and technology to users of the coastal environment. Maintaining a close relationship with research scientists, as well as other expert sources, is paramount to a successful extension program. SGE professionals serve as the information liaisons between researchers and stakeholders and should foster bi-directional communication with both groups. To maximize the impact of extension programs, actions and products must be based on quality cutting-edge science. Stakeholder needs can be incorporated into research by

- identifying future relevant research needed and working these needs into the program's regular RFPs.

- working with your supervisors and other Sea Grant professionals to develop future research and outreach needs at the national level.

- working independently and with other researchers to conduct applied research needed by developing proposals together and responding to RFPs.

- working with appropriate agencies and groups toward policy modification.

- developing tools or products needed by stakeholders to overcome barriers.

Reference

Dow, Robert L. 1969. *The Role of Research in Fisheries Extension.* Atlantic States Marine Fisheries Commission, 28th annual meeting, 27–29 October, New York City.

Regional and National Networks
How do we work together?

Mike Liffmann

> *"...[Sea Grant's] marine extension network is an army of colleagues."*
>
> —William Q. Wick, Director, Oregon Sea Grant College Program, 1985

Sea Grant Extension

consists of diverse and autonomous programs that are committed to inter-institutional cooperation. As we have evolved in an era characterized by fast-paced change and shrinking budgets, we've constantly looked for ways to advance together and share resources as a community or network of Sea Grant Extension programs. Although diverse in geography and culture, organization and size, and funding and staff capabilities, the SGE program has been successful in large part because we've actively practiced a model of collaborative problem solving that features nonstop building of linkages with others and among ourselves. After 30 years of service, we can point to this achievement as one that has given us a great reputation, that has made us strong, and for which we can be justifiably proud.

Informal Links and Talent Sharing

These linkages have given SGE a distinct advantage. We typically rely on informal networking arrangements, where individuals engage in one-on-one information exchanges after having read or heard about a colleague's expertise in a particular subject or on a specific topic. Very often these exchanges have led to expanded talent-sharing arrangements, where SGE programs call on peers from other states to help address specific problems. SGE professionals have many backgrounds and skills in fields from aquaculture, beaches, and biotechnology to weather, wildlife, and zebra mussels. An excellent source for identifying the expertise and resources available within SGE and the rest of the Sea Grant family is the National Sea Grant Media Relations Office's *Sea Grant Guide to Coastal Science Experts*.

Interstate talent sharing and other forms of networking have resulted in many benefits to Sea Grant as a whole. Talent sharing is an agreement among Sea Grant individuals to work together on specific projects. In most instances, the SGE programs seek the talent and provide funds needed for an individual's time and/or travel expenses. In so doing, we manage to solve local problems by leveraging talent and resources while sustaining working relationships and encouraging additional cooperative efforts with the rest of the Sea Grant family. Talent sharing helps ensure that individual programs and regions can respond quickly, via networks, with the delivery of cost-effective extension services. Together, we have been able to move ideas into action and sustained collaboration. Networking on a larger scale has also helped connect many of our local stakeholders with those in other states, often blurring state lines and enabling SGE to address more effectively issues of regional and national significance.

There are benefits to the professional who is being shared—he or she gets training, as does the receiving program's professional. It builds cohesion in the programs and allows programs to hire more specialized professionals. However, the downside is that if money becomes an issue, the shared extension professional's services could be the first to go.

Many examples of talent-sharing arrangements can be cited. In the Great Lakes, it is common for one state to call on specialists from another to help organize and conduct educational programs. In the Pacific region, a ports specialist was a national resource until his retirement in 1999, and as such, he was frequently called on by his SGE colleagues to address port issues throughout the nation. Since the early 1990s, a small SGE cadre of coastal tourism and recreation specialists has networked to address topics related to sustainable development and information technology. SGE Great Lakes zebra mussel experts have conducted conferences and workshops for their colleagues and industry leaders in southern, eastern, western and even non–Sea Grant Pacific states. Fisheries experts from SGE programs in the Pacific, Atlantic, and Gulf of Mexico regions have conducted research and conferred extensively to develop the necessary knowledge to help revitalize the nation's commercial fisheries. A Connecticut specialist has worked with peers and policy makers nationwide and provided them with information, technology, and techniques to educate municipal managers about how to protect and enhance water quality.

SGE's talent sharing has not been limited to exchanges within the 30 programs. Over the years, quite a few individuals have taken advantage of opportunities to spend anywhere from six months to two years at the National Sea Grant Office. The most common arrangement involves an interagency personnel agreement (IPA) between an individual's program and the national office.

In addition to informal links and talent-sharing arrangements, some SGE programs provide sabbatical leave opportunities. Often titled "visiting Sea Grant professorships," these arrangements can bring expertise from one region to another for applied projects and extension education of longer duration.

Formal Networks

Along with the informal links and talent-sharing arrangements, SGE also has more formal regional and national networks. Our individual programs belong to one (or more) of five regional networks: Great Lakes, Northeast, Mid-Atlantic, Southeast, and Pacific. These independent networks were first designed in the 1970s to respond to issues of regional concern, conduct educational programs, and offer training for SGE personnel. Originally these regions were eligible for regional funding from the National Sea Grant Office to develop and carry out regional activities, but this is not the case today.

Currently, the level of activity varies in the five Sea Grant regions. Some regions meet approximately every year to 18 months to carry out training for outreach specialists (including communicators), develop regional plans of work, discuss current regional issues, and plan joint activities. Other regions have minimal formal regional activities and plan and carry out regional activities on an informal basis. Program leaders and specialists attending the network's biennial meetings—Sea Grant Week and the Assembly of SGE Program Leaders, as described in the section "Administrative Structure" (pages 13–17)—also discuss regional topics.

In recent years the National Sea Grant Office, in recognition of regional programs, has set aside money for regional extension projects. One aspect of these projects is that several include the formulation of a transitional management or exit strategy. It is understood that NSGO funding to support these networks is finite and that shared management, involving government and private sector partners, is a very important element designed to ease the transition once project funding ceases.

It is critical that the formal networks amass enough resources—human and financial—to have an impact on an issue beyond what any informal or regional group could do. The members of national networks share responsibility for the success or failure of the network, and the level of commitment on the part of the member programs is relatively high.

The following vignettes describe several networking successes.

HACCP Seafood Educational Alliance

Initiated in 1994 to support a national training and education effort that at first focused on Hazards Analysis Critical Control Points (HACCP), the Seafood HACCP Alliance for Training and Education is a collaborative effort between federal and state regulatory agencies, including the Food and Drug Administration, the National Marine Fisheries Service, and the U.S. Department of Agriculture as well as the Association of Food and Drug Officials, the Interstate Shellfish Sanitation Program, and two national industry trade associations (the National Fisheries Institute and the National Food Processors Association). The program is funded by the National Sea Grant Program and has also received financial support for the past year from Sea Grant, the U.S. Food and Drug Administration, and the Association of Food and Drug Officials.

Seven SGE programs—Florida, California, Virginia, Oregon, Alaska, Louisiana, and North Carolina—provided the initial leadership for the Seafood HACCP Alliance, which later expanded to include significant roles for the programs in New York, Maryland, Delaware, Mississippi, and Rhode Island. By February 2000, over 10,000 individuals representing the domestic seafood processing industry, government regulators, academia, consultants, and seafood exporting countries had completed one of the 403 HACCP training courses conducted in the United States, and 770 individuals had completed one of the 30 courses conducted in other countries around the world.

Additional Seafood HACCP Alliance projects included developing a compendium of fish and fishery product processes, hazards, and controls; an encore training course; and a sanitation control procedures training course. New York Sea Grant also coordinated a project to convert the first two days of the alliance training courses to an Internet-delivered program with Cornell University's Food Industry Management Distance Education Program.

In 1998, HACCP was given the prestigious National Performance Review Hammer Awards by then Vice President Al Gore. The Hammer Award recognizes "partnerships that make a significant contribution in improving the way federal agencies accomplish their responsibilities." The Seafood HACCP Alliance also received the U.S. Department of Agriculture Secretary's Honor Award in June 1999.

MarinaNet

The National Sea Grant Marina Network (MarinaNet) is another example of SGE's remarkable ability to work in concert to address specific outreach issues. Begun in 1995, MarinaNet expanded what had been an informal network into a formidable national network comprising academia, the boating trades industry, and regulatory agencies at state and national levels. For nearly 30 years, Sea Grant researchers and outreach staff had worked virtually one-on-one with marina organizations at the state level. MarinaNet enabled Sea Grant colleagues to work jointly on a number of small projects, all of which led to the formation of a meaningful national network dedicated to sharing information about the sector.

In 1997 MarinaNet designed an exit strategy that involved sharing the production and management of three major MarinaNet products: a newsletter, an e-mail discussion group, and a research conference. The Marine Environmental Education Foundation, a national coalition of associations representing the boating trades and the marina industry, recently established a MarinaNet committee to head up these endeavors and continue working with their Sea Grant partners.

Sea Grant National Aquatic Species Clearinghouse and Nonindigenous Species Site

Since August 1990, stakeholders interested in the introduction, spread, impacts, and control of nonindigenous and invasive aquatic nuisance species have relied on Sea Grant's National Aquatic Nuisance Species Clearinghouse for timely, reliable scientific information and fast, easy access to published research pertaining to such organisms. The clearinghouse, located at the State University of New York at Brockport, is home to North America's most extensive techni-

cal library of published research, "gray literature," and other relevant documentation pertaining to zebra mussels (*Dreissena* spp.). It also is the leader in information on more than 25 important freshwater and marine invasive and nuisance species. The clearinghouse serves as a link between the research community and a wide array of university, government agency, industrial, and special interest stakeholders. It plays a high-profile role as a primary nexus for identifying completed, current, and proposed research activities on aquatic nuisance, nonindigenous, and invasive species and for linking researchers with similar interests.

All of the information in the clearinghouse's 3,500-document library is accessible to any researcher, agency, industry, utility, student, or other individual or group needing the information via electronic mail, fax, toll-free telephone, written requests, or visits to the clearinghouse. The searchable electronic database of its Technical Library Bibliography is available on the clearinghouse web site and receives several hundred "hits" per day, mostly from researchers and government agencies. The clearinghouse has serviced more than 7,700 information requests from North America and foreign countries and has distributed more than 565,000 publications.

In September 1996 a national Sea Grant Zebra Mussel and Nonindigenous Species World Wide Web site was opened to make the volume of Sea Grant research and outreach information readily available to industries, governments, and the public. This site was created by a team composed of Sea Grant personnel from four Great Lakes programs (Illinois-Indiana, Wisconsin, Michigan, Minnesota).

This national information source contains a comprehensive collection of research publications and education materials produced by 17 Sea Grant programs across the country. Two unique features make Sea Grant Nonindigenous Species (SGNIS) a credible and user-friendly source of information: all site information is peer reviewed, and it is fully searchable by user category, product type, keyword, date of publication, title, author, and/or organization of the author. This site enables scientists and clients around the world to access high-quality Sea Grant research and outreach products related to nonindigenous species.

This site contains all national Sea Grant research and outreach products on all aquatic nonindigenous species, and in the future, products from other federal agencies and a section for K–12 will be added. Furthermore, the site exemplifies how information will be transferred in the future. Researchers and all end users can not only perform literature searches (such as are possible on searchable library databases), but also download entire documents or products on demand. Use of this information technology has expanded distribution of Sea Grant's products and has reduced printing and distribution costs. Over 1,000 files are transferred daily, and during the month of February 1998, over 30,000 files were transferred to 37 countries. Due to the large amount of international use, a language translator has been added.

Summary

The Sea Grant Extension program is a university-based network that has been firmly committed to interprogram cooperation since its inception. Our diverse programs are linked in many ways. Most notably, our professionals have excelled at setting up small, informal networks that involve collaboration with peers from other programs to solve distinct problems. SGE programs are also linked through formal networks designed to address regional and national concerns.

Despite financial woes, SGE has grown and matured. As a national program, it has become a formidable resource to help meet our country's coastal environmental and economic needs. New extension professionals are encouraged to tap into SGE's creative collective experience so that they may continue to carry on the traditions of the program's meaningful work.

Impact of Technology on Programming
How do we stay connected?

Bruce DeYoung

The age of the digital economy is dawning, and with it, new mechanisms for Sea Grant to reach out to its stakeholders are increasing. While our work focuses on people, advances in technology make it possible to provide education more quickly and effectively than ever before.

The relationship of technology and university outreach typifies the adage, "The more the world changes, the more it remains the same." While the technology facilitating university outreach has changed over time, its role in outreach program delivery remains the same—vitally important!

Through the years, technology has helped Sea Grant staff stay connected with people and speed the delivery of critical information to them. Sea Grant uses various technologies to achieve educational impacts. Sea Grant's outreach enabled by technology is best characterized as knowledge that can be applied, multiplied, and trusted by stakeholder groups for its accuracy and timeliness!

Continuous Access to Information

The rate of adoption of digital technology by U.S. citizens is proceeding at a brisk pace. Although radio existed for 38 years before gaining 50 million users, and television took 13 years before reaching that threshold, it took just four years for the Internet to attract 50 million users in the United States.

Internet users now exceed 100 million adults in the United States, about half of the nation's adult population. By the year 2005, this participant level is expected to double. In a recent industry study, two-thirds of youth and adults said that if they were stranded on a deserted island, they would prefer Internet access to a television or phone. Sixty-three percent of the youth surveyed indicated they would rather surf the web than watch television.

The digital technology revolution of the twenty-first century also promises to provide access to goods and services beyond the bounds of time and place. Knowledgeable business observers such as Peter Drucker anticipate that an e-commerce–driven marketplace and

economy will radically change the mental geography of capitalism. For coastal and marine entrepreneurs, this shift likely means that neither their competition nor their markets will be just local.

Interestingly, this wave of change in information delivery technology is concurrent with a significant population influx into our nation's coastal areas. Over 50 percent of Americans now live on the coast, and this population is anticipated to swell to 127 million during the next decade. Powerful new information technologies offer the ability to reach effectively this large and rapidly growing coastal population and pose interesting challenges for Sea Grant outreach.

Outreach Strategies for Digital Technology

You can keep up with technological changes through in-service training opportunities offered by host universities or from Sea Grant and Cooperative Extension colleagues throughout the country. A source of this information is the peer-reviewed journal for outreach professionals, *The Journal of Extension,* which also is available online without a subscription fee. New ideas on the application of technology in outreach also can be harvested from business, industry, and governmental sources. It is important to be a self-activated learner, continually gleaning insights and educational experiences available from diverse organizations.

Beyond learning how to use emerging digital technology effectively in outreach programming, sensitivity is also needed in its judicious use. Many segments of our coastal audience do not yet have continuous Internet access to this new technology. Research indicates that less than 10 percent of coastal enterprises used information technology and e-commerce business methods in 2000. In light of this, use a range of media to ensure that nobody is left out of the educational communication loop. Make it easy for the public to access your publications in either hard copy or online versions. No matter how sophisticated information technology becomes, the personal touch is always appreciated!

It also is helpful to design your digital technology outreach projects to prevent stakeholders from becoming overly dependent upon your assistance. Teach your stakeholders how to use emerging technology effectively. As a related Chinese proverb observes, "Give a person a fish, and a single meal is provided. But by teaching others how to fish, a lifetime of meals will result!"

The following strategies may help guide you in using digital technology to deliver educational programs and to teach others to use it:

Technology Demonstrations—People are sometimes reluctant to adopt a new technology for their own use without first trying it out. To accelerate the adoption of low-power radio (LPR) by coastal audiences, several SGE programs are demonstrating this technology in collaboration with various organizations and enterprises. By circulating hardware among stakeholder groups at pre-arranged intervals, the "Johnny Appleseed" strategy for spreading technological innovations can accelerate adoption by public and private groups.

Stakeholder Evaluation—Involve stakeholders in evaluating emerging technology. In New England, coastal LPR users submitted online evaluations to enter a drawing to win a Sea Grant discovery cruise on the Great Bay Estuary. This marketing approach boosted evaluation participation while highlighting another Sea Grant educational offering.

Facilitating Collaboration—Coastal business and community leaders typically struggle alone with thorny problems and promising opportunities. With more stakeholders gaining e-mail capability, it is possible to connect peers through mechanisms such as listservs and e-mail groups. Most universities or Internet service providers (ISPs) have the ability to create virtual communities of subscribers who use a single e-mail address to communicate.

To avoid external "spamming" of such groups with unsolicited e-mail, it is useful for these groups to be closed (that is, available for use by subscribers only) to outside participation. While Sea Grant might organize, sponsor, and administer an e-mail group, it is important to make clear that participants are able to speak their mind within specific bounds. This can be achieved by programming the host information server to include a brief tag line at the bottom of each message indicating (1) Sea Grant's sponsorship of the e-mail group, (2) the e-mail group's purpose, (3) a disclaimer that opinions expressed through the group are not endorsed by Sea Grant, and (4) instructions on how to unsubscribe from the e-mail group. By providing user information on the e-mail group, conflicting issues such as business advertising can be nipped in the bud.

Transportable Libraries—The rapid evolution of compact disc storage of voice, text, graphic, video, and interactive data is opening new horizons for outreach enhanced by this digital technology. As CD-ROM gives way to DVD technology, it will be possible to make available full-length movies along with other information on a single disc. In using this technology as an educational delivery tool, it is important to ensure that the information is equally accessible to Windows and Macintosh computers.

Sea Grant Extension staff use CD-ROM technology in a variety of imaginative ways. The boating safety display game "Dangerous Waters!" is a CD-ROM computer game that puts players at the virtual helm for a series of fast-paced recreational boating simulations presented with colorful video clips, splashy graphics, and amusing sound effects.

Another outreach application of this technology is to share lengthy curriculum materials with teachers interested in marine education. This saves postage costs, reduces storage space requirements, and conserves trees through local printing of just those pages needed. Likewise, proceedings of conferences are now being archived on CD-ROMs so that participants can print desired papers later on, as needed. Photo libraries are also being archived on CD-ROM for later use by Sea Grant staff in newsletters.

This digital technology holds much promise for a wide range of distance education applications by Sea Grant Extension. Soon entire workshops or short courses will be recorded onto a single disc for those not able to participate.
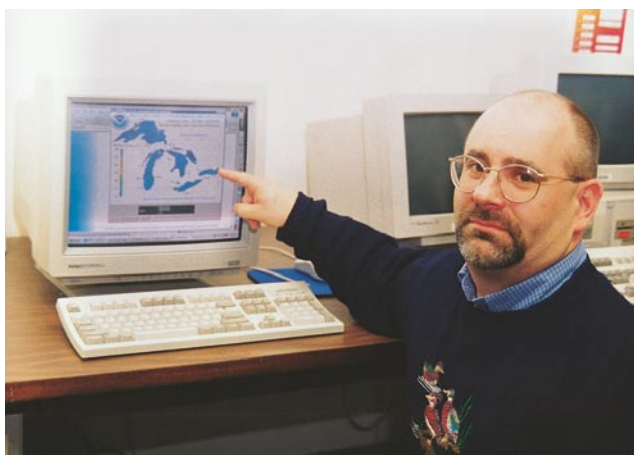
World Wide Web—The World Wide Web, with its intuitive point-and-click navigation, its ability to display pictures and sound as well as text, and the relative ease of setting up a web server, has driven the explosion in public interest and use of the Internet. For instance, computer server statistics indicate that Oregon Sea Grant is receiving an average of 218 information requests a day—more than 9 such requests per hour. Although the activity is low by comparison with many popular commercial sites, the requests assume significance when compared with similar requests received by telephone or mail. Nine such phone calls in a single hour would be considered unusual; 218 letters in a single day asking for Sea Grant publications or program information would be phenomenal.

Research indicates that some people skim what they find online, others read it from the computer screen, and some print it. Some outreach stakeholders indicate they do all three, so online materials need to be visually appealing and user-friendly both online and in print.

Sage Advice

The importance of artfully blending technology with the personal touch in Sea Grant outreach is reflected in the sage advice of a veteran Cooperative Extension educator:

"The extension delivery method is simple—stay close to the people to learn what they need. If you don't know an answer, get it any way you can—by letter, telephone, library search, or research study. Make the answer timely and as understandable as humanly possible. Provide all your information in a form people can use. If the public can't or won't come to receive it, then deliver it. Above all, don't be afraid to try new programming methods in order to help people!"

—Trenholm Jordan, Cornell University (retired), personal communication, May 1976

Distance Education—Just as information technology and telecommunications are rapidly changing the global economy, they also are increasing the need for lifelong learning. Continuous education is needed by people to stay current—and to advance—in most fields. Information technology is at once the catalyst for great change and the tool by which we can respond to this outreach challenge.

Distance education is one response by university outreach programs to address this need. It is any learning situation in which the instructor and student are separated by distance or time. In some cases, distance education offerings yield formal credit, but in many outreach applications it conveys knowledge for use in people's lives. For instance, Sea Grant outreach on the West Coast presented a national web-based conference on harmful algal blooms for educators, media, and business communities. Presentation papers were accessed online, and interactive discussions took place thereafter via e-mail.

Web-based meetings are also taking place among Sea Grant staff with similar professional interests and/or responsibilities. Because web-based meetings can be archived by topic, it is possible for latecomers to find and review earlier discussions on specific topics. This enables all participants to meet as informed discussants and move forward rather than rehash topics or issues previously covered.

Looking toward the Future

Telecommunication networks in the United States will soon carry more electronic data than voice. With voice communications expected to make up less than 2 percent of the traffic by 2005, this shift portends a future where telephones run on the Internet rather than the Internet running on telephone systems.

This shift may significantly reduce long-distance telecommunication costs, thereby encouraging greater use of digital information technology by business and society. Mobile phones, pagers, e-mail, global positioning satellites, and other electronic devices yet to be invented will become commonplace in our daily lives. As the world becomes more connected than ever before, and global marketplaces become the rule, what are the future implications for Sea Grant outreach?

The answer can be found in Sea Grant's core values. The Sea Grant Extension program was born with a mission of concern and a spirit of service. Our delivery of educational programming can fulfill these mandates by using an appropriate blend of personalized communication patterns with emerging information technologies.

Summary

As a Sea Grant professional, you are in the best position to judge the program delivery tools and strategies needed to achieve the desired educational outcome. As part of the outreach process, it is important to not lose sight of stakeholders as individuals. The personal touch fosters people's trust and confidence in using the information you convey through various media.

Maximizing Our Efforts
How do we find the time?

Bruce Wilkins and Marion Clarke

It's useful from

time to time to reflect on the many elements of Sea Grant Extension—our philosophy and our work. Our role is mostly about collaboration and how we link with others. It seemed that saying a little more on how one can be most effective in such work might be useful, particularly to those for whom this is a rather new role. In this section we share some observations and insights from a number of us who have found this work rewarding, though at times trying. Our hope is to help you avoid or feel better prepared to deal with a variety of pressures that most of us feel at some point—pressures having to do with the use of time.

A common cry of extension professionals is, "I don't have enough time." In fact, we all have the same amount of time, and we have enough time to do virtually anything—not everything, but any single thing. So the primary problem is really failure to do the things we later identify as important. Our goal here is to point out ways you might find that you have lost time and to suggest means of recapturing some of that time. You may further benefit by reading and practicing many of the strategies prescribed in the voluminous literature on time management.

Time Lost—And Found Again

Interruptions

Time-management experts may identify phone calls and drop-in visitors as interruptions because they result in major time losses. But it is those very "interruptions" with person-to-person contacts that are essential to the success of your extension program. That doesn't mean that interruptions cannot be reduced, but their demise would signal a weak and ineffective program. How to reduce them? Use other modes of education to solve the more common causes of interruptions.

If numerous inquiries come in on repairing ice-damaged docks, for example, developing a news release or fact sheet on that topic can help reduce the time needed to respond to interruptions. You may want to consider asking your communications team to help you find or develop the appropriate medium for your message. A fact sheet will permit others such as an assistant to handle routine requests, thereby freeing your time for more specialized or detailed questions.

An impressive example of this approach was the Rhode Island SGE's solution to numerous requests it received from elementary and high school students seeking information for their papers. "Please send me all the literature on sharks (or whales or tuna)" typifies such requests. Development of a booklet, *How to Find Marine Information in Public and School Libraries,* reduced the time needed to respond and allowed virtually anyone in Rhode Island and other states to help the students learn how to get such information. The booklet also does a more complete job of educating students (rather than feeding them facts) than Sea Grant personnel might do by answering individual requests. Note in this case that the question asked was not answered.

Answering All Questions

Many SGE professionals seem to think they are responsible for providing the answer to any question asked of them. Yet it seems clear that we have neither the time nor the expertise to answer all questions. Indeed, we should avoid answering or finding answers to questions that are not central to our role. "What is the price of hamburger?" is clearly a question to which few SGE professionals bring special expertise. Further, the answer is readily available from other sources (on the web, at the supermarket, or in newspaper ads). Finally, it is not a coastal problem, and solving coastal problems is the major reason Sea Grant was established.

Suppose the caller, a commercial fisherman, wishes to know market prices for flounder. For the extension professional, a response, not an answer, may still be most appropriate. The question may reflect a problem that requires Sea Grant attention—that is, fishermen not knowing how to gain current market prices. One solution would be for you to keep abreast of those prices, but other resources such as the web may also exist to meet this need. Responding with a web site or phone number and instructions on its use involves us in our educational mode. We help the person learn to solve the problem rather than solve it for him or her. Other approaches to solving the real problem reflected might be envisioned by creative extension staff. (In one case a daily newspaper was stimulated to carry such prices on a regular basis.) Such creativity is impaired if time is taken by providing bits of information such as the daily price of fish.

Here's an additional concern. By answering that kind of question, you encourage repeated similar requests. Stakeholders may think, "If you gave me accurate information last time, I'll come back to you." While answering questions is one way that we develop our audience's confidence in us, we also need to be certain they see us as we wish to be seen—usually as educators, not simply as a source of facts.

Perhaps the most insidious result of this behavior is that in attempting to answer virtually all questions, we become very active and busy, and people are appreciative. But we are reacting, not initiating, and soon we will find no time to plan and carry forth adequately the educational programs we (and our advisory groups) see as important. Being busy is not necessarily a sign of effectiveness!

Doing It All Ourselves

It is amazing how often extension staff carry out tasks that others could adequately do. The goal of SGE is to help others grow. Every time we do a task that others could have done themselves, we preclude them from growing.

A vivid and useful analogy is to compare a task or a problem to handling monkeys on your back. Skilled professionals ensure that the tasks (or monkeys) on their backs are kept to a minimum—not by avoiding them (because then you're not needed), but by feeding the monkey (accomplishing the task) or giving it to another person competent to resolve the problem. Perhaps you have known two staff persons who receive the same number of requests, but at some point one has 20 "monkeys" needing feeding while the other has only one or two. The difference often is not the number of monkeys one has acquired, but the rapid rate at which one of the persons is getting rid of the monkeys. For example, some monkeys can be fed by responding at once to simple inquiries. Other ways to get monkeys off your back include developing form letters or paragraphs for common inquiries, checking off items done each day from a checklist, and reading only the material you need to know.

To continue the analogy, giving the monkey to someone else by sharing or delegating jobs is a skill most effective people have. Extension professionals often accept a task that others can capably perform. Dictate or draft a response, or ask colleagues to help carry out a portion of a task for which they may have special skills or which requires a skill they may find useful in the future. It often takes effort to envision how a job can be broken into components that can be handled by others. It frequently takes even longer to help the person do the job well the first time. However, the potential savings of your time over the long term can be substantial.

Larger Tasks

What about larger tasks or assignments that we are asked to undertake? Agreeing to assume those monkeys should fit within our previously planned priorities. Without clear priorities, you cannot accurately say, "I can't." Before saying no, it is important to determine how important the task is, including its significance to others such as those with leadership responsibility. The task's importance in achieving organizational objectives may not be entirely clear at first, but this needs to be considered in your decision. By the same token, a leader requesting a staff member to assume a task is responsible for clarifying the importance of the task to that person and reaching a mutual understanding with the person of what other tasks will not be done because of this new assignment.

Meetings

Many identify meetings as time wasters, and they can be, so try to keep planned meetings to a minimum. Good meetings, however, are one of the best ways to achieve certain goals, such as helping you become part of your team, ensuring that major concerns are raised and answered at appropriate intervals, and helping clarify that you and your support staff understand important points.

A modest but important first step is to ensure that others know what days or weeks you will be absent from your office. Clarifying schedules is a common reason for meetings, but posting schedules on the web can speed such meetings and save time. Regularly scheduled meetings are more critical when staff must spend hours traveling to attend them. So, a corollary to holding fewer meetings is to make sure that the ones you do hold are necessary and the best way to do a job.

Wisely using conference calls, e-mail, faxes, and web sites can help ensure that less personal time is involved in attending meetings. But meetings still are the best way to guarantee that all personnel receive the same message or understand and accept changes that are being considered. Just be sure to always ask yourself, "Is there a cheaper, quicker, or better way to achieve my goal than another meeting?"

Often the best meetings result when the potential audience has helped plan and execute the meeting. Be sure to include some agenda items suggested by those not directly planning the meeting. These people often have great ideas. Letting people know that your meetings will follow a planned schedule by beginning and ending on time will also help move things along more quickly.

Relationships with Stakeholders

Knowing your clientele means knowing the best way to communicate with them. By collaborating, you may be the catalyst that gets a program started. But once the ball is rolling, you may have to design an exit strategy that helps you stay connected but not in a leadership role. From New York to Washington, examples abound in which extension professionals worked with marine trade associations to start a project, then phased out of it, helping to develop leadership among stakeholders.

Care and Feeding of Committees

Most of us work with a number of committees who help us advance our programs toward desired goals. Like meetings, committees can be a potential waste of time, depending largely on your knack for working effectively with a group. Effective advisory groups can help you plan programs that will better reach a targeted audience. Those individuals will often remain in the community longer than you do. If so, your work with such groups can help others learn successfully how to employ group dynamics, which will be a great benefit to your stakeholders for many years.

We suggest you consider rotating the terms of committee members and adopt a clear policy about the roles a committee is being asked to play. For example, are they advisers or decision makers? Stipulating the length of appointment of an adviser can be helpful and may become valuable if a need to shorten the length of an adviser's tenure becomes evident to most.

Choosing members is key to generating an effective committee. You want people who will get things done and who are respected in their community. It is appropriate to ask busy people to serve, but be clear about the time commitment you are seeking from them. You may suggest members for the group, but consider having a program leader or someone higher up to name the members. That can give the appointment more prestige and doesn't put you in an awkward position if it is clear the committee would benefit from a more active member.

Also keep in mind the type of busy, effective person who can best serve your committee needs and who expects to be actively involved in influencing the program. Find ways that they can help plan and implement meetings, and ask these people to introduce guests at appropriate public meetings. You may need to coach some of them on how to introduce a speaker, but such work can be an important educational role for SGE leadership and lots of fun as people gain expertise.

Plan Ahead

As is true with most organizations, SGE programs have deadlines, many of them known well in advance. Most of us prepare proposals with a given deadline or annual reports that are due sometime after the end of the fiscal or program year. It is likely that you will need to provide information about your activities for these reports or for presentations made during scheduled program assessment and review times.

Some programs request monthly accomplishment reports that can provide a foundation for the annual report. By keeping these reports up-to-date and organized in your computer, you have the foundation for your annual report. Even if your program does not require monthly reports, monthly summaries will be useful to you in documenting your accomplishments and activities for other occasions when you may need to report your program activities. Those at higher echelons will be pleased that you can provide that information!

Setting a personal deadline some weeks before the known or probable due date can ease time pressure. You don't need to wait for someone else to determine a deadline to begin drafting the document. The draft can be written when it is most convenient for you over several months rather than at the last moment. This reduces conflict with other high-priority tasks, and because of the additional time you'll have for reflection and for gaining needed input, you can enhance the end product. Sending requested materials in a timely fashion can reflect positively on your individual or program performance.

You read in the section "Impact of Technology on Programming" (pages 55–59) how to use new technologies effectively. But surface mail is still the most appropriate means of communicating event announcements, newsletters, and other printed materials. There are always stakeholders who still cannot take advantage of electronic media. Mailing lists should be purged periodically to ensure that the materials sent by surface mail are needed and are proving valuable to the stakeholders receiving them. Work with your communications staff to find the most efficient way of keeping your stakeholder mailing list up-to-date.

Summary

Enabling others to handle some portions of your work, responding to but not answering all questions, not assuming tasks others should do, doing tasks expeditiously, knowing your priorities, and anticipating time demands are some of the ways SGE personnel can save time. These approaches can help others grow, enable each of us to get the important work done, and reduce some of the pressures under which we work.

Conclusion

In these pages we have talked about many tasks that you and your co-workers find important and suggested ways to save time and effort while accomplishing those. The list may seem long— ranging from a philosophy, to how SGE is structured, to planning, evaluation, and how you might better collaborate with others. A link to research, regional networks, and use of newer technologies is generally valued and we hope is evident in your program efforts.

Sounds like a lot, and it is. But you most likely do some of the things we spoke about already, and you may have ideas on how to do some of these tasks even better. We hope so. Our intent in this publication has also been to suggest that our work is important, fun, and constantly involves us in learning and teaching.

As a final point, our work can be exciting, and it is important because it has a definite impact. The work also must hold some real pleasure for you. We hope you are able to join others in our successes—commiserating about those things that don't work as well as we wish, but always moving on to further the Sea Grant Extension program's contributions.

Sea Grant

National Sea Grant College Program

Science Serving America's Coasts