

RESILIENCE CHECKLIST FOR NEW JERSEY'S COMMERCIAL FISHING INDUSTRY

Helping New Jersey's Commercial Fishing Businesses Evaluate and Improve
Their Preparedness for Coastal Hazards and Fisheries Changes



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INTRODUCTION

Since the 1600s, New Jersey's fishing industry has continuously adapted to change. In the face of challenges on land and water, from coastal storms to species shifts, commercial fisheries are resilient because they *must* be to survive. This checklist is meant to help New Jersey's commercial fishing businesses reflect on steps they have already taken to be resilient and to identify opportunities to further prepare for current and future risks associated with coastal hazards and fisheries changes.

THE FISHING INDUSTRY IS RESILIENT

Resilience is the ability to prepare, respond, adapt, and thrive in the face of challenges.

*Fishing businesses are continuously facing new challenges. This Checklist focuses on **coastal hazards** and **fisheries changes**.*

HOW TO USE THE CHECKLIST

This checklist helps to assess strengths and weaknesses of your business operations and identify opportunities to improve resilience to coastal hazards and fisheries changes. Although it can be used individually by one business or fisherman, it is most effective when completed collaboratively by several fishing businesses or fishermen from a New Jersey port or dock. The checklist is intended to start conversation and coordination among dock managers, fishermen, processors, dealers, and others involved in the industry about planning and preparation to address vulnerabilities. Each section includes online resources that can be used to learn more and develop solutions to improve resilience.

The overall resilience of a port or dock depends on the ability of each member of its fishing community to assess and address risks.



The checklist is organized into four sections to comprehensively address fishing business resilience to coastal hazards and fisheries changes:

Assess Coastal Hazard Risks - Identify and understand the risks to your business from coastal storms, flooding, and shoreline erosion.

Prepare for Coastal Hazards - Develop a plan to prepare your business for the impacts of coastal storms, flooding, and shoreline erosion.

Recover from Coastal Hazards - Identify proactive steps for speedier business recovery after a coastal hazard event.

Assess and Prepare for Fisheries Changes - Consider the impacts of potential shifts in fisheries resources and identify strategies to improve resilience.



DOES CLIMATE CHANGE MATTER?

The fishing industry is accustomed to change and knows how to adapt. But climate change threatens to increase the intensity and frequency of coastal hazards and fisheries changes. Knowing that these challenges have impacted fishing businesses in the past - and will continue to cause impacts in the future - highlights the importance of planning and preparation to improve resilience.

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SECTION 1: ASSESS COASTAL HAZARD RISKS

COASTAL HAZARDS



storms



floods



erosion

Commercial fishing communities know (perhaps better than anyone) that storms, floods, and shoreline erosion are a natural part of living and working on the coast. Whether you are a fisherman, vessel owner, processor, dock manager, or shipper, your business has likely been impacted by coastal hazards in the past - and will be again in the future. Coastal hazards can damage assets, disrupt business, and cause financial loss. Assessing the risks to your business (and to your port or dock) is the first step to reducing vulnerability.

CAN YOU OPERATE DURING FLOODS?



Assessing flood risk is important for fishermen and vessel owners too!

Even if your boat is unaffected by floods, your business could suffer if flooding damages (or prevents access to) land-based infrastructure such as boat launches, docks, or processors needed for off-loading, packing, etc.

RISK ASSESSMENT CHECKLIST

Step 1: Take a few minutes to think about how coastal hazards have impacted your business and operations in the past.

Step 2: Use this checklist to identify steps to assess coastal hazard risks to your business.

- ☐ (a) Document impacts, damages, and costs of previous coastal hazards that impacted your business and/or your dock or port (using local knowledge, insurance claims, historical or scientific reports, prior fishery disaster applications, weather records, etc.)

Notes

- ☐ (b) Use maps to identify potential flood levels, storm surge extents, or shoreline erosion rates that could impact your business and/or your dock or port

Notes

HAZARD MAPPING RESOURCES

NJ Flood Mapper

njfloodmapper.org

Use this mapping website, created by Rutgers University, the Jacques Cousteau National Estuarine Research Reserve, and NOAA, to visualize direct flood impacts (e.g., damage to buildings) and indirect flood impacts (e.g., flooded roadways preventing access to/from your port or dock).

FEMA Map Service Center

msc.fema.gov

Use flood hazard maps produced for the National Flood Insurance Program to find the FEMA flood zone and base flood elevation for buildings that support your business operations.

- ☐ (c) Estimate financial losses that could result from the impacts of coastal hazards (such as damage to buildings or gear, lost revenue, etc.), considering how impacts may differ due to size of storm, time of year, etc.

Notes

- ☐ (d) Consider or update insurance coverage for damages from coastal hazards including flood, wind, and/or catastrophic loss for assets both on the water and on land (such as dry-docked boats, stored gear, etc.)

Notes

FLOOD INSURANCE RESOURCES

National Flood Insurance Program

[floodsmart.gov](https://www.floodsmart.gov)

Get information about commercial flood insurance options to protect your buildings and equipment.

- ☐ (e) Identify updates to infrastructure, procedures, or services that may be needed to overcome the cumulative impacts of coastal hazards with other man-made or economic stressors (such as COVID-19, offshore wind development, crew shortages, etc.)

Notes

- ☐ (f) Coordinate with your port or dock to identify opportunities to upgrade infrastructure and facilities to mitigate or adapt to coastal hazards (such as shoreline protection projects, floating docks, elevating or relocating buildings, stormwater system upgrades, etc.)

Notes

HAZARD MITIGATION RESOURCES

FEMA Hazard Mitigation Grants

[fema.gov/grants/mitigation](https://www.fema.gov/grants/mitigation)

Hazard mitigation is action to reduce risk to people and property from future coastal hazards. If your local government has a FEMA-approved hazard mitigation plan, they can apply for grants on behalf of community members (e.g., businesses) for projects to decrease vulnerability.

SECTION 2: PREPARE FOR COASTAL HAZARDS

Being prepared can mean the difference between a challenging event and a crisis. Preparedness refers to proactive measures a business can take to get ready for and reduce the impacts of coastal hazards. The following checklist can help develop a plan to execute before, during, and after coastal hazard events (e.g., major storms). Being prepared increases resilience by reducing impacts, decreasing business disruptions, and speeding up recovery.



HAZARD PREPARATION CHECKLIST

Step 1: Take a few minutes to think about how you prepared your business and operations for major storms in the past.

Step 2: Use this checklist to identify steps to prepare your business for future coastal hazards.

- ☐ (a) Know how to obtain emergency information about coastal hazards within your area from NOAA's National Weather Service and other sources

Notes

EMERGENCY INFORMATION RESOURCES

NJ Office of Emergency Management

ready.nj.gov

New Jersey's official site for emergency preparedness, including guidance on getting emergency information and preparing for a variety of hazards.

County Office of Emergency Management

ready.nj.gov/about-us/county-coordinators.shtml

Visit your county website for local emergency information.

Nixle

nixle.com

Sign up for text message alerts with emergency information from your local public safety departments.

Stevens Flood Advisory System

hudson.dl.stevens-tech.edu/sfas

Sign up to receive an email when flooding is predicted at your local tide gauge. Created by Stevens Institute of Technology.

- ☐ (b) Have a list of employee contact information and responsibilities in case of emergency

Notes

- ☐ (c) Develop and practice a list of procedures to prevent or minimize damages from coastal hazards (such as securing or moving vessels, pulling and storing gear, equipment, vehicles, or other assets), including a pre-storm timeline for each step

Notes

BUSINESS PREPAREDNESS RESOURCES

Ready.gov

ready.gov/business

The federal government's site for emergency preparedness, including toolkits for businesses with step-by-step guidance and checklists to prepare for a variety of hazards.

- ☐ (d) Have a list of supplies to gather in case of emergency (such as generators, fuel, flares, lights, water, food, mobile communications devices, etc.)

Notes

- ☐ (e) Compile documents needed to continue business operations after a major storm (such as agreements with vendors for critical services, permit copies, etc.) and put them in a secure location

Notes

- ☐ (f) Document your assets with videos, photos, and/or receipts (stored digitally and/or with back-ups in a safe location) to record conditions in case of future insurance claims

Notes

- ☐ (g) Have a plan (and practice it) for evacuation, shelter-in-place, and/or re-entry

Notes

- ☐ (h) Coordinate with other businesses at your port or dock and with your local government about hazard preparedness

Notes

COORDINATION IS KEY...



...with your employees. Familiarize employees with emergency procedures and their designated roles, such as starting preparations, coordinating emergency services or clean-up, calling vendors, updating customers on business status, etc. Review and update these procedures annually.

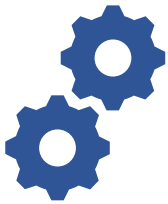
...with your port or dock. Your business' ability to recover from coastal hazards is tied to the preparedness of your port or dock. Talk to them about emergency plans, plans to accommodate transient vessels seeking safe harbor during storms, identifying critical facilities and services to prioritize for restoration after storms, and identifying recovery needs like channel maintenance, power restoration, debris removal, etc.

... with your local government. Local government action is crucial to storm recovery. Talk to them about a re-opening plan and opportunities to leverage service agreements for road clearing, bulk debris removal, etc.

SECTION 3: RECOVER FROM COASTAL HAZARDS

Businesses that are prepared to respond to coastal hazards can more quickly resume operations after (or even potentially maintain operations during) a coastal hazard event. Proactively planning for recovery allows a business to implement actions during and after an event to “bounce forward” and rebuild stronger, smarter, safer, and more resiliently.

CONSIDER CONTINUITY



Can you maintain business operations during or after a coastal hazard event?

Your answer might depend on:

- Reliability of access to supplies, services, and infrastructure
- Employee availability
- Ability to maintain operational activities like launching boats out of dry dock and administrative activities like payroll, purchasing, etc.

HAZARD RECOVERY CHECKLIST

Step 1: Take a few minutes to think about how your business and operations recovered after major storms in the past.

Step 2: Use this checklist to identify proactive steps for recovery from future coastal hazard events.

- ☐ (a) Develop a list of critical business operations and a plan for maintaining them during or after a storm

Notes

- ☐ (b) Establish agreements with vendors to facilitate emergency recovery services (such as repair work, clean-up services, towing, supply, and equipment orders, damage assessments, bulk debris removal, channel maintenance, etc.)

Notes

- ☐ (c) Consider agreements with other local businesses to provide emergency support (such as using an alternate port or dock, sharing supplies, helping with cleanup, etc.)

Notes

- ☐ (d) Have a plan to maintain operations in case of a disruption to the supply chain between fishermen, dealers, and customers

Notes

- ☐ (e) Become familiar with disaster assistance programs and how to apply

Notes

DISASTER ASSISTANCE RESOURCES

Small Business Administration

sba.gov/funding-programs

The Small Business Administration provides low-interest disaster loans to help businesses recover from disasters.

NOAA Fishery Disaster Assistance

fisheries.noaa.gov/national/funding-and-financial-services/fishery-disaster-assistance

When a fishery disaster determination is made, Congress can appropriate funds to assist fishing communities with recovery.

NJ Department of Environmental Protection, Division of Fish & Wildlife

nj.gov/dep/fgw

Find information on how to apply for assistance after a fishery disaster is declared.

- ☐ (f) Coordinate with your port or dock to identify the appropriate government agencies to evaluate channel conditions after a major storm

Notes

CHANNEL MAINTENANCE RESOURCES

US Army Corps of Engineers, Philadelphia District

nap.usace.army.mil

Responsible for dredging the New Jersey Intracoastal Waterway (Manasquan Inlet to the Cape May Canal).

US Army Corps of Engineers, New York District

nan.usace.army.mil

Responsible for dredging federal navigation channels in and around the New York/New Jersey Harbor.

NJ Department of Transportation, Office of Maritime Resources

state.nj.us/transportation/freight/maritime

Responsible for dredging State Navigation Channels.

NJ Department of Environmental Protection, Division of Land Resource Protection

nj.gov/dep/landuse

Information about required state permits for dredging (and many other post-storm recovery activities).

- ☐ (g) Coordinate with your port or dock to identify opportunities to rebuild or repair damaged assets in ways that can reduce potential future damages (see Hazard Mitigation Resources in Section 1(f))

Notes

SECTION 4: ASSESS AND PREPARE FOR FISHERIES CHANGES

Potential and Observed Shifts



distribution



abundance



survival



recruitment

The commercial fishing industry has always adapted to shifts in the productivity and distribution of fisheries resources. Due to environmental variability (e.g., salinity, currents) and the dynamics of marine populations, few ports target the same species in the same locations that they did a century - or even a decade - ago. Today, research suggests that climate change factors (e.g., warming waters, ocean acidification) are accelerating fisheries changes, impacting the science and management of commercial fisheries. Considering these impacts now can improve resiliency to current and future shifts.

FISHERIES CHANGE CHECKLIST

Step 1: Take a few minutes to think about how past fisheries changes impacted your business.

Step 2: Use this checklist to identify steps to help assess and prepare for current and future fisheries changes.



HAVE YOU NOTICED?

Have you observed shifts in marine fisheries resources based on your fishing experience or knowledge of fisheries research?

Have you considered how your fishing activity (and/or operations at your port or dock) might have been influenced by species shifts?

- ☐ (a) Identify potential fisheries changes for the species you commonly target or those landed at your port or dock (see resources below)

Notes

FISHERIES CHANGES RESOURCES

NOAA DisMAP

apps-st.fisheries.noaa.gov/dismap/

Distribution mapping and analysis portal provides data and maps showing changes in the distribution of marine species based on scientific survey data updated annually.

NOAA Fisheries Climate Information

fisheries.noaa.gov/new-england-mid-atlantic/climate/climate-change-northeast-us-shelf-ecosystem

Information about climate change and its impacts on the ecosystem and living marine resources in the Northeast U.S. Shelf.

NOAA Fisheries Northeast Vulnerability Assessment

fisheries.noaa.gov/new-england-mid-atlantic/climate/northeast-vulnerability-assessment

Scores species' vulnerability to climate change based on biological sensitivity, exposure to change, and expected impact.

- ☐ (b) Review recent records and identify how fisheries changes may impact operating costs (such as by traveling greater distances, changes to target species, bait availability, etc.)

Notes

- ☐ (c) Review currently held fishing permits and consider potential new permits needed as species availability changes

Notes

- ☐ (d) Identify technologies or equipment that would improve the resiliency of your business to fisheries changes (such as new or modified gear types, delivery or processing methods, etc.)

Notes

- ☐ (e) Assess if existing onshore infrastructure such as dock space and processors at your port or dock would be adequate and/or sustained in response to fisheries changes

Notes

- ☐ (f) Identify how marketing may be impacted by fisheries changes (such as changes to target markets, product quality, business diversification opportunities, customer demands, pricing, distribution, etc.)

Notes

- ☐ (g) Follow or get involved with cooperative research partnerships and/or management of marine fisheries resources

Notes

- ☐ (h) Consider membership in (or use resources provided by) industry associations that represent your needs (such as the Garden State Seafood Association, Fisheries Survival Fund, National Fisheries Institute, etc.)

Notes

FISHERIES RESEARCH & MANAGEMENT RESOURCES

Mid-Atlantic Fishery Management Council

mafmc.org

New England Fishery Management Council

nefmc.org

Atlantic States Marine Fisheries Commission

asmfc.org

NJ Department of Environmental Protection, Division of Fish & Wildlife, Marine Fisheries Council

dep.nj.gov/njfw/fishing/marine/marine-fisheries-council/

NOAA Northeast Fisheries Science Center

fisheries.noaa.gov/new-england-mid-atlantic/science-data/cooperative-research-northeast

Cooperative research between the fishing industry and the science community to support sustainable fisheries management.