

# Fundamentals of a Sea Grant Extension Program

*Second Edition*



Sea Grant

## Acknowledgments

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*Cover: (clockwise from center)*

*Sustainable Local Seafood • New York Sea Grant*

*Hudson at High Tide • New York Sea Grant*

*Research on the Salmon River • Oregon Sea Grant*

*Community Workshop • Alaska Sea Grant*

*Commercial Fishing • New Hampshire Sea Grant*

*Farming Oysters • Oregon Sea Grant*

*Sediment Sampling • New Hampshire Sea Grant*

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# Foreword

For almost 50 years, Sea Grant has built its reputation by attacking “wicked” problems, those intractable issues that impact the lives of both the people who live on the coast and the people who visit there. Sea Grant’s success has been built on a team approach by many dedicated and talented professionals throughout the Network.

Sea Grant Extension professionals play a vital role, taking the best science-based solutions produced by Sea Grant researchers and making them understandable and useful to coastal residents, businesses and communities. Doing so in an effective manner is no small achievement. It takes a great deal of skill to engage our constituents with scientists to frame the critical questions that are necessary to ensure an outcome of rigorous, credible, and above all useful information.

And to be able to accomplish all that while maintaining neutrality in the midst of the controversies that swirl around Sea Grant issues requires an in-depth understanding of how people use information to make decisions. That understanding comes with experience and yes, with age, but it can also be taught. That is the purpose of this manual, to guide new agents as they begin their careers, and to reinforce the lessons that more experienced personnel have learned along the way.

Our country is facing difficult economic and environmental challenges, but thanks to the outstanding team of individuals who have chosen to make their career in Sea Grant, we can look forward to solutions that will make everyone’s life better. That is the promise of Sea Grant.



*Leon M. Cammen*  
*Silver Spring, MD*





Michael Liffmann

# Fundamentals of a Sea Grant Extension Program

## A Primer

This update of the *2000 Fundamentals of Sea Grant Extension Program* primer is designed to assist you in understanding our roots, core concepts, and how we continue to adapt to effectively extend science-based ocean and coastal research to our stakeholders. In the last decade or so, there have been significant changes in how extension work is conducted. These changes led the National Oceanic and Atmospheric Administration's (NOAA) National Sea Grant Office (NSGO) and the Assembly of Sea Grant Extension (SGE) Leaders to initiate a revision and update of this primer, the *Fundamentals of a Sea Grant Extension Program*, which was first published in 2000.

Many SGE program leaders and fellow Sea Grant communicators, under the very able leadership of Kathy Bunting-Howarth, Extension Program Leader for New York Sea Grant, contributed to this revision as

volunteers. Please step up if you are ever called upon to help with future updates.

Those of you who are new to Sea Grant and SGE are the intended audience for this 2012 *Fundamentals* version, as are those just wanting to learn more about this proud partnership and tradition. The *Fundamentals* has become SGE's manual of choice for incoming personnel and is extensively used during their training at the National Sea Grant Extension Academy.

Sea Grant Extension's primary role has not changed since the program was established more than 40 years ago. Some 400 agents and specialists in 33 Sea Grant programs continue to serve as educators who apply science-based knowledge to solving many of the urgent problems confronting their coastal, marine and Great Lakes stakeholders. In the process, these agents and specialists have gained a well-deserved reputation for being superb teachers

who are credible, knowledgeable, objective and reliable.

Hundreds of thousands of coastal constituents have benefited from these services over the years. Established in December 1972, SGE was officially referred to as Marine Advisory Service (MAS). In the mid-1990s, after considerable debate, the name was changed to SGE and even today, some Sea Grant programs retain the word “advisory.”

Although SGE professionals have always worked with diverse audiences, in the program’s early years, agents were best known for commercial fisheries work. Dr. Athelstan Spilhaus, who is credited with proposing the establishment of Sea Grant colleges, referred to them as “county agents in hip boots.” At the time, increasing the harvest of U.S. fishery resources was a national policy, and most extension programs focused on one-on-one

engagement with fishermen and seafood producers.

Since the early years, there has been a growing demand for extension services to address a variety of other coastal development and ecosystems issues. It is well known that coastal circumstances have changed dramatically since SGE’s inception. And despite budget limitations, the Sea Grant programs have responded and adapted. They have gradually built institutional capacity and diversified extension programming concerning the impacts of the coastal growth boom that has taken place over the last several decades—all while continuing to address the important needs of traditional fisheries constituents.

There are no indications that the coastal growth trend is abating. On the contrary, census data indicate that between 1970 and 2010, the country’s coastal population increased



National Park Service Ocean Commotion 2012 • Louisiana Sea Grant

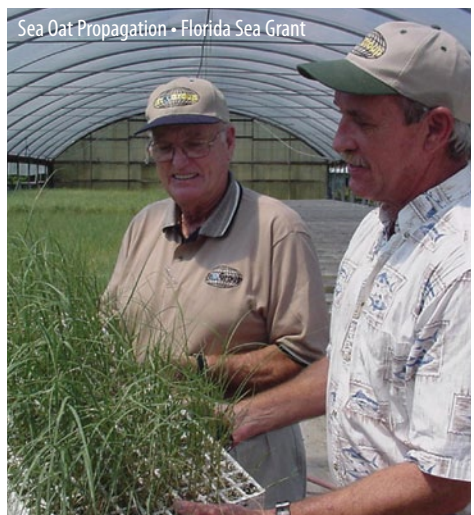




by more than 50 million people (45 percent), which far exceeded earlier demographic projections. It is no surprise then that the coastal landscape continues to be transformed. Water quality continues to deteriorate, and there are growing pressures on finite resources, including fisheries. Projections of sea level rise and significant Great Lakes water level fluctuations only increase the urgency of SGE's work.

Sea Grant Extension is up to the task. The program is a success story attributed to the knowledge, expertise, dedication and passion of the thousands who have worked in this capacity. Agents, specialists and administrators can proudly point to their accomplishments over the last four decades. They have created a remarkable problem-solving infrastructure built on a solid foundation of credibility and trust—an infrastructure that, through partnerships, possesses the elements needed to engage effectively the country's coastal constituents and address the daunting challenges of the early 21st century.

I invite you to learn more about our proud and illustrious past. There is much to be gained by learning more about our roots, traditions and best practices. You can also learn how we work together as a network and with partners. A look back, along with a look ahead at the wealth of information in this manual, will be certain to bring a smile to your face and remind you of why you are involved in this proud and rewarding tradition.





Updated by Nancy Balcom, Michael Liffmann,  
and Michael Spranger

Original by Jim Murray and Bruce Wilkins

# The History and Philosophy

## What do we do?

Welcome to Sea Grant Extension (SGE). As you begin sorting out your responsibilities and plan of work as an extension professional, you may be wondering 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 consciousness, and faith in our abilities to harness new wealth from marine and Great Lakes resources.

During the sixties, Rachel Carson, in her classic environmental book, *Silent Spring*, raised national concerns about the ecosystem effects of pesticides. The Cuyahoga River near Cleveland, Ohio, was so polluted that it caught fire, and renowned journalist Edward R. Murrow produced the revealing television documentary "Who Killed Lake Erie?"

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 farmers were helping to feed the world's growing population. The public's trust in science to solve problems was at an all-time high, but compared to 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 Althehan 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, saying it was "one of the best investments this nation ever made" and that the "same kind of imagination and foresight should be applied to the exploration of the sea" (*Science*, September 1964). Spilhaus went on to say, "Why not promote the relationships





Urunao Beach • Guam Sea Grant

among academia, state, federal, and industrial institutions in fisheries. . . . do what wise men have done for the better cultivation of the land a century ago. Why not have ‘Sea Grant Colleges?’” He was referring to the radical idea of bringing teaching, research and extension into contemporary society that began with the Morrill Land-Grant Acts of 1862 and 1890.

Led by Senator Claiborne Pell of Rhode Island and Congressman Paul Rogers of Florida, Congress passed the National Sea Grant College and Program Act of 1966. The act assigned administrative responsibilities for Sea Grant colleges to the National Science Foundation (NSF). The 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 the 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.”

In 1970, Sea Grant was transferred to the newly-established National Oceanic and Atmospheric Administration (NOAA) under the United States Department of Commerce (DOC). Since that time, the Sea Grant network and its local, university-based programs have enabled NOAA and the nation to harness the best science, technology and human expertise to address complex coastal, ocean, and Great Lakes issues.

Today, roughly 400 people compose what is now called Sea Grant Extension, conducting extension educational programming throughout the coastal and Great Lakes states and territories. Nationally, Sea Grant has grown from the four legacy programs that received college program status in 1971 (Oregon State University, University of Rhode Island, Texas A & M University, and University of Washington) to a network of 33 Sea Grant programs (including Guam and Puerto Rico), the National Sea Grant Library and National Sea Grant Law Center. The network involves more than 300 institutions

nationwide. This idea of a Sea Grant Program has also been adopted in several parts of the world, with established programs in Korea and Indonesia.

## **What is Sea Grant Extension?**

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.

SGE programs appear in many forms and shapes. 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 segments of biology, sociology, economics, public policy, engineering, law, and a host of related fields. A SGE professional may be known by many names — specialist, educator, marine advisor or agent. Each works directly with people in coastal, ocean or Great Lakes-related sectors. Extension professionals are also schooled in approaches that can be used to improve information transfer, as well as deal with complex and often controversial areas.

Within Sea Grant there are several mechanisms to disseminate science-based information. Sometimes the terms used to describe them are employed interchangeably. Assume that

the overall goal of extension education is to effect change by having individuals, groups or institutions use 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, ocean and Great Lakes information to people. Any activity that extends new understanding fits this definition and may come in many forms. Hosting a webinar or responding with research-based information to an email inquiry are both outreach activities. Working with a shellfish grower to develop better spawning techniques; summarizing Sea Grant research results in a fact sheet; teaching educators who will, in turn, teach their students; training seafood processors in the safe handling of seafood; and helping a coastal municipality review its planning and zoning regulations to address local water quality concerns are all techniques to extend university knowledge.



The foundation of SGE has been built and reinforced by the thousands of extension professionals who have contributed to its success over time. Many made profound contributions to society during their SGE tenure and continued to do so after leaving Sea Grant. In 1994, the Sea Grant Extension Assembly began recognizing former or retired peers with William Q. Wick awards for visionary career leadership in either programming or administration. The awards are named for the former extension leader/director of Oregon Sea Grant.

Through 2011, 23 former SGE administrators and professionals have been recognized by receiving the Wick Award. For example, the award winners include:

- Hank Pennington, who was recognized in 1998 for conducting award-winning fishing vessel safety programs in Alaska that led to the survival of dozens of fishermen.
- Sara Peck, who in 2008 received a Wick Award for raising ocean literacy and empowering stakeholders in Hawai'i coastal communities during her 14-year career.
- Eric Olsson, who was recognized in 2010 for programs that helped commercial fishermen and recreational boaters in Washington reduce small oil and toxic spills through the Clean Marina Program and for his role in the transfer of a commercial boat lift from Valdez, Alaska to ravaged parishes in Louisiana after Hurricane Katrina.
- Jay Rasmussen (OR), Dale Baker (NY), William DuPaul (VA) and the late Ralph Rayburn (TX) are among the Wick Award recipients who have been recognized for outstanding extension administration and leadership.

Individual successes like these are built on relationships and trust — with universities, indus-

tries, organizations and governments — that can take years or decades to build. These same relationships can be destroyed in a heartbeat if fundamental extension principles are ignored. It takes most outside observers, and indeed most new extension staff, a period of exposure before a clear understanding of extension philosophy and techniques is achieved.

## ***What defines a Sea Grant Extension professional?***

Within the Sea Grant community are people who have special skills to use for different delivery approaches. They may be science writers, graphic artists, web designers, audio/video experts or editors found 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 Sea Grant Education unit or included within SGE. Extension staff collaborates with these individuals to devise the best means and products to reach specific audiences.

The work of extension professionals can be defined as designed activities that effect behavioral change through programs focused on outcome-based objectives using a variety of educational processes and techniques over time:

- Designed activities — Extension specialists do not “wing it” but rather approach their positions and programs with some type of a plan in mind. Almost all extension staff members have an advisory group or steering committee to help plan activities and provide overall direction. Obtaining outside input and advice on the extension staff's plan of work provides a bottom-up approach to programming that distinguish-



es extension education from most other types of public education programs.

- Behavior change — Extension professionals want their audiences or stakeholders — individuals, groups or institutions — to do something differently as a result of the science-based information they have provided. A good example is for stakeholders to make more informed decisions, by having access to the science-based information that addresses all aspects of an issue.
- Programs — Extension education is more than a “one and done” effort.
- Outcome-based objectives — Extension professionals have certain measurable outcomes in mind when they decide to conduct a program.
- Educational processes — A variety of techniques may be necessary to achieve the desired outcome, such as one-on-one meetings, workshops, conferences, demonstrations, fact sheets, CDs or DVDs, videos or webinars, web pages or radio shows.
- Over time — Solid extension work builds on a series of events towards an outcome that may take several years to achieve.

As Cooperative Extension has its roots in agriculture, SGE has its roots in fisheries. Over the years, SGE programs have evolved to bring biological, physical and social sciences to address coastal, ocean and Great Lakes issues into many sectors. These include such topics as coastal development, eco-tourism, recreation, working waterfronts, aquaculture, regional planning, water quality and nonpoint source pollution, as well as fisheries and seafood technology.

Furthermore, while SGE personnel are locally-based, working to help address local concerns and needs, they must be ever mindful of the broader state–regional–national (and in some cases, international) context in which we work.

### **Example 1: Modifying Shrimping Practices to Minimize Bycatch**

*Shrimp trawlers routinely catch between two- to four-pounds of bycatch for each pound of shrimp caught. Much of the bycatch was discarded as dead, with mortality rates contributing to reduced populations of important commercial and recreational species of fish. Fisheries managers at the regional and state levels needed to develop timely solutions to this problem.*

*A university fisheries extension specialist worked with an advisory committee of industry and agency leaders to hold meetings to establish that reducing bycatch was an important goal thus gaining bottom-up support. The extension specialist developed a plan of work (designed activities) that included a 50 percent bycatch 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 required modification (behavior change). Various activities were developed to change their behavior. They included applied gear development that involved shrimp fishermen and net makers; presentations at commercial fishing meetings and shows; articles in coastal newspapers; fact sheets, booklets and videos; and one-on-one training on how to install bycatch reduction gear (a variety of educational processes).*

*Initially, shrimp fishermen met the bycatch issue with suspicion. The issue closely followed the highly controversial requirement for shrimpers to utilize turtle excluder devices, and mistrust existed between shrimpers and the regulatory agencies that mandated this device. The Sea Grant professional, however, had credibility with these fishermen for at least two important reasons. First, he had worked locally in the fishing community for a number of years, thus earning a high degree of trust with the shrimpers based on his years of non-advocacy. 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.*

## Example 2: Streamlining the Aquaculture Permitting Process

*A marine aquaculture extension educator conducted a needs assessment in which shellfish growers identified uncertainties in several areas that would be major impediments to the growth and viability of their industry (bottom-up support): application requirements for marine aquaculture operations; process time; permit conditions; and liability. Permit applications were being reviewed on a case-by-case basis, leading to frustration on the parts of both industry and the state and federal regulatory agencies.*

*The state aquaculture agency wanted to introduce a new permitting system that would affect both how applications were submitted and reviewed (behavior change), and asked SGE to chair a state aquaculture permitting work-group. The extension educator developed a plan (designed activities) to convene workshops for state and federal agencies involved in aquaculture permitting decisions to review the current*

*policies and application process, and develop a more streamlined, straightforward permit application process that would reduce the timeframe for initial application to permit notification by 50 percent (outcome based objective).*

*Workshops and regularly scheduled meetings enabled the agencies to develop better and more efficient working relationships. Meetings with industry members helped clarify issues and concerns as the new application process evolved. A comprehensive marine aquaculture web site that included the online permit application and guide was developed (variety of educational processes). More than 10 years later, the application has undergone several iterations, and the timeframe for aquaculture applications to be permitted has been significantly shortened from a year or more to about three months. This has meant cost savings for all involved, and new companies are receiving permits for traditional and new products every year.*

## Example 3: Natural Resource-Planning Leads to Comprehensive Conservation Plan

*Tremendous growth projections led officials and residents in one rural county to raise concerns about the adequacy of existing planning policies and zoning ordinances to balance the expected growth with the protection of the county's natural and cultural resources (bottom-up need). A SGE professional worked with numerous partners to initiate a conservation planning effort for the county (designed activities). More than 100 stakeholders representing local government, state and federal resource agencies, non-profits, local businesses, private landowners and concerned citizens met as the county began to revise its countywide comprehensive plan. This group was trained in the methods for conducting a natural resource inventory to assess the county's natural resource and conservation assets and needs.*

*The inventory was used to set community conservation goals (outcome-based objective) for inclusion in the county's Natural Resources Conservation Plan, which serves as a guidebook for residents, developers and local officials on how to preserve the county's rich heritage and quality of life. The stakeholder involvement provided strong support for the conservation plan, which was included as an appendix in the county's revised comprehensive plan. Many of the goals, objectives and strategies were integrated into the natural resources element of the comprehensive plan (behavior change over time).*



## Summary

Throughout its rich history, SGE professionals have conducted thousands of successful programs that have educated stakeholders and led to significant environmental, economic, social, and educational improvements within coastal and Great Lakes states. In the future, as coastal populations expand, and economic and environmental pressures increase, the unique capabilities of the SGE program will be needed more than ever. New issues will continue to arise and SGE professionals will adapt to meet them, relying on the philosophy of employing planned programs focused on outcome-based objectives to effect behavioral change.







Sockeye • Tom Kline, Alaska Sea Grant

Update by Robert H. Bacon  
Original by Dale R. Baker

# Sea Grant Network Organizational Elements

*Where, how and why do we fit?*

The Sea Grant Extension (SGE) Program is part of a larger complex of programs at the state, regional and federal levels. Now that you are a part of extension, you need to know just where, why and how your SGE program fits within your Sea Grant program, university, state government, national Sea Grant network, and federal government structure. This knowledge provides a necessary foundation for understanding the Sea Grant organization and its operation at all levels.

## **The NOAA National Sea Grant College Program**

Dr. Athelstan Spilhaus first conceived of Sea Grant in 1966. It is based on the Morrill Act of 1862, which created the Land Grant

Colleges, and the Smith-Lever Act of 1912 which created the Cooperative Extension System. Since the early 1970s, Sea Grant has been an extramural program of the National Oceanic and Atmospheric Administration (NOAA), and the United States Department of Commerce (DOC). Within NOAA, the National Sea Grant College Program (NSGCP) is located in the Office of Oceanic and Atmospheric Research (OAR) which is one of six NOAA 'line' offices.

The NSGCP, a partnership of the federal government, state government and academia, is administered by the National Sea Grant Office (NSGO) located in Silver Spring, Maryland. The NSGO currently supports a dozen professionals (full-time federal employees), and a varying number of contractors and fellows who support them. Each of these



professionals has multiple responsibilities within the office such as developing budget initiatives, monitoring individual Sea Grant programs and communicating Sea Grant activities to other NOAA and federal offices. Each full-time professional is responsible for monitoring two or more Sea Grant programs. In this role, they provide liaison between the national office and the state programs to which they are assigned. In addition to their duties as program officers, four of the 12 Sea Grant professional staff members provide support to and liaison with the national SGE and communications networks.

**National Sea Grant Advisory Board (NSGAB)**  
—The National Sea Grant Advisory Board was created by the same legislation that began the National Sea Grant College Program. The board is appointed by the Secretary of Commerce (via the NOAA Administrator) and includes 15 members with expertise in marine science, education, marine affairs and resource management, coastal management, extension services, state government,

industry, economics or planning. The Advisory Board works closely with the NSGO and the Sea Grant Association to provide input and advice regarding strategic planning for and evaluation of the program, designation as a Sea Grant College or Institution and means to utilize the program to “address the Nation’s highest priorities regarding the understanding, assessment, development, management utilization, and conservation of ocean, coastal, and Great Lakes resources” — in short, issues that affect how Sea Grant achieves its mission. The Advisory Board also provides a biennial report to Congress on the state of Sea Grant.

## ***The National Sea Grant Network***

An array of national associations, panels, assemblies, boards and committees have helped make Sea Grant Extension the local, regional and national program it is today.



These have had the most impact:

**Sea Grant Association (SGA)** –The SGA is a formally incorporated, not-for-profit association of institutions hosting Sea Grant programs. The institutions themselves are members, and each institution is represented by a delegate, usually the Sea Grant director. At its semiannual meetings and through the work of its committees and elected officers, the SGA provides leadership and a national direction for the Sea Grant network programs. The major committees of the SGA are the Board of Directors, Program Mission Committee (PMC), the External Relations Committee (ERC), and the Networks Advisory Council (NAC). The association employs, and the ERC works closely with, a Washington D.C. government affairs firm to ensure effective communication among the SGA, the United States Congress, and the NSGO.

Although not members of the SGA, exten-

sion is represented on or participates in several of its committee processes. The chair of the Sea Grant Extension Assembly (Assembly) participates in the SGA PMC meetings and is a member of the Networks Advisory Council. The council is led by a SGA member (director) and is comprised of representatives from the other Sea Grant elements: extension, communications, education, legal, research, and fiscal. The chair-elect of the Assembly participates in the SGA ERC meetings. In some cases, a state's extension program leader is also its director, and in such cases, participates in all SGA business.

**Sea Grant Extension Assembly (Assembly)** – The Assembly is an association of extension program leaders representing each Sea Grant program and its extension staff. It is governed by a set of by-laws and led by elected officers: Assembly Chair, Chair-Elect, Secretary-Treasurer, and two At-Large Delegates.



Collecting Whelks • Georgia Sea Grant



There are six extension regions (Northeast, Mid-Atlantic, South Atlantic, Gulf, Pacific, Great Lakes) each with a regional representative who acts as a liaison with the Assembly's elected officers who compose its executive committee.

The primary functions of the Sea Grant Extension Assembly are to:

1. Provide a mechanism for SGE program leaders to respond to network issues or needs and provide a forum for sharing related professional knowledge.
2. Foster ongoing communications with SGA, NSGO and other Sea Grant outreach and research components.
3. Develop mechanisms to increase cooperative programming, outreach innovations and talent sharing among Sea Grant programs and with external partners at the local, state, regional and national levels.

4. Represent the SGE program network in relations with other organizational entities both within and outside of the Sea Grant network.
5. Encourage recognition of outstanding performance by current SGE professionals and of the contributions to SGE by former colleagues.

### Grass Roots Thematic Networks

Before the common use of the internet and email, extension staff working in local communities often felt isolated from colleagues working in similar fields, on similar issues, in different states. Lines of communication from the top of the organization to the bottom were also difficult and inconsistent from program to program. With the advent of modern communications technologies, it is now possible, for example, for fisheries extension staff working throughout the network to communicate easily among themselves and to develop collaborative working relationships.

For the first time, it became practical for working SGE professionals to form their own national, grass roots, sustainable thematic networks. In 2005, the extension staff funded through the NSGO Coastal Communities grant program began meeting and by 2007 had organized themselves into the National Sea Grant Coastal Community Development Delegation under the leadership of John Jacobs of Texas Sea Grant. They wrote a charter and applied to the Assembly for recognition as a committee of the Assembly and were granted that status.

The fisheries extension staff followed suit in 2008 and soon thereafter were followed by the climate extension network and working waterfronts groups.

This was a truly big deal in the history of Sea Grant because it made the organization more horizontal and democratic. There were and are many benefits for extension programs. For one, it made regional programs easier and less expensive to implement. The benefits were not only programmatic. From a management perspective, it enabled a direct line of communication from the NSGO, SGA and Assembly. For example, if Sea Grant managers want to know how fishing communities are feeling about catch limits, they have a contact, who has a network to poll through a listserv or web-based survey instrument. The SGE professional in the field is now immediately connected to the

top in important program policy decision processes.

The Assembly remains open to the development of grass roots, thematic networks.

## ***The State Sea Grant Programs***

There are 33 university-based programs that compose the National Sea Grant College Program. They exist in every coastal and Great Lakes state as well as the Caribbean and Pacific Territories. Each one is organized a little differently, variations on the university-based theme.

In most cases, a Sea Grant program is hosted by one university or university system within



Student Projects, Thunder Bay Marine Sanctuary • Michigan Sea Grant



its state although one Sea Grant program, South Carolina, is a state agency and organized as a consortium of state-supported universities. Another, New Jersey, is organized as a consortium of institutions of higher learning, but its membership is also open to corporate, governmental, industrial and other organizations with compatible interests.

Within a Sea Grant system, a SGE program may also be organized in several different ways. Approximately two-thirds of SGE programs are administratively linked to the state Cooperative Extension Programs (CES). This is especially true if the Cooperative Extension program had an interest in natural resources, environmental issues and fisheries outreach when the SGEP was formed and continues to provide matching state and local resources necessary for the support of a Sea Grant outreach effort.

The traditional CES approach employs a network of county-based agents who work

closely with subject-area specialists conducting research 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 Cooperative Extension 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 with input from the county extension leader. Specialists often report to academic department chairs with input from the SGEP program leader and/or the Sea Grant director. This is the model used in states such as Florida, Maryland, New Hampshire, and Oregon.

In North Carolina, SGE was never affiliated with Cooperative Extension. It is hosted by the North Carolina Land Grant institution, North Carolina State University, but partnered with the state's three coastal public aquaria in basing its exten-



sion field staff. Agents sole reporting is to the extension leader.

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

As a SGE professional, you should discuss the structure of your Sea Grant program with your program leader so you will better understand how you and your program fit into the overall structure within your state and the Sea Grant network.



## Program Funding

*Sea Grant is a matching funds program. For every two dollars of federal funding received, a state is required to provide a minimum of one dollar in non-federal funding as a match. This is the case for money a state receives from NOAA to fund its state Sea Grant program. It is also true for grants a state Sea Grant program makes to a university partner to fund Sea Grant research. To receive its NOAA funding, every two years each state Sea Grant program must submit an omnibus proposal consisting of a group of individual proposals to fund research, extension, communications, education and program management. The extension program leader and staff prepare an extension proposal as a part of this omnibus proposal. Through this process we announce our plan of work and request our funding.*

*Including all funding, federal and non-federal, the unwritten guideline has historically been that research was to get 50 percent of the Sea Grant budget, and all the other Sea Grant elements split the rest, with extension usually receiving somewhere between 20 to 40 percent. In recent years, that guideline has relaxed and the extension share has expanded in many programs, sometimes exceeding 50 percent of a program's total budget.*

*In addition to core funds, which are received through the omnibus proposal, SGE programs may be funded from a variety of sources. Partial extension staff salaries and other support are often provided in CES affiliated programs, by state or county funds. SGE programs and projects may also be funded by periodic grant opportunities from the NSGO, or from other NOAA offices, or from other federal agencies, such as Environmental Protection Agency (EPA), or Federal Emergency Management Agency (FEMA). In difficult financial times programs have become creative in identifying and using financial resources from grants, contracts, industry, private gifts and endowments. There are many funding models. Sea Grant Extension staff members in most states have become very successful at securing extramural funding (not included as matching funds) to support their programming efforts. This can also secure buy-in from our many different partners. Ask your extension program leader how SGE is funded in your state.*



Updated by Michael Spranger and Katherine E. Bunting-Howarth  
Original by Brian K. Miller, Bruce T. Wilkins  
and Michael Spranger

# Planning the Extension Program

*How do we decide what to do?*

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 detailed and formal; in other cases it is informal, flexible and fluid. Agencies at all levels have a formal planning process and it is now an integral part of most organizations.

## **Planning Starts at the National Level**

The National Oceanographic and Atmospheric Administration (NOAA) and the National Sea Grant College Program (NSGCP) network have a

general framework for planning and evaluation of activities. As a Sea Grant Extension (SGE) professional you will find that planning your activities within a general framework will ease your task in preparing proposals, implementing your key programs, and reporting annual activities. Proper planning not only helps us determine what we should do, but also helps us identify what evaluation steps may be needed and when these should be initiated. (Evaluation will be discussed in the next chapter.)

Periodically, NOAA develops a strategic plan. This plan identifies the broad goals and objectives NOAA wishes to accomplish. The National Sea Grant Office (NSGO) then develops strategic and implementation plans (sometimes incorporated into the same document) that identify which of NOAA's goals and objectives we will concentrate on nationally. The topics identi-

fied are the basis for the priorities identified by each NSGCP. Each program decides which national priorities apply to local, state and regional issues and how they will be addressed within the scope of their program's staff and resources.

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

1. A vision and relevance – where the program is headed and why.
2. 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

The components of the strategic plan that guide extension activities are the identified goals and objectives. In some cases, an extension professional will operate under these objectives directly. 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, and objectives are the intermediate steps needed to accomplish any given goal. As you consider the ultimate need to demonstrate impact in an extension program to yourself and others, 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 an 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 first to write down the impacts that will result if the goal is achieved. When the impacts are identified, it becomes easier to incorporate indicators of these impacts into a goal statement that tells 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 coworkers 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 in a shorter term than goals and constitute steps that must be taken in order for a goal to be reached. If you word an objective with expected milestones, then the objective serves its purpose in identifying what steps must be achieved in reaching 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 what the milestone will be reached if the objective is achieved.

At this point you have identified the impact you want and have developed your goal statement. Now ask:

- “What must happen to achieve this impact?”
- “What smaller benchmarks or milestones would signal progress toward reaching this impact?”
- “In what order should these occur?”

As in the goal-setting process, have coworkers and stakeholders assist you in compiling this list.

Objective statements should generally identify:

1) the audience; 2) how you want the audience’s behavior to change because of your effort; and 3) some measurable component that indicates the magnitude of change you intend to have. A common mistake that SGE professionals make is when their objective statements indicate what they will be doing.





The important thing to realize, it is not the number or amount of activities that you do, but what your identified audience will do as a result of your activities.

Even identifying the target audiences presents some difficulty. Terms like “anglers” or “coastal residents” define huge audiences. Unless you intend to design actions that will reach all anglers or coastal residents, a refinement of this audience is needed such as “subsistence anglers fishing from shore” or “shore property owners.” 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 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. Remember that our role is to provide the best available science that may influence some type of economic, environmental or social change 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 strategic plan identifies the general direction a program will take over a four-year period. The implementation plan identifies what expected milestones and impacts will result from a state extension program, what resources and approaches are necessary, and what data will be collected to measure progress and success. Sometimes the implementation plan is incorporated into the strategic plan. The work plan lays out specific actions that will be taken over the next year to work toward the identified goals and objectives. In order to develop the work plan, you 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 is ultimately a prioritized list of steps and actions that must take place for the desired impacts to be realized.

Each action should try to include the following criteria when possible:

1. A product that will result from the activity or action.
2. Identifiable efforts to cooperate with appropriate organizations or agencies.
3. Identifiable contributions toward achieving an expected milestone or impact, which can be evaluated.
4. Measurable resulting milestones or impacts.

Implementation plans used by Sea Grant programs should flow from and coincide with the state strategic plan and describe how you expect your goals and objectives will be accom-

plished and measured. The implementation cycle is also generally divided into two biennial intervals that correspond to the program's omnibus proposal that is submitted to the NSGO.

The omnibus proposal describes in detail the planned research, outreach, and administrative actions planned for a two to four year period. This biennial approach to strategic implementation provides an opportunity to re-prioritize objectives and redirect program activities every two years.

In addition, SGE professionals should individually review their activities on an annual basis and, with approval from their extension program leader, adapt their outreach activities appropriately in their annual work plans. This provides further opportunities for mid-course adjustments.

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



work plan. The implementation plan focuses on stakeholders to be served, alliances to be formed, and resources 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 completed. 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 set a clear direction for accomplishing objectives. The implementation plan may be embedded in the strategic plan. What is important is that the strategic plan is implemented.

## Work Plans

Annual work plans are the most detailed step in our planning process. Work plans specify 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 because of change or to take advantage of unique opportunities.



A work plan should be more than just a list of proposed actions. You should refer to 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 a rationale that explains 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 desired milestones or impacts.

## Designing a Program that Achieves Impact

In light of tightening budgets, it is imperative to demonstrate the relevance and impact from a program effort. It is no longer enough to select only projects we feel comfortable with



or have ready capabilities to address. We also need to plan our programs so we can measure and demonstrate the impact we have had. This may be a change from the way some have evaluated your extension program in the past, where proving impact was encouraged but never required. Is your program worth its cost and relevant in addressing current issues? This is not easy to determine. A program or project developed with our suggestions can help you and others respond effectively to such questions.

## ***Increase Your Program's Level of Effectiveness***

Your extension program should be planned and evaluated to increase its effectiveness. All programs start with staff and financial inputs. Programs go through lifecycles. Programs evolve as they are evaluated, and they go through different phases from initiation to development to stability to dissemination (Trochim et al, 2012). More on evaluation is discussed in Chapter 4.

## ***Assessing and Meeting Needs of Stakeholders***

One challenge for all extension professionals is to identify the stakeholders with whom they will work, as well as the projects on which they will work. You may have your general topic area, but where and with whom do you start addressing which issue? 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 their wants and needs, and between perceived and actual solutions that will achieve the desired outcome. At times, stakeholders express a specific solution as needed, but there are often multiple solutions, and the stakeholder may be seeing the issue from only one perspective. There are both formal and informal mechanisms to help you determine needs and how you to address them.

Negwegon High School Interpretive Signs Project • Michigan Sea Grant





Dutch Harbor • Kurt Byers, Alaska Sea Grant

## Formal Mechanisms

**Advisory Committees:** Most effective extension programs seek stakeholder input. Each program does this differently but has some form of user advisory committee and research advisory committee formed at the program level. Some programs use this as their only formal committee 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 can provide an effective mechanism for regularly seeking stakeholder input. You must be careful, however, to remember that these groups are advisory and are not a board of directors. You ultimately need to decide what projects and activities you will implement.

**Evaluations:** You may decide to do a formal needs assessment of your stakeholder group or

area in which you work. 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). Also, an assessment of your publications, products, and services not only evaluates the quality and effectiveness of your program, but can also be used to assess additional stakeholder needs. We often ask participants to complete evaluation forms at the conclusion of planned activities. 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 among future programming choices.

## 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 continual basis. Contacts occur through phone calls, emails and other social media forms from stakeholders; interaction with other government agencies and institutions; interaction with stakeholders at meetings and workshops; interaction with general public at large; and one-on-one interaction with stakeholders. These 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 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 assist you in identifying true causes for problems or gaps that you have 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 extension professionals, we are in a unique position not only to understand the current state of the science in our focus areas and future research trends, but to assess how this science is being applied and where stakeholder needs are going unmet. Extension personnel can assimilate this information and anticipate the future needs of our stakeholders. We may identify present and future barriers to achieving expected impacts and milestones and take steps to remove them. These steps may include identifying research needs and participating in developing future research proposals. (See Chapter 7.)

### *Incorporating Stakeholder Needs into Program Plans*

Stakeholder needs that you have identified should be incorporated into the program's strategic plan and corresponding implementation plan, the omnibus proposal and annual work plans. The objectives developed in the strategic plan articulate the basic direction needed to meet present and future stakeholder needs. If you anticipate barriers and future trends, research and technology can be developed before the stakeholders' needs arise. The implementation plan identifies milestones that signal progress in accomplishing goals; articulates the impacts program activities are expected to have; and identifies partnerships and mechanisms needed to accomplish program objectives. The omnibus proposal and annual work plans we submit describe actions to address stakeholder needs and achieve expected milestones and expected impacts. All feedback from users can be incorporated into your extension planning process and can



be used to formulate and modify program activities at a number of points:

- Strategic planning
- Implementation planning
- Omnibus proposals
- Work plans
- Anytime opportunities or problems arise

## **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, social media/web designers, and videographers—can be invaluable resources and the proper time to enlist them is at the product's conception and not after its development. Many universities also have communication departments with staff that 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 will better target stakeholder needs.

### **Ten Important Questions in Planning an Extension Program**

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 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 product (e.g. publication, video, workshop, web site, etc.) 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 indicators and/or a higher level of program users than the previous year?*
8. *Does your work plan contain projects with regional or national impacts?*
9. *Has your outreach program grown in size and with a concomitant level of outside funding and stakeholder support?*
10. *Once you have met your objectives, do you have an exit strategy and ability to move on to other projects and activities?*





## Summary

Planning is one of the foundations upon which Sea Grant Extension programs were built. Planning identifies both short-term and long-term courses of action and identifies milestones that can be used to measure if our 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 these ten questions 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.

## References

- Bennett, Claude F. (1978). Analyzing impacts of Extension Programs. No. ECS-575, U.S. Department of Agriculture, Extension Service, Washington, DC.
- Dick, Walter and Lou Carey. (1996). The Systematic Design of Instruction (4th edition). HarperCollins Publishers Inc. NY, NY. 385pp.
- National Oceanic and Atmospheric Administration, Coastal Services Center. (2002). Program Design and Evaluation. Charleston, SC.
- Trochim, W., Urban, J.B., Hargraves, M., Hebbard, C., Buckley, J., Archibald, T., Johnson, M. and Burgermaster, M. (2012). The Guide to the Systems Evaluation Protocol. Ithaca, NY: Cornell Digital Press Services.



Updated by Michael Spranger  
and Katherine E. Bunting-Howarth  
Original by Michael Spranger

# Evaluation

## *Why bother?*

“What have you done for me lately?” That is what Sea Grant funders and stakeholders want to know. Sea Grant Extension (SGE) professionals must regularly account for the outputs and outcomes that flow from the funds agencies provide for our projects. In business terms, these agencies are asking: “What is the return on investment (ROI) of public dollars in our programming?”

To allocate limited public resources more efficiently, federal, state and local governmental agencies, including the National Oceanographic and Atmospheric Administration (NOAA), expect projects and products to be evaluated to determine their impacts. Recipients of limited public dollars must be accountable for their use. To answer these questions, SGE professionals need to show the impact that our programs and projects have on the people and resources we target. This is what evaluation is all about. It is a process that measures whether our programs or projects accomplished what we hoped for or intended. Evaluation also shows

us what we did to achieve our goals, what worked well or what we 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, assist in job creation, and increase the sustainability of the marine and aquatic resources. But how do we ensure that these examples are duly documented and that our funders, administrators and stakeholders have access to 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. Training workshops and materials now abound on the topic, including expertise within NOAA (NOAA Coastal Services Center, 2002). We no longer operate in a vacuum in the planning, implementation 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. To be most effective as SGE professionals, we must see evaluation as a process that is informed by program creation and delivery, and which informs program design and delivery.

Program evaluation is not new. 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
4. Summative evaluation

Every SGE program follows these basic stages of evaluation in some form.

As stated in Chapter 3, planning and evaluation go hand-in-hand. Planning not only determines what we should be doing but also helps in identifying 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 our program efforts.

Rip Current Mobile Application • New Jersey Sea Grant



Coastal Community Workshop • South Carolina Sea Grant







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 finished 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 used 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?

Another way to look at evaluation is systematically. When planning our extension program we should do so with evaluation in mind. This includes being specific about identifying stakeholders, defining the program pathways (outputs and outcomes), specifying boundary conditions (the limits of the program), assessing the stage of the program in its lifecycle and planning the appropriate type of evaluation (Trochim et al 2012). Of course, implementing the evaluation plan is the key to understanding whether your goals were met, how they were

met and how delivery can improve in the next stages.

What is important is that SGE professionals should consider evaluation a continual process of inquiry. It is a process of constantly asking questions about what they are doing, what impacts and benefits are occurring, and what are the social, economic and environmental conditions and circumstances 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. Sea Grant Extension staff can also ask questions about whether the program is reaching the intended stakeholder groups. Finally, SGE professionals can ask questions about whether the program is producing desired results (Douglass 1998).

## ***Demonstrating Impact***

The decade of the 1990s can be considered the era in which current government program accountability began. During that time several pieces of performance-based accounting legislation were enacted that now impact many extension activities at the federal and state

level. The Government Performance and Results Act (GPRA) of 1993 was the first to mandate that agencies demonstrate the impacts of their programs on the audiences or resources that were targeted. Other accountability legislative acts have followed. Federal and state agencies are increasingly being asked to quantify the results of their efforts with economic, environmental and societal impacts. Today, accountability, evaluation and performance assessment of outreach programs is a necessary part of the business of all extension and education professionals (Spranger, 2000).

The dilemma in SGE program evaluation is that this emphasis on return on public investment may not fully show the impact of our programs. There are also non-economic benefits that SGE programs deliver. Sea Grant Extension programs may change peoples' lives, their attitudes or behaviors. Sea Grant Extension programs may also benefit society in other ways, such as reducing pollution, creating better community leaders and 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.

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 programs, as well as to their stakeholders. For example:

- Decisions made by SGE stakeholders not to do something that may have large economic consequences are often not factored into determinations of success. For instance, saving marine businesses money because a poor investment was NOT made



based on information gained at a SGE meeting is hard to quantify.

- Saving a life or vessel because a boater knew what to do in a hazardous situation as a result of information gained at a SGE fishing vessel safety program is hard to quantify in economic terms.
- Providing training to coastal planners on alternatives in coastal shoreline mitigation may allow them to incorporate those alternatives into local ordinances. These may preserve and enhance shorelines and at the same time decrease erosion and reduce other coastal hazards, but are difficult to quantify in economic terms.

Similarly, we should not be overly concerned about the initial number of stakeholders that we serve. The adage of quality over quantity is applicable here. Sea Grant Extension professionals often use the traditional adoption-diffusion model in our work. In this model, we work with key leaders and innovators who are respected by their peers. We therefore maxi-

mize our outreach by having these individuals learn and adopt new skills and knowledge and then apply them in their home and workplace. These new skills and knowledge are gradually diffused throughout the stakeholder groups that we have targeted (Rogers, 1983).

In addition to impacts of economic and behavioral changes, SGE programs or activities may have scholarly impacts and benefits. Increasingly, SGE professionals conduct applied field projects that may contribute to the research literature. As members of universities, SGE professionals have the opportunity to present papers at professional meetings, as well as publish results of their research and extension activities in peer-reviewed journals, such as the *Journal of Extension*. The scholarship of extension is another “indicator of success” that is often overlooked in the evaluation of SGE program activities (Boyer, 1990).

There is increased emphasis placed on SGE programs to be evaluated against national objectives. National performance measures and metrics are being identified that estimate the parameters under which our programs, products and activities are reaching targeted results. As a result, state Sea Grant programs must establish performance outcomes for all measurable activities. This is important, since activities that are not measured or assessed cannot be managed because there is no objective information to determine their value. Sea Grant Extension professionals thus need to ensure identifying performance outcomes is a critical part of their planning process. These outcomes also provide the basis for the accountability of results rather than just a reporting of level of effort in our SGE activities.

Helen Domske Teaches Teachers About Invasives • New York Sea Grant



## Evaluation That Serves Many Masters

Historically a majority of SGE funds came from NOAA; however, increasingly SGE programs are augmenting their budgets from other federal, regional, state and local sources. As a result, our programs may also reflect regional, state and local needs that may or may not be in national strategic plans. These programs may have different reporting requirements as well. Hence, we may have another dilemma: having to show not only how we meet National Sea Grant goals, but also how we meet the expressed needs of these other funding entities. We also have the complication of assuring our local stakeholders that we serve them regardless of our funding sources!

What is important is that all SGE programs should have strategic plans, implementation plans and individual annual work plans that reflect the needs of the people and resources with which they work. Sea Grant Extension programs and activities should then be mea-

sured and evaluated against what has been proposed in these 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 and answers:

1. **WHO should evaluate the program?**  
Anyone who wants to know the strengths, weaknesses, successes and failures of the program may be involved in evaluation.
2. **WHAT is program evaluation?**  
Evaluation is a planned process that determines whether 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.



Whitefish • Gauthier Spaulding, Michigan Sea Grant





3. **WHEN should you conduct a program evaluation?** Program evaluations should be a natural part of 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. Nevertheless, administrators and funders 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 Chapter 3.

There are some caveats in conducting formal evaluations:

- a. 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.
- b. If the program is a one-shot activity you do not have to worry about collecting information about changing the program.

- c. If you have limited time, money or resources to conduct the evaluation, make sure you choose tools and techniques that fit your resources.
  - d. If there are no clear goals and objectives for the program, it is hard to measure the program's effectiveness if you cannot agree on what effectiveness means. Clear goals and objectives become the chief criteria on which success is determined.
4. **WHERE should you evaluate a program?** This does not refer to location but where in the program's life you should evaluate. Program evaluation should take place during all phases of the program. Needs assessment, formative and summative evaluations should be part of every SGE professional's vocabulary.

5. **WHY evaluate a program?** The bottom line of evaluation is to show you are making a difference in your program or activity that provides a positive impact or benefit to your stakeholders. It should also demonstrate that you have a positive return on the investment with the time, resources and funds you have allocated.



## 6. **HOW do you evaluate a program?**

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

## **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. It 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 non-economic indicators should be used to determine if the program has met stakeholders' needs. Effectiveness can be ascertained through quantifiable measurements as well as qualitative measurements obtained by unobtrusive methods.

Program performance also needs to be based on both short-term and long-term benefits and impacts. A SGE program may not show results for several years. Research indicates it takes time for new information to be diffused throughout a resource user group. This needs to be acknowledged in any evaluation process. Funders, administrators and stakeholders must be reminded that success may take many years to occur and document. Sea Grant Extension professionals must also build in time, resources and funds for both short-term and long-term evaluation of our activities.

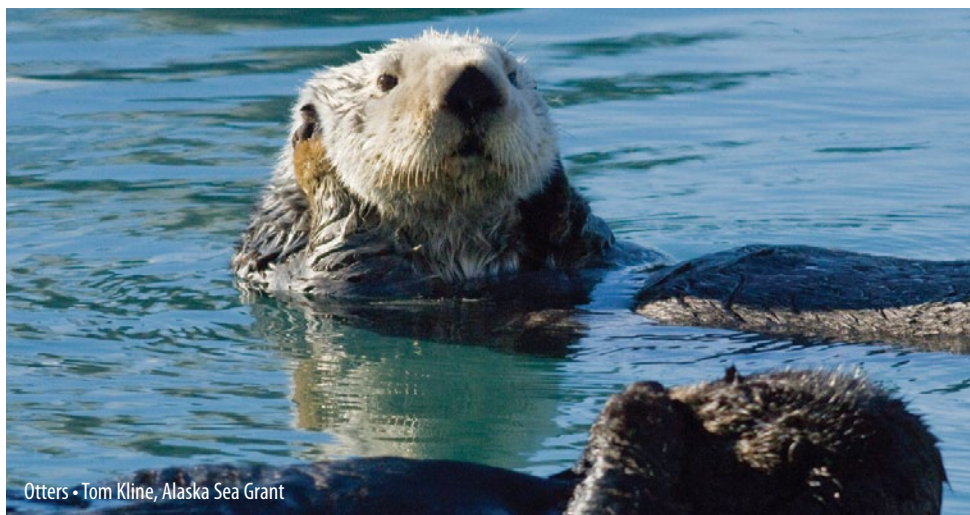
Program leaders need to put more emphasis and resources toward systematically incorporating evaluation into SGE programs. We should ensure that evaluation occurs in the needs assessment and planning phases of our programs and not wait until after the program is complete. Evaluation is an activity that should be conducted throughout a project. We must also have clear ideas about what is to be accomplished in our programs, and what measurements will be used to determine if we are successful.

## Summary

Evaluation of programs should be seen as an opportunity, not as a threat, to SGE professionals. 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.

## References

- Boyer, Ernest L. (1990). *Scholarship Reconsidered. Priorities of the Professoriate. A Special Report*, The Carnegie Foundation for the Advancement of Teaching. Princeton, New Jersey.
- Boyle, P. (1997). "What's the Impact?" *Epsilon Sigma Phi Newsletter*. No. 68:1-4. May/June, 1997.
- Diem, K. (1997). "Measuring the Impact of Educational Programs." *Fact Sheet FS869*. Rutgers University Extension, New Brunswick, NJ.
- Douglass, M. (1998). "Developing a Concept of Extension Program Evaluation." in *Evaluating Collaboratives: Reaching the Potential*. Taylor-Powell, Ellen; Rossing, Boyd, and Geran, Jean. (eds.). G3658-7. Program Development and Evaluation. University of Wisconsin-Extension, Madison, WI.
- Morris, L. L., and Fitz-Gibbon, C.T. (1978). *Evaluators' Handbook*. Sage Press, Beverly Hills, CA.
- National Oceanic and Atmospheric Administration, Coastal Services Center. (2002). *Program Design and Evaluation*. Charleston, SC.
- Rogers, Everett M. (1983). *Diffusion of Innovations*. Free Press, New York, NY.
- Spranger, M. (1999). *Decision Pyramids of Success in Washington Sea Grant Program. Strategic Plan, 1999-2006*. Washington Sea Grant Program, Seattle, WA.
- Spranger, M. (2000). *Accountability, Evaluation and Performance Assessment in Sea Grant Extension Programs, Florida Sea Grant College Program, University of Florida, Gainesville, FL*.
- Trochim, W. Urban, J.B., Hargraves, M., Hebbard, C., Buckley, J., Archibald, T. Johnson, M and Burgermaster, M. (2012). *The Guide to the Systems Evaluation Protocol*. Ithaca, NY: Cornell Digital Press Services.
- Wilkins, Bruce T. (1980). *Views on Sea Grant Advisory Service Work*. New York Sea Grant Extension Program, Ithaca, NY.



Otters • Tom Kline, Alaska Sea Grant







Updated by Robert H. Bacon  
Original by Robert H. Bacon

# Extension Partnerships

*With whom do we work and how?*

Engagement is a basic principle of Sea Grant Extension (SGE). Engagement is a commitment of service through a partnership between Sea Grant and its constituencies. Thus, the success of Sea Grant depends on collaborations and partnerships in its program planning and delivery.

There are two kinds of partnerships that SGE relies on:

1. Partnerships in programming.
2. Partnerships with the communities with which SGE engages.

Program delivery partners may include agencies and organizations that share similar goals and objectives with SGE but have complementary skill sets or additional resources to enable a more robust outreach program. In good or bad financial times, no community-based outreach program ever has the resources, staff or financial, to meet fully the needs of the people it serves. Program delivery partners are both welcome and essential to our success. To ensure SGE's programs meet the needs of its target audiences, SGE must engage with

its community program partners: individuals, community groups, local governments, non-profits and businesses.

## *Program Delivery Partnerships*

Many of the problems faced by SGE constituencies today can be traced to the rapid and continuing growth of coastal populations. That growth put pressure on coastal and ocean ecosystems resulting in user conflicts as more people competed for the use of these resources.

When Sea Grant was conceived in the 1960s, its focus was narrower, with fisheries the dominant program area. Over the years, Sea Grant has expanded into many new areas that better reflect the entirety and complexity of coastal, ocean and human interactions.

Some of these areas include coastal processes, natural hazards, land-use planning, water quality, climate adaptation, economics, sociology and tourism.

## **EXAMPLE 1 North Carolina Sea Grant (NCSG) Local Catch: Marketing, Branding and Consumer Education for Coastal Fishing Communities**

*Commercial fishing is an integral part of North Carolina's coastal economy. Historically, the state's fishermen satisfied a strong demand along the East Coast for fresh, seasonal seafood. Since 1995, less expensive imports have taken significant market share. Many businesses are struggling to remain profitable.*

*North Carolina Sea Grant led the development and delivery of a program focused on seafood branding, direct marketing and consumer education. Four regional workshops along coastal North Carolina covered product and enterprise diversification; market analysis and outlook; marketing strategies, plans and clubs; direct, wholesale, and processing markets; contract production, branded or certified marketing, value-added products, and business and strategic planning.*

*To educate consumers, a blog showcasing dishes prepared with fresh-caught North Carolina seafood was developed to offer a way to get seafood recipes; learn about local fisheries and traditions; and stay up to date on safety, handling and preparation tips. Additionally, the NCSG communications team developed a series of reminders of seasonal choices of locally harvested fish. The NCSG team also provided information on how and where North Carolina seafood is harvested.*

Sea Grant Extension has done well to maintain the staffing of its programs to accommodate the skill sets required to meet the needs of Sea Grant's new audiences. In addition to new program areas, a whole new set of skills evolved in the past 20 years in technology. It began with email and the internet, and progressed to Geographic Information Systems (GIS). It now includes social media, such as Twitter, Facebook; web-based meetings and virtual space for sharing documents, such as webinars, Go-To-Meeting, Google Docs; as well as mobile information technology and the accompanying "apps." The need for program delivery partners increases as SGE resources fluctuate, its baby-boomer members approach retirement, its audiences grow and technology expands.

A successful program partnership requires consensus about goals, program leadership, credit, accountability, and metrics. Early planning and organization will help you build on strengths and overcome potential obstacles.

One of the biggest stumbling blocks to partnerships in program delivery is: Who gets

the credit? Usually, folks working in the field, from whatever agency and organization, are focused on getting the job done — not about questions of credit. Those questions are mostly of concern for organizational leadership.

Nevertheless, it is important that people working in the field remember that credit is infinitely divisible. In developing programs with partner agencies and organizations, make



## Rip Current Signage • Michigan Sea Grant



sure you address the question of credit, and take steps to make sure every partner receives it in full measure. When you and professionals in other agencies or programs have common goals and target audience, you capitalize on different strengths and assets through partnerships. If your interactions require sharing funding, credit or people, you increase the strength of your bond from collaboration to partnership. In either case, you create the opportunity to reach a wider audience more credibly and efficiently than you will with programs developed and conducted by any of the partners acting alone.

You may partner with a program or agency, but essentially your partnership is with another professional. If you are new to Sea Grant, your task is to build a network. You identify people through advisory committees, interagency meetings, conferences and one-on-one interaction with citizens. You may find people with common objectives in other Sea Grant programs, NOAA units or federal agencies. As you engage people in local and state government,

businesses, organizations, non-profit organizations and citizen groups, your network grows. Consider what kind of databases you may need to maintain contact with your network. Of course, potential collaborators or partners may approach you if you have been quoted in print, web or audio media or recommended by other professionals.

If you are asked to work with elected officials, such as state and federal legislators, be aware of rules and policies of the supporting universities and the Sea Grant director. Check first with your program leader before initiating contact with elected officials. This can be very tricky ground, and each Sea Grant program has its own policy regarding this interaction. Follow the appropriate process, be a team player, and work with your program leader and director. Contact with the legislature can be a powerful mechanism for affecting coastal decision through improved information.

## Community Partnerships

When engaging with communities, delivering the best available science, in forms most easily used and understood by the community, to inform the decision-making process is SGE's most important responsibility.

Think of the word community in its broadest, small 'c' sense. Here community will mean everything from local governments as in beachfront communities; to interest groups, as in the environmental community; to industry groups, as in the fishery community.

Engagement with communities is not an event; it is a process. And truly, to be fully engaged with one's community is the highest plateau

## EXAMPLE 2: *Hanauma Bay Education Program*

*Hanauma Bay is world renowned for its clear, turquoise blue water, reefs teeming with marine life and the pristine white sand beach. For those who are intimately familiar with its history, however, Hanauma Bay symbolizes more than just a spectacular natural environment. It has come to represent a long and difficult struggle between the expanding visitor industry and the need to conserve the natural resources of the Hawaiian Islands.*

*In 1990, Hawai'i Sea Grant entered into a unique tripartite cooperative agreement between the City and County of Honolulu and the non-profit Friends of Hanauma Bay to administer the Hanauma Bay Education Program. Hawai'i Sea Grant staff and volunteers oversee the daily operation of the education program and developed resources that enhanced ocean literacy and conservation awareness in visitors to the bay.*

*Annually, a little over 800,000 visitors learn the value of marine resources and stewardship that reduced their environmental impact at Hanauma Bay. Staff and volunteers run an information booth on the beach and present an orientation film in the theater. The film covers the formation of the bay and important ocean safety information; introduces visitors to some of the marine life they may encounter; and describes actions that visitors can implement to help protect the reef.*

*In addition, the education program hosts 50 weekly public evening presentations for approximately 2,000 community members. It also provides relevant educational programs, including service learning activities for 250 school and community groups that visit Hanauma Bay annually. Fortunately, it is now seen as a model partnership among community groups, state and local governments, and non-governmental organizations. It serves as a prime example of how individuals with the passion to bring about change can catalyze a lasting movement, which continues to touch many lives.*

a SGE professional can reach. Engagement is a partnership between SGE and a community based on trust, reciprocity and shared goals. Trust is not gained overnight. It is built over time and can be lost in a minute. It is not to be taken lightly. It is based on honesty, integrity and familiarity. SGE professionals live and work in the communities they serve. They get to know the people and build up trust over time. This is what makes us nearly unique within NOAA and is a highly valued attribute of our network.

To deliver programs in a community, a SGE professional must fully involve representatives from that community in the planning process. Community members can provide valuable assistance in many ways. Most importantly, they can frame the issues to focus on the particular needs and interests of the community. They can also help determine the kind of program

structure to best suit the community: broad public meeting vs. small group session, for example. They can also help select an optimal time for a program to avoid or capitalize on specific times of the year, e.g. fishing season or local festival. Locals may know the best people to invite to participate and the best places to meet. The more a SGE program can feel like an event of the community and not an event for the community, the better it will be.

Whether a program delivery or a community partnership, any program is strengthened when it can demonstrate that many have recognized a need for it, shared in its objectives and contributed to its successes.

## **Extension Roles**

Most commonly we, ourselves, think of the role of SGE professionals as being the development



and delivery of traditional programs such as workshops and demonstrations. We think less, however, about other important roles we play as facilitators, brokers and conduits of information. In its role as a neutral third party, SGE brings people to the table to discuss resolving issues among themselves. Sometimes our partners in program delivery, including our colleagues in coastal zone and fishery management, for example, are constrained by a prescriptive set of legal requirements. In cases like these, Sea Grant may collaborate to deliver information in the public interest in a less formal, less structured and more timely manner.

SGE professionals typically meet many people from many different agencies, organizations and businesses. We see and hear a great deal. Sometimes an idea we hear in one context may be of relevance elsewhere. In these cases, Sea Grant professionals may function as information brokers, introducing people who really

ought to be talking, and who, for some reason, are not.

Often, SGE professionals make the introduction or host a meeting among the parties to facilitate dialogue. This is an important SGE role, where concrete value is difficult to identify for the purposes of reporting to the NSGO. Facilitation of dialogue and helping to connect parties with multiple interests are important because they build linkages and networks between groups and individuals. The Sea Grant role is often under-recognized and under-valued because it is an intangible product, the benefits of which may only be directly verifiable in the thoughts of the parties affected.

Sea Grant Extension often catalyzes action. For example, extension staff members living and working among their constituencies know and understand the problems that confront them. This knowledge often leads to the inclusion of

### **EXAMPLE 3: *Framing the Message about Seafood***

*Seafood Safety and Technology Specialists from Delaware and New York SGE programs partnered with Sea Grant researchers from Oregon, California, Rhode Island and Florida to create a website to help seafood consumers navigate the mixed messages concerning health impacts. This entailed a one and a half day workshop that brought together participants from the private sector, government, academia, and advocacy groups to discuss the challenges and opportunities of a risk-based approach to seafood safety, as well as the coordinated roles of government and industry. The workshop focused on the issues and implications of the messaging currently being used by these groups: i.e., seafood guide cards and advisories, with the goal of making concrete recommendations for implementation of a new science-based message.*

*One of the most significant results of the Framing the Message about Seafood conference was a consensus among participants on a conceptual framework to present information to consumers based on the following: how much seafood they eat; their status in a special risk group; and the source of products they consume — commercial or recreational.*

*The project team decided to use an existing internet based resource, the Seafood Health Facts website, <http://seafoodhealthfacts.org>, to produce a web-based tool to deliver information to consumers using this framework. This website was developed in a concurrent project funded by the United States Department of Agriculture (USDA) National Institute of Food Agriculture to conduct outreach education for health care providers on the risks and benefits associated with seafood consumption. The Seafood Health Facts Website, one of the primary deliverables for this project, was launched just before the Framing the Message about Seafood conference in September 2011.*

## EXAMPLE 4: Addressing Waterfront Access

*Coastal access and working waterfronts regained focus in 2003 when, in response to reported fears of declining access, the Maine Sea Grant program hosted its first workshop for 100 participants in collaboration with the Gulf of Maine Foundation, Coastal Enterprises, Inc. and other partners.*

*Maine Sea Grant organized and facilitated several subsequent workshops, which identified a need for information about legal mechanisms for addressing waterfront access issues. In response, Maine Sea Grant and its state partners obtained funding from the National Sea Grant Law Center to conduct research on new and existing legal tools. These tools were then made available to waterfront users, landowners, and government and public trust entities via [www.accessingthemainecoast.com](http://www.accessingthemainecoast.com).*

*Through its partnership with Maine's Working Waterfront Coalition and other activities, Maine Sea Grant also helped the state develop new legislation to create the Working Waterfront Access Pilot Program, which helps to preserve and enhance working waterfront properties. Maine SGE associates share leadership of this program and collaborate extensively with partners, including the Maine Working Waterfront Coalition, Coastal Enterprises, Inc., Maine Coastal Program, Island Institute, University of Maine Law School's Center for Law and Innovation, Maine Department of Revenue Services, Bernstein Shur Sawyer & Nelson Attorneys, and Maine Coast Heritage Trust. Because of Maine Sea Grant's strong state partnerships and its history of working on this issue, the program has also taken on a leadership role in national working waterfront issues.*

such problems in a state Sea Grant program's omnibus request for proposals as an item of particular interest. In some cases, this inclusion may lead to funded research projects addressing the problems. In other cases, the state Sea Grant research coordinator might seek outside grant funding and assemble a research team to address the problem outside the NSGO omnibus grant process.

## Cooperative Extension Collaborations



Measuring Beach Volume • Hawai'i Sea Grant

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 state Cooperative Extension programs. Whether your program has this formal affiliation, it makes sense for SGE professionals to collaborate with Cooperative Extension. Many topics are similar, such as water quality/quantity, climate change, land use and run-off, and hazard preparation for storms or flooding. Many formats are similar, such as workshops, community programs or webinars.

Points to consider:

- Professionals in both programs can request, receive, and even provide in-service training on topics of interest.
- Sea Grant and Cooperative Extension publications and other information packets can be shared online or in print, thus providing additional outlets for distribution.
- Joint outreach programs that serve communities on a watershed scale create roles for both Sea Grant and Land Grant as streams and rivers move from inland toward the sea.

- Climate, hazards, and community development are also fruitful areas of collaboration among Land Grant and Sea Grant programs.
- As with any program delivery partnership, a successful Land Grant and Sea Grant partnership requires consensus about goals, program leadership, credit, accountability, metrics and advocacy. Early planning and organization will help you build on strengths and overcome potential obstacles.

- Knowledge transfer

Partnerships with communities are built on trust developed over time. They thrive on the honesty and integrity of SGE in delivering the best available science, in forms most easily used and understood by the communities, to inform their decision making process.

## Summary

Collaboration and partnership remain 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 collaborative programming even more critical. Successful program collaborations and partnerships include:

- Compatibility of goals
- Program coordination
- Credit sharing



Examining Pilings • North Carolina Sea Grant

### EXAMPLE 5: *Assisting the Shrimping Industry*

*In late March 2010, the Southern Shrimp Alliance (SSA) — a trade group representing Gulf and South Atlantic shrimp fishermen — asked Texas Sea Grant to prepare a regional Petition for Eligibility for Trade Adjustment Assistance (TAA). In less than three weeks, the petition was completed by a Texas Sea Grants economist and submitted by SSA to the U.S. Department of Agriculture's Foreign Agricultural Service. The approved petition ultimately resulted in thousands of fishermen being able to participate in this unique USDA program that assists domestic food producers negatively impacted by imports.*

*Not content with merely developing the petition, Sea Grant programs from North Carolina to Texas developed relevant, industry-specific educational materials. They then organized and intensively trained 95 percent of the 4,602 approved applicants in their first language: English, Spanish or Vietnamese — the three languages routinely used in the shrimp communities. This was done through nearly 500 face-to-face workshops, and more than 6,000 online sessions via the five approved online courses. In all, 3,633 (79 percent) went on to complete their long-term business plans. Directly due to these educational efforts, shrimp fisher men received \$45.6 million in cash benefits.*

*Furthermore, Sea Grant educators also went on to develop and demonstrate proven methods for shrimp fishermen to adopt long-term strategies vital to their economic survival: catch record quantities of shrimp with less fuel, while at the same time ensuring those shrimp remain in peak condition throughout the cruise, so they can receive full market prices at the dock.*





By Stephanie Showalter Otts  
and James A. Fawcett

# Advocacy and Extension

## *The art of extension*

As a Sea Grant Extension professional, you will likely find yourself in situations where partners may ask you to advocate for them. The art of extension requires that you understand how to maintain your reputation as a neutral expert who brings research-based information to the table while still serving your constituents.

## **Background**

**ad-vo-ca-cy**, n. (15th Century): the act or process of advocating or supporting a cause or proposal (Merriam Collegiate Dictionary, 2001).

Congress commissioned the National Sea Grant College Program (NSGC) in 1966 to assist the nation's marine and maritime community. Throughout its 40-plus years of history, the nation's Sea Grant programs have wrestled with how best to assist those living along the coast and working in the marine environment. Sea Grant strives to provide the best science and

policy information available while remaining neutral about whether and how to apply that knowledge in the development of public policies and technical assistance.

This neutrality prevents Sea Grant from becoming a partisan in public policy discussions over how to use the information from its affiliated academic institutions. This continues to be a challenge. Academic faculty and Sea Grant professionals developing and providing information are a highly educated group with well-developed views. Nevertheless, Congress charged Sea Grant with providing our best information to all citizens who seek our help. A concomitant obligation is to keep our distance from positions advocating how that information is used.

The National Sea Grant College Program Act establishes guidance when Congress finds and declares that the national interest requires a strategy to "provide for the understanding

and wise use of ocean, coastal, and Great Lakes resources and the environment.” The 33 Sea Grant programs representing the coastal and Great Lakes states and U.S. Territories, therefore, work to enhance the “wise use” and conservation of coastal, marine and Great Lakes resources. Our Congressional mandate, however, raises the question – what does it mean to “provide for the understanding and wise use?” This question is open to interpretation and answers may vary among Sea Grant programs, their constituents, and other stakeholders. We would argue, however, that to “provide for the understanding and wise use” means informing the policy debate through the best science, socio-economic, and policy information available.

What follows are ideas about how we as outreach professionals can both honor the Congressional charge and participate in the public debate, yet avoid becoming partisans in that debate.

## *What is neutrality?*

No one expects that researchers or outreach professionals will not have opinions over how the research we generate and provide to the public is used; after all, we all seek some level of truth. Neither should the public expect that we lack a sense of ownership or commitment to the research we have conducted to reach our conclusions.

Nevertheless, it is not our role to decide which of the science or policy alternatives should ultimately be implemented on a federal, state, or local level. In our own minds we may be quite certain that a particular policy alternative is in the best public interest; however, there are other voices that have a right to be heard, even if they lack our scientific sophistication. All of which brings us to the question of why neutrality is so important.

Lobster Demonstration • New Hampshire Sea Grant





## *The importance of neutrality* Lobbying

Policy experts describe as “public goods” many of the resources Sea Grant professionals provide. By definition, it is not possible to allocate public goods through a market. Thus government — the one body that represents all the putative owners of those goods — must make those decisions. What other body would represent the interests of everyone with a stake in clean air and water, for example?

Using Garrett Hardin’s view of these resources as a “commons” helps to illuminate the problem further. Because a commons is open to all, overuse will destroy it for all. In this setting, no entity should have the right to overuse the resource or to dictate use of the commons; instead only a body that fairly represents the views and needs of the public can exercise that responsibility.

In application then, Sea Grant professionals have been given the opportunity to seek out the science and transform it into policy choices but not dictate its use. The decisions about which policy choices to select fall to our representatives in government who should consider our best professional views, but who simultaneously have an obligation to listen to the public who elected them.

One aspect of advocacy is lobbying and we want to make a distinction here between the two behaviors. While lobbying is a form of advocacy, not all advocacy is lobbying. The two terms should not be used interchangeably. Lobbying involves “conduct[ing] activities aimed at influencing public officials and especially members of a legislative body on legislation.”

As recipients of federal funding, SGE professionals are prohibited from expending funds on activities that attempt to influence the outcome of any federal, state, or local election or the introduction, enactment, or modification of any federal or state legislation (OMB Circular A-21, sec. J28). While SGE professionals may not engage in lobbying, they may share expertise and knowledge with public officials, at their request, through presentations, testimony, and reports.

What about in our private lives? Can a SGE professional, in the evening and on the weekends, write letters to her Congressmen or organize a political rally? Of course. As individuals we are free to participate fully in the political debate.

But should we? Many of us live in the communities in which we work and the line between professional and personal is often blurry.



Stakeholders who discover their SGE professional is working on a political campaign on the weekends might begin to wonder whether there is a political agenda behind the information the agent provides. Although it may involve a personal sacrifice, as a “best practice,” SGE professionals should avoid becoming involved in political advocacy either professionally or personally if their identification with a campaign or candidate is likely to affect adversely their professional delivery of services.

### **Researcher neutrality and academic freedom**

Some may protest, “your proposal flies in the face of academic freedom to explore issues where they take us.” Sea Grant’s neutrality, however, does not limit researchers; rather, it restrains Sea Grant professionals from promoting a particular application of research to the representatives of the public affected by its use.

Consider Einstein’s reaction to the use of his research to build and deploy a nuclear weapon in World War II: “I made one great mistake in my life... when I signed the letter to President Roosevelt recommending that atom bombs be made; but there was some justification—the danger that the Germans would make them” (Clark, 1984). Here a scientist explored an issue, but the use of the findings by policy makers was not in the scientist’s control.

### **Advice and neutrality**

Can Sea Grant professionals provide advice and still remain neutral? We believe that is possible. Aaron Wildavsky, one of the foremost thinkers in the field of policy analysis, provides some guidance for translating advice (into which much of scientific discovery evolves) to policy:

“The demand for analysis depends upon the desire for competition in the giving of advice. There must be more than one alternative; they must come from more than a single source; and there must be sufficient dispersion of power in society so that competing sources of advice have a chance of being heard and acted upon.”  
— Aaron Wildavsky, 1979

The utilitarian philosopher, John Stuart Mill provides a similar but earlier (1859) view when he tells us that, “There is the greatest difference between presuming an opinion to be true because, with every opportunity for contesting it, it has not been refuted, and assuming its truth for the purpose of not permitting its refutation” (Collini, 1989). Academic peer review invites refutation of scientific findings. In the same manner, data and policy applications must be open to review and refutation in the public square to gain legitimacy as public policy.



## ***Non-advocacy is a best practice***

While it is tempting to assume the role of an advocate because we identify with the issue at stake, have devoted ourselves to the study of an issue for years, or have a personal predilection for the position, we need to remain conscious of the public trust. While we all may at times be tempted to step over the line into advocacy, the knowledge of our responsibility to all citizens should draw us back from the brink when we find ourselves becoming more than good researchers and educators. Not only is our own credibility at stake when we take partisan positions but that of our funding agency as well.

## ***Taint by association with an issue***

When ideological opponents of our research or outreach portray our work as “advocacy” merely because we are associated with an idea that may be controversial in some circles, our response must be that we are professional educators, who gather the best science.

This is particularly true over issues such as global climate change where skeptics have questioned our roles as scientists by challenging the science. By involving ourselves in the discussion have we become advocates? Research and public education about matters of public importance does not make us advocates. Quite the contrary, we have a responsibility to conduct research and go where the findings take us and do our best to educate the public about current science affecting our Great Lakes and marine resources.

In fact, we have both technical and ethical responsibilities to translate our understanding of natural and anthropogenic processes affecting our marine and Great Lakes ecosystems into language that the public can use to advise both public officials who are managing these resources and private entities who are using coastal resources. If our understanding of these processes has implications for public policy, all the better. Congress developed the Sea Grant College Program to help the nation better manage its marine and coastal resources. To accomplish that objective we need to know and be involved in all issues surrounding coastal, ocean and Great Lakes management.



Encounter with the Sea Workshop • Oliver Bencosme Palmer, Puerto Rico Sea Grant

Unpopularity of an idea is no justification for avoiding it when science detects a problem. In such situations, however, it becomes all the more important to be aware of competing points of view — as there will inevitably be — when educating the public about issues affecting their welfare. Sea Grant Extension professionals should remember that while we are frequently involved in controversial issues, as long as scientific findings are the foundation for our positions, we have an obligation to forge ahead in research and in public outreach.

### *A policy or best practice?*

No funding agency, NOAA or otherwise, may prohibit university personnel from becoming advocates. In their work, Sea Grant professionals ought to refrain from advocating as a best practice out of professional and ethical responsibility. Each of us is human, and we do not always hew to the best practices of our professions. But, when matters of our nation's oceans, Great Lakes and coastal environment are at stake, we have a particular responsibility to abide by the best practices of professional behavior.

One of those best practices is adherence to the NOAA Code of Scientific Conduct found within the NOAA Administrative Order on Scientific Integrity. All recipients of NOAA funding should be, to the best of their ability:

- Honest in all aspects of scientific effort.
- Accountable in the conduct of research and interpretation of research results.
- Professional, courteous, and fair in working with others and respectful of the ideas of others.
- Good stewards of research on behalf of others.

As extension agents, we have a professional responsibility to ensure that we do not use or disseminate scientific and policy information in a manner that distorts findings to reinforce our personal position, values or beliefs.

In short, to be a partisan or advocate invites us to assume the infallibility of our position at the expense of forging a more robust — but evolutionary — position on the anvil of public discourse, an evolution that may more nearly meet the needs of the public.



Lake Superior Shipping • Chris J. Benson, Minnesota Sea Grant



## Additional Reading

Barrows, Richard L. (1984). "Taking a stand: Extension and Public Policy Issues." *Journal of Extension*. March 1984. Volume 22, Number 2.

Raison, B. (2010). Educators or Facilitators? Clarifying Extension's Role in the Emerging Local Food System Movement. *Journal of Extension*. 48(3).

Welch, T. (2010). Education in the Face of Controversy: When Water and Politics Mix. *Journal of Extension*, 48(3).

## References

Clark, R. (1971, 1984). *Einstein: The Life and Times*. New York: HarperCollins, Avon Books. P. 752.

Collini, Stefan (Ed.). (1989). *J.S. Mill: On Liberty and Other Writings*. London: University of Cambridge Press, p. 22.

Hardin, G. (1968.) *The Tragedy of the Commons*. *Science*, 162(3859), 1243-1248.

Wildavsky, Aaron. (1979). *Speaking Truth to Power: The Art and Craft of Policy Analysis*. Boston: Little, Brown & Co., p. xxvii.

Merriam Webster's Collegiate Dictionary, 10th Ed. (2001). Springfield, MA: Merriam Webster, Inc. OMB Circular A-21, sec. J(28).







Updated by Judith Pederson, Nancy Balcom, Michael Liffmann  
Original by Judy Lemus and Judith Pederson

# Sea Grant Extension and Research

*Where do we get our information?*

Sea Grant Extension (SGE) professionals interpret scientific knowledge for policy makers, managers, the media and the public. Within this role, it is our responsibility to distinguish scientific and technical facts from the interpretations of a biased constituency. Social media and speedy search engines have made information about any subject available instantly and often without knowledge of its reliability. Our role as Sea Grant professionals is to advocate for good scientific information but not impose personal bias.

This chapter identifies sources of information and their reliability, and the role of SGE professionals as translators of scientific and technical information, as researchers, and as liaisons between communities, agencies and researchers.

## **Sources of Information**

While scholarly information relies on publication of papers in peer-reviewed journals, today's electronic media have revolutionized how we access information and bring special challenges in evaluating the information. Search engines have made electronic access to information quick and comprehensive from web sites, historical and recently published documents, blogs, videos, social media, and newspapers. But this plethora of information poses challenges in evaluating the accuracy of the sources.

Traditionally, information in peer-reviewed papers, where two or more experts have reviewed each paper, is considered to be reliable

with defensible scientific data. Peer-reviewed papers are often referred to as primary sources. Reviewers are asked to ensure that a scientific method has been used to produce the data and to comment on the researchers' sampling design, the quality of the data, the validity of the analyses and the interpretation of the data.

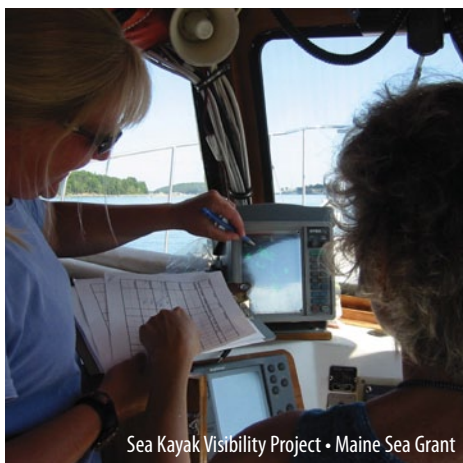
Scientists may be asked to conduct additional experiments, add controls or recalculate the data before papers are published. What often confuses the public and challenges extension professionals are contradictory conclusions from peer-reviewed papers, particularly in new or emerging areas of interest. 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 and interpretation are reports from government, consulting companies or other organizations that may be based on specific inquiries or are data reports of monitoring programs. These reports may also 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; hence these reports are referred to as “gray literature.”

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 accepted scientific protocols. At the state level, reports may be less reliable, and thus, it is necessary to determine the extent to which data are collected by qualified scientists and technicians and whether the reports have been 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 insight into 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 biological, 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, although most volunteers receive some type of quality assurance/quality control training. The reports should be interpreted cautiously unless confirmed by other reliable sources. There are exceptions: citizen monitoring programs that





use training programs, field supervision, and academic laboratories for analyzing nutrients and other data, may obtain quality data. For example, over the past several years, local ecological knowledge collected from fishermen is being integrated into local fisheries management (Murray et al. 2006).

Secondary sources are those where 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 writer conferences and will present differing points of views on the issue. Scientific articles written by non-governmental organizations may reflect the agenda of the organization. These articles should be read with the potential bias of the publisher in mind and not treated as primary sources of information.

With social media such as Twitter, Facebook and blogs, as well as websites like Wikipedia,

our ability to access information has transformed the way we gain knowledge and form opinions, often without knowing the reliability of the source. Electronic journals with academic titles publish papers with and without peer-review processes and are prevalent in all subject areas.

Nearly all segments of society, scientists, the public and students are using the internet to obtain information about every conceivable topic, including climate change, alternative energy, fisheries, marine bioinvasions, biotechnology, pollution, eutrophication and endocrine disrupters. With immediate access to an individual's home page, government reports, peer-reviewed journal articles, newspaper articles and press releases, reliability issues remain a concern.

The same questions and standards applied to other forms of information apply here as well. If the work is peer reviewed and 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 academic science 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. As noted above, fishermen's local ecological knowledge provides information that is not necessarily captured in scientifically structured monitoring programs. Often it is challenging to separate anecdotal information biases in reporting. Sometimes information from different sources, including academic research, may be in conflict. A Sea Grant professional's aim is to provide the best information from all sources (Hartley and Robertson, 2006).

## **Evaluating the Information**

The challenge for Sea Grant professionals is to report accurately the findings and provide alternative interpretations as appropriate to ensure that all sides are heard. As a result of our efforts, Sea Grant has a reputation for reliable reporting. Sea Grant programs should be neutral brokers in providing scientific and technical information. Sea Grant professionals write articles for the lay public which are published in newsletters, fact sheets, websites and social media outlets. Sea Grant professionals may also be interviewed on radio or television and present information at public events. Sea Grant professionals need to maintain a high standard in delivering information to our constituents. When the information sources are so varied in quality, answers to the following questions can help evaluate its reliability:

- What are the sources of the facts?
- Were scientific methods used to generate the data?
- Were there adequate controls, numbers of samples, and good sampling designs used to generate data?
- How reliable are the data? What are the uncertainties in the data?
- How were conclusions reached?
- Is there a built-in bias in the interpretations?
- Who funded the research (as funders may impact conclusions)?
- How can different conclusions from prominent scientists and experts be evaluated and digested for the public?

These questions can apply to articles in the media, scientific journals, progress reports and gray literature, as well as underlie disagreements among prominent scientists and experts. Below 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 "lies, darn lies, and statistics." Learn how to interpret statistical analyses.
- Understand that relationships between two events do not mean they are cause and effect.

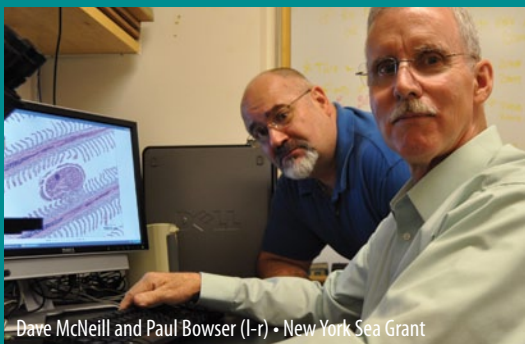
## **Working with Researchers and Sea Grant Scholars**

Working with researchers and academic scholars is an integral part of SGE's mission. Indeed,



## *From Research to Application: Using Research to Support Good Practices in Managing and Preventing the Spread of a Mortal Fish Virus*

*The viral hemorrhagic septicemia virus (VHSV) caused mortality of hundreds of tons of freshwater drum as well as other fish and threatens the Great Lakes sport fishing industry. Paul Bowser, from Cornell University, and his research group investigated and continue to conduct studies on VHSV to identify its presence, spread and impact on fisheries. Using VHSV research, Dave McNeill, from NY Sea Grant, and Bowser, through workshops and other outreach materials, shared important*



Dave McNeill and Paul Bowser (l-r) • New York Sea Grant

*findings to inform the aquaculture and fishing communities of the dangers of spreading the virus. Along with other Sea Grant programs, several regional workshops for aquaculture facilities highlighted guidelines and practices that would avoid contaminating fish-rearing facilities. In recognition of this effort, the first-ever Sea Grant Association Research to Application Award was awarded to Bowser and McNeill in 2010.*

many extension professionals are researchers advancing scientific knowledge. The role of SGE professionals in translating research findings to targeted audiences is an essential component in research. State and federal agencies request and work with Sea Grant to provide broader societal impacts that stakeholders can comprehend and use. As researchers and technical and scientific translators, the role of Sea Grant professionals is to be acquainted with current research and research-in-progress to communicate accurate and useful information to a target audience. A familiarity with research is essential for gaining 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 the researchers themselves. 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. One-on-one conversations with a scientist will give a better sense of how confident he or she is in the data; how data might best be used by a particular audience; and how the historical and scientific context is conveyed in ways not apparent in written materials.

Often the research used for extension information will be a Sea Grant-funded project, and the researchers involved will be 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 of the actual research and data collection for a project, should not be overlooked as a valuable resource for first-hand information. Graduate student presentations and symposia are excellent forums for keeping abreast of research and offer

opportunities for the program staff to gain knowledge of the issues.

Sea Grant programs are university-based and support research initiated and designed to address real-world coastal and marine problems. Research generated from a focused or applied approach is a vital element of Sea Grant programs because it is responsive to local communities' needs. Applied or basic research, however, may not yield immediate results. Managers and the public often demand immediate answers and may ask questions like "Is it done yet?" or, "How much is enough?" As a group, scientists focus on long-term issues and are reluctant to make decisions in the face of uncertainty. Where decisions are required (as often occurs in resource management issues) but data are either incomplete or unresolved, it is the Sea Grant professionals, in consultation

with researchers, who determine whether the information carries enough merit for extension or transfer into the community.

Where data and information are incomplete, presenting both sides of an issue and indicating levels of uncertainty will lay the foundation for incorporating new information as it becomes available. For example, town planners strategizing for future sea level rise are uncertain about predictions that range from a 81 cm to 179 cm rise by 2100 (Vermeer and Rahmstorf 2009; based on IPCC, 2007) and that have implications for human safety and economic investments. Maintaining an open line of communication with scientists throughout the research process will benefit all.

Helping Watermen Reduce Bycatch • Virginia Sea Grant





## ***Integration of Extension into Research Proposals***

Sea Grant's mission is to apply university-based research and technologies to issues relating to the responsible use of coastal and marine resources. In this role, extension professionals serve as the messengers and translators of scientific and technical issues, ensuring that information generated within the research community makes its way into the hands of those who need it. From this perspective, an ideal research proposal would incorporate a well-defined extension outreach plan. Granting agencies outside of Sea Grant, at both the local and national levels, also recognize the value of consolidated research and outreach efforts.

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. A good research project,

however, can only be strengthened by a well-developed outreach plan. It falls to extension professionals, as the liaison between research and the community, to foster that alliance. A good working knowledge of both research and community needs will go far in this regard. Integration of outreach activities early in the proposal development stages is the goal in facilitating communication between scientists and communities. Not only do scientists want their research to be useful, but, as recognized experts in their field, they may rightly expect to be consulted. Many research requests for proposals require outreach and extension components.

Extension professionals may also be involved in the proposal review process. Specialists and leaders, in particular, are often asked to provide feedback on pre-proposals regarding relevance, appropriateness, application of results and prospects for outreach. This initial screening affords another opportunity to become familiar



with upcoming research projects and to initiate working relationships with scientists in areas applicable to stakeholders.

In many programs, extension professionals may be required or desire to develop their own applied research proposals. In this scenario, the extension 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. Nevertheless, the extension 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***

A complete extension program should take into account the full circle of information transfer. This includes:

1. Obtaining data from researchers and interpreting it for a particular audience.
2. Communicating information from extension staff to researchers concerning problems or issues that have been identified by industry and agencies.
3. Providing a feedback loop from users back to researchers regarding the efficacy of applied technologies and information, as well as the shortfalls and remaining needs.

Because most Sea Grant programs are supported, often substantially, by state dollars, research priorities from resource agencies at the state level are an important driver of funded efforts. Sea Grant professionals are responsible for informing state and local resource managers and policy makers of research results and technologies that address relevant research priorities and information gaps. This flow of information from Sea Grant to the state will then complete the cycle of information transfer by helping resource managers make better-informed decisions regarding regional or statewide research agendas. Please note, 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 transfer to users of coastal and marine environments. Maintaining a close relationship with research scientists, as well as other expert sources, is paramount to a successful extension program. Extension professionals serve as the information liaisons between researchers and stakeholders and should foster communication in both directions with both groups. To maximize the impact of extension programs, actions and products must be based on reliable data and quality cutting-edge science. Stakeholder needs can be incorporated into research by:

- Identifying future relevant research priorities and working these into a Sea Grant Program's regular Request for Proposals (RFP) cycle.
- Working with supervisors and other Sea Grant professionals to refine future research and outreach needs at the national level.
- Working independently and with other researchers to conduct applied research collaboratively in response to RFPs.
- Working with appropriate agencies and groups on various aspects of policy.
- Engaging with communities to expand ocean literacy and work toward behavior modification.
- Developing tools or products needed by stakeholders to overcome barriers.

## References

- Anderegg, William R.L., James W. Prall, Jacob Harold, and Stephen H. Schneider. (2010). Expert credibility in climate change. *Proceedings of the National Academy of Sciences* 107:1207-1209.
- Dow, Robert L. (1969). *The Role of Research in Fisheries Extension*. Atlantic States Marine Fisheries Commission, 28th Annual Meeting. New York City, Oct. 27-29.
- Hartley, Troy W. and Robertson, Robert A. (2006). Stakeholder engagement, cooperative fisheries research and democratic science: The case of the Northeast Consortium. *Human Ecology Review* 13:161-171.
- Solomon, S., Qin, D., Manning, M., Chen, Z., Marquis, M., Averyt, K.B., Tignor, M. and Miller, H.L. (eds.) (2007). *IPCC. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
- Murray, Grant L., Neis, Barbara, and Johnsen, Jahn Petter. (2006). Lessons Learned from Reconstructing Interactions Between Local Ecological Knowledge, Fisheries Science, and Fisheries Management in the Commercial Fisheries of Newfoundland and Labrador, Canada. *Human Ecology*, 34, (4): 549-571, DOI: 10.1007/s10745-006-9010-8
- Vermeer, Martin and Rahmstorf, Stefan. (2009). Global sea level linked to global temperature. *Proceedings of the National Academy of Sciences* 106:21527-21532.



Planting Native Species • North Carolina Sea Grant



Updated by Michael Liffmann, Judy Pederson, Nancy Balcom  
Original by Michael Liffmann

# Regional and National Networks

*How do we work together?*

“One of the strengths of National Sea Grant College Program (NSGCP) lies in its ability to plan, organize, and deliver programs as a coordinated network, especially by its extension program. Regional programs, subject-based programs, and the sharing of talent and information across programs and between people make the extension program more than the sum of its parts.”

— *A Mandate to Engage Coastal Users, 2000*

Much of Sea Grant Extension’s (SGE’s) success may be attributed to its commitment to networking and inter-institutional cooperation. In an era that has been characterized by rapid change, more demands from stakeholders and shrinking budgets, SGE has constantly sought ways to share resources and advance as a community or network of SGE programs. And although SGE programs are all different because of geography and culture, organization and

size, as well as funding and staff capabilities, the model of collaborative problem solving has been an absolute key to success. Sea Grant Extension works tirelessly to engage and build linkages with others and among ourselves. After 40 years of service, SGE can point to this achievement as one that has given it an outstanding reputation, made us strong, and of which Sea Grant can be extremely proud.

## *Informal Links and Talent-Sharing*

“... (Sea Grant’s) marine extension network is an army of colleagues.”

— *Director William Q. Wick*

*Oregon Sea Grant College Program, 1985*

Sea Grant Extension still relies primarily on ad hoc networking arrangements, where indi-



viduals engage in one-on-one or small group information exchanges. Predictably, some of these exchanges have led to the establishment of informal networks that we now commonly refer to as communities of practice. In a community of practice, individuals sharing concerns or great interest in a topic interact regularly to build their own understanding and expertise (Wegner, et al, Cultivating Communities of Practice, 2006).

One example of a relatively new community of practice is the Sea Grant Climate Network. Here, nearly 100 extension, education and science-communication professionals work to build their capacity to provide practical assistance and education programming in climate adaptation to their coastal communities. In the Gulf of Mexico region, SGE and other outreach and education experts from partner organizations have joined informally to collaborate on addressing community preparedness issues as they relate to coastal hazards and sea level rise.

Sea Grant Extension fisheries, aquaculture, seafood safety, policy and business development specialists from throughout the network have also organized and are learning more about community supported fisheries and direct marketing. By gaining knowledge in these fields, they can help constituents develop innovative business models to better connect with local markets, generate additional revenues and help sustain the industry. In another instance, the challenges associated with changes in coastal access have brought a number of Sea Grant coastal community development specialists and partner organizations together to address working waterfront and coastal access issues.

In addition to informal networking on a topical basis, SGE programs often call on the expertise of peers from other states to help address specific issues. Extension professionals have remarkable backgrounds and are experienced in fields ranging from aquaculture, beaches







and coastal tourism to harmful algal blooms or pathogenic bacteria, weather, and zebra mussels and marine invasions. Typically, talent sharing simply involves an agreement to work together on specific projects. In most instances, the Sea Grant programs seeking the talent will provide the funds needed for an individual's time and travel expenses.

For example, Alaska SGE fisheries specialists, experienced in community response and recovery aspects since the Exxon Valdez oil spill event, were called on by their Gulf of Mexico counterparts following the Deepwater Horizon incident in 2010. In the northeast, Sea Grant programs collaborate on sharing information on ways to prevent new marine invasions, develop programs for divers and citizen scientists, and contribute to a regional website.

Coastal and marine spatial planning experts from Rhode Island have shared their knowledge concerning offshore uses, conflicts and environmental impacts with other Sea Grant programs along the east and west coasts and Pacific Islands. Illinois-Indiana Sea Grant and other Great Lakes programs are lending

their expertise to other programs to educate constituents about proper disposal of unwanted medicines to help reduce nonpoint source water pollution. For a number of years, Connecticut Sea Grant land use specialists have been sharing their skills with SGE peers and policy makers nationwide. They provide information, technology and technical support to engage municipal officials the protection and enhancement of water quality.

Sea Grant Extension's talent-sharing has not been limited to exchanges within the 33 programs. Over the years, many individuals have taken advantage of opportunities to spend anywhere from six months to two years at the National Sea Grant Office (NSGO). 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 Professors, these arrangements can bring expertise from one region to another for both applied projects and exten-

sion education of longer duration. Networking on a larger scale has also helped connect many of our local stakeholders with those of other states, often blurring state lines and enabling SGE to address more effectively issues of regional and national significance. In some cases, individuals from government agencies spend weeks to months at a Sea Grant Office to gain experience and share information to the benefit of both programs. Such ties persist long after the sabbatical.

The extension programs have also used other, typically soft money, mechanisms to develop regional and national capacity and to share talent through bi-state agents, regional and subject-matter specialists and at least one national SGE specialist. The bi-state arrangements involved omnibus funding in California-Oregon, Wisconsin-Indiana, and the Mississippi-Alabama and Illinois-Indiana Sea Grant consortia. A regional specialist is located in the Great Lakes; a climate specialist serves North and South Carolina; and a specialist at NOAA's National Severe Storms Laboratory

focuses attention on total water levels resulting from tropical storms. A national ports and harbors specialist supported the work of similar specialists in the network.

Some SGE programs have also benefited from NOAA-based funding that supports coastal storms outreach programming in the Great Lakes, Gulf of Mexico and Pacific Islands regions. The Great Lakes SGE programs conduct regional climate education and outreach projects with NOAA funding from the Great Lakes Restoration Initiative.

It has been a successful formula. Collegiality has helped ensure that individual programs and regions can respond quickly and deliver cost-effective extension services. Together, ideas are moved into action and sustained effort.

"Sea Grant Extension programs are a successful model of community-based endeavors that respond to the needs of local stakeholders. Looking to the future, Sea Grant can extend this model to address community needs across local and regional boundaries." (Regional and National Sea Grant Extension Programming, 2000)

## Formal Networks

In addition to the informal linkages, SGE has regional networks along six geographic boundaries—Great Lakes, Pacific, Gulf of Mexico, Southeast, Mid-Atlantic and Northeast. These independent groups were first designed in the 1970s to respond to issues of regional concern, conduct educational programs, and offer training for SGE personnel. The chairpersons of these regional networks serve as ex officio members of the SGA Assembly's Executive Committee.



Community Supported Fisheries • New Hampshire Sea Grant

## Issue-Based Networking Success: *Fisheries Extension Network*

*The Fisheries Extension Network was established by agents and specialists funded by the National Sea Grant Fisheries Extension Enhancement (FEE) initiative. In 2000, Congress mandated that Sea Grant invest \$3.0 million to broaden fisheries extension programming to local, regional and national stakeholders. The FEE also sought to promote communication and collaboration among fishermen, fisheries managers, environmentalists and researchers for the resolution of fisheries issues.*

*Eighteen SGE specialists and agents were hired in the six geographic regions. In South Carolina, FEE funds enabled the program to obtain fisheries extension capabilities. The new specialist eventually became the southeast regional coordinator for the FEE Initiative and initiated a number of new regional and multi-state fisheries extension projects.*

*California Sea Grant hired two new fisheries extension agents with training in the social sciences, thereby adding relevant expertise to the capabilities of California Sea Grant that had not previously existed in the program. Similarly, Maryland and Alaska Sea Grant programs added social science expertise to their respective fisheries extension capabilities. Other Sea Grant programs, including Florida and Alaska, used the incremental funds to place agents in locations where a distinct need existed for fisheries extension capacity but where no such capacity existed before the FEE investment.*

*The Fisheries Extension Network organized a National Fisheries Extension Enhancement Workshop attended by more than 90 SGE fisheries specialists and expects to hold similar events periodically. The network maintains an active listserv forum that includes aquaculture extension and seafood safety specialists. Network leaders with Land Grant affiliations are helping to organize a Sustainable Marine Fisheries community of practice within eXtension, a web-based collaborative environment where content providers have the opportunity to exchange objective, research-based knowledge.*

*A 2008 review of the FEE initiative by a special panel of the Sea Grant Advisory Board concluded that the initiative had significantly increased extension capacity on a collective and national scale, and that the bottom-up projects, including the careful nurturing of the network, had increased the potential for meaningful impacts.*

*For a relatively small investment, the FEE initiative produced identifiable and significant impacts. For instance, Rhode Island's Eliminator Trawl won the 2007 World Wildlife Fund Smart Gear Award and will enable the harvest of underutilized haddock that is estimated to have a \$30 million impact for the industry. Lake Erie charter boat captains were taught marketing concepts that target women to add more of this under-represented audience to the industry's clientele base. In Alaska, 140 young fishermen gathered at summits to learn policy and business skills to help ensure the industry's continued success.*





Lake Erie Algal Bloom • Ohio Sea Grant

The simple premise for the geographic networks is that nearby states confront similar challenges, and SGE staff members work in relatively close proximity to each other, thus allowing for more interaction and pooling of resources. There is variability in the level of activity within each of the Sea Grant regions. Most regions meet face-to-face every year or two and carry out training for agents and specialists, discuss projects and current regional issues, and plan joint activities. Other regions have minimal formal activities and plan and carry them out on an informal basis. Program leaders and specialists attending the network's two-biennial meetings — Sea Grant Week and the Sea Grant Extension Assembly — also meet to discuss regional topics.

But in recent years, the SGE network has been increasingly organizing more around issues and subject matter, called intellectual regions, as recommended in the 2000 report, *Regional and National Sea Grant Extension Programming*. In effect, the work undertaken by the Great Lakes programs in the 1990s to address the introduction, spread, impacts, and control of nonindig-

enous and invasive aquatic nuisance species began as a geographic network that rapidly evolved into an issue-based one that now involves just about every Sea Grant program.

With initial funding from the NSGO, the Northeast Sea Grant programs developed two regional ocean science initiatives with the goal of coordinating regional research and outreach. A newly formed Northeast Sea Grant Consortium funded more than \$1.8 million dollars of regional research and outreach projects, including leveraged funds, to address technical, environmental and social science issues relevant to the North Atlantic.

It is critical that the formal networks amass enough human and financial resources to have an impact on an issue beyond what any informal or regional group can do. The individual networks require a relatively high level of commitment on the members' part and a mindset focused on the greater good. Ultimately, the member programs share responsibility for its success or failure.



## *Issue-Based Networking Success: Sustainable Coastal Communities Development*

*Undertaken in 2001 in recognition of the growth and development along the nation's coasts, the Coastal Community Development (CCD) initiative may be the single largest influence on coastal communities and resources. Its mission is to provide coastal user groups and decision makers with the knowledge and tools needed to make sound economic development, sustainable land use and coastal resource decisions. Each Sea Grant program receives \$50,000 per year from the NSGO to build CCD outreach capacity.*

*Agents and specialists involved in CCD work established Sea Grant's Sustainable Coastal Community Development (SCCD) network in 2005. Its 150 members are organized into geographic regions, committees, and by subject-matter interests. The network communicates via listservs and an online website, sharing information, and posting discussion questions, documents, pictures, blogs and other resources. The network also meets annually, organizes training for its members, and has been at the forefront of issues such as sustainable development, working waterfronts and coastal access, tourism development, climate adaptation, water resources and land use planning.*

*Network members in Virginia and Maine Sea Grant have hosted national symposia to help identify local solutions to water access loss and explore public-private partnership opportunities. Several SCCD network specialists are involved in related community harbor planning and development, policy and planning assistance to local governments for waterfront revitalization, and improvements to waterfronts for public access to enhance economic opportunities.*

*Several Sea Grant land use planners work with data providers and leading researchers to initiate the development of a consistent land use and land cover data set for the nation's coastal watersheds. Others are applying geospatial technologies in coastal management, urban and regional planning and environmental assessment. Some are exploring how smart growth approaches can help waterfront communities plan for and address hazard resiliency concerns and the likely impacts of climate change. Others work with local communities and state agencies to gather data on non-point sources of pollution to assist decision makers in areas where improvements are needed.*

*SCCD experts also address water issues, notably quality, supply and stormwater management. California Sea Grant, for instance, works with planners and emergency managers on structural stormwater issues. Delaware, New Hampshire and South Carolina Sea Grant partnered with others to publish guides on managing stormwater and protecting water resources. Findings by Michigan Sea Grant watershed researchers resulted in cost-effective planning tools and outreach materials for the coastal village of Spring Lake. Illinois-Indiana Sea Grant helped develop Water 2050, the Northeast Illinois Regional Water Supply/Demand Plan projecting how water demand will grow in the region over the next half-century. Minnesota Sea Grant helped facilitate the creation of the first-ever statewide framework for sustainable water management.*

*In 2006, a special panel of the Sea Grant Advisory Board (SGAB) reviewed the CCD initiative. The SGAB noted that additional investments from the individual Sea Grant programs and other sources had enabled CCD efforts to expand considerably after its 2001 inception and produced excellent results. At the time, more than 90 SGE professionals and specialists addressed critical coastal community development issues.*

## Issue-Based Networking Success: *Seafood HACCP Alliance for Education and Training*

*The Seafood Hazards Analysis Critical Control Points (HACCP) Alliance remains the primary training and educational program for seafood processing and importing entities in the nation. Composed of numerous public and private sector partners, the alliance began in 1994 to support a national effort focused on applying the principles of HACCP to the safe processing of seafood. In 1998, HACCP received the “National Performance Review Hammer Award” from then Vice President Al Gore. The award was given to “partnerships that make a significant contribution in improving the way Federal agencies accomplish their responsibilities.” The alliance also received the USDA Secretary’s Honor Award in June 1999.*

*Leadership for the alliance has been anchored in Florida Sea Grant, and seven other SGE programs participate — California, Virginia, Louisiana, New York, Maryland, Delaware and Rhode Island. Drawing on feedback from instructors with years of seafood HACCP training experience, the alliance significantly updated and revised the program. In 2011, the new curriculum was issued to 5,400 seafood professionals nationwide, and formal certifications of HACCP training were awarded to 1,700 individuals from the seafood industry.*

## Summary

Sea Grant Extension is firmly committed to inter-program cooperation, and our diverse programs are linked in many ways. Most notably, SGE professionals have excelled at setting up small, informal networks that involve collaborating with peers from other programs to solve distinct problems. The SGE

professionals also have the opportunity to participate in formal networks designed to address regional and national concerns. As a national program, the SGE network has become a formidable resource to help meet our country’s coastal environmental and economic needs.

Jim Brennan Leads Coastal Managers on Shoreline Regulations • Washington Sea Grant





## References

Miller, Brian et al. (2000). Regional and National Sea Grant Extension Programming, Oregon Sea Grant College Program, Corvallis, OR.

Miloy, John. (1983). Creating the College of the Sea: The Origin of the Sea Grant Program, Texas A&M University Sea Grant College Program, College Station, TX.

National Sea Grant College Program. (2001). Fundamentals of a Sea Grant Extension Program, Cornell Cooperative Extension, Ithaca, NY.

The National Sea Grant Extension Review Panel, NOAA Sea Grant. (2000). A Mandate to Engage Coastal Users, Oregon Sea Grant College Program, Corvallis, OR.

NOAA Sea Grant. (2004). Sea Grant in the New Century, Department of Commerce, National Oceanic and Atmospheric Administration, Office of Oceanic and Atmospheric Research, Silver Spring, MD.

Panshin, Daniel A. (1973). Introductory to Marine Advisory Services, Office of Sea Grant, National Oceanic and Atmospheric Administration, Washington, DC.

University of North Carolina Sea Grant College Program. (1992). Sea Grant Marine Advisory Service: The Nation's Coastal Technology Transfer Program for the 21st Century, North Carolina State University, Raleigh, NC.

Wenger, E., McDermott, R., and Snyder, W.M. (2002). Cultivating Communities of Practice, Harvard Business School Press, Boston, MA.







Updated By Laura Biggs, Katherine Bunting-Howarth,  
Paul C. Focazio and Pat Kight  
Original by Bruce DeYoung

# Technology

*How does information technology impact our programming?*

Through the years, technology has helped Sea Grant staff stay connected with people and speed the delivery of critical information. As social and information technology continues to evolve, it brings new challenges for extension, as well as new opportunities to involve stakeholders and generate high-impact programs. Sea Grant's outreach and extension enabled by technology is best characterized as knowledge that can be applied, multiplied and trusted by stakeholders for its accuracy and timeliness.

## Technology Trends

Americans are using more communication technologies, and with higher frequency, than ever before. The first Sea Grant Extension (SGE) professionals used corded telephones, "snail mail" and reams of paper for flyers. Times have changed. According to the Pew Internet and American Life Project, in 2012, 85 percent of

American adults use the internet. They connect to it via computers (desktop and laptop, mobile phones and tablets). They store information in "clouds." Other statistics from Pew for 2011 include:

- Twenty percent of Americans use the internet as their primary source of news and information, second only to television (41 percent) and well ahead of newspapers (14 percent), magazines (14 percent) and radio.
- Among those who use the internet as a primary source of scientific information, a quarter of adult smartphone users say they go online from their phones more often than from a computer.
- Eighty-seven percent of Americans use the internet as a research tool, and most of them would turn first to the internet if they needed information on a specific topic; only 12 percent would use a library.

The implication is clear: to communicate effectively with Sea Grant research, education and extension stakeholders, we must use the communication and information tools they prefer. The technology is changing rapidly and will continue to change. As has always been the case, Sea Grant must be where the people are, and today, many people are online.

## ***Outreach and Extension Strategies for Utilizing Technology***

An effective communication strategy begins with effective planning and integration of technologies. In the past, that might have meant laying out strategies for deciding when to issue a news release, a mailing, or an in-house newsletter, flyer or fact sheet. Today, SGE professionals need to expand their thinking to consider the full range of modern communication tools, from email and text alerts to blogs, social websites (such as Facebook and Twitter), e-newsletters, mobile websites, and smartphone apps. Advances in technology can rapidly outpace even the tech savvy. To stay updated on current topics in the communication technology, do not be shy about relying

on your program's communication staff or university faculty (or even university students). The internet itself has a wealth of information including technology tutorials and videos. Though the use of many of these technologies requires some level of know-how, the purchasing of pricey equipment or software is not always necessary. The key to remember is that these technologies facilitate discussion, often with a more broad-based attraction. They have the ability to allow the recipients to be more active participants in the creation and development of the content, which can generate and reinforce stakeholder involvement.

Sensitivity is also needed in the judicious use of emerging digital technology in outreach programming. Although dwindling, some segments of our coastal audience do not yet have continuous internet access. Depending on your stakeholder habits and preference, you may choose to use a range of media to ensure no one is left out of the educational communication loop. Make it easy for the public to access your publications in either hardcopy or online versions. No matter how sophisticated information technology becomes, the personal connection is still necessary.





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## ***Applying What You Already Know to Social Media***

While the methods by which Sea Grant's efforts are extended continue to evolve (signifying the 'how'), the reason for doing so (signifying the 'why') remains the same. As Oregon Sea Grant points out on its social media repository webpage, the key is to stay current with the inventive, often ever-changing ways our users seek out information, whether that be via printed bulletins, newsletters (print or electronic), radio spots, film, the web or platforms like Facebook, Twitter, YouTube, blogs and news feeds. This is because communicating our successes and extending research requires us to investigate and appeal to the multiple ways that humans learn and express themselves –

including written, spoken, gestural, symbolic, electronic and digital.

Twitter, for example, provides an avenue to offer succinct news bits, links and pictures. It is one in a long line of services to provide such an experience and is likely to pass the torch along to another technology at some point. The method by which we can connect with partners and reach new audiences, though – by passing along (retweeting) their content and thanking these followers for doing the same – is a timeless one. The upside of using most social media platforms is that they facilitate discussion, often with a more broad-based attraction, and allow readers, listeners and viewers to participate in the creation and development of the content, creating a more genuine, shared experience.

For an extension agent, it is important to examine how your stakeholder group could best receive the information you would like to impart – maybe it is a face-to-face, traditional-type meeting in one situation and a blog or video series in another. Remember to choose what works best for your audience and activity.

## ***Face-to-face Alternatives***

As all organizations are pressured to become more efficient and do more with less, technology can provide low-cost solutions to some problems. For instance, savings can be made by reducing travel costs to face-to-face meetings through using internet services that allow for video conferencing, such as Skype, G-Chat and Adobe Connect. Blogs and Wikis can also be used to exchange information and ideas from remote locations when individual travel is too costly.



For example, information presented and developed in the biennial Sea Grant Week work sessions and discussions by guest speakers holds value for the entire network. Starting in 2010, a group of Sea Grant Communicators volunteered to report on the entire week in words, photos and web-friendly versions of meeting presentations, via a blog set up for the purpose. Nine communicators and educators took part in the 2010 effort, posting updates of each session in near real time. Presentations were solicited from speakers, converted to web-friendly slideshows via the free Slideshare.com service, and added later. The blog proved popular and received many favorable comments, as well as serving as an archive for the meeting.

## **Alternatives to Publications**

In addition, publishing hard copy documents can be costly in terms of dollars and staff time, and the delivery of the information may not be timely. Oregon Sea Grant's Extension ornamental fish veterinarian has a large international

following of veterinarians, breeders, and aquarium hobbyists. He started a newsletter, distributed to more than 600 people around the world by email, but found it hard to make time to compile, write and publish new issues. The solution? Sea Grant Communications set up a WordPress blog where the extension professional can write about new developments, upcoming meetings and courses as they occur and when he has time, including spare moments while traveling. Using the blog to write posts rather than planning and creating an entire newsletter freed up more time for the extension professional, while the hundreds of subscribers receive relevant news when it is fresh and timely.

## **Internet for Business Development**

Technology can also be used to help stakeholders connect to potential customers, such as helping the seafood industry enhance profit-



ability and connect with consumers. Sea Grant programs in Florida, Louisiana, Alabama, South Carolina and Texas are involved in Market-Maker, an interactive, web-based portal that promotes food products all over the country.

With Sea Grant's support, this resource is now helping all sectors of the seafood industry identify new markets and connect with consumers to enhance profitability during tough economic times. When South Carolina Sea Grant and partners launched MarketMaker in the state, more than 50 individual commercial fishermen and seafood and aquaculture businesses began promoting local seafood products.

South Carolina MarketMaker won the 2011 National Food MarketMaker Innovation Award from Farm Credit for developing the national seafood component of this online resource. In 2011, just after the debut of the Alabama MarketMaker website, the Gulf States Marine Fisheries Commission awarded a grant to fund an Alabama MarketMaker outreach coordinator position. This coordinator works through

Mississippi-Alabama Sea Grant and is available to answer questions and to help ensure that seafood businesses are successful in joining the site.

## ***Technology for Efficient Information Transfer***

Mobile devices and internet-based technology are popular partially because it makes sharing information easier. With funding from North Carolina Sea Grant, a fishery specialist and a programmer designed a pilot project called RecText, to test their electronic reporting method for recreational angler catches. Initially, six charter boat captains used cell phones to text their fishing reports to an online database using Twitter. Data collected through RecText may contribute valuable information to state and federal resource managers about the health of game fish populations. Maryland and National Marine Fisheries Service officials are using RecText by testing operational adaptations of the system.





The data collected by Sea Grant and its partners, along with the modeling and other research accomplished in our geographic programming areas, enables extension programming to be built alongside other research and policy tools using the latest technology. For example, conditions on coastal waters—in this case, the St. Lawrence River—can alter dramatically due to weather changes, draw down on the water management system, or pooling and ponding. Because of a project combining the talents of New York Sea Grant, Great Lakes Observing System and the Great Lakes Environmental Research Laboratory, recreational boaters can now plan and adjust their travel on the St. Lawrence River using a new real-time and future forecasting tool. Users can go to a website, identify their boating location, check on current and future conditions and sign up for email or text alerts.

## ***Training Yourself and Your Stakeholders***

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. New ideas on the application of technology in outreach can be harvested from business, industry and governmental sources. It is important to be a self-activated learner, continually gaining insights and educational experiences available from a diversity of organizations.

Training your stakeholders in the use of these technologies may also be appropriate and important. However, design your digital technology outreach projects to avoid 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.”

## Looking to the Future

At its best, new technologies invite immediate response and conversation among all parties. At its worst, it can produce arguments, disputes and misinformation. Considering in advance the tools and practices that can help keep such conversations on track and advance the program mission is an essential part of developing a communication technology strategy.

As our extension training has taught us, providing information to the public is often not enough to make a high impact. The job of an effective extension agent is ultimately to create a change in behavior. Providing meaningful information in a readily accessible platform is one way to bring stakeholders closer to making the change. What works today may not work tomorrow. During the life of this document, specific technologies mentioned here likely will be supplanted by others. More important is to develop strategies that allow rapid assessment of new tools and whether they meet your programming needs.









Updated by Katherine E. Bunting-Howarth  
Original by Bruce Wilkins and Marion Clarke

# Maximizing Our Efforts

## *How do we find the time?*

A common cry of extension professionals is, “I do not have enough time.” In fact, we all have the same amount of time and have enough time to do virtually anything — not everything, but any single thing. The primary problem is really failure to do the things we identify as important. Our goal in this chapter is to review some ways that time is lost and to suggest means of recapturing some of that time. You may further benefit by reading and practicing strategies prescribed in the voluminous literature on time management. This is in the hope that you can avoid or be better prepared to deal with multiple demands on your time and the pressures they cause.

## **Time Lost and Found Again**

### **Interruptions**

Time management experts may identify frequent emails, phone calls and drop-in visitors

as interruptions because they result in time lost. But it is those very interruptions with person-to-person contacts that are essential to the success of your extension program. That does not mean that interruptions cannot be reduced, but their demise would signal a weak and ineffective program. How to reduce them? Consider using 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, an article for the web, Facebook or Twitter, or a classic fact sheet on that topic can help reduce the time needed to respond to interruptions. Consider asking your communications team to help you find or develop the appropriate medium for your message. A fact sheet or website for the information will permit others, such as an assistant, to handle routine requests, meaning your time is freed for more specialized or detailed questions.



An impressive example of this approach was Rhode Island Sea Grant Extension's solution to the numerous requests 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 lets anyone in Rhode Island and other states help students learn how to get information. It also does a better job of educating students, rather than feeding them facts, than we might do by answering individual requests.

### **Technological Distractions**

Email and other forms of electronic and mobile communication make extension professionals more accessible than ever. Although email can be a time saver, it can also be a source of distraction as the sights, sounds and symbols that tell us "You Have Mail" echo in the background. There are ways to prevent email from becoming a time drain. These include scheduling

times to check your email and treating it as you would any other task or meeting. Your email box may also appear overwhelmingly full as the newsletters and announcements to which you subscribe pile up. Use the technology and create folders for emails from specific listservs or other mass mailing senders. This practice can keep your inbox from becoming unwieldy and allow you to schedule time to read through the contents.

### **Answering All Questions**

Many extension professionals seem to think they are responsible for providing the answer to any question asked of them. It is clear we have neither the time nor the expertise to answer all questions.

Suppose the caller, a commercial fisherman, wishes to know market prices for flounder. For you, an extension professional, a response, not an answer, may be most appropriate. The question might reflect a problem needing 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 website or phone number and how to use it involves us in our educational mode. We help the person learn to solve the problem rather than solving it for him or her. Other approaches to solving the real problem behind the question might be developed by creative extension staff. In one case, a daily newspaper was persuaded to carry such prices on a regular basis. Such creativity is impaired if time is taken with providing bits of information, such as today's price.

Here is 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 will come back to you." While this is one way to develop our audience's confidence in us, we are better used as educators, not simply as a source of facts.

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

### **Doing It All Ourselves**

Skilled professionals ensure that the tasks are kept to a minimum not by avoiding them because then you are not needed, but accomplishing the task by giving it to another person competent to resolve the problem.

Perhaps you have known two staff persons,

each of whom gets the same number of requests, but at some point one has 20 tasks needing responses while the other has only one or two. The difference often is the rapid rate at which one of the persons gets rid of the tasks. For example, one SGE professional might respond at once to simple inquiries. But some other ways to respond include developing form letters or paragraphs for common inquiries, checking off items done each day from a check list, or reading only the material you need to know.

Giving the requests to someone else by sharing or delegating jobs is a skill effective people use. Extension professionals often take on a task that others can capably perform. 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 to do the job well the first time. But the potential savings on your time over an extended period can be substantial.

### **Larger Tasks**

What about larger tasks or assignments that you are asked to undertake? First, check to see if those tasks will fit within your previously planned priorities. Without clarity in priorities, it is not accurate to say, "I cannot." Before responding to the request, it is important to determine how significant 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 and needs to be considered in your decision. By the same token, a leader requesting you assume a task has the



responsibility of clarifying its importance and of reaching a mutual understanding of what other tasks will not be done because of this new assignment.

## Meetings

Many identify meetings as a big time waster and they can be, so try to keep planned meetings to a minimum. On the other hand, well-planned and organized meetings with clear goals and objectives are one of the best ways to achieve certain ends, such as helping you build your team, ensuring major concerns are raised and answered at appropriate intervals, and clarifying that you and your support staff have similar understandings on important points.

Current technology, email, shared electronic calendars and other information sharing techniques can reduce meeting lengths or eliminate that reason for holding a meeting. If staff must travel to attend meetings, it becomes critical that the meetings are well-planned and executed to use resources wisely. Make sure

the meetings you hold are really necessary and the best way to do a job.

Wisely using conference calls, email, video conferencing web sites, such as SharePoint or Google Docs, and webinars can help ensure that less personal time is involved in attending meetings through either reducing travel time or by providing other mechanisms to work together on a project. But face-to-face, in-person meetings still are the best way to guarantee that all participants receive the same message or to gain buy-in to certain changes being considered. When scheduling an in-person or virtual meeting, just be sure you consider:

- Costs of holding the meeting.
- Goals of the meeting.
- Pros and cons of the various media available to conduct the meeting.

You often get the best results when the potential audience has helped to plan and execute the meeting. Be sure to include some agenda items suggested by those not directly planning the meeting. Often those people have great



ideas. When people know your meetings will follow a planned schedule closely by beginning and ending on time, they will move along more quickly.

### **Relationships with Stakeholders**

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

Letting a program fly is difficult. Many times, when we work with partners to create programs, events or organizations, we develop strong relationships. Reducing the time and effort that you spend on the program may therefore lead to stress and worry. When facilitating the creation of a new program, we develop a sense of ownership in the program and a desire to ensure its success. Additionally, a program may become politically popular and by walking away, we may be concerned that the action will lead to negative repercussions for Sea Grant. Designing an exit strategy BEFORE undertaking a new programming endeavor can ease these concerns as you will have planned for the man-

ner, timing and circumstances under which you reduce your time and energy commitment to a program.

### **Care and Feeding of Committees**

Most of us work with a number of committees that help us better advance our programs toward desired goals. As with 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 longer in the community than you do. If so, your work with such groups can help others learn to employ group dynamics successfully, a great benefit to your stakeholders for many years.

Consider some rotation of the terms of any such committee members and have a clear policy about the roles a committee is being asked to play. For example, are they advisors or decision makers? Stipulating the length of appointment as an advisor can be helpful and may become valuable if the need to shorten the length of an advisor's tenure becomes evident.

Choosing members for your committee is key to generating an effective one. You want people who will get things done and who are respected in their community. It is okay to ask busy people to serve, but be clear concerning the time commitment you seek. You may suggest members for the group, but consider having a program leader or someone higher in the organization name the members. That can give the appointment more prestige and increase the incentive for someone to be involved.

Keep in mind that busy, effective people who will usually best serve your committee expect



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to be actively involved in influencing the program. Think of ways they can help plan and implement meetings and use them to introduce guests at appropriate public meetings.

## Plan Ahead

As with most organizations, Sea Grant Extension (SGE) has deadlines, many of them known well in advance. Most of us prepare proposals with a given deadline or prepare an annual report due sometime after the end of the fiscal or program year. You will need to provide information about your activities and impacts for these reports or for presentations made during scheduled program assessment and program 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 on your computer, you have the foundation for your annual report and can easily provide information on your accomplishments. Even if your program does not require monthly reports, monthly summaries will be useful to you in compiling your accomplishments and activities for any request

for your program activities. And our experience tells us that those at higher echelons will be pleased you can provide such information!

Setting a personal deadline some weeks before the due date can ease time pressure. You do not need to await someone else's determination of a deadline to begin drafting the document. The draft can be written when most convenient over a several-month period rather than at the last moment. This reduces conflict with other high-priority tasks and, because of the added time available for reflecting and for gaining needed input, can enhance the end product. Having materials requested sent out in a timely fashion can reflect positively on your individual or program performance.

## Summary

Time-saving strategies used by SGE include:

- Enabling others to do portions of our work.
- Responding but not answering all questions.
- Not assuming tasks others should do.
- Doing tasks expeditiously.
- Knowing our priorities.
- Anticipating time demands.

These approaches can help others grow, enable each of us to get the important work done, and reduce some of the pressures on us in this busy, varied and changing work that we do.





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