

Safe and Sustainable Seafood Supply

Focus Team Report 2013

The purpose of this Focus Team report is to view the entirety of the Sea Grant Network and its progress towards the 2009-2013 National Strategic Plan (Plan) and its national impact. Much of this report derives from an analysis of “impact statements” (impacts) submitted by each Sea Grant (SG) Program via NOAA Sea Grant's Planning, Implementation, and Evaluation Resources (PIER) system. These impacts describe significant and verifiable economic, societal and/or environmental benefits of SG work in the Safe and Sustainable Seafood Supply (SSSS) Focus Area, according to the strategic plan.

This report is organized into four functions:

1. Assess SG's progress towards its strategic plan focus area goals and outcomes;
2. Identify national impacts that should be highlighted in communication products and reporting;
3. Pinpoint gaps to achieve the focus area goals outlined in the Plan;
4. Identify emerging issues and new opportunities for SG.

This report is based on compilation and analysis of impacts reported during the 2012 report year. Impacts were categorized into goals and strategies within the SSSS focus area using a predetermined set of criteria to ensure consistency. This compilation process serves several objectives across the sections of this report: In section 1, we assess progress toward plan, by analyzing the completeness with which SG is addressing the goals and associated strategies set forth in the Plan. In section 2 of the report, “national impacts” are identified and highlighted according to each goal. Sections 3 and 4 serve to guide future SG programming efforts by identifying gaps and assessing new opportunities.

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1. Assessment of SG's progress towards its strategic plan focus area goals and outcomes

Analysis of impacts reported during 2012 provides some insight into SG's progress, as identified in the Plan. Similar to previous report years, the majority of impacts pertain to goals 1 and 2, comprising 50% and 36% of reported impacts, respectively (see figure 1 below). Also following previous reports, goal 3 was least represented and accounted for 14% of impacts.

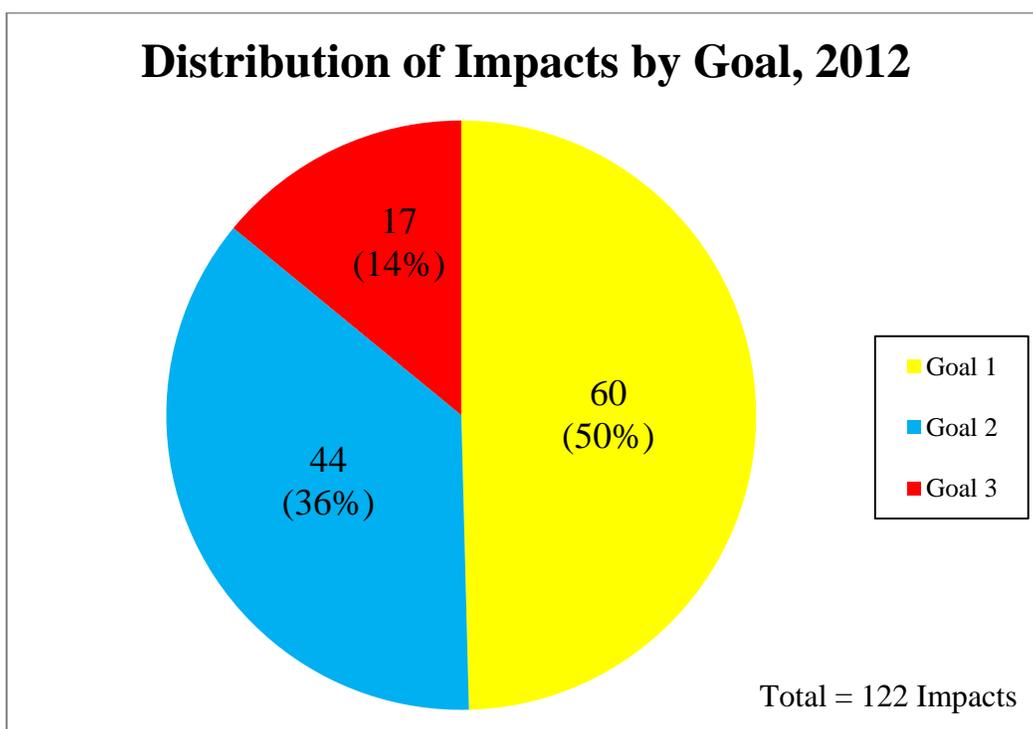


Figure 1. Distribution of 2012 impacts by goal

For this reporting year, there were a greater number of SSSS impacts that support seafood sustainability and supply and the health of our domestic seafood industry, and fewer impacts associated with the education and training component of the focus area. This distribution is consistent with previous reporting years.

Assessment of SG's progress toward plan directs us to further examine the distribution of impacts among individual strategies within each of the SSSS focus area goals. The following analyses provide further resolution and describe how impacts work toward the goals in the Plan. Under the Plan, SG supports the following SSSS national goals and strategies:

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Goal 1: A sustainable supply of safe seafood to meet public demand

1. **Strategy 1: Support sustainable ecosystem based fishery management.** Use Sea Grant’s research, extension, education, and communication capabilities to develop and disseminate essential knowledge about natural and human threats to the long-term viability of wild fish populations, to identify ways to minimize these threats, and to use ecosystem-based fisheries management and other innovative approaches to accomplish this.
2. **Strategy 2: Support viable and sustainable domestic aquaculture.** Conduct integrated research, education, and outreach activities to support a viable domestic aquaculture industry with acceptable environmental impacts, in ways that are consistent with national objectives, building on the leadership role Sea Grant plays in this area.
3. **Strategy 3: Collaborate with federal and state partners to enhance wild fisheries.** Work with NOAA’s National Marine Fisheries Program, other federal and state partners, and the seafood industry to enhance the management and productivity of wild fisheries.

Strategy 1: 32 impacts (53%)	Strategy 2: 20 impacts (33%)	Strategy 3: 8 impacts (13%)	Total Goal 1: 60 impacts
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Goal 1 accounted for the largest number of impacts submitted in 2012, likely reflecting the amount of SG programming in support of sustainable seafood. Further analysis indicates that the majority of goal 1 impacts are supported through strategy 1, fewer impacts attributed to Strategy 2, and fewer still to strategy 3. Taken together, these figures indicate that the majority of SG’s goal 1 programming produced impacts focused on wild fishery resources and aquaculture-produced seafood.

Goal 2: A healthy domestic seafood industry that harvests, produces, processes, and markets seafood responsibly and efficiently

1. **Strategy 1: Engage constituents to develop innovations in the use of natural resources.** Engage harvesters, recreational fisherman, producers and managers in the development of research and management innovations related to the condition, use, and conservation of the natural resources they depend on.
2. **Strategy 2: Support new technologies for the viability and sustainability of the domestic seafood industry.** Support research, development, and transfer of new technologies to keep the domestic seafood industry financially competitive and environmentally responsible.

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3. **Strategy 3: Engage with industry to increase seafood value.** Work with the seafood industry to develop new products and innovative marketing approaches to increase seafood availability and profitability.

Strategy 1: 7 impacts (16%)	Strategy 2: 18 impacts (41%)	Strategy 3: 19 impacts (43%)	Total Goal 1: 44 impacts
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Goal 2 accounted for fewer impacts than goal 1, but nonetheless illustrates SG’s focus on domestic seafood industry issues. Strategy analysis indicates a similar level of investment between strategies 2 and 3, with fewer impacts attributed to strategy 1. These figures suggest that SG’s work under goal 2 produces mostly impacts related to development of production and marketing technologies, and fewer having to do with engaging stakeholders on the use of natural resources.

Goal 3: Informed consumers who understand the importance of ecosystem health and sustainable harvesting practices to the future of our domestic fisheries, who appreciate the health benefits of seafood consumption, and who understand how to evaluate the safety of the seafood products they buy.

1. **Strategy 1: Provide seafood safety and quality training.** Enhance training and technical assistance programs related to the application of standards for safe domestic and imported seafood.
2. **Strategy 2: Conduct public seafood education and outreach.** Develop educational programs and materials that enhance the American public’s understanding of what is required to maintain sustainable domestic fisheries and to build the public’s awareness of differences in the quality, safety, and nutritional benefits of different seafood products so they will be informed advocates and consumers.
3. **Strategy 3: Use information technology to educate about seafood.** Work in close coordination with the National Marine Fisheries Service and other federal partners to develop information portals that give access to factual information on seafood safety.

Strategy 1: 8 impacts (47%)	Strategy 2: 6 impacts (35%)	Strategy 3: 3 impacts (18%)	Total Goal 1: 17 impacts
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Goal 3 accounted for the fewest number of impacts, but impacts were reported for each of the 3 strategies within this goal. When viewing the distribution of strategies among goal 3, we find that strategies 1 and 2 account for the majority of impacts, whereas strategy 3

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represents comparatively few. This indicates a greater number of impacts pertaining to training seafood producers and educating consumers, and fewer impacts related to the development of electronic media for communicating seafood safety.

The preceding figures and analyses indicate that SG is making progress toward its Plan. This is supported by the distribution of SG programming that addresses each strategy within the goals in the Plan. However, the degree of progress towards each strategy requires further evaluation, both quantitative and qualitative, relative to implementation plan targets. The following section further describes the nature of Sea Grant efforts within these goals.

2. Identification of national impacts that should be highlighted in communication products and reporting

The SSSS Focus Team members identified 58 “national impacts” from the 2012 submissions. Three working definitions (criteria) for “national impacts” were used:

1. An impact that currently has relevance on a national scale and shows that SG is a national program, and/or;
2. An impact that is mature and ready for expansion to a national scale and, if expanded, will clearly show that SG is addressing national needs, and/or;
3. An impact that demonstrates an appropriate level of innovation and novelty.

Given the above definitions, some of these were individual program impacts and some were network-wide efforts addressing similar topics (e.g., aquaculture, safety at sea, HACCP training). National impacts were categorized under each of the three goals as follows:

Goal 1: A sustainable supply of safe seafood to meet public demand

Strategy 1: Sea Grant supports sustainable ecosystem-based fishery management

1. SG’s research on thresher sharks, spiny lobster, and blue crab helped inform sustainable management decisions. Impacts 16718, 16647, 17061 from CA SG, MD SG.
2. SG helped the New England Fishery Management Council include social sciences in policy decisions. Impact 17785 from MIT SG.
3. SG research on the effect of geoduck aquaculture on eelgrass led to buffer zones for eelgrass meadows. Impact 17366 from WA SG.
4. SG research led to the development of an automated pelagic egg sampling technology that has been adopted by fishery managers in the US and internationally. Impact 16716 from CA SG.

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Strategy 2: Sea Grant supports viable and sustainable domestic aquaculture

5. SG developed an oyster spatfall model and used monitoring data to guide restoration efforts. Impact 16979 from MD SG.
6. SG research informed oyster management, helping Georgia shellfish growers expand their market. Impact 17287 from GA SG.
7. New Hampshire SG helped develop aquaculture site permitting process for oyster farmers. Impact 16583 from NH SG.
8. SG research aided the aquaculture industry by developing new procedures for non-lethal VHS testing and the removal of VHS pathogens from fish eggs. Impacts 18127, 16689 from WI SG, NY SG.
9. SG research aided the aquaculture industry through developments in multi-trophic aquaculture technologies, by adapting sea vegetable species for commercial grow out and raising awareness of aquacultured products. Impacts 16582, 17332, 17392, 16883, 17095 from NH SG, FL SG, CT SG, ME SG.
10. SG research developed protocol for Alewife aquaculture production and led to the discovery of a substitute for using horseshoe crab bait. Impacts 16730, 17163 from NH SG, DE SG.
11. SG funded the development of a biotoxin testing instrument to keep contaminated shellfish out of consumers' food supply. Impacts 17505, 17554 from WA SG.

Strategy 3: Sea Grant collaborates with federal and state partners to enhance wild fisheries

12. SG's project to restore habitat for coho salmon influenced policy on in-stream barrier removal. Impact 16472 from CA SG.
13. SG developed a more efficient bycatch reduction device for gulf shrimpers, boosting catch-per-unit-effort. Impact 17268 from TX SG.

Goal 2: A healthy domestic seafood industry that harvests, produces, processes, and markets seafood responsibly and efficiently

Strategy 1: Sea Grant engages constituents to develop innovations in the use of natural resources

1. SG supported the seafood industry through a quality assurance program. Impact 17284 from MD SG.
2. SG continues to provide vessel safety training for commercial fishermen, reducing loss of life at sea and economic costs from rescue operations. Impacts 17272, 17873 from WA SG, MS-AL SG.

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Strategy 2: Sea Grant supports new technologies for the viability and sustainability of the domestic seafood industry

3. SG supported research for economically viable and locally sourced fishmeal replacements, reduced feed and labor costs for abalone farmers, and helped draft a state plan for off-bottom oyster aquaculture. Impacts 14978, 16429, 16549, 16759 from CA SG, HI SG, LA SG.
4. SG researchers developed a GIS-based aquaculture siting tool to help seafood farmers identify profitable sites, 16681 WI SG
5. SG helped with cost reduction and marketing through business management software. Impact 16724 from NH SG.

Strategy 3: Sea Grant engages industry to increase seafood value

6. SG provided business assistance to seafood processors, and training to help tribal fishermen increase the value of their catch. Impacts 17971, 17277 from AK SG, WA SG.
7. SG provided expertise to help set up community supported fishery (CSF) and direct-marketing operations, and helped establish a brand and develop web-based marketing for local shrimpers. Impacts 16723, 17450, 16752, 16783 from NH SG, NC SG, LA SG.
8. SG conducted workshops to educate shrimp farmers on international markets, and influenced public perception of Lake Superior cisco fishery sustainability. Impacts 17767, 16573 from IL SG, MN SG.
9. SG helped establish “catch and cook” program to support local economies, educated the public on oyster flavors through a tasting panel and publications, and collaborated with a local TV network station to educate public about purchasing local seafood. Impacts 17929, 17816, 17644 from MI SG, VA SG, NC SG.
10. SG administered business development training to fishermen and local oyster growers, and distributed economic assistance via the Trade Adjustment Assistance (TAA) program. Impacts 17058, 17867, 17261, 17444 from ME SG, MS-AL SG, TX SG, NC SG.

Goal 3: Informed consumers who understand the importance of ecosystem health and sustainable harvesting practices to the future of our domestic fisheries, who appreciate the health benefits of seafood consumption, and who understand how to evaluate the safety of the seafood products they buy.

Strategy 1: Sea Grant provides seafood safety and quality training

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1. SG educated seafood processing and retail employees, provided HACCP and seafood safety training to businesses, and helped develop a video on seafood safety training. Impacts 17274, 17930, 17315, 17418, 17449, 17799 from HI SG, MI SG, FL SG, GA SG, NC SG, VA SG.
2. SG conducted research to reduce pathogen growth on value added seafood products. Impact 18131 from NYSG.

Strategy 2: Sea Grant conducts public seafood education and outreach

3. SG led and collaborated in campaigns to educate recreational fishers on control and mitigation of invasive species, and provided volunteer coordination and training for a program to monitor harmful algal blooms. Impacts 16671, 16883, 17387 from WI SG, WA SG.

Strategy 3: Sea Grant uses information technology to educate about seafood

4. SG trained K-12 educators to use aquaponics as a learning tool, and in a network-wide effort; SG launched a web tool to educate consumers about seafood consumption. Impacts 16672, 17146 from WI SG, DE SG.

3. Pinpointing SSSS Focus Area gaps to achieve the focus area goals outlined in the National Strategic Plan

In previous versions of this report, gaps identified in prior Focus Team reports were examined with respect to impacts reports in the current reporting year. This report follows the same convention, with the addition that we consider both impacts and accomplishments to better inform on current SG work in the gaps discussed below.

1. Educating consumers about seafood sustainability

A gap since the 2011 report, limited progress has been made in this area, though these results may be affected by the specificity of this gap. It is also important to note that reporting may not fully account for complimentary areas of programming that have significant components of consumer education (e.g., community supported fishery programs and direct-marketing efforts).

2. Partnering with NOAA and the U.S. Food and Drug Administration (FDA) on seafood and fisheries management issues

A gap since 2012, Sea Grant continues to provide HACCP and other seafood safety training to constituents in wholesale and retail trade. These efforts make up the majority of impacts

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associated in this area. New efforts to partner with the FDA and other parts of NOAA are limited; hence, this gap remains.

3. Catch shares

This was a new area in 2012, and the number of impacts and accomplishments addressing catch share issues reflects this. While further work to address this gap is needed, these projects indicate Sea Grant's acknowledgment of these issues as catch shares continue to affect constituents, communities, and markets.

4. Hatchery production issues

Declared a gap in 2012, PIER figures suggest that hatchery production issues have gained increasing attention in Sea Grant programming. A study of impacts associated with this gap indicates the hatchery issues remain critical to ensure our domestic seafood supply through aquaculture, stock enhancement, and restoration applications.

Cross-cutting Gaps

The following gaps indicate areas where issues under the SSSS focus area also fall under one or more of SG's other focus areas. These "cross-cutting" gaps are examples where SG programming could span multiple focus areas to address issues in a holistic manner.

5. Climate and Ocean acidification impacts

Climate and ocean acidification impacts have been a gap since 2011. This gap is shared with the Healthy Coastal Ecosystems (HCE) focus area, indicating that, while work is being done to address this gap from ecosystems and resources perspectives, both focus areas may benefit from increased integration of these efforts. This would occur with clear benefit to the resources, as impacts in this focus area examine the management impacts for aquaculture and capture fisheries.

6. Ecosystem-based management and ecosystems evaluation

A gap since 2012, most impacts apply to the HCE focus area. However, ecosystem-based management and evaluation is aligned with the goals and strategies in the SSSS focus area, and therefore remains a gap. Coordinating efforts to work toward this gap in both focus areas could offer significant benefits from increasing seafood sustainability to informing management or policy decisions.

7. Fishery infrastructure and working waterfronts

A gap since 2012, Sea Grant continues work in this area through the SSSS and Sustainable Coastal Development (SCD) focus areas. Commitment to infrastructure and working waterfronts is a clear area through which these focus areas can work together to ensure the viability and economic diversity of coastal communities.

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8. Coastal and marine spatial planning

Listed in 2012, this gap is also addressed through the SSSS and SCD focus areas, and became a Sea Grant priority via the National Ocean Policy. This gap remains an important area of cross-focus area coordination as development continues to place spatial pressures on coastal and marine resources.

New Gaps

In addition to assessing progress made in the preceding gaps, individuals on the Focus Team identified the following additional gap where SG stands to make a national contribution.

1. Fisheries information systems

There is a current revolution in the use of fisheries information systems, in which SG can play a significant role. The development and use of technologies, such as real-time data collection and electronic monitoring systems, are a chance for SG to play a role in research and application of these technologies. In addition, SG can reach out to ensure smooth transition to this new technology and keep communication lines open between constituents and managers.

4. Identification of emerging issues and new opportunities for Sea Grant

Individuals on the focus team identified several opportunities for Sea Grant to play a role in emerging issues in the SSSS focus area at a national level:

1. The graying of the fleet:

Sea Grant is in a unique position to address the increase in average age of fishers and fishery infrastructure. This phenomenon is commonly referred to as the “graying of the fleet.” There is a need for research and outreach to address what limits the entry of new intellectual and physical capital in our domestic fisheries.

2. Environmental and pollutant monitoring:

Many ecosystem services, upon which the seafood industry and coastal economies rely, are vulnerable to variable water quality, waterborne pathogens, and water chemistry. As such, these hard-to-detect, deleterious changes ultimately affect ecosystem productivity and economic health of coastal communities. There is a need to study and quantify these effects to develop tools and policies to address these effects on the seafood industry.