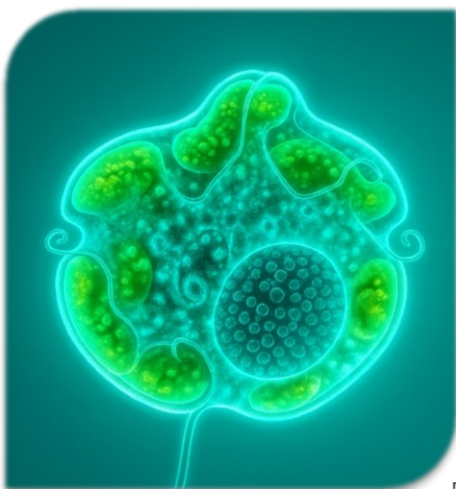


MULTIAGENCY GUIDANCE TO RED TIDE EVENTS IN FLORIDA

Information for County-Level Response
Agencies on Red Tide Response and
Coordination



Abstract

This guidance outlines the roles and responsibilities of state and local response partners during red tide events in Florida. It supports interagency coordination and public health protection by providing essential information about response actions.

Harmful Algal Blooms Taskforce

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CONTENTS

LIST OF ACRONYMS	1
INTRODUCTION	2
PURPOSE	2
SCOPE	2
SITUATION OVERVIEW AND ASSUMPTIONS	2
SITUATION OVERVIEW.....	2
ASSUMPTIONS	3
OPERATIONS	4
OBJECTIVES.....	4
ROLES AND RESPONSIBILITIES	4
AUTHORITIES AND REFERENCES	6
RESOURCES.....	7

LIST OF ACRONYMS

CHD: County Health Department

CRTR: Center for Red Tide Research

DEP: Florida Department of Environmental Protection

DOH: Florida Department of Health

FDACS: Florida Department of Agriculture and Consumer Services

FWC: Florida Fish and Wildlife Conservation Commission

FWRI: Fish and Wildlife Research Institute

HABs: Harmful Algal Blooms

K. brevis: *Karenia Brevis*

NSP: Neurotoxic Shellfish Poisoning

Note: Acronyms are used throughout this guide for brevity and consistency. This list is provided as a quick-reference to support clarity throughout the guide. Readers are encouraged to revisit this page as needed.

INTRODUCTION

PURPOSE

The purpose of this document is to provide clear insight for understanding and responding to red tide events in Florida. It aims to establish a shared understanding of what red tide is, what causes it, and how it impacts communities, while outlining the respective roles and responsibilities of state and local response partners. By supporting local preparedness, coordination, and situational awareness, this document serves as an educational tool to ensure an informed, timely, and effective response—ultimately safeguarding residents and visitors.

SCOPE

This document is intended for use by coastal Florida counties that are currently experiencing, or have historically experienced, red tide events. It is specifically designed for County Government and other local response partners. It promotes education, interagency coordination, in addition to public outreach and communication by providing a general yet comprehensive overview of red tide impacts, state agency responsibilities, and county-level response considerations.

Note: For detailed protocols and actionable guidance on responding to Harmful Algal Blooms, refer to the [Resource Guide for Public Health Response to Harmful Algal Blooms in Florida](https://myfwc.com/research/redtide/research/scientific-products/tr14/) – available at <https://myfwc.com/research/redtide/research/scientific-products/tr14/>

SITUATION OVERVIEW AND ASSUMPTIONS

SITUATION OVERVIEW

Karenia brevis (*K. brevis*), the organism responsible for red tide in Florida, is a naturally occurring, single-celled dinoflagellate found in the warm marine waters of the Gulf of America. While *K. brevis* can be present year-round at low levels, under favorable environmental conditions—such as elevated nutrient availability, warm temperatures, salinity, and calm seas—it can multiply rapidly, forming the Harmful Algal Bloom (HAB) commonly known as red tide. These blooms often occur offshore and are transported inshore by winds, waves, tides, and currents, where they intensify and can persist for weeks or even months.

Red tide events are a recurring environmental hazard in Florida, particularly impacting Gulf Coast counties. As blooms move closer to shore, they can severely affect marine ecosystems, public health, tourism, and local economies. The primary driver of these impacts is the potent neurotoxin produced by *K. brevis*, brevetoxin. This toxin is released into the surrounding water and air when waves, winds, or physical agitation (e.g., boating) rupture the *K. brevis* cells.

Red tide presents several negative impacts in Florida:

- **Human exposure risk including respiratory irritation** due to airborne brevetoxin, especially to those with asthma, bronchitis, and/or other chronic respiratory conditions.
- **Development of rashes and dermal irritation** due to skin contact with red-tide contaminated waters.

- **Neurotoxic shellfish poisoning (NSP)** in humans resulting from consumption of contaminated shellfish.
- **Widespread wildlife illness or death** including finfish, sea turtles, manatees, dolphins, and seabirds.
- **Pet exposure risks**, especially if animals swim in or ingest contaminated water or sea life.
- **Depletion of oxygen levels** in the water as blooms decay, contributing to marine die-offs and ecosystem damage.
- **Economic disruption** to tourism, beach access, and seafood industries.

Florida counties along the Gulf Coast (from Pinellas to Collier) experience red tide almost annually, with occasional events stretching as far as Escambia County in the western Panhandle and Volusia County on the east coast. Local and state agencies must frequently coordinate across sectors to monitor red tide, protect public health, respond to environmental impacts, and manage risk communications.

The persistence and complexity of red tide events underscore the need for a clear, multi-agency guidance framework to support county governments as they navigate their operational roles in monitoring, responding to, communicating, and educating the public about red tide blooms.

ASSUMPTIONS

This guide is developed with the understanding that counties along the Gulf Coast of Florida are susceptible to impacts from red tide blooms annually. It is assumed that the level and complexity of these impacts are influenced by environmental conditions and other factors that affect bloom formation, intensity, and duration. These factors in turn determine the extent to which these counties must coordinate and respond. The following assumptions help frame the guidance, roles, and collaborative response strategies outlined in this document:

- The degree of impact to ecosystems, residence/visitors, and local economies will vary significantly depending on bloom concentration, size, and duration.
- Health risks will vary by the exposure to and intensity of the bloom. Individuals may be exposed through inhalation of airborne toxins near affected shorelines, through the consumption of contaminated shellfish, or by direct water exposure.
- Human health effects may range from mild respiratory and eye irritation to more serious gastrointestinal or neurological symptoms.
- Pets are also vulnerable to exposure, particularly if they swim in or ingest contaminated water, or consume dead aquatic life along the shore.
- Community events and coastal social gatherings may present additional challenges for public health protection, requiring enhanced risk communication and education efforts for both residents and visitors.
- Impacts on tourism and local business may be significant and prolonged, especially in areas that rely heavily on coastal economic activity.
- Shellfish harvesting areas may face closures, affecting the livelihoods of commercial fishers, aquaculture operations, and businesses dependent on shellfish supply.
- The response may require multi-agency, multi-jurisdictional coordination to assess environmental and health impacts, conduct ongoing sampling, and ensure timely and consistent public messaging.

- Red tide blooms may disrupt aquatic life by depleting oxygen and nutrients in the water as cells decompose, leading to large-scale fish kills that require coordinated cleanup and disposal efforts.

OPERATIONS

OBJECTIVES

The overarching objective of a coordinated multi-agency, multi-jurisdictional response to significant red tide blooms is to protect human health by minimizing exposure to hazards associated with these events. Achieving this requires seamless coordination among local and state partners. By working together, they can support timely, effective response actions and communication that protects residents and visitors.

Key objectives guiding red tide preparedness and response include:

- ✓ Prevent or reduce human and pet exposure to brevetoxin through timely interventions, advisories, and protective measures.
- ✓ Ensure coordinated surveillance, sampling, and monitoring of *K. brevis* bloom conditions—offshore, nearshore, at key public access points, and at shellfish harvesting areas.
- ✓ Provide timely and consistent public messaging to reduce exposure risks and inform residents, visitors, and business owners about bloom conditions and recommended protective actions.
- ✓ Track and support coordinated fish kill and marine life cleanup operations to reduce nuisance conditions, prevent further environmental contamination, and restore safe public access.
- ✓ Support continuous interagency communication and collaboration across local and state levels to ensure rapid information-sharing and avoid duplicative or conflicting response actions.
- ✓ Maintain clear situational awareness among response partners through updates, agency-specific roles, and accessible technical guidance.
- ✓ Promote long-term resilience by documenting lessons learned and supporting the development of localized red tide response protocols based on county-specific risks and capacities.

ROLES AND RESPONSIBILITIES

A successful response to red tide events depends on clearly defined roles and close coordination between state and local government agencies. This section outlines the general responsibilities of each, with state-level agencies presented first, followed by local-level response partners.

State-Level Partners

- **Florida Department of Health (DOH)** – DOH serves as the lead agency for public health communication. They develop and disseminate approved public health messaging related to red tide. This includes fact sheets on human and pet safety, press release templates, public health signage templates, talking points for healthcare providers, and responses to frequently asked health questions. DOH also provides standardized Health Caution messaging (issued when *K. brevis* cell counts range between 10,000 to 100,000 cells/L) and Health Alert messaging (issued when *K. brevis* cell counts exceed 100,000 cells/L). DOH closely monitors sampling data provided by Florida Fish and Wildlife Conservation Commission (FWC) and coordinates with local County Health Departments (CHDs) to

ensure timely and consistent public health notifications. Additionally, DOH monitors shellfish harvesting area closure information and informs CHDs accordingly.

- **Florida Fish and Wildlife Conservation Commission (FWC)** – FWC serves as the lead agency for environmental surveillance and coastal water sampling to detect and monitor *K. brevis* concentrations. Through its Center for Red Tide Research (CRTR), FWC leads the effort to observe, track, and research HABs, with a primary focus on red tide. The CRTR promotes enhanced surveillance, scientific understanding, and improved response coordination. FWC also manages a public-facing interactive red tide status map and regularly shares sampling data with response partners, including DOH, to support coordinated communication, situational awareness, and decision-making.
- **Florida Department of Agriculture and Consumer Services (FDACS)** – FDACS monitors and manages shellfish harvesting areas to protect public health. Based on collected samples, when *Karenia brevis* concentrations within a harvesting area reach or exceed 5,000 cells/L, temporary closures may be issued. In certain cases, precautionary closures may be triggered earlier—such as when concentrations exceed 50,000 cells/L in adjacent waters, when other agencies report levels $\geq 5,000$ cells/L, or when early warning signs like fish kills or respiratory irritation occur. Upon a closure, the DOH Central Office is notified and begins monitoring for potential shellfish-related illnesses. If an illness or outbreak is traced to shellfish consumption, DOH notifies FDACS and coordinates with CHDs to support public outreach and risk communication. Notifications of harvesting area closures are posted on the FDACS website, the interactive harvesting areas map, and via press releases as needed. FDACS may also coordinate with law enforcement, seafood industry stakeholders and other partners. Reopening may occur when *K. brevis* concentrations fall below 5,000 cells/L and toxicity levels in shellfish meat are confirmed by FDACS to be below established public health safety thresholds (see *authorities and references section*).
- **Florida Department of Environmental Protection (DEP)** – Although not a lead agency for red tide response, DEP plays a supporting and coordinating role, particularly when red tide impacts escalate. By working with contracted vendors or mobilizing cleanup crews to manage shoreline impacts, DEP provides assistance to counties overwhelmed by large-scale fish kills, dead sea life, or marine debris. DEP often supports efforts along state-managed waters or in situations where red tide poses significant environmental or public health risks.

Local-Level Partners

- **County Health Departments (CHDs)** – Are key in protecting public health during red tide events by executing health advisory protocols. When red tide cell concentrations reported by FWC exceed established thresholds (10,000 – 100,000 cells/L for a Health Caution and greater than 100,000 cells/L for a Health Alert), the DOH Central Office notifies CHDs and provides standardized, approved public messaging materials and signage templates. Upon receiving notification, CHDs:
 - May issue public health notifications – Health Cautions or Health Alerts.
 - Post approved signage at impacted coastal areas and access points.
 - Distribute press releases through their public information officers.
 - Coordinate outreach with local government partners to disseminate timely and accurate health information to the public.
 - Collaborate with FDACS and DOH Central Office in the event of any shellfish-related illness outbreaks or public concerns.

- **County Governments and Local Response Partners** – Implement additional protective measures during significant red tide events. While specific actions may vary by jurisdiction, they:
 - May close public beaches or recreational water access points.
 - May declare local states of emergency during prolonged or severe red tide bloom events.
 - Coordinate with DEP and contracted vendors if local cleanup resources are overwhelmed.
 - Enhance local situational awareness through interagency communication, emergency management updates, and participation in coordination calls or meetings with other response agencies.

Note: While the roles and responsibilities listed above reflect common practices, it should be recognized that local response actions vary between counties based on available resources, internal protocols, and local organizational structures. The information listed in this section is intended as a general overview.

AUTHORITIES AND REFERENCES

This section outlines the primary legal authorities, statutes, and official guidance that shape Red Tide response in Florida by delineating the roles and responsibilities of agencies involved in the response.

FLORIDA STATUTES & RULES

- **Chapter 379.2272, F.S. – Harmful-Algal-Bloom Program**
Mandates the Fish and Wildlife Research Institute (FWRI) to lead HAB monitoring, detection, prediction, and mitigation efforts—supporting local governments with data, surveillance and technical guidance.
- **Chapter 20.331, F.S. – Fish & Wildlife Conservation Commission Duties**
Directs FWC to monitor and evaluate HABs, including red tide, and to provide technical support to state and local partners.

AGENCY-SPECIFIC AUTHORITY

- **DOH – Public Health Response**
Anchored in **Chapter 381.0062**, CHDs can then implement Caution/Alert thresholds and notifications during Red Tide events. DOH's role on the Red Tide Task Force ensures coordinated messaging and public health advisory guidance.
- **FWC – Environmental Monitoring & Research**
Mandated by **Chapters 379.2272** and **379.2273 F.S.**, to conduct HAB surveillance, sampling, reporting, and research—providing real-time data via online resources and hotlines.
- **FDACS – Shellfish Harvest Management**
Under **Chapters 379** and **597 F.S.**, and **Chapter 5L-1 FAC**, FDACS regulates shellfish harvesting areas; when *K. brevis* concentrations meet or exceed 5,000 cells/L, closures and public notifications may be issued accordingly (note: this threshold differs from the 10,000 cells/L level commonly used as a public

health concern threshold for respiratory impacts and beach monitoring). Reopening typically requires water samples to fall below 5000 cells/L, as well as verification that shellfish meat toxicity is within safety levels (≤ 1.6 ppm for clams, ≤ 1.8 ppm for oysters, or ≤ 20 MU/100g for any species tested).

- **DEP – Environmental Cleanup & Support**

Operating under **Chapter 376** and **403 F.S.**, DEP leads coastal cleanup (e.g., fish kills), pollution response, and technical coordination when local resources are exceeded. DEP holds responsibility under emergency orders for spill and debris management.

RESOURCES

- **DOH – HABs Alert Notifications**

This is a link to the front-facing DOH website where users can find health cautions and health alert notifications issued and lifted for the current and previous years. Additional information on notifications and types of HABs can be found on this site as well.

- **EPA – Beacon 2.0: Beach Advisory and Closing Information**

An interactive map showcasing real-time beach advisories and closures. Through user input individuals can quickly access pertinent information by selecting specific locations on the map.

- **FDACS – Harvesting Areas Map**

An interactive map that displays location information on shellfish harvesting areas, aquaculture leases, shellfish processing facilities, and water quality sampling stations. For descriptions of the map features, users can select the points or polygons.

- **FWC – Fish Kills and Fish Kill Hotline**

This link provides users with online tools and information to report fish kills whether online or via telephone, and additional information regarding the fish kill hotline.

- **FWC – Red Tide Current Status Map**

An interactive map that provides information on the current status of red tide based on sample locations and results. The map displays sample locations and concentrations as dots on the map where users can click them to view additional information.

- **FWC – Red Tide FAQs**

Provides a list of frequently asked questions regarding the health, safety, and overall information of Red Tide, and includes factsheets to learn more about *Karenia brevis* and other algae species.

- **FWC – Red Tide Outreach and Media Materials**

A site that provides links to various FWC social media sites, red tide factsheets, red tide videos, red tide rack cards and other social media and multimedia educational red tide products.

- **NCOOS – Respiratory Forecast**

The Gulf Coast Red Tide Respiratory forecast provides beach-level information on the potential risk of respiratory irritation caused by *Karenia brevis*, commonly referred to as red tide. This microscopic algal species produces a toxin that can cause respiratory and eye irritation in humans when airborne.

- **MOTE Marine Laboratory – Beach Conditions Reporting System**

Provides current conditions at multiple beaches along the west coast of Florida, this includes respiratory irritation, rip currents, wind and others.

- **OCL – Red Tide Prediction and Tracking on the West Florida Shelf**

A map that displays a prediction and tracking of the movement of specific areas on the map where samples for red tide were recently taken along the west Florida coast—from the Florida Bay, Charlotte Harbor, Tampa Bay, Big Bend and Panhandle regions. The lines that display represent simulated trajectories.

Note: The bullet points in the resource section are hyperlinked. If viewing this document electronically, click the underlined text to open the linked webpage in a new browser tab. If using a printed copy, readers can access the resource by typing its name in to a search engine—most links should appear on the first page of results.

**Aquatic Toxins Program**

850-245-4250

healthhabinfo@flhealth.gov

**Shellfish Program Inquiries**

1-800-HELP-FLA

1-800-435-7352

**Red Tide Hotline – Statewide**

In-State: 866-300-9399

Outside of FL: 727-502-4952

**General DEP Inquiries**

850-245-2118

Public.Services@FloridaDEP.gov