Illinois-Indiana Sea Grant

With a focus on southern Lake Michigan, Illinois-Indiana Sea Grant (IISG) serves a heavily populated coastline. Approximately 10 million people live in the region, drink the water, and fish, swim, and boat in the lake. IISG focuses programming in topics that align regional need with National Sea Grant priorities as follows.

Healthy Coastal Ecosystems	Resilient Communities and economies	Safe Sustainable Seafood Supply	Hazard Resilient Coastal Communities
45%	40%	10%	5%

About one-fourth of our annual $3.3 million budget comes from Sea Grant omnibus funding. Another quarter comes from a partnership with the U.S. EPA Great Lakes National Program Office (GLNPO). Through this partnership, IISG provides research and outreach to support Great Lakes communities using GLNPO data and research. The remaining 50 percent comes from outside grants and matching funds provided by universities.

IISG's strategic goals are identified and shaped with advice from the program's user advisory committee. This group, comprised of industry, conservation, community, and agency leaders in the two states, provides guidance throughout the strategic planning process. This helps position IISG and host institutions to assume a vital role in the science and practice of coastal restoration and management in our region. Our administrative advisory committee is comprised of administrators from the University of Illinois and Purdue University, which house the program, provide matching funds, and integrate IISG into their units. This group advises on policy considerations that affect the priorities and the program's long-term directions including involvement of partner institutions, sources of matching funds, and strategies for engaging scientists, and local, state, and federal partners. In addition, IISG specialists sit on over 100 boards and committees through which we are able to ensure our programming is relevant and responsive to stakeholder needs.

We engage stakeholders, partners, and collaborators in all of our formal project areas from the design phase to delivery and application. Our specialists work with over 300 national, state, local, NGO, industry, and international entities. In this review period, we led 22 regional and multi program projects, and founded the Great Lakes Social Science Network and the National Pharmaceuticals and Personal Care Products Working Group.

We have invested $2.3 million in 41 research projects that helped us contribute to scientific and technological advancement. We coordinated food web research in Lake Michigan for over six years and built cyberinfrastructure that allows for data sharing across agencies and facilitates research and management decisions. We have informed policy change in both Illinois and Indiana, improved local water quality, and enhanced the general public's literacy about critical challenges faced in the southern Lake Michigan region.

Project Partners

14	Federal Agencies
31	State Agencies
70	Local Agencies
47	Businesses
21	Schools
32	Universities
18	Sea Grant Programs

Safe Sustainable Seafood Supply Summary Report

Illinois-Indiana Sea Grant (IISG) programming in this focus area includes aquaculture marketing and fish consumption safety outreach.

Although aquaculture is a $1 billion industry in this country, the U.S. imports large amounts of farm-raised seafood. Illinois and Indiana's aquaculture industry cannot compete with low-priced imported processed seafood products. The states' potential to increase aquaculture profits lie with accessibility to major and niche markets in the region. IISG focuses the majority of our Safe Sustainable Seafood Supply efforts on building marketing tools and exploring new opportunities for producers to increase the aquaculture industry market share.

We also look for ways to ensure the safety of fish consumption by supporting efforts to improve accessibility and accuracy of fish advisories and by providing science-based resources to teachers.

IISG Contributions to Science and Technology

IISG has funded eight research projects to inform our aquaculture marketing and seafood consumption outreach initiatives. Our work has resulted in 12 impacts and 16 accomplishments, 14 of which are outlined in the supporting PIER documentation. Below are examples of how IISG has contributed to science and technology in this area.

Aquaculture Marketing

Kwamena Quagrainie, IISG aquaculture marketing specialist, has worked closely with the Indiana Soybean Alliance, the Indiana Aquaculture Association, Inc., and Purdue University Extension to be a driving force in the growth of aquaculture in Indiana and the region. Since 2005, Kwamena has held 40 workshops with over 1,200 participants. He has worked one-on-one, advising potential and ongoing producers, and engaged in numerous market studies. One of these studies revealed the impact of their efforts to support aquaculture in Indiana.

Through the efforts of IISG and its partners, farm sales of aquaculture products in Indiana reached about $15 million in 2013, a nearly fivefold increase from $3.5 million in 2005. Fish farming in Indiana supports 280 jobs, 169 directly in the aquaculture industry. It also generates $3.7 million in labor income and $19.5 million in added value. The industry output is valued at $23.6 million for a total value of $38 million with other supporting industries.

Just like other agricultural operations, many aquaculture practitioners do not have the resources, so depend on loans to finance their operations. Agricultural lending agencies in the region have not had aquaculture as part of their investment portfolios so most aquaculture operations are funded from private sources. Kwamena provides agricultural lending agencies with technical resources on aquaculture economics, costs, budgets, and other investment decision tools. Kwamena worked closely with banks and farms, providing information on the production economics and the market for the fish. As a result, First Farmers Bank & Trust has now funded three aquaculture operations in Indiana.

To support Kwamena's outreach program, IISG has funded research projects. For example, IISG supported a study that surveyed fish retailers and revealed consumers' willingness to pay for fresh-on-ice fish. With knowledge from the study in hand, Tipcco Fish Farm and RDM Shrimp secured retail space in Lafayette, Ind. to sell fresh-on-ice tilapia and shrimp. Tipcco produces about 150,000 pounds of tilapia/year and RDM is produces about 5,000 pounds of shrimp/year.

IISG also examined the determinants of shrimp imports from China, Vietnam, Thailand and Indonesia. Results from this study have been presented to farmers at various workshops. Producers learned that exchange rate, import prices, and tariff are affecting the U.S. shrimp industry. Now shrimp farmers are marketing their products as fresh (not frozen), local, and sustainably produced. This is attracting premiums and allowing farmers to compete with cheap frozen imported shrimp. Just a few years ago, pool side shrimp was sold at $6- $7/lb. Now, at indoor operations, they sell for $12 - $14/lb. Altogether, six Indiana shrimp farmers raise and sell about 20,000 lbs of shrimp in a year.

In another study, IISG funded research to investigate how much American consumers would be willing to pay for seafood products with a variety of safety and quality features. This research revealed that consumers would pay the most for seafood grown in the U.S. and more for imported seafood when safety practices are U.S.-certified. People are willing to pay between $5.41 and $10.65 per pound for shrimp from the U.S., depending on growing and safety testing methods used. In contrast, they will pay only $3.71 and $4.12 for Chinese and Taiwanese shrimp that passed rigorous safety screenings.

Fish Consumption Advisories

Fish consumption advisories for recreationally caught fish are nothing new in Indiana, where state environmental and health agencies have been monitoring the safety of consuming fish from local water bodies for more than 30 years. Typically, advisories were distributed in a small number of booklets that were difficult to find and even harder to use.

With funding from IISG, a Purdue University researcher, working with several state agencies, developed an online, real-time database that gives Hoosiers direct access to information on how much and how often recreational fish can be consumed safely. Angling Indiana visitors can use the database to find information in English or Spanish for specific counties and water bodies. Separate advisories also help pregnant or nursing women make safer choices in light of the risks contaminants pose to babies, during and after pregnancy, and young children.

In another IISG-funded project, a University of Notre Dame researcher found that salmon transfer high levels of contaminants to resident fish. In areas with spawning salmon, research found that fish, like brook trout and sculpin, had higher concentrations of toxic chemicals, such as PCBs, in their body tissues than where salmon are blocked by dams—high enough in some places to potentially merit state warnings against eating the fish. Contaminant levels were highest in Lake Michigan streams, where salmon are more abundant and have higher PCB levels than in other lakes. These findings may have important implications for state efforts to ensure food safety.

One of the most important conclusions from this study is that brook trout in certain streams may require a consumption advisory. States do not usually monitor brook trout, but testing may be necessary. The results could also complicate any future dam removal projects. Tearing down dams would restore the natural river flow and open new habitats. But it would allow salmon to spread contaminants to new environments.

This and other research was used by IISG educator Robin Goettel in teacher workshops at the Peggy Notebaert Nature Museum in Chicago. Robin and other Sea Grant educators conducted sessions to help teachers bring the issue of seafood safety to their classrooms. Through this project, Sea Grant presented the latest research findings on nutritional aspects of fish consumption, including health effects from consuming contaminants. The Sea Grant educators shared critical information from EPA and FDA fish advisories, as well as the latest outreach and education projects.

These day-long sessions were part of a larger initiative at the museum called the Science Teaching Network. The program goal is to create a collaborative learning environment where teachers work together to learn science content and develop unique, integrated science curricula using classroom and museum-based lessons.

PIER PRP Program Focus Area Report

Illinois-Indiana Sea Grant

Safe and Sustainable Seafood Supply

Program Focus Area: SAFE AND SUSTAINABLE SEAFOOD SUPPLY

Program Goals

1. An aquaculture industry in Illinois and Indiana that provides safe, sustainable seafood at affordable prices.
2. A network of resources available to support aquaculture producers, processes, and markets.
3. Residents of Illinois and Indiana understand how to select fish to feed their families.

JUMP TO REPORT SECTION

Full Text of Impacts
Program Performance Measures
Objectives

Impacts and Accomplishments toward Program Goals

1. **Program Goal: An aquaculture industry in Illinois and Indiana that provides safe, sustainable seafood at affordable prices.**
   Impact(s)
   - 18841 - Research informs new fish-on-ice enterprise in Indiana
   - 18839 - Aquaculture industry a boon to Indiana economy
   - 17768 - 13 new aquaculture businesses get off the ground
   - 16128 - Two new aquaculture businesses launch in Indiana
   - 16121 - Two new aquaponic businesses get off the ground
   - 16119 - Strategic planning lays the groundwork for growing Indiana aquaculture production and jobs
   - 7026 - Two new shrimp farms start up in Indiana

2. **Program Goal: A network of resources available to support aquaculture producers, processes, and markets.**
   Impact(s)
   - 17912 - Indiana aquaculture grows to $15 million and 280 jobs
   - 17767 - Farmers are getting top dollar for fresh shrimp
   - 17766 - Aquaculture farmers have a new financial resource
   - 16120 - IISG links Indiana producers with aquaculture markets, fostering $2 million in annual sales and three new jobs
   - 13839 - Kenya, Ghana develop baitfish and food fish businesses

   Accomplishment(s)
   - 17577 - Research helps aquaculture farmers enhance sales

3. **Program Goal: Residents of Illinois and Indiana understand how to select fish to feed their families.**
   Accomplishment(s)
   - 16138 - Indiana Residents Have Easy Access to Fish Consumption Advisories
   - 16137 - Aquaculture Research Finds Consumers Will Pay More for U.S. Seafood

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Full Text of Impacts and Accomplishments

18841 - Research informs new fish-on-ice enterprise in Indiana
Relevance: The fish market in the Midwest region is dominated by frozen products, both domestically produced and imported. Indiana's aquaculture industry is small and cannot compete with low-priced imported processed seafood products. The potential to increase local aquaculture production lies with accessibility to markets as well as niche opportunities.

Response: Illinois-Indiana Sea Grant surveyed fish retailers to understand consumers' willingness to pay for fresh-on-ice fish.

Results: With knowledge from the study in hand, Tipcco Fish Farm and RDM Shrimp are in the process of securing a retail space in Lafayette, IN to sell fresh-on-ice tilapia and shrimp. Tipcco is producing about 150,000 pounds of tilapia/year and RDM is producing about 5,000 pounds of shrimp/year.
RECAP: IISG consumer preference research helps two aquaculture businesses expand to sell fresh-on-

ice products. Back to Goals

18839 - Aquaculture industry a boon to Indiana economy
Relevance: As fish continue to be harvested from oceans and other water bodies at unsustainable rates, aquaculture's role in securing the future of food fish supplies grows ever more vital. Indiana is a great location for aquaculture industries due to its rich supply of raw materials for fish food and access to large markets. And industry trends show that the expansion of aquaculture supports economic development in a variety of sectors.

Response: Along with the Indiana Soybean Alliance and the Indiana Aquaculture Association, Illinois-Indiana Sea Grant-Purdue University Extension have been a driving force in the growth of aquaculture in Indiana. Since 2005, IISG's aquaculture marketing specialist has held 40 workshops with over 1,200 participants. He has worked one-on-one, advising potential and ongoing producers throughout the state, and engaged in numerous market studies.

Results: Research as revealed that farm sales of aquaculture products in Indiana reached about $15 million in 2013, a nearly fivefold increase over 2005. Fish farming in the state supports 280 jobs, 169 directly in the aquaculture industry. Aquaculture generates $3.7 million labor income and $19.5 million added value. The industry output is valued at $23.6 million for a total value of $38 million with other supporting industries. A $1.00 sale in the aquaculture industry results in additional local output of $0.61, and every new job in the industry results in an additional 0.66 job in the local economy. For a $1.00 increase in added value from the aquaculture industry, there is an additional $0.62 increase in added value in the local economy.
RECAP: Indiana aquaculture sales grow to $15 million and help support 280 jobs statewide.
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17912 - Indiana aquaculture grows to $15 million and 280 jobs
RELEVANCE: In oceans and other water bodies, fish are being harvested at unsustainable rates, making aquaculture critical to the future of fish as a food source. Indiana is a great location for aquaculture enterprise. The state is a rich source of corn and soybeans-- raw materials for aquaculture feed. Plus, fish farmers in Indiana have access to big city markets.

RESPONSE: Illinois-Indiana Sea Grant is one of several entities that has been committed to making aquaculture work in Indiana. The program's aquaculture marketing specialist holds workshops and works one-on-one with producers to help them establish business plans. He also works with local banks, engages in research, and has developed key partnerships to provide more resources for aquaculture operations.
RESULTS: In 2007, total farm sales value of aquaculture in Indiana was estimated to be $3.5 million. In 2012, it is estimated at over $15 million. Aquaculture now supports 280 jobs within the industry and other allied industries; 169 of them were employed directly in aquaculture positions. The industry generates $3.7 million worth of labor income and $1.9 million of added value.

RECAP: IISG has helped aquaculture sales in Indiana grow to $15 million, helping to support 280 jobs. Back to Goals

17768 - 13 new aquaculture businesses get off the ground
RELEVANCE: The U.S. imports about 83 percent of its seafood, but there are definite advantages to local fish production. Illinois and Indiana are great locations for aquaculture enterprise. The states are a rich source of corn and soybeans-- raw materials for aquaculture feed. Plus, fish farmers have access to big city markets.

RESPONSE: Every year, Illinois-Indiana Sea Grant holds aquaculture workshops to assist potential producers and help on-going operations, especially with business and marketing plans.

RESULTS: In 2012, a total of 13 new aquaculture businesses started up in Illinois and Indiana: five tilapia operations, four shrimp operations, and four aquaponic operations.

RECAP: As 13 new aquaculture operations got off the ground in Illinois and Indiana, IISG was there to help with business and marketing plans. Back to Goals

17767 - Farmers are getting top dollar for fresh shrimp
RELEVANCE: The U.S. imports about 90 percent of its seafood. The aquaculture industry in the Midwest is small and cannot compete with low-priced imported processed seafood products. The potential to increase production lies with accessibility to markets as well as niche opportunities. Illinois and Indiana have the comparative advantage to produce fish that can be sold live and fresh to ethnic markets.

RESPONSE: A study was conducted that examined the determinants of shrimp imports from China, Vietnam, Thailand and Indonesia. Results from this study have been presented to farmers at various workshops and they now understand that exchange rate, import prices, and tariff are affecting the US shrimp industry.

RESULTS: This information has helped shrimp farmers to ,arket their products as fresh (not frozen), local, and sustainably produced, which is attracting premiums and allowing farmers to compete with

cheap frozen imported shrimp. Just a few years ago, pool side shrimp was sold at $6- $7/lb. Now, at indoor operations, they sell for $12 - $14/lb. Altogether, six shrimp farmers raise and sell about 20,000 pounds of shrimp in a year.

RECAP: Smart marketing has boosted the fresh shrimp business in Illinois and Indiana. Back to Goals

17766 - Aquaculture farmers have a new financial resource
RELEVANCE: Just like other agricultural operations, many aquaculture practitioners do not have sufficient resources, so depend on banks to finance their operations. Agricultural lending agencies in the region have not have aquaculture as part of their investment portfolios so most aquaculture operations are funded from private sources.

RESPONSE: Agricultural lending agencies were provided resources on technical information on aquaculture, economics, costs/budgets, and other investment decision tools. Illinois-Indiana Sea Grant worked closely with the bank and the farms, providing information on production economics and the market for fish.

RESULTS: First Farmers Bank & Trust has now funded three aquaculture operations in Indiana.
RECAP: Aquaculture operations now have the backing of agricultural lending agencies and three producers have received loans. Back to Goals

17577 - Research helps aquaculture farmers enhance sales
The fish market in the Midwest region is dominated by frozen products, both domestically produced and imported. Two studies were conducted; (1) to examine the role demographic factors play in a fish retailer's provision of fresh-on-ice fish, and (2) how much more fish retailers are willing to pay for eight fresh-on-ice species that are grown in the Midwest, i.e., bluegill, carp, catfish, hybrid striped bass, largemouth bass, tilapia, trout, and yellow perch. Fish farmers now understand that fish retailers are willing to pay more for these species provided there are regular weekly supplies/deliveries.
RECAP: IISG conducted research helps fish farmers in Indiana identify marketing opportunities.
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16138 - Indiana Residents Have Easy Access to Fish Consumption Advisories
The good news is that Indiana has been issuing fish consumption advisories for recreationally caught fish for 3+ decades. The bad news is that the advisories come in 40-50 page booklets and only 10,000 copies are printed. Researcher Charles Santerre, Purdue University, has been working to make fish consumption information easily accessible to more people. To that end, he used Sea Grant Discovery Grant funds to build an online, real-time fish consumption database that can deliver specific information to specific users based on water body, population characteristics (e.g. pregnancy, age or weight), and language. Users will also have access to other information from Santerre's lab including fish cleaning and preparation guidelines to minimize contaminants, fish identification, and information about the risks and benefits of consuming fish. The public can access the database at http://fn.cfs.purdue.edu/prodaai/main.xml.
RECAP: A new database developed with Sea Grant discovery grant funds will allow Indiana fishers easy access to fish consumption information. Back to Goals

16137 - Aquaculture Research Finds Consumers Will Pay More for U.S. Seafood
Purdue University Ph.D. student, David Ortega, using Sea Grant discovery grant funds, found that consumers are willing to pay more for seafood from the U.S. and more for imported seafood where safety practices are U.S. certified. They are willing to pay, on average, $10.65/pound for shrimp with an enhanced food safety characteristic from the U.S. and $5.41/pound for shrimp grown in the U.S. using environmental friendly methods. Consumers are only willing to pay $3.71 for shrimp from China and $4.12/pound for shrimp from Thailand. A similar pattern emerged with respect to eliminating antibiotics. While consumers are wearier of imported seafood, the survey showed a willingness to pay $6.02/pound for Chinese tilapia certified by the U.S. government to meet certain safety standards and $4.43/pound for tilapia that is certified by a U.S third party. Consumers are not willing to pay more for tilapia certified by China.
RECAP: Purdue University Ph.D. student, David Ortega, using Sea Grant discovery grant funds, found that consumers are willing to pay more for seafood from the U.S. and more for imported seafood where safety practices are U.S. certified. Back to Goals

16128 - Two new aquaculture businesses launch in Indiana
RELEVANCE: Indiana is a great location for aquaculture enterprise. The state is a rich source of corn and soybeans-- raw materials for aquaculture feed. Plus, fish farmers in Indiana have access to big city markets.

RESPONSE: Each year, Illinois-Indiana Sea Grant holds workshops and hands-on training to introduce potential aquaculture producers to technical and practical aspects of the business. In addition, training is available to producers who are already engaged in aquaculture to enhance their production and the marketability of their products. The Sea Grant aquaculture specialist also provides one-on-one on-site guidance to producers.

RESULTS: Two new aquaculture businesses got started in Indiana: Jeff and Lillie Palmer now have a pond aquaculture operation; and the Northern Indiana Aquaproducts in Goshen is engaged in indoor aquaculture, raising tilapia.

RECAP: With support from IISG's educational workshops, two new aquaculture businesses have been established in Indiana. Back to Goals

16121 - Two new aquaponic businesses get off the ground
RELEVANCE: Aquaponics, a process of raising fish and plants together in a manmade ecosystem-creating a symbiotic relationship-provides the opportunity to be a significant part of the future of urban food production.

RESPONSE: Since 2006, IISG has held aquaponics workshops each year to spotlight the benefits of this process and explain how potential producers can set up their own system. Attendees also learn about costs and marketing, as well as visit an aquaponics facility.

RESULTS: In 2011, two new aquaponics businesses were established in the two states: City Micro Farms in Chicago and Victus De'Aqua LLC, in Albany, Indiana.
RECAP: IISG workshops helped two new aquaponics businesses get started in Chicago and Indianapolis. Back to Goals

16120 - IISG links Indiana producers with aquaculture markets, fostering $2 million in annual sales and three new jobs
RELEVANCE: The U.S. imports about 83 percent of its seafood. Indiana's aquaculture industry is small and cannot compete with low-priced imported processed seafood products. The state's potential to increase aquaculture production lies with accessibility to markets as well as niche opportunities. Indiana has the comparative advantage to produce fish that can be sold live and fresh to ethnic markets.

RESPONSE: In the past three years, Illinois-Indiana Sea Grant has held 13 workshops to help link aquaculture producers with available markets to sell their fish. Producers in Illinois and Indiana were provided access to major markets in north central Indiana, Toronto, and especially, in Chicago.

RESULTS: $2 million of the $10 million in sales of fish raised in Indiana came about through IISG's effort to link producers with available markets. These thriving relationships led to three new jobs related to marketing and delivery.

RECAP: IISG links Indiana producers with aquaculture markets, fostering $2 million in annual sales and three new jobs. Back to Goals

16119 - Strategic planning lays the groundwork for growing Indiana aquaculture production and jobs
RELEVANCE: In oceans and other water bodies, fish are being harvested at unsustainable rates, making aquaculture critical to the future of fish as a food source. Indiana can provide a ready supply of corn and soybeans for low cost fish feed as well as potential producers receptive to diversifying their existing farm operations.

RESPONSE: Illinois-Indiana Sea Grant and the Indiana Soybean Alliance developed a strategic plan in 2007 to establish research and outreach projects that support aquaculture production in Indiana.

RESULTS: The strategic plan has led to an average of $600,000 in annual support from the soybean checkoff program for aquaculture education and research. Over the past three years, educational workshops and other support have resulted in 100 jobs created or retained as aquaculture production and sales in the state grow.

RECAP: The implementation of the strategic plan developed by IISG and ISA has created or retained 100 jobs related to aquaculture enterprises. Back to Goals

13839 - Kenya, Ghana develop baitfish and food fish businesses
RELEVANCE: A lack of business knowledge has been one major constraint to aquaculture development in Africa. In Kenya, aquaculture can play a role in helping to protect the threatened native shark-tooth catfish in Lake Victoria; it is being depleted by Nile perch fishers who use it for baitfish.

RESPONSE: With funding from USAID and expertise from Illinois-Indiana Sea Grant, small- and medium-scale fish farmers in both Ghana and Kenya were trained in all aspects of aquaculture supply chain management and marketing as well as the potential environmental effects of their activities. In Kenya, farmers were trained in hatchery technology and business techniques related to farmed juvenile catfish that can be sold as an alternative to wild-caught baitfish. Specifically, women have been trained in pond construction and catfish breeding.

RESULTS: Farmers have implemented environmental best management practices on their farms, especially in Ghana. New market opportunities have opened for food fish producers in Kenya and Ghana. In Kenya, farmers now successfully sell baitfish in markets along the shores of Lake Victoria. Women bait traders who usually did not have income during the closed season on Lake Victoria now are able to farm and supply bait fish throughout the year. Farmers have successfully accessed urban markets and they engage in collective efforts, commonly called clusters, to plan produce, and manage

supply and sales, in Kenya. Kenyan baitfish farmers are using the cluster farming system to achieve significant improvements in their marketing capabilities and to assist other farmers in adopting the collective model.

RECAP: Through workshops and training, Sea Grant has helped get aquaculture farming off the ground in Ghana and Kenya, encouraging economic development and resource protection.Back to Goals

7026 - Two new shrimp farms start up in Indiana
RELEVANCE: Less than 1 percent of the farm-raised seafood consumed in the U.S. is produced in the Midwest, but with such a large consumer base, it makes sense for these numbers to increase. In addition to satisfying a hungry market, Illinois and Indiana can provide a ready supply of corn and soybeans for low-cost fish feed as well as potential producers receptive to diversifying their existing farm operations. Aquaculture also holds the promise of improving struggling economies in rural as well as urban counties.

RESPONSE: Each year, Illinois-Indiana Sea Grant holds workshops and hands-on training to introduce potential aquaculture producers to technical and practical aspects of the business. In addition, training is available to producers who are already engaged in aquaculture to enhance their production and the marketability of their products. The Sea Grant aquaculture specialist also provides one-on-one on-site guidance to producers.

RESULTS: In Indiana, 2010 saw the start of two new shrimp farms. RDM Shrimp http://www.rdmshrimp.com in Fowler is a new family-owned aquaculture business. Their first sale was in December 2010. Bedrock Springs Seafood Farm at Ladoga is now selling Pacific white shrimp raised indoors without the use of chemicals or industrial oxygen.

RECAP: Sea Grant provided guidance and training that helped two new shrimp farm businesses get off the ground in Indiana. Back to Goals

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Program Performance Measures (2010 - 2013)

Program Performance Measure	Program Plan Target (2010-2013)	Reported	Program Comments
Number of communities engaging in educational and outreach practices to promote safe consumption of seafood.	10	3	2012 - Funding for projects has expired. 2013 - Funding for this project was not renewed.
Number of individuals whose mercury levels have been reduced as a result of Sea Grant information on fish consumption.	250	0	2011 - Funding was not secured for this work. 2012 - Funding did not come through for this project. 2013 - Funding for this project was not received.
Number of new aquaculture facilities begun in Illinois and Indiana.	10	41	
Number of new tools and information sources available to aquaculture producers in Illinois and Indiana.	3	15	
Number of new ventures or collaborations available to aquaculture producers in Illinois and Indiana.	4	926	
Number of students taught to make informed seafood choices.	500	0	2011 - Funding did not come through for this work. 2012 - Funding for these projects has expired.

			2013 - Funding for this project was not renewed.

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Program Objectives (2010 - 2013)

Program Objective	Achieved (yes/no)	Program Comments
By 2010, enterprise budgets, start-up costs, profit potential, and other investment decision tools will be available online to everyone contemplating an aquaculture venture.	Yes	2010 - 3 tools are available. 2011 - 3 tools are available. 2012 - 3 tools are available.
By 2010, the AquaNIC website will be redesigned to ensure that it continues to reach 2.5 million visitors per year and serves as a premiere gateway to the worldâ€™s electronic aquaculture resources.	Yes	2010 - The AquaNIC website continues to serve an international audience. 2011 - The AquaNIC website continues to serve an international audience.
By 2013, 10 new aquaculture facilities will start operations in Illinois and Indiana.	Yes	2010 - At this point 5 facilities are in operation. 2 shrimp farms started in 2010. 2011 - 8 are now in operation. 2012 - 13 and counting. 2013 - Aquaculture is now a $15M operation in Indiana sustaining over 280 jobs.
By 2013, aquaculture producers in Illinois and Indiana will have access to established markets for three species (Tilapia, Hybrid striped bass and Largemouth bass) suited to production in the Midwest.	Yes	2010 - 3 new ventures are available. 2011 - 3 new ventures are available.
By 2013, IISG will collaborate with Indiana Soybean Alliance and Illinois Soybean Council to embark on a strategic planning process to increase the use of soybean products in aquaculture.	Yes	2010 - Work with the Alliance and Council continues. 2011 - 300 new collaborations strategic plan developed funding for new programs. Work with the Alliance and Council continues. 2012 - Over 300 new ventures.