



A Shellfish Farm Self-Assessment

Understanding How Prepared
Your Shellfish Farm is for a Disaster



“On the road to shellfish farm resilience”

Shellfish Farming Resilience Index

Farm Name: _____

Date Completed: _____

Name	Title

Introduction

All Shellfish farmers face challenges during disasters. The **Shellfish Farming Resilience Index (SFRI)** is a self-assessment tool developed for shellfish farmers. It serves as a simple and inexpensive method of predicting if individual businesses are prepared to maintain operations during and after disasters. Completing the SFRI will assist farmers in identifying actions for long-term resilience for natural, human and economic disasters.

The SFRI can be completed by farmers. However, Sea Grant staff are willing to meet individual farmers to assist in completing the SFRI and will not share your results with anyone else. When the SFRI is used, each farm should consider the farm’s level of preparedness for both large- and small-scale events. Being able to withstand and adapt to change has become a focal point for businesses and industries. Resilient businesses recognize the vital role that planning, preparation and collaboration play in developing and executing strategies to respond to challenges, adapt to changes and thrive.

Shellfish farmers will benefit from the SFRI by identifying strengths and weaknesses in their overall farm operation. These indicators can provide an important baseline to measure progress toward resilience goals. Progress toward resilience goals of a farm can be measured by retaking the SFRI every 18 months. In addition, the SFRI assists in assessing the overall resilience of the industry by identifying best practices used by farmers. The process of completing the SFRI will help identify the action items farmers should work towards to address system vulnerabilities and maintain long-term viability.

How was the SFRI Developed

The SFRI was developed with broad participation from industry leaders. The development team coordinated with an industry steering committee to identify measures of resilience, or indicators. Each of the 122 indicators was written in the form of a “yes” or “no” question. Using those indicators, the SFRI was organized into seven categories: business planning, marketing, disaster preparedness planning, workforce, monitoring of water and oysters, regulatory knowledge and resource access and knowledge. The SFRI was then pilot tested with farmers in Alabama and Mississippi, and modifications to the SFRI were made before finalizing it.

A point system is used for each indicator so an overall score can be calculated. It is important to note that the process of completing the SFRI is intended to be an in-person activity bringing together employees of your farm to discuss the questions and determine answers. This process creates conversations across important issues and joint solutions to challenges your farm may face as well as documents your farm’s strengths and best practices. An understanding of how your farm addresses or does not address the indicators is the most valuable part of completing the index, not the scores.

Results Overview

After completing this self-assessment, you should complete the summary table that will help you determine the resilience of your farm using this self-assessment (see page 14). For more details about interpreting SFRI results, go to page 15.

Business Planning

Section 1: Does your business include the following information?

Check Yes or No for the 33 questions in this section.

Section 1: Business Planning	Yes	No
1. Do you have a written business plan containing at least the following:		
a. Mission statement and goals		
b. Company overview (legal structure, products or services, location, management, insurance)		
c. Industry analysis (differentiates business functions/activities including seed availability/access to product)		
d. Do you know how much it costs for you to grow shellfish to market size and the anticipated amount you will be paid for your shellfish that reaches market size?		
e. Financial plan (cash flow statement, three-year income projection, sources and uses of funds, summary of financial needs, financial statements and profits/losses)		

Section 1: Business Planning		Yes	No
f.	Business operations plan (facilities, equipment and staffing)		
g.	Farm expansion plan (1-3 years, 3-5 years and 5-10 years) that also accounts for markets, labor, availability of seed/spat and equipment		
h.	Recruitment, training, leadership development and staff succession strategy		
2.	Has your written business plan been reviewed or updated in the last 12 months?		
3.	Does your farm have enough cash on hand (e.g. 3 months) or a line of credit to cover expenses for extended periods of time due to harvest closures, storms or unforeseen circumstances (e.g., equipment damage)?		
4.	Do you have an inventory management system that includes product tracking at different growth stages, photographs of shellfish at all sizes and a way to recover your records to document any losses that occur, including a backup of electronic records?		
5.	Do you have an adequate supply of products and services such as:		
a.	Seed and spat		
b.	Equipment (e.g. gear, generator, lines, graders, anchors, etc.)		
c.	Supplies (e.g. fuel, ice, etc.)		
d.	Labor and contractors		
6.	Do you test your shellfish for contaminants and pathogens?		
7.	Do you have adequate water-dependent infrastructure (boats, boat launches, navigation aids, docks, pier) during normal operations?		
8.	Do you have insurance or are you pre-registered for emergency assistance for the following:		
a.	Crop [e.g. Emergency Assistance for Livestock, Honey Bees, and Farm-raised Fish (ELAP) and Noninsured Crop Disaster Assistance Program (NAP)]		
b.	Catastrophic loss of gear and/or shellfish (hurricane, freshwater flooding, harmful algae bloom)		
c.	Boat and other equipment		
d.	Wind (for structures and equipment)		
e.	Fire		
f.	Flood		
g.	Theft (shellfish and gear)		
h.	Product liability (customer becomes sick from consuming oysters)		
i.	General liability (employees and visitors)		
j.	Health (owner and employees)		
k.	Disability		
l.	Workers compensation (e.g. state, Jones Act Coverage)		

Section 1: Business Planning	Yes	No
9. Do you know the limitations of various types of shellfish farming-related insurance?		
10. Does your farm employ methods to reduce theft or vandalism?		
11. Do you have an alternate source of income to cover on-farm losses (e.g. another job)?		
12. Do you have the information (e.g. contacts, farm records and application information) needed to obtain capital improvement or operating loans?		
Total number of Yes and No answers:		

Additional Comments or areas where you would like to learn more.

Marketing

Section 2: Does your business have the following marketing plans, procedures and strategies?
Check Yes or No for the 27 questions in this section.

Section 2: Marketing	Yes	No
13. Do you have a written marketing plan as part of your business plan containing at least the following:		
a. Company analysis (strengths, weaknesses, opportunities and threats)		
b. Customer analysis (customer demographics, target markets, needs of target customers)		
c. Situation analysis (short-, mid- and long-term competition, growth, price elasticity, market availability, potential expansion)		
d. Goals		
e. Strategies		
f. Tactics		
g. Timeline		

Section 2: Marketing	Yes	No
14. If you have a written marketing plan, is your marketing plan reviewed and updated as needed?		
15. Do you use targeted marketing methods?		
16. Do you have an established brand and a promotion plan (e.g. social media, TV, radio) for your oysters?		
17. Do you have an adequate supply to fill the market demand for your oysters?		
18. Does your farm (if allowed by regulations) sell directly to consumers?		
19. Do you employ diverse marketing strategies including the following:		
a. Have arrangements with alternative markets in the event of a disruption with your primary market		
b. Provide multiple sizes and product forms (e.g. half-shell, shucking, food or restoration)		
c. Use multiple distribution channels (e.g. food truck, on-farm, pop-ups, online, processor)		
d. Have additional streams of revenue for your business, such as weddings, farm tours, carbon or nutrient credits, equipment clothing and/or other branded items		
e. Receive compensation from the state or third-party companies for the ecosystem services provided by oysters, such as carbon or nutrient credits		
f. Offer packages of your products or services with other businesses, such as gift boxes for special occasions or holidays		
20. Do you have reliable transportation services to deliver your oysters to market?		
21. Do you take part in collaborative marketing in the following ways:		
a. Participate in a coordinated industry driven program to improve the public perception of oysters		
b. Participate in your local or a regional chamber of commerce?		
c. Participate in marketing or restaurant organizations (local, state, regional or national)		
d. Partner with local restaurants who sell your oysters		
22. Do you have a designated employee trained to serve as a spokesperson to manage any questions from the general public and media?		
23. Do you have a communication plan to address potential negative press (e.g. vibrio outbreak)?		
24. Do you communicate to customers and the public about your product(s), including closures and salinity levels?		
25. Do you have communication materials that you share with the public about oysters that include nutritional values, preparation methods and safety tips?		

Section 2: Marketing	Yes	No
Total number of Yes and No answers:		

Additional Comments or areas where you would like to learn more.

Disaster Preparedness Planning

Section 3: Does your business have the following disaster preparedness plan in place?

Check Yes or No for the 16 questions in this section.

Section 3: Disaster Preparedness Plan	Yes	No
26. Have key personnel in your business had firsthand experience with disaster recovery during the last 10 years?		
27. Do you have a written disaster preparedness plan that includes at least the following:		
a. Evacuation, re-entry and shelter-in-place plan		
b. Continuity of operations plan (e.g. essential personnel/services/equipment, alternate reporting locations, reopening, critical records storage)		
c. Agreements and contracts with suppliers and contractors for critical operations (e.g. anchors, pilings, generators, debris removal and cleanup services)		
d. Mobile communications ready for use in the event of a disaster (e.g. satellite phones, Garmin inReach, two-way radios, phone apps)		
e. Emergency supplies (e.g. fuel, ice, batteries)		
f. Internal (employee) communications plan including for non-English speaking employees (e.g. established phone numbers for staff to call for information, schedule for staff to return to work)		
g. Communications plan for media, customers and the public (e.g. predetermined messages and messaging channels)		
h. Gear recovery strategy		

Section 3: Disaster Preparedness Plan	Yes	No
28. Is your disaster preparedness plan reviewed and updated as needed with lessons learned after each disaster?		
29. Do you practice various disaster scenarios including practicing preparing your gear (e.g. storm preparation and recovery)?		
30. Do you perform regular maintenance on your anchoring system and pilings for your oyster cages and lines and check knots, zip ties and other methods you use to secure your equipment and crops?		
31. Does your farm have pre-existing agreements to move shellfish to a site out of harm's way in the event of a storm, harmful algae bloom or some other disaster?		
32. Do you participate in any post-disaster surveys by federal or state agencies to determine the extent of damage from a disaster and the status of the recovery progress?		
33. Have you identified the appropriate public or private resources to obtain up-to-date disaster information within your city, county or state (e.g. local emergency management hotline, local municipalities' website)?		
34. Do you know the flood zone for your land-based facilities?		
Total number of Yes and No answers:		

Additional Comments or areas where you would like to learn more.

Workforce

Section 4: Does your business meet the following criteria in relation to your local workforce?

Check Yes or No for the 10 questions in this section.

Section 4: Workforce	Yes	No
35. Are you able to hire qualified employees when needed?		
36. Do you have enough supplemental labor (non-employees) willing to work before and after disasters (e.g. storms, harmful algal blooms, freshwater inflow)?		

Section 4: Workforce	Yes	No
37. Do you have employees who are cross-trained in tasks outside of their normal job duties to assist with disaster recovery?		
38. Are you part of a social network that connects you to other farmers whom you can call on for support if needed (e.g. shared labor pool to assist in relocating oysters)?		
39. Do you provide training for new or current employees that includes the following:		
a. Farm operations and management		
b. Mentoring or farmer-to-farmer exchange program		
c. Health and safety training specific to your business (e.g. first aid/CPR training, food safety, OSHA, mental health services)		
40. Do you have enough adequately trained staff for normal operations under regular working conditions (including disruption of work due to absences of staff)?		
41. Do your employees have adequate wrap-around services (e.g. affordable housing, transportation, child care)?		
42. Do you provide employee incentives to assist with retention (e.g. bonuses, flexible hours, discounted shellfish purchases, housing stipends, health insurance, retirement contributions, accommodating class schedules)?		
Total number of Yes and No answers:		

Additional Comments or areas where you would like to learn more.

Monitoring of Water and Oysters

Section 5 Does your business track water quality, quantity and monitoring issues in local waters?

Check Yes or No for the 21 questions in this section.

Section 5: Monitoring of Water and Oysters	Yes	No
43. Do you monitor growth rates of your shellfish at different sizes and times of the year?		
44. Do you monitor the following:		
a. Salinity		
b. Water temperature		
c. Dissolved oxygen		
d. Turbidity		
e. Air temperature		
f. Local rainfall		
g. Pathogens (e.g. viruses or bacteria)		
h. Toxins (e.g. harmful algae blooms)		
i. Metals (e.g. cadmium, lead, mercury, arsenic)		
45. Do you currently share your monitoring data or would you be willing to share it with state agencies to aid in informing regulatory closures and reopenings?		
46. Do you receive adequate advance notice from state or local government agencies if water quality-related closures are about to occur?		
47. Over the last 12 months, has your farm remained open without regulatory closures (e.g. closures due to freshwater inflow, harmful algae blooms, pathogens, stormwater overflow)?		
48. Are you prepared to act in response to potential closures due to the following:		
a. Freshwater inflow		
b. Harmful algae blooms		
c. Sewage overflows		
d. Storms		
e. Chemical or oil spills		
f. Dredging		
49. Do you have access to local facilities for more advanced testing of toxins and pathogens?		
50. Do you utilize wet storage to hold shellfish in anticipation of water quality closures?		
Total number of Yes and No answers:		

Additional Comments or areas where you would like to learn more.

Regulatory Knowledge

Section 6: Does your business monitor and participate in regulatory activities?

Check Yes or No for the 11 questions in this section.

Section 6: Regulatory Knowledge	Yes	No
51. Do you renew your permits or licenses as required and on time?		
52. Do you know the permitting requirements and timeline to obtain a permit to expand your farm (e.g. U.S. Army Corps of Engineers permits)?		
53. Do you know who to contact to obtain the latest regulations related to your farm?		
54. Do you know the shellfish management policies on a local level (e.g. cause for closures, reopening processes)?		
55. Are you involved in the Interstate Shellfish Sanitation Conference (ISSC)?		
56. Do you know how the ISSC National Shellfish Sanitation Program Guide is managed?		
57. Do you know how the classification of shellfish growing waters can change?		
58. Do you know the regulations for moving your shellfish to other locations (relaying) if the need arises?		
59. If you have a license to process, does your farm have a Hazard Analysis and Critical Control Point (HACCP) plan?		
60. Do you use your knowledge or experience to influence shellfish farming policies (e.g. public comment, calling your regulatory office)?		
61. Do you know how to learn of planned restoration projects and do you provide input or comment on restoration projects that could impact your farm?		
Total number of Yes and No answers:		

Additional Comments or areas where you would like to learn more.

Resource Access and Knowledge

Section 7: Does your business access additional resources regularly?

Check Yes or No for the 4 questions in this section.

Section 7: Resource Access and Knowledge	Yes	No
62. Do you participate in any shellfish industry communities of practice that bring together members of the industry to solve problems?		
63. Are you aware of the latest farming science and technology developments that are being used by the industry?		
64. Do you participate in resource sustainability activities on your farm (e.g. habitat conservation and restoration, erosion prevention, stormwater management, nutrient reduction, recycling, local sourcing, energy efficiencies)?		
65. Are you a member of any local, regional or national professional industry associations?		
Total number of Yes and No answers:		

Additional Comments or areas where you would like to learn more.

Use the row labeled “Total Number of Yes or No Answers” from Sections 1-7 to complete the following table.

Sections 1-7	Number of Yes answers	Your Assessment of Your Farm’s Resilience (Low, Medium or High)	Comments
Example using the Workforce section	4/7	Medium	Staff training would increase our farm’s resilience in the workforce section.
Section 1: Business Planning (33 yes or no questions)			
Section 2: Marketing (27 yes or no questions)			
Section 3: Disaster Preparedness Planning (16 yes or no questions)			
Section 4: Workforce (10 yes or no questions)			
Section 5: Monitoring of Water and Shellfish (21 yes or no questions)			
Section 6: Regulatory Knowledge (11 yes or no questions)			
Section 7: Resource Access and Knowledge (4 yes or no questions)			

What do you believe about your overall farm resilience (Low, Medium or High)? Please explain why you assigned your rating.

Rating and Interpreting Your Results

Resilience Index: The Shellfish Farming Resilience Index is an index using indicators to gauge your shellfish farm’s ability to return to an acceptable level of operations after a disaster. After completing the scoring table of this self-assessment, your resilience index can be categorized as LOW, MEDIUM, or HIGH in each section.

LOW Resilience Index. A low score in any section may indicate that your farm should pay specific attention to that section and should make efforts to address the areas of low ratings. It could also indicate that it would take more time to return to normal operations than would a higher resilience rating.

MEDIUM Resilience Index. A medium score in any section indicates that more work could be done to improve your areas of low ratings.

HIGH Resilience Index. A high score in any section indicates that your farm is prepared for disasters (natural, economic and human caused) for that section. A high resilience rating does not guarantee that your farm will not suffer major losses during a catastrophic disaster.

Next Steps

Regardless of your farm's score, you should learn about and investigate the weaknesses you have identified during this process. You may refer to the following section (supporting resources) for additional information on resources, training and support.

What are some steps you can take to increase your resilience rating?

What do you believe Sea Grant should do to help your farm increase its resilience?

Contacts

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