

Oil or Chemical Spill Notification

call the National Response Center at
800-424-8802

Oil Spill Response

in the Region IV Coastal Zone,
contact the U.S. Coast Guard
Marine Safety Office (MSO):

MSO Wilmington, NC 910-792-8408	MSO Charleston, SC 843-724-7616
MSO Savannah, GA 912-652-4353	MSO Jacksonville, FL 904-247-7310
MSO Miami, FL 305-732-0160	MSO Tampa, FL 813-228-2189
MSO Mobile, AL 334-441-5121	

In the Region IV Inland Zone,
contact the U.S. Environmental
Protection Agency:
404-562-8700

Inland Zone U.S. Coast Guard Offices are:

MSO Huntington, WV 800-253-7465	MSO Louisville, KY 800-253-7465
MSO Paducah, KY 502-442-1621	MSO Memphis, TN 901-544-3912

State Pollution Response Contacts are:

North Carolina 919-733-3300	South Carolina Spill: 888-481-0125 Office: 803-896-4000
Georgia 404-656-4300	Florida 850-413-9911
Alabama 334-242-4378	Mississippi 601-352-9100
Tennessee 800-258-3300	Kentucky 800-928-2380

Suggested References:

Fish and Shellfish Tainting
Questions and Answers
NOAA HAZMAT Report 94-6 July 1994

Workshop on Managing Seafood Problems
During the Response Phase of an Oil Spill
Proceedings of the Twentieth Arctic and
Marine Oil Spill Program 1997

Closing and Reopening Fisheries Following
Oil Spills; Three Different Cases with Similar
Problems

Proceedings of the Twentieth Arctic and
Marine Oil Spill Program 1997

Oil Spills and Seafood Tainting



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Regional Response Team

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U.S. Coast Guard 305-536-5651
U.S. EPA 404-562-8721

Introduction

An issue of concern that arises at nearly every oil spill incident of any significance is potential contamination of seafood resources in the affected area. Real and potential contamination of seafood can have substantial impacts on commercial and recreational fishing and subsistence seafood use.

What is Tainting?

Tainting is generally defined as the development of an off-flavor or off-odor in seafood when caught or harvested that is not typical of the odor or flavor of the seafood itself. The presence of a taint simply indicates flavor or odor is altered and does not characterize the nature of the atypical flavor or odor or quantify the degree of taint.

What Causes Tainting?

Tainting of finfish and shellfish has been associated with exposure to chemical contaminants present in the aquatic environment. There are many examples of tainting of commercial species of fish, crustaceans, clams, oysters, and mussels by petroleum products. Tainting can be caused by compounds taken up by the tissues or by surface contamination of the organism. The natural flavor of fish, however, can be strongly influenced by many factors such as the diet of the fish and stage of life cycle prior to catch or degradation after death. Distinguishing flavors associated with natural processes from those resulting from exposure to contaminants released into the environment can be difficult.

How is Tainting Detected and Measured?

Tainting is difficult to assess quantitatively because it is a sensory based on individual experience, preference, and sensitivity. Screening for taint in fish and shellfish is

typically accomplished through sensory or “organoleptic” evaluation. Organoleptic evaluation consists of odor and flavor tests conducted by panels of people serving as “judges” or testers to determine whether there are detectable odor or flavor differences between potentially tainted seafood and a known standard or control. Organoleptic testing is subjective; individuals vary widely in sensitivity and even the same person will not be consistent in the concentrations detectable from day-to-day.

Why is Tainting a Problem?

Tainting is of concern because it can adversely affect commercial and recreational fisheries, mariculture activities, and industries supporting fisheries activities such as canneries. Impacts on the market for fresh or processed catch due to actual or potential tainting and related fisheries closures can result in substantial economic losses. Tainting can also result in modifications of traditional subsistence use of seafood resources, causing serious cultural disruption.

Tainting is as much a perception problem as a real risk; fear of tainting can result in impacts as serious as an actual tainting incident. In the case of large-scale oil pollution incidents, risk of tainting is probably the most serious effect on the fishing industry. The impact is due primarily to marketing problems rather than actual incidence of off-flavor or off-odor. In many instances fish even slightly suspect of petroleum tainting or thought to originate from oiled waters become unmarketable. Fishing bans and closures are sometimes imposed to prevent oil from fouling fishing gear and to reduce the risk of tainted seafood being brought to market. Though tainting is usually short-lived, perception and marketability of a region’s commercially harvested species can be affected long after the actual risk has subsided, resulting in severe economic losses.

How are Marine Organisms exposed to Oil?

Most petroleum tainting incidents have been associated with major spills involving releases of large volumes of oil into confined coastal waters. Tainting of seafood has been associated with releases of crude oil, diesel fuel, Bunker C, and gasoline. Light oils and the middle boiling range of crude oil distillates are the most potent sources of taint, but all oil fractions can cause tainting.

Who Issues Fish Advisories and Bans?

In the United States the authority to issue fish advisories or closures due to human health risks from consumption resides with the states, typically in the health department rather than a state resource agency. Many states routinely conduct chemical contaminant analyses of fish and shellfish tissues as part of their water quality monitoring programs. If a state concludes that consumption of chemically contaminated fish or shellfish poses an unacceptable human health risk, it may issue local fish consumption advisories or bans for specific waters bodies or parts of water bodies and specific fish and shellfish species for specific populations.

