Ensuring Food Safety Following an Oil Spill in Alaska: Regulatory Authorities and Responsibilities

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December 31, 2018

Acknowledgments

Cover photo: berries (GroundTruth Trekking); other photos (Nuka Research)

This report was developed with funding from the Oil Spill Recovery Institute (Contract # 18-10-07).

The Alaska Regional Response Team's Food Safety Workgroup and additional experts provided input on the scope and contents during report development, including:

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U.S. Department of Agriculture: Gary Sonnenberg
U.S. Department of Commerce (National Oceanic and Atmospheric Administration): Doug Helton, Catherine Berg, Sarah Allan, Amy Holman
U.S. Department of Health and Human Services: Joe Sarcone (Agency for Toxic Substances and Disease Registry)
U.S. Department of Interior: Dr. Philip Johnson, Dr. Angela Matz (U.S. Fish and Wildlife Service)
Sea Grant: Dr. Stephen Sempier

Other individuals who provided information about their organization's role and experience are identified throughout the report. Nuka Research appreciates the willingness of so many people to share their time and expertise.

Executive Summary

A wide diversity of wild foods is harvested or consumed in Alaska, ranging from world-class commercial fisheries to the consumption of polar bears, musk ox, fish, or berries for subsistence purposes. Agricultural products include reindeer herding, bison ranching, and other livestock; agricultural produce; milk; and eggs. Alaskans rely on the foods they hunt, catch, gather, and grow for their livelihoods, nutrition, cultural expression, recreation, holistic well-being, identity, and connection to the land and water. In the event of an oil spill impacting any of these resources, preventing human consumption of contaminated foods will be an important response priority. This report was funded by the Oil Spill Recovery Institute to provide the Alaska Regional Response Team (ARRT) background information as it crafts its own policy and guidance on handling food safety issues in a spill response. While this report focuses on oil spills, almost all of the relevant authorities discussed are applicable to a wider range of public health contamination or emergency situations.

The resources contaminated, potentially contaminated, or perceived to be contaminated by a spill determine the state or federal agencies involved in food safety issues. Other organizations may provide input to decisions about the appropriate course of action and support the development and dissemination of messages to the public. Federally recognized tribes may be consulted more generally about the response, and this may include food safety issues where species used for subsistence purposes are at risk as well.

Alaska has state regulatory authorities in place to implement its Zero Tolerance Policy for the sale of oil-contaminated seafood products. The state manages many of the commercial fisheries and all commercial aquaculture and shellfisheries, and oversees seafood processing – as well as other commercial food processing – regardless of the source of the fish (whether from a state or federally managed fishery). State agencies have authority to close access to these resources in the event of an oil spill. Regulations require state inspections and recertification of affected/associated fishing vessels, tenders, and processors for contamination if a spill occurs before they resume fishing/processing operations. The federal government can also close areas of federal waters to commercial fishing for emergency purposes, including an oil spill. The implementation of commercial fishery closures may involve only the state, or may be a shared state and federal effort. A closure or access restrictions to affected areas can be implemented directly by the Unified Command running the response.

Non-commercial food uses include subsistence, personal use, and sport or recreational fishing, hunting, and gathering. Generally, while commercial resources are considered closed unless explicitly opened by the managing agency, access to subsistence resources is considered opened unless closed. Advisories against harvesting species that smell, feel, or look like oil (or where oil is observed) are more common than complete closures. Agency actions to protect the public oil spill-related contamination may also be taken to mitigate other health hazards, such as paralytic shellfish poisoning. Subsistence hunts for marine mammals and migratory birds are co-managed between federal agencies and Alaska Native organizations. Agencies may issue advisories in an emergency though generally would do so after consulting with public health organizations or tribes. Land managing agencies, public health agencies, tribal health organizations, and universities may be involved determining whether contamination is present and poses a public health threat, crafting risk communications, and disseminating communications to affected communities.

Far more experience has been documented food safety impacts in Alaska's marine environment than in its freshwater or terrestrial environments. Case examples illustrate a range of options, from one agency closing a relatively small fishery based on the presence of oil to multi-agency, multi-stakeholder processes that last days or weeks. Closures or advisories can also be issued based on oil detected by sight, smell, or feel to chemical analysis of tissue samples and analytic risk assessments to determine potential human impacts. Contaminated food disposal also requires compliance with state and federal laws and coordination among agencies.

While this report does not seek to dictate ARRT policy, it offers recommendations for next steps. These include advancing a shared understanding within Area Committees of the food resources at risk and the partners and practices in place to address them, exercising procedures in place for a major freshwater spill in Alaska, and identifying best practices for communicating advisories (particularly with and to subsistence communities).

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Acronyms

ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish & Game
ADHSS	Alaska Department of Health and Social Services
ADNR	Alaska Department of Natural Resources
ANILCA	Alaska National Interest Lands Conservation Act
ARRT	Alaska Regional Response Team
ATSDR	Agency for Toxic Substances & Disease Registry
BLM	Bureau of Lands Management
CDC	Centers for Disease Control
CERCLA	Comprehensive Environmental Response, Compensation, and Restoration Act
DOI	Department of Interior
EEZ	Exclusive Economic Zone
EPA	Environmental Protection Agency
FDA	Food and Drug Administration
FOSC	Federal On-Scene Coordinator
FSIS	Food Safety and Inspection Service
FSS	Food Safety and Sanitation Program
FWS	Fish and Wildlife Service
GMU	Game Management Units
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NRDA	National Resource Damage Assessment
OR&R	Office of Response and Restoration
PRD	Protected Resources Division
SOSC	State On-Scene Coordinator
USCG	United States Coast Guard
USDA	United States Department of Agriculture

1 Introduction

This report was funded by the Oil Spill Recovery Institute to support the efforts of the Alaska Regional Response Team's (ARRT) on-going food safety report. The workgroup's overall effort is described in a white paper entitled, "Potential Safety and Security Issues During Emergency Responses in Alaska" (Helton et al., 2015).

Alaskans depend on wild and cultivated food resources to various degrees for income, nutrition, cultural expression, holistic well-being, identity, connection to the land and waters, and their general livelihoods. If food resources are contaminated, potentially contaminated, or perceived to be contaminated, there could be human health, socioeconomic, psychological, emotional, and cultural impacts.

When a spill occurs, protection of the environment - including food resources - is the top priority after human life and safety. Addressing concerns about the safety of food resources harvested or produced from Alaska's terrestrial, freshwater, or marine environments is critical to protect human health and the environment from the harmful effects of contaminant exposure. This includes implementing response strategies to minimize impacts to plant and animal species and their habitats. Decisions regarding when to limit – and when to expand – access to different resources are made under a framework of state and federal authorities within a broader context that includes economic and cultural considerations.

1.1 Purpose

The goal of this project is to support the ARRT's efforts to develop policy and guidance for On-scene Coordinators regarding food safety during pollution responses. Project objectives to achieve this goal include: (a) identify statutory and regulatory authorities, as they exist, regarding closure/opening of each of the following in the event of contamination from a marine oil spill: commercial, recreational, personal use, and subsistence resources; (2) directly engage ARRT workgroup in the project; and (3) produce a concise report to inform the ARRT workgroup's efforts to develop a policy and guidance related to food safety in the event of a marine oil spill in Alaska.

This report provides background information related to one element of the ARRT workgroup's overall effort by documenting existing state and federal regulations and agency responsibilities. The report does not recommend ARRT policy.

1.2 Approach

The ARRT workgroup and colleagues from state and federal agencies convened two times via teleconference during this project. This *ad hoc* group informed the scope of the project, recommended applicable case studies, provided information and contacts from their own and other agencies, and reviewed and commented on two drafts. During the first call, the scope was expanded from a focus strictly on marine spills to include inland (terrestrial and freshwater) spills, as well. Teleconferences were supplemented by email correspondence to enhance details about specific topics.

1.3 Scope

The geographic scope of this project includes marine waters out to the boundary of the U.S. Exclusive Economic Zone (EEZ) and land and freshwater within the State of Alaska. The focus of the report is laws, regulations, and policies (or actions) undertaken by state and federal agencies to prevent human health impacts caused by the consumption of foods contaminated by oil spills. These are primarily, though not exclusively, wild plants and animals.

This report focuses on the authorities related to preventing human consumption of foods contaminated by oil spills. In most cases, these authorities apply for other types of spills or pollution, such as spill of other hazardous substances, mercury contamination of freshwater fish, or paralytic shellfish poisoning. "Authorities" here are primarily based in state and federal statutes and/or regulation. Other responsible entities are also identified, such as co-management organizations and tribal health organizations, but this report does not attempt to describe all the ways in which any particular agency or organization may contribute to a spill response.

1.4 Organization of this report

This report provides brief background on jurisdiction over lands and waters in Alaska and the ways that different food species are managed. It then identifies state and federal agencies and some potential partnering organizations according to the generalized functions they may provide related to food safety following a spill. These are summarized in a table in Section 4 and each agency is described in more detail in Appendix B. Case examples then provide examples of how agencies have addressed past spills in Alaska, with an additional discussion of some federal agency tools developed following the Deepwater Horizon spill in the Gulf of Mexico. If foods become contaminated and require disposal, this process must also follow state and federal requirements as

described in Section 6. Some recommendations for potential next steps are described in a brief discussion section.

Appendices contain Alaska's Zero Tolerance Policy for oil contamination of commercially processed seafood and other foods, agency descriptions, and examples of utilized during previous food safety-related events in Alaska.

2 Background on Food Resources and Management

Marine waters are managed by the state within 3 nautical miles of Alaska's coastline, or "baseline," with federal waters then extending to the edge of the U.S. Exclusive Economic Zone (EEZ) 200 nautical miles from shore. Except where already privately owned before statehood, the intertidal zone is managed by the State of Alaska. Upland areas are either privately owned or publicly managed. More than 60% of Alaska is managed by a federal agency and almost 30% is managed by the State of Alaska (ADNR, 2000). Figure 1 presents these general jurisdictional lines. However, there are many exceptions where state or federal agency authorities apply across the simplified areas depicted.

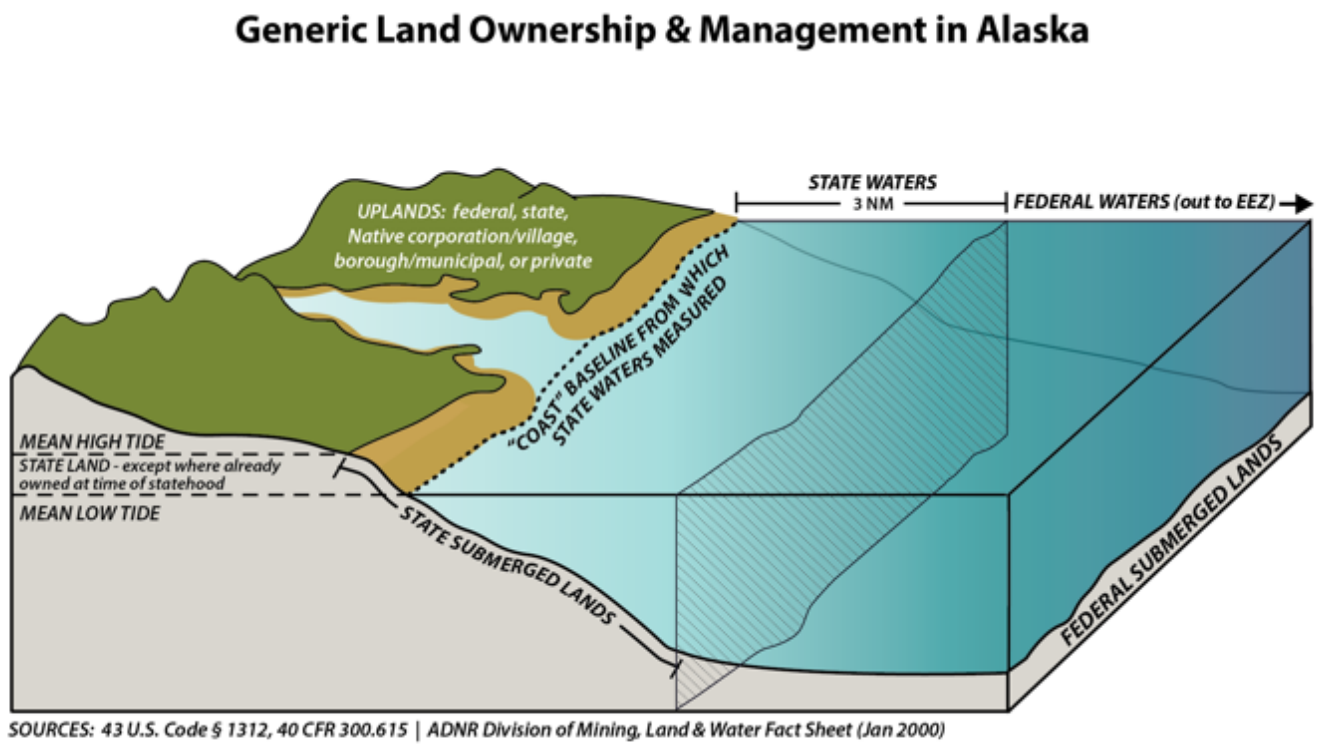


Figure 1. Generic ownership or management of lands and waters in Alaska

2.1 Subsistence

The subsistence harvest of wild foods in Alaska is central to many Alaskans' way of life and ranges from polar bears to berries, including fish and shellfish, marine and terrestrial mammals, birds, and plants. Subsistence activities of various kinds may take place on federal, state, or private lands and the marine waters around the state. Regardless of whether closures or advisories are issued by federal or state agencies during spill responses, users may choose *not* to hunt or harvest in particular areas based on perceived or observed contamination. As an example, an observed oil sheen may not always instigate a response but may deter or disrupt consumptive activities. Thus, even small releases that do not result in active responses could impact consumptive users.

Subsistence activities vary among communities and change with the seasons (Raymond-Yakoubian et al., 2017). As noted on the Alaska Department of Fish and Game (ADF&G) website:

> *Subsistence fishing and subsistence hunting are important for the economies and cultures of many families and communities in Alaska. Subsistence uses of wild resources exist alongside other important uses of fish and game in Alaska and are especially important for most rural families, who depend on subsistence hunting and fishing as sources of nutrition and cultural practices. An estimated 36.9 million pounds of wild foods are harvested annually by rural subsistence users.* (ADF&G, no date)

The importance of subsistence activities, particularly (and sometimes exclusively) by Alaska Native communities extends beyond the nutritional value of the foods harvested, as noted in this discussion of the term:

> *By the term "subsistence," the authors employ the senses commonly used by indigenous residents of this region (as opposed to, for example, the State of Alaska's understanding). The indigenous perspective encompasses hunting and gathering related activities which have a deep connection to history, culture, and tradition, and which are primarily understood to be separate from commercial activities. (Raymond-Yakoubian et al., 2017)*

Food safety and security are interlinked in places where a large percentage of the foods consumed are from "subsistence" activities, as is the case throughout much of rural Alaska and especially within Alaska Native communities. As one example, the Inuit Circumpolar Council's definition of "food security" highlights some of the broader cultural values of hunting and gathering activities to Inuit people.

> *Alaskan Inuit food security is the natural right of all Inuit to be part of the ecosystem, to access food and to care-take, protect and respect all of life, land, water and air. It allows for all Inuit to obtain, process, store and consume sufficient amounts of healthy and nutritious preferred food – foods physically and spiritually craved and needed from the land, air and water, which provide for families and future generations through the practice of Inuit customs and spirituality, languages, knowledge, policies, management practices and self-governance. It includes the responsibility and ability to pass on knowledge to younger generations, the taste of traditional foods rooted in place and season, knowledge of how to safely obtain and prepare traditional foods for medicinal use, clothing, housing, nutrients and, overall, how to be within one's environment. It means understanding that food is a lifeline and a connection between the past and today's self and cultural identity. Inuit food security is characterized by environmental health and is made up of six interconnecting dimensions: 1) Availability, 2) Inuit Culture, 3) Decision-Making Power and Management, 4) Health and Wellness, 5) Stability and 6) Accessibility. This definition holds the understanding that without food sovereignty, food security will not exist.* (ICC-AK, 2015)

It is evident from the excerpt above that a spill or spill response activities may have broader implications for food security which go beyond the scope of this report. The excerpt also highlights the relationship between food security and sovereignty that may need to be navigated when a spill impacts Indigenous communities.

Subsistence resource use on federally-managed lands is overseen by the Federal Subsistence Board (U.S. DOI, no date). The State of Alaska's Department of Fish and Game (ADF&G) manages subsistence resource use elsewhere under a Board of Fisheries (AS 16.05.251) and Board of Game (AS 16.05.255), with the exception of federally protected species. Subsistence use of species protected by the Marine Mammal Protection Act (16 USC 31) is managed jointly by either the NOAA Fisheries or the U.S. Fish and Wildlife Service (USFWS) with one of several Alaska Native co-management organizations. Co-management relationships are defined in agreements between the Alaska Native co-management organization and the relevant federal agency, but generally include monitoring the harvest, conducting research to inform management plans, and collecting and analyzing data (NMFS, 2017).

USFWS also has responsibility for protecting migratory bird species under the Migratory Bird Treaty Act. Table 1 identifies the subsistence resource oversight responsibilities of ADF&G, NOAA Fisheries, and USFWS. Table 2 lists the co-management authorities for federally-protected species that are harvested for subsistence in Alaska.

Table 1. General subsistence resource oversight responsibilities

Species	Agency		
	ADF&G	NOAA Fisheries	USFWS
Shellfish	X		
Finfish (except Pacific halibut)	X		
Pacific halibut	International Pacific Halibut Commission via NOAA Fisheries		
Marine mammals: Beluga whales, bowhead whales, harbor seals, ice seals, northern fur seals, Steller sea lions		X – co-managed (see Table 2)	
Marine mammals: polar bears, sea otter, walrus			X – co-managed (see Table 2)
Aquatic or terrestrial plants	X		
Game birds	X		
Migratory birds	X - waterfowl		X
Terrestrial game species: Bison, black & brown bear, caribou, Dall sheep, deer, elk, moose, mountain goat, muskox, wolf, and small game	X		

Table 2. Alaska Native co-management organizations and federal agencies with responsibility for marine mammals

Species	Management Responsibility	
	Co-management Organization	Federal Agencu
Beluga whale	Alaska Beluga Whale Committee	NOAA Fisheries
Bowhead whale	Alaska Eskimo Whaling Commission	NOAA Fisheries
Harbor seal	Alaska Native Harbor Seal Commission Aleut Marine Mammal Commission	NOAA Fisheries
Ringed, ribbon, spotted, and bearded seals (Ice seals)	Ice Seal Committee	NOAA Fisheries
Northern fur seal	Aleut Community of St. Paul Aleut Community of St. George	NOAA Fisheries
Sea otter	Indigenous People's Council on Marine Mammals	USFWS
Steller sea lion	Aleut Community of St. Paul Aleut Community of St. George Aleut Marine Mammal Commission	NOAA Fisheries
Polar bear	Alaska Nannut Co-management Council	USFWS
Walrus	Eskimo Walrus Commission	USFWS

2.2 Other non-commercial uses

In addition to subsistence uses, other species are harvested for personal use or sport and recreation. "Personal use" is a term in state regulations that refers to specific non-commercial harvests open only to Alaska residents who use specified gear and intend to keep their catch for use within their own household. This may include finfish, shellfish, or aquatic plants and requires a license or permit in addition to established Alaskan residency. Personal use fishing occurs in more heavily populated areas, in contrast to the subsistence activity in rural areas. Targeted species

vary around the state. They include, but are not limited to, salmon, herring, hooligan, Dolly Varden, groundfish, and shellfish (clams, mussels, shrimp, crab, scallops).

Sport fishing and hunting are also common around the state, open to both Alaskans and non-residents with the appropriate permit. Sport fishing, using rod and reel only, occurs in both marine and freshwater for a range of fish and shellfish species similar to those harvested for personal use but adding freshwater species such as trout, grayling, and pike. Personal use and sport/recreational hunting and fishing are managed by ADF&G. Table 3 identifies the target species for sport and personal use activities.

Table 3. General personal use and recreational oversight responsibilities (hunting is also regulated by land-managing agencies)

Species	ADF&G Management	
	Sport/Recreational	Personal Use
Shellfish	X	X
Finfish[1]	X	X
Aquatic plants		X
Game birds	X	
Migratory birds	X - waterfowl	
Terrestrial game species: Bison, black & brown bear, caribou, Dall sheep, deer, elk, moose, mountain goat, muskox, wolf; small game; and furbearers	X	

2.3 Commercial uses

Commercial food uses include commercial fisheries (finfish and shellfish), aquaculture, reindeer herding, bison ranching, cattle farming, and agriculture.

Alaska's commercial seafood industry harvested 5.6 billion pounds of fish in 2016 for a value of $1.7 billion (paid to the fishermen) or $4.2 billion at wholesale (McDowell Group, 2017). Commercial seafood activities occur throughout marine waters south of the Bering Strait (ADF&G, no date; NPFMC, 2009). Fishery products from Alaska are sold worldwide and represent tens of thousands of jobs in Alaska among fishing vessels and both at-sea and shoreside processors (McDowell Group, 2017). There are also commercial geoduck and razor clam harvests.

Aquaculture, mariculture, and or aquatic farming operations are most common in Southcentral and Southeast Alaska. Oysters, clams, and mussels are most commonly cultivated in this relatively new economic activity for the state (ADF&G, no date).

[1] All uses of Pacific halibut are managed by the International Pacific Halibut Commission via NOAA Fisheries.

Commercial seafood harvest activities are managed based on geographic jurisdiction (state or federal waters), species, and gear type by ADF&G and/or NOAA Fisheries.[2] The Alaska Department of Environmental Conservation (ADEC) and U.S. Food and Drug Administration (FDA) oversee processing for sale of any commercially produced food products, depending on whether the food processed is intended for sale in Alaska. See Table 4.

Table 4. Overview of agency oversight related to commercial seafood in Alaska

Species	Responsible for Harvest Management		Responsible for Safe Processing/Sale	
	ADF&G	NOAA Fisheries	ADEC	FDA
		SHELLFISH		
Crab	X[3]		X	
Scallops	X – state waters & joint mgmt. in federal waters	X – joint mgmt. in federal waters	X	X
Shrimp, clams, sea urchins, sea cucumbers, octopus, squid	X - any location		X	X
Aquaculture (includes oysters, mussels)	X		X	
		FINFISH		
Groundfish (pollock, sablefish, cod, rockfish - excluding Pacific halibut)	X – state waters	X – federal waters	X	X
Pacific halibut	International Pacific Halibut Commission via NOAA Fisheries		X	X
Herring	X		X	
Salmon	X - state waters, inland waters	X – federal waters	X	X

Agriculture on land is much less prominent in Alaska than commercial fisheries and aquaculture, but there are more than 700 farms growing vegetables and raising cattle (meat and dairy), poultry, bison, and pigs (USDA, 2017).

Similar to commercial seafood, the processing and sale of other commercial food products is also overseen by ADEC and FDA - with USDA involved for certain species - depending on whether

[2] Pacific halibut are jointly managed by the U.S. and Canada. The International Pacific Halibut Commission (IPHC) is chartered by the U.S. and Canadian governments to manage the Pacific halibut fishery and stock in U.S. and Canadian waters. IPHC makes recommendations for both countries to include in their regulations. In the U.S., these regulations are implemented by NOAA Fisheries.

[3] Management of king and Tanner crab in the Bering Sea/Aleutian Islands region is deferred to the State of Alaska with federal oversight.

interstate commerce is intended. See Table 5. While ADEC has could exercise its broad authority over the safety of foods offered or sold to the public in Alaska if there were a food safety concern, the only state programs that require permits and regular inspections are for fish/shellfish. Also, many producers in Alaska – such as poultry and eggs – are small enough to be exempt from federal regulations.

Table 5. Overview of agency oversight related to commercial food species

Species	Responsible for Processing/Sale		
	ADEC	FDA	USDA
Fish and shellfish	X	X	
Poultry (domestic)	X		X
Wild turkeys, ducks, geese	X	X	
Cattle, sheep, pigs, goats, horses, reindeer	X		X
Bison, rabbits, game animals, deer, elk, moose	X	X	
Eggs, meat products[4]	X	X	X

[4] Regulatory authorities for USDA and FDA (besides seafood) are described here: https://www.registrarcorp.com/resources/fda-usda-food-regulations/

3 Spill Response Context

The Alaska Regional Contingency Plan (2018) describes the federal and state agencies that may be involved in a spill response in Alaska. The responsibilities of different agencies will depend on the spill location and species that are - or may be, or may be perceived to be – exposed to contamination. Beyond the narrow focus of this report on food safety specifically, affected communities will be involved in a spill response through the Incident Command System and, where applicable, requirements for federal agency consultation with recognized Tribes. Specific spill risks, sensitive areas (including for food sources), and key organizations or community actors are identified in the four Area Contingency Plans for the state governed by corresponding Area Committees (ARRT, 2018).

3.1 Contamination pathways

The potential for a spill to impact food species will depend on the type of oil or other pollutant and how it behaves in the environment to which it is spilled (EPA, 1999). Plants or animals used as foods may be contaminated through direct oiling or inhalation/ingestion of spilled hydrocarbons in the marine, terrestrial, or freshwater environment. Contamination could also occur if an animal consumes or contacts another contaminated animal or plant. Contact with oil could also occur as part of a harvest or processing activity, e.g., contact with contaminated gear, spreading contamination to an entire hold of fish or bringing contamination into a tender or processor via the use of seawater (Yender, et al. 2002; Nuka Research, 2005).

The impact of a chemical compound released into the environment depends on the physical characteristics as well as the chemical reactions that occur after it is released. For example, oil may have an immediate impact on an animal due the physical characteristics of the product, at the same time that the oil itself – or its chemical components – have a toxic impact. Bioaccumulation may also occur (EPA, 1999).

3.2 Related policies, plans, and other guidance

The State of Alaska has a Zero Tolerance Policy for the oil contamination of seafood processed in Alaska (see Appendix A). Agencies may also have additional guidance documents that relate to food safety during a spill response. For example, NOAA Fisheries' *Arctic Marine Mammal Disaster Response Guidelines* (NFMS, 2017) directly addresses the importance of marine mammals as

subsistence food resources.[5] Likewise, the Department of Interior has a *Departmental Manual* which includes a chapter on, "Communication of Fish and Shellfish Consumption Advisories" (U.S. DOI, 2012). NOAA Fisheries and FDA developed guidance regarding federal fisheries closures and reopening which is described in Section 5.2. Other applicable guidance or policies are referenced with the appropriate agency in Appendices B and C.

3.3 Mechanisms for preventing consumption of contaminated foods

Areas may be closed to public access for public safety or to prevent disruption to response activities. In addition, there are two primary mechanisms specific to reducing human exposure to spill-contaminated foods: advisories and closures. In general, both state and federal agencies consider subsistence access to resources to be open unless closed, while other uses are considered to be closed unless opened. In the event of a spill, advisories are more commonly used for subsistence resources, while closures are more likely to be applied to commercial operations. Finally, while closures will be lifted (i.e., an area reopened to commercial fisheries), advisories often are not "lifted" in the same way: the recommendation not to eat an animal or plant that looks or smells like it has been oiled, or tastes wrong, holds true even after the oil from a spill appears to be gone.

The decision to close access to a resource or issue an advisory due to known or potential contamination may be made based on:

- Known or potential presence of oil in the area (visual observations including overflights, trajectory modeling) or on food species either in harvest (e.g., in fish hold on a vessel) or in situ (e.g., oiled clams or clam flats),
- Oil on sampled product detected through sight or smell (e.g., sensory – or "organoleptic" - testing), and/or
- Oil components detected in chemical analysis of tissue samples.

The applicable agency authorities and responsibilities are summarized in Section 4. Examples of how these methods have been used in spills in Alaska are described in Section 5.

[5] A similar plan for the Cook Inlet and Kodiak area is forthcoming in 2019.

4 Overview of Agency Responsibilities in Protecting Food Safety After a Spill

There is no single agency with the authority or responsibility to address food safety issues following an oil spill. The processes used and the agencies involved will vary depending on which agency manages an affected resource (if any), whether the food is used for non-commercial or commercial purposes, whether it will be sold outside Alaska (if commercial), and the size and scope of the spill and its associated impacts. This section provides an overview of the functions provided by agencies and other organizations in a spill response context, then describes how these may be implemented for offshore, nearshore, and inland spills. Appendices B and C provide more detailed descriptions of each agency's food safety authority and responsibility for reference.

4.1 Agency functions related to food safety

Agency functions may generally be described as serving one or more of the following: response coordinator, land or resource manager, technical assistance, public health, and risk communications. Some agencies will serve more than one function at a time, or may serve different functions depending on the circumstances.

Tables 5 and 6 identify the federal and state agencies, respectively, that may provide these generalized functions. More detailed descriptions are provided in Appendix B (state agencies) and Appendix C (federal agencies).

- ***Response coordinators.*** This general category is used to identify those agencies serving as On-Scene Coordinators, representing federal, state, local, and tribal authorities along with the responsible party. The Federal On-Scene Coordinator will usually be from the U.S. Coast Guard or U.S. Environmental Protection Agency. The State On-Scene Coordinator will be from the Alaska Department of Environmental Conservation. More information regarding the Incident Command System and agency response functions is described in the Alaska Regional Contingency Plan (ARRT, 2018).

- ***Land or resource manager.*** Agencies also manage various resources ranging from fisheries to lands. Managing agencies typically implement an advisory or closure, but they may rely on public health agencies when determining the appropriate course of action. Different agencies have different mandates and expertise regarding their involvement with food

safety issues. Management is sometimes shared between agencies or with co-management organizations as discussed in Section 2.

- ***Technical assistance.*** Agencies may provide technical assistance such as sampling or testing of contaminated or potentially contaminated species, waters, or soil to inform a decision regarding whether food sources are safe for consumption. Technical assistance may include conducting chemical or sensory analysis of samples, or identification of the presence of pollution (e.g., using sorbent materials in fish holds). It may also include analyzing the trajectory of the spill and identifying species at risk. In addition to state and federal agencies, universities and science centers around the state may provide technical assistance.

- ***Public health.*** Agencies determine whether food sources are safe for human consumption based on the known presence of oil or a risk analysis. (Specific methods and thresholds will vary.) A public health determination may be based on information provided by technical assistance agencies. Federal and state agencies often collaborate, and may also work with tribal health organizations if subsistence resources are impacted. This decision is commonly made collaboratively with more than one agency involved.

- ***Communications.*** Public health, resource, and land management agencies may craft and disseminate messages for the public regarding the presence of a closure or risks associated with consuming foods from a certain area if an advisory is issued. Land management agencies also disseminate these communications. Tribal health organizations and co-management organizations may be involved in crafting or disseminating information as well.

Table 6 identifies the state agency functions related to food safety in spill context. ADEC and ADF&G are most likely to be the lead agencies (or working closely together). ADF&G has an emergency order authority that can be applied to closing – or not opening – the subsistence, recreational, personal use, and commercial food resources it manages or co-manages [AS 16.05.060]. ADEC's provides a response coordination function as State On-scene Coordinator as well as having specific responsibilities related to both commercial and non-commercial foods. This falls both under the Department's public health mandate but also includes broad authorities related to ensuring the safety of any commercial foods processed in Alaska. ADEC's Food Safety and Sanitation (FSS) program also specifically requires fishing vessels, tenders, and processors to be inspected before, during, and after fishing activities or receiving seafood if there has been a spill. These regulations represent the only authorities described in this document that are specific

to an oil spill situation [18 AAC 34.600-625]. ADEC and ADF&G responsibilities are described in more detail in Appendix B.

The Alaska Department of Health and Social Services (ADHSS) provides public health advice and disseminates information to the public, and serves as the ultimate authority in the state regarding public health matters. (Both ADEC and ADF&G frequently coordinate with ADHSS on public health-related issues.) The Alaska Department of Natural Resources (ADNR) is a significant manager of state lands, though not the only one. ADNR and other land managing agencies may support the implementation of a closure or advisory by limiting access to certain areas or posting signs, but they otherwise do not determine whether such a measure is necessary.

Table 6. State agency functions in the event of an oil spill where food safety issues may arise

State Agencies	Response Coord.	Land or Resource Manager	Technical Assist	Public Health	Comms
Alaska Department of Fish and Game (ADF&G)					
Division of Commercial Fisheries		X			X
Division of Sport Fish		X			X
Division of Wildlife Conservation		X			X
Alaska Department of Health and Social Services (DHSS)				X	X
Alaska Department of Environmental Conservation (ADEC)					X
Spill Prevention, Preparedness, and Response	X		X	X	X
Environmental Health Division					
Food Safety and Sanitation			X	X	
State Veterinarian			X	X	
Alaska Department of Natural Resources (ADNR)		X			X

Table 7 summarizes the federal agency responsibilities in the event of a spill impacting food safety. The U.S. Coast Guard or U.S. Environmental Protection Agency (EPA) will most likely serve as Federal On-Scene Coordinator (FOSC).[6] NOAA analyzes the spill trajectory and identifies potentially impacted species. If federally-managed fisheries are impacted, NOAA Fisheries may close an area of federal waters to commercial fishing activity and then work with ADEC and FDA to determine when it is appropriate to reopen it. NOAA and USFWS work with state or federal public health agencies to determine the need to issue an advisory for subsistence hunting of federally-protected species (in consultation with co-management organizations as timing allows). While ADEC has jurisdiction over food offered or sold to the public in Alaska, FDA and USDA share jurisdiction with ADEC in cases where food is distributed wholesale and interstate commerce is

[6]The FOSC role and exceptions (such as when contamination involves radiation or nuclear weapons, or originates from a Department of Defense or Department of Energy vessel or facility) are found at 40 CFR 300.130.

involved. ADEC coordinates closely with FDA, where appropriate. Both USDA and FDA have limited capacity for food inspections in Alaska and, as noted, many producers are exempt from federal requirements because of their low volume relative to operations in the Lower 48.

The Department of Health and Human Services houses the Centers for Disease Control, which includes the Agency for Toxic Substances and Disease Registry (ATSDR). ATSDR provides consultation to agencies or federally-recognized Tribes on public health exposures to contaminants. ATSDR may assist in disseminating public health information as well. Finally, in addition to serving as FOSC, EPA can provide technical assistance regarding the nature of the contamination levels and cleanup levels suitable to minimizing human exposure.

Table 7. Federal agency functions in the event of an oil spill where food safety issues may arise

Federal Agencies	Response Coord.	Land or Resource Manager	Technical Assist	Public Health	Comms
U.S. Coast Guard	X			X	X
U.S. Environmental Protection Agency (EPA)	X		X		
U.S. Department of Agriculture (USDA)					
Food Safety Inspection Service (FSIS)			X	X	X
Forest Service		X			
Department of Commerce					
NOAA Fisheries – Sustainable Fisheries Div.		X	X		X
NOAA Fisheries – Protected Resources Div.		X	X		X
NOAA Fisheries – Habitat Conservation Div.		X	X		
NOAA – Office of Restoration & Recovery			X		
NOAA – Emergency Response Division			X		
U.S. Department of Health and Human Services					
Agency for Toxic Substances and Disease Registry (ATSDR)			X	X	X
Centers for Disease Control (CDC)			X	X	X
Food and Drug Administration (FDA)			X	X	X
U.S. Department of the Interior					
Bureau of Land Management (BLM)		X			
Fish and Wildlife Service (USFWS)		X	X		
National Park Service (NPS)		X		X	X

4.2 Summary of agency authorities and actions by resource affected

Table 8 summarizes the key actions relevant to different resources. This is also presented more generally in Figure 2. For more information on the relevant statutes or regulations and agency actions described here, see Appendices B (state agencies) and C (federal agencies). Regardless of the resource, the On-Scene Coordinators can close public access to an area to protect public safety and avoid disruption of response activities. Federal regulations at 40 CFR 300.130(a) state that the

FOSC is authorized to, *"…act for the United States to take response measures deemed necessary to protect public health or welfare or environment from discharges of oil or releases of hazardous substances, pollutants or contaminants…"* The Governor delegates similar authorities to State On-scene Coordinators.

Table 8. Summary of key agency authorities and actions related to food safety based on resource impacts

Impact to…	Food Resources	Responsible Agency(ies)	Additional Actions
Subsistence or personal use fishery?	Finfish, shellfish, aquatic plants	DHSS may issue an advisory regarding harvest of subsistence resources from the affected area under its general mandate to protect the public health. This could be issued based strictly on the known presence of oil or another substance or be implemented – or sustained – based on sampling. ADF&G may close a state-managed or co-managed subsistence or personal use fishery by emergency order [AS 16.05.060] or issue an advisory.	ATSDR, tribal health organizations, and/or DHSS may also provide input to decision and disseminate risk communications. EPA may provide technical assistance to inform public health decision. ADEC FSS provides technical assistance and sometimes issues releases jointly with DHSS. Land-managing agencies may assist in disseminating information (e.g., posting signs). USFWS may also conduct sampling on Refuge lands but will not render a public health determination. [16 USC 3114, 16 USC 3121, 16 U.S.C. 3126(b]
Sport fishery or hunting?	Marine and freshwater finfish, shellfish, large and small game (including waterfowl)	On non-federal lands, ADF&G may close a state-managed sport fishery or hunt by emergency order [AS 16.05.060] or issue an advisory. This may be done based on the known or expected presence of oil.	For shoreline or inland activity, state/federal land managing agencies may assist with dissemination of advisory/closure information (e.g., posting signs).
Marine mammals or migratory birds?	NOAA: whales, seals USFWS: Polar bears, walrus, sea otters, birds	Based on public health input from DHSS, ADEC's Environmental Health Division, ATSDR, and/or EPA, the USFWS and NOAA Fisheries may issue an advisory regarding harvest or consumption of federally protected marine mammals and migratory birds.	Co-management organizations will be engaged through established consultation channels and may contribute to risk communications and decision-making regarding concluding an advisory.
Commercial fishery?	Groundfish, salmon, herring in state waters, shellfish Groundfish and salmon in federal waters (See Table 4.)	For a state-managed or co-managed fishery, ADF&G may close commercial fishing by emergency order [AS 16.05.060] or not open a fishery if currently closed. For a federally-managed fishery, NOAA Fisheries may close an area of federal waters to commercial fishing [16 USC 1855(c)]. This includes Pacific halibut, though the IPHC may assist in disseminating information about the closure.	ADEC FSS requires fishing vessels, tenders, and processors to be inspected before, during, and after fishing activities or receiving seafood if the area is threatened by a spill [18 AAC 34.600-625]. *This applies to processing regardless of whether a state or federally managed fishery and regardless of whether the processor is in state or federal waters, per ADEC FSS.*
Shellfish aquaculture or other commercial shellfish operation?	Clams, mussels, oysters	ADEC FSS may close a certified growing area to harvest and/or recall harvested product.	DNR may assist with disseminating information (on state-managed intertidal areas). (DNR issues permits for farms and hatcheries.)
Terrestrial commercial food sources?	Livestock, vegetables/fruits, harvested wild berries, etc.	ADEC FSS regulates commercial food processing in Alaska; State Veterinarian oversees livestock. USDA and FDA each have jurisdiction over foods processed for interstate commerce as outlined in Table 5.	

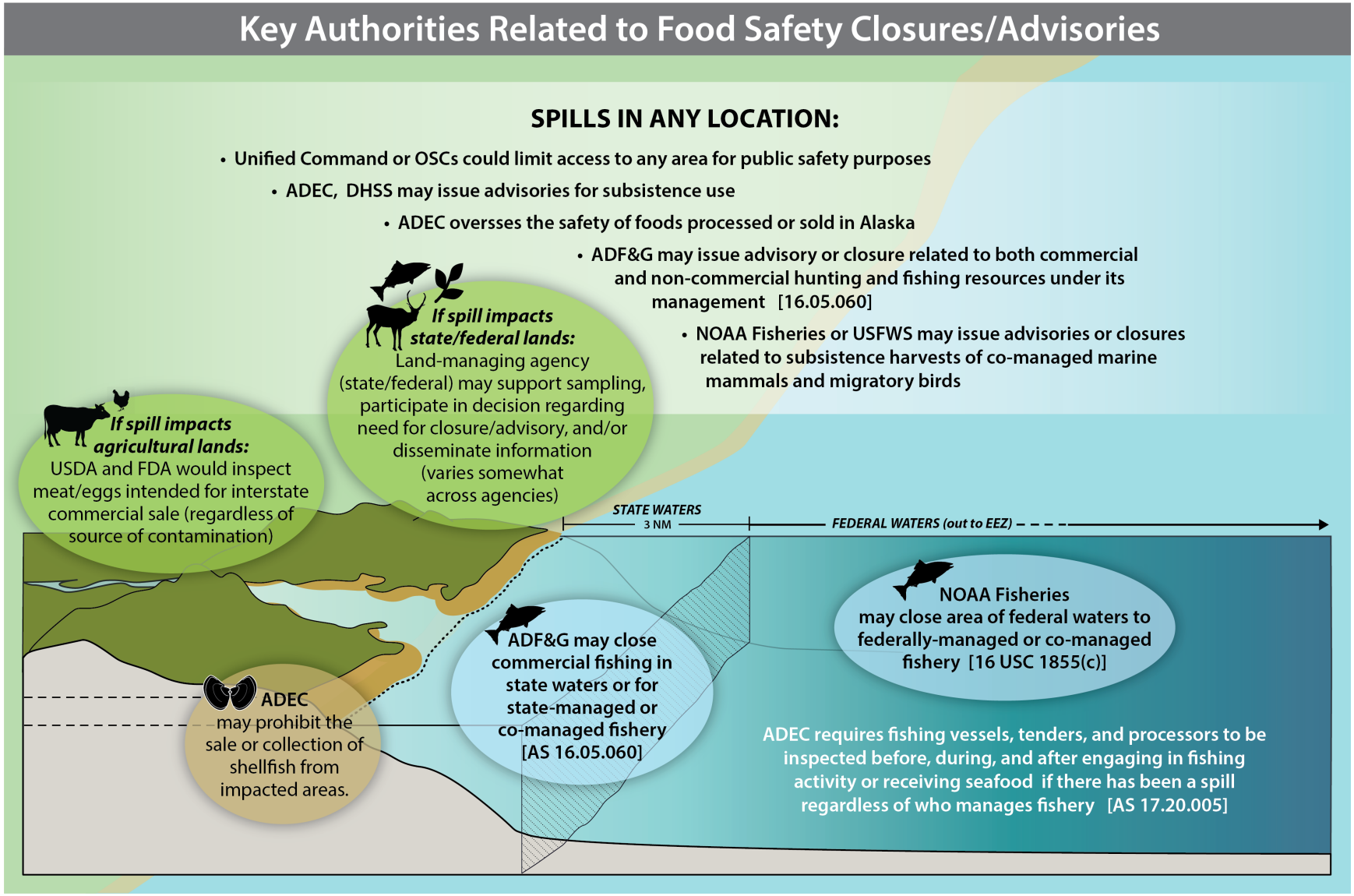


Figure 2. Summary of key agency authorities and actions related to food safety in the event of an oil spill

4.3 Other organizational functions directly related to food safety

As noted above, tribal health organizations, museums or cultural centers, and universities or science centers may also directly participate in food safety issues in the event of a spill.

Tribal Health Organizations (Public Health, Communications)
Tribal health organizations provide public and individual health services throughout Alaska. The Alaska Native Tribal Health Consortium provides a statewide focal point for tribal health, with regional organizations also providing a broad range of services. In addition to providing direct medical care, these organizations may provide a range of services related to community health, economic development or environmental protection which may relate directly or indirectly to the health and viability of subsistence resources and uses.

Tribal health organizations in an area affected by a spill will work with agencies making public health decisions both to inform that decision and to craft and disseminate risk communications when local populations may be affected. These groups are listed below, but also typically identified for a particular region in the geographic-specific index of each Area Contingency Plan. Determining the role each may play within its local area is important, because, as mentioned, the areas of expertise vary.

Tribal Health Organizations in Alaska[1]

Alaska Native Health Board	Kenaitze Indian Tribe
Alaska Native Medical Center	Ketchikan Indian Community
Aleutian Pribilof Islands Association	Knik Tribal Council
Annette Island Service Unit	Kodiak Area Native Association
Arctic Slope Native Association	Maniilaq Association
Bristol Bay Area Health Corporation	Mt. Sanford Tribal Consortium
Chickaloon Native Village	Ninilchik Traditional Council
Chitina Traditional Indian Village Council	Norton Sound Health Corporation
Chugachmiut	Seldovia Village Tribe
Cook Inlet Tribal Council	Southcentral Foundation
Council of Athabascan Tribal Governments	Southeast Alaska Regional Health
Copper River Native Association	Consortium
Eastern Aleutian Tribes	Tanana Chiefs Conference
Native Village of Eklutna	Ukpeagvik Inupiat Corporation
Native Village of Eyak	Yukon Kuskokwim Health Corporation
Fairbanks Native Association	

Museums and Cultural Centers (Technical Assistance)

Local museums or cultural centers may also be sources of expertise regarding the types of subsistence resources that are important locally. An example of this is the Alutiiq Museum in Kodiak, which has published guidebooks on subsistence foods that are important locally which could serve as a reference when determining whether food safety is a concern depending on the species affected by a spill. These groups are not listed here, but could be identified in Area Contingency Plans for reference during a spill.

Science Centers and Universities (Technical Assistance)

Science centers and universities may provide technical expertise and analysis, including sampling design and methods and laboratory analysis. These include the Prince William Sound Science Center, Sitka Sound Science Center, and Anchorage Science Center as well as University of Alaska branches around the state. Alaska Sea Grant may also support the generation or dissemination of information.

International Management Bodies (Communications)

Pacific halibut are jointly managed by the U.S. and Canada. The International Pacific Halibut Commission (IPHC) is chartered by the U.S. and Canadian governments to manage the Pacific halibut fishery and stock in U.S. and Canadian waters. IPHC makes recommendations for both countries to include in their regulations. In the event of an oil spill in Alaska, IPHC would not be the one to decide to restrict fishing, but they could disseminate information to the halibut fleet regarding any actions taken by NOAA Fisheries, ADF&G, or ADEC (and did so during the *M/V Selendang Ayu* oil spill response in 2004-2005 – see Appendix D). IPHC should also be informed of any oil spill that may impact the Pacific halibut population to inform their management recommendations.[7]

Similarly, groups such as the International Whaling Commission might be indirectly involved if a spill occurred (eg, quotas/catch levels, disseminating information) but they aren't the ones who will decide if there should be an advisory to subsistence hunters.

[7] Based on interview with Stephen Keith, IPHC, September 24, 2018.

5 Case Studies

Case examples illustrate agency actions in past spill events in Alaska. The cases do not attempt to describe the overall response effort or spill impacts, but instead focus on the roles played in determining closures or advisories to prevent or mitigate risks to human health from consuming species contaminated by the spill.

This section also includes a summary of some tools related to commercial fishery closures and opening in the context of the Deepwater Horizon oil spill.

5.1 Alaska Cases

Appendix B includes some examples of information issued regarding closures or advisories from the case examples described here.

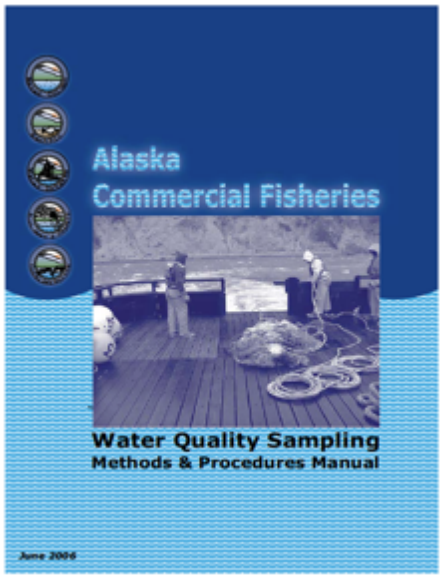
5.1.1 M/V Selendang Ayu (2004)

Location: Nearshore, state waters on Unalaska Island
Resource closure: State-managed commercial fisheries between Cape Kovrizhka and Spray Cape (Makushin and Skan Bays)
Advisory issued: Subsistence consumption on Unalaska Island
Factors: Known oil in area
Agencies directly involved in food safety action: ADEC FSS determined that the spill threatened water bodies used for commercial fishing, activating state regulations at 18 AAC 34.600-625. Following the determination, ADF&G closed and re-opened area of state waters to commercial fishing, and Unified Command issued subsistence advisory. DHSS reviewed data to make public health finding regarding risks associated with subsistence consumption and issued recommendations.
Reopening based on: ADEC removed the Threatened Waterbody status on September 30, 2005 after lightering operations were complete and no further sheen was observable. ADF&G reopened the area to commercial fishing on October 7, 2005 citing ADEC's removal of Threatened Waterbody status.
Timeline:

- On December 8, 2004, the M/V *Selendang Ayu* grounded in Skan Bay, Unalaska Island, broke in half, and spilled about 335,000 gallons of diesel and fuel oil and 132 million pounds of soybeans.

- On December 27, ADEC FSS determined that the spill threatened state-waters between Cape Kovrizhka and Spray Cape, including Makushin and Skan Bay (under 18 AAC 34.600), waters used for commercial fishing. That day, ADF&G Commercial Fisheries issued a news release closing state-waters between Cape Kovrizhka and Spray Cape, including Makushin and Skan Bay, to commercial fishing that would have opened on or after Jan 1. This included the following fisheries: Eastern Aleutian District Tanner crab, Pacific cod, black rockfish, and other groundfish species.
- February 25, 2005 Unified Command issued a notice to fishing vessels with information about where oil had been detected and the status of cleanup activities. Vessel operators/crew were asked to inspect catch and gear and report any observations of oiling to ADEC. ADEC's FSS continued to inspect seafood caught in the area.
- February 27, the International Pacific Halibut Commission issued a notice to commercial and recreational Pacific halibut fishing vessels in the area with information similar to that issued by Unified Command on February 25.
- March 8, Unified Command issued a "Subsistence Advisory for Unalaska Island" urging subsistence users to watch for oil when collecting foods, carefully look and smell for oil on harvested foods, and not consume contaminated foods. The advisory also asked for subsistence users to report any abnormalities as part of on-site observers.
- On September 30, ADEC removed the Threatened Water Body Designation for state-waters between Cape Kovrizhka and Spray Cape, including Makushin and Skan Bay.
- On October 6, ADF&G Commercial Fisheries issued a news release announcing the reopening of the Makushin/Skan Bay area to all commercial fishing activities.[8]
- April 18, 2006 DHSS' Division of Public Health, Section of Epidemiology issued a final risk assessment regarding subsistence consumption of commonly consumed species on Unalaska Island. Polyaromatic hydrocarbon (PAH) levels were highest in samples collected near the spill site, but did not pose a health concern and were expected to decline over time. The report recommended that in order to "err on the side of safety," beaches in the area should be reposted to advise people not to eat foods if oil can be seen, smelled, or tasted on them. Additional sampling was recommended for the future to confirm the expected decline in PAHs. (Additionally, PSP remained a health concern for those consuming shellfish from the area.) (Arnold, 2006). Additional blue mussel samples were taken and analyzed by ATSDR in 2006. The expected reduction in PAHs was observed. The same recommendation remained in place regarding avoiding consuming foods that look, smell, or taste like oil and also adhering to warnings related to PSP (Verbrugge, 2008).

[8] Based on information provided by J. Alas (ADF&G), Dr. Bob Gerlach (ADEC) and ADEC situation reports: https://dec.alaska.gov/spar/ppr/response/sum_fy05/041207201/041207201_index.htm



Alaska Commercial Fisheries Water Quality Sampling Methods & Procedures Manual
(Nuka Research, 2006)

Water Quality Sampling Program

During the *M/V Selendang Ayu* oil spill response, ADEC convened a workgroup to develop and oversee a water quality sampling program targeting areas where fishing activities may be exposed. This process was additional and complementary to inspections conducted under state regulations in the event of a spill. The sampling methods and procedures are documented in a manual.

Sampling methods used readily available materials and vessels, and were designed to target:

- Water column
- Benthos
- Water intakes (vessels and processors)
- Fish gear and vessels

The manual also describes routes of exposure, water quality standards, sampling design and analysis of results, the workgroup process used during the *M/V Selendang Ayu* spill response, and stakeholder communications.

5.1.2 F/V *Leading Lady* and F/V *Kupreanof* (2012)

Location: Nearshore, state waters (Jakolof Bay)
Resource closure: Commercial oyster aquaculture (closed growing area to harvest)
Factors: Known sheen in vicinity of pens
Agencies directly involved in food safety action: ADEC FSS
Reopening based on: Absence of visible spill in area and ADEC FSS organoleptic analyses found product acceptable
Timeline:

- On December 24-25, 2012, two fishing vessels sank in Jakolof Bay with approximately 50 gallons of diesel and 35 gallons of hydraulic fluids and lube oils were onboard the *Leading*

Lady (none onboard the *Kupreanof*, per the owner). The sinking was likely related to heavy snow fall.

- ADEC FSS immediately closed the certified growing waters for harvest. Oysters were not being harvested for sale at the time.
- In January, both vessels were refloated and remaining recoverable contaminants removed.[9]
- Shellfish meat samples, collected at the end of February 2013, passed organoleptic analyses.

5.1.3 F/V *Lone Star* (2013)

Location: Nearshore, state waters (Nushagak Bay)
Resource closure: State-managed commercial fishery
Factors: Spill proximity to fishing activity; sporadic sheen present; contaminated fish caught
Agencies directly involved in food safety action: AFD&G issued closure(s) via Emergency Order(s)
Reopening based on: ADF&G stated in a situation report (July 18) that the closure would remain in effect until fuel had been lightered and no more sheen observed
Timeline:

- On June 30, 2013, the F/V *Lone Star* sunk near the mouth of the Igushik River in Nushagak Bay. At 9:00 AM on June 30, ADF&G Division of Commercial Fisheries issued Emergency Order 23 (WSSA 19) closing the Igushik set gillnet fishery immediately. The fishery was reopened by Emergency Order 26 (WWSA 22) at 12:00 PM the next day.
- During an overflight on July 5, a rainbow sheen was observed going up the Igushik River with the tide. Also on July 5, the fishing tender *Cape Saint John* reported receiving oil-contaminated fish. At 1:00 PM, ADF&G Division of Commercial Fisheries issued Emergency Order 31 (WSSA 27) closing all commercial fishing within 6 statute miles of the F/V *Lone Star* sinking and closing the Igushik Section to set gillnet fishing.
- On July 13, ADF&G flew a survey of the spill vicinity, and because patchy silver and rainbow sheen was still observed, a news release (WSSA 33) announced the fishery would remain closed until the vessel was removed from the river.
- July 18 situation report indicated that the fishery would remain closed until lightering was complete and no more sheen observed.[10]

[9] Based on information in ADEC situation reports: http://dec.alaska.gov/spar/ppr/spill-information/response/2012/20-lady/

[10] Based on information provided by J. Alas, ADF&G unless otherwise noted.

5.1.4 *T/V Silver Bay II* (2014)

Location: Nearshore, state waters (Zimovia Strait)
Resource closure: None
Advisories issued: ADEC and DHSS already had in place an advisory against harvesting shellfish (subsistence and personal use) for consumption due to PSP, but an additional advisory was issued
Factors: Spill proximity to known subsistence harvesting activity; sheen visible in the area and on beaches
Agencies directly involved in food safety action: ADEC and DHHS
Reopening based on: Beach was not officially closed, so there was no official re-opening.
Timeline:

- January 14, 2014, the sinking of the T/V *Silver Bay II* was discovered by crew at Silver Bay logging facility. The time and date of the sinking is unknown. The vessel reportedly held 3,500 gallons of diesel fuel at the time of the sinking. Silver Bay employees deployed boom around the sunken vessel, which did not adequately control the sheen.
- January 15, USCG observed a sheen extending five miles from the vessel.
- January 16, ADEC personnel conducted shoreline surveys for damage and contamination. This survey noted a sheen and odor on Institute Beach. By the next morning, the sheen and odor has dissipated. While a PSP advisory was already in place, an additional advisory related to possible oil contamination was posted. "ADEC recommends against personal use and subsistence harvesting because of the threat of Paralytic Shellfish Poisoning (PSP). Also, shellfish in the area may have been impacted by the recent spill. To avoid any potential health risk, harvesting and consumption of shellfish should be avoided where oil and/or sheens can be seen or smelled on the beach or water." (Quoted language from SITREP #2 and #3, January 17, 2014 and January 21, 2014)
- On January 18, ADEC personnel conducted a final shoreline survey of Institute beach and found no sheen or odor. A personal use and subsistence harvesting advisory remained in effect. [11]

5.1.5 T/V *Powhatan* (2017)

Location: Starrigavan Bay, state waters/clam flats on state park & U.S. Forest Service lands

[11] Based on situation reports: https://dec.alaska.gov/spar/ppr/spill-information/response/2014/01-silverbay/

Resource closure: None
Advisories issued: Warning of potential contamination of clams and mussels in area used for subsistence harvests
Factors: Sheen observed on beach
Agencies directly involved in food safety action: ADEC and ADHSS issued advisory; the Sitka Tribe took clam and mussel samples for analysis; DHSS reviewed tissue analysis results and advised On-Scene Coordinators on re-opening
Reopening based on: Analysis of tissue samples
Timeline:

- April 19, 2017 at 10:15 pm the tug *Powhatan* sank at its dock 7 miles from Sitka (Starrigavan Bay). The size of the spill is unknown.
- April 21, the Sitka Tribe's Southeast Alaska Tribal Ocean Research (SEATOR) initiative posted a notice on their website recommending people not harvest clams from Starrigavan Beach until further notice because of the oil spill (SEATOR.org). (An advisory due to PSP was already in place.)
- April 25, ADEC observed weathered oil sheens in the clam beds of North Starrigavan Bay. ADEC posted shellfish alert signs at North and South Starrigavan beach access points (Old Sitka State Historic Park and U.S. Forest Service Starrigavan Recreational Area). The sheen had abated by April 28.
- May 3, clam and mussel samples were collected from Starrigavan beach for analysis as part of the Natural Resources Damage Assessment (NRDA) process.
- May 25, NRDA trustees shared tissue PAH results with the State and Sitka Tribe. The Responsible Party had also completed a risk assessment which concluded that PAH concentrations were below human health risk thresholds.
- [From June 5 – 20, SEATOR[12] issued a PSP warning. Although this applied to the same area, it was unrelated to the spill. That advisory remained in place through June 20.]
- August 10, ADEC removed the spill related harvest and consumption advisory signs from the two access points to Starrigavan beach. The On-Scene Coordinators made the decision to remove the advisory based on ADHSS' review of the results of the sample analysis. No further monitoring or advisories were conducted. (Industrial Economics, 2018)

[12] Southeast Alaska Tribal Ocean Research (SEATOR) is a research group established through a partnership of area Tribes, "to ensure that Tribal citizens and community members can safely harvest and consume traditional foods." This primarily includes focus on harmful algae and PSP, but also ocean acidification, the accumulation of heavy metals in the food chain, and other issues. See www.seator.org for more information.

5.1.6 F/V *Pacific Knight* (2018)

Location: Nearshore, state waters (Nushagak Bay)
Resource closure: State-managed commercial fishery
Advisories issued: Subsistence users warned of potential contamination
Factors: Spill proximity to fishing activity; observed slick movements; projected trajectory
Agencies directly involved in food safety action: AFD&G issued closure(s) via Emergency Order(s)
Reopening based on: Absence of observable spill
Timeline:

- On July 26, 2018 the fishing tender F/V *Pacific Knight* sank in Nushagak Bay near Clark's Point. At 9:00 AM, ADF&G Division of Commercial Fisheries issued a news release alerting fishermen of the fuel spill.
- On July 26, ADF&G Division of Commercial Fisheries flew a survey of the Nushagak District and observed significant amounts of fuel spreading from the F/V *Pacific Knight*. Because the wind, tide rips, and changing tide would likely spread the fuel across the bay, exposing gear and fish to fuel, the entire district was closed to commercial fishing by Emergency Order 45 (EO 2F-T-45-18). Subsistence fishing was not closed but users were warned that their gear and fish could also become contaminated.
- On July 27, ADF&G Division of Commercial Fisheries conducted another overflight of the district and reopened commercial fishing in the Igushik Section of the Nushagak District by Emergency Order 46 (EO 2F-T-46-18).
- On July 29, ADF&G Division of Commercial Fisheries closed the Igushik Section by Emergency Order 47 (EO 2F-T-47-18) again to commercial fishing because of reports of a sheen and the smell of fuel in the area. Subsistence users were also warned that fuel could impact subsistence fishing in the area.
- On July 31, no sheen was observed from the F/V *Pacific Knight* and previously reported sheens appeared to have dissipated, so ADF&G Division of Commercial Fisheries reopened the Nushagak District to commercial fishing by Emergency Order 48 (EO 2F-T-48-18).[13]

5.1.7 Askinuk Tank Farm Gasoline Release (2018)

Location: On land, inland waters (Scammon Bay)
Resource closure: None

[13] Based on information provided by J. Alas, ADF&G.

Advisories issued: Subsistence users warned of potential contamination and advised not to use affected area until potential impacts can be assessed and mitigated
Factors: Release (initially of unknown size due to presence of snow and ice) into area used for subsistence ice fishing, as well as many other uses following breakup into the spring/summer
Agencies directly involved in food safety action: ADEC and ADHSS issued subsistence advisory (distributed fact sheet to community)
Reopening based on: N/A – area was not closed
Timeline:

- On April 23, 2018, community members report a potential spill near tank farm; operator confirms the next day, estimating 7,000 gallons of unleaded gasoline was released from secondary containment into Kun River
- ADEC and USCG set up Unified Command
- ADEC posts fact sheets on subsistence use advisory and reporting oiled wildlife around community of Scammon Bay and on ADEC website (reported in April 26 situation report); advisory expected to remain in place until breakup [14]

5.2 Deepwater Horizon Oil Spill

While the Alaska cases are all spills in the nearshore (or inland) environment, the Deepwater Horizon spill occurred offshore and thus impacted federally managed fisheries significantly. This section summarizes the process for closures of federal fisheries and the protocol established for reopening of commercial fishing activity in both state and federal waters. As the State of Alaska would be directly involved in determining a fishery reopening (or, for limited fisheries managed only by NOAA Fisheries, the state would at least determine whether it was allowed to sell or process the fish), this protocol would not necessarily be applied verbatim.

The Deepwater Horizon oil spill began on April 20, 2010 when an explosion on an oil rig killed 11 workers and began a months-long release of oil from the Macondo well in the federal waters of the Gulf of Mexico (NOAA, 2018). The first fishery closure was announced on May 2 under an emergency regulation specific to Fisheries of the Caribbean, Gulf of Mexico, and South Atlantic (50 CFR 622; Federal Register Vol. 75, No. 87).[15] Fishing vessels were advised not to fish anywhere

[14] Based on information in situation reports: https://dec.alaska.gov/spar/ppr/spill-information/response/2018/08-askinuk-tank-farm/ unless otherwise noted.

[15] Fishery closures and other regulatory actions are also announced via bulletins – which can be received via text message – here: https://sero.nmfs.noaa.gov/fishery_bulletins/. Coordinates for closure areas were also

they observed an oil sheen, even if outside a closure area (NOAA, 2010). The emergency regulation was in effect until April 19, 2011 (Federal Register Vol. 79, No. 36) during which time the closure areas shifted based on observations and modeling of the spill trajectory. A 2014 Federal Register notice removed the emergency regulations in full, stating:

> *NMFS has worked closely with the U.S. Food and Drug Administration (FDA) to assess whether seafood from the Gulf EEZ is tainted or contaminated to levels that pose a risk to human health. NMFS and FDA have determined that seafood from all previously closed areas of the Gulf EEZ due to the oil spill is safe for human consumption. Therefore, NMFS withdraws the emergency regulations that established a protocol for closing and reopening portions of the Gulf, South Atlantic, and Caribbean EEZ that were or could potentially be affected by the oil spill. The intent of this rule is to withdraw the now obsolete regulations from the codified text.* (Federal Register, Vol., 79, No 36, pp. 10028, February 24, 2014

NOAA Fisheries and the U.S. FDA developed and implemented a protocol for interpreting sampling results to reopen fisheries closed because of the oil spill. The protocol was developed with input from the EPA and Gulf Coast states, and used for both state and federal waters. As identified in its title, the protocol is specific for use related to the Deepwater Horizon oil spill, but it references the 2001 sensory testing protocol developed by NOAA with the Canadian Food Inspection Service (Reilly and York, 2001).

The Deepwater Horizon protocol states that the closure of a fishery area is based on avoiding contamination by avoiding areas with known or potential oiling (based on trajectories). Reopening a closed area requires that 1) there is no more known oil in the area, 2) samples taken from the area pass sensory testing by trained personnel, and 3) analytic testing of polycyclic aromatic hydrocarbons (PAH) results in levels below FDA thresholds. The protocol also states that data collected for other purposes related to the spill response (e.g., sediment or water column data collected by the responsible party or other agencies) may be considered as part of the assessment of whether or not to reopen an area for commercial fishing (FDA and NOAA, 2010).

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announced via NOAA Weather Radio and Twitter, or could be heard in English, Spanish, and Vietnamese by calling a toll-free phone number (NOAA, 2010).

Protocol for Interpretation and Use of Sensory Testing and Analytical Chemistry Results for Reopening Oil-Impacted Areas Closed to Seafood Harvesting Due to The Deepwater Horizon Oil Spill (2010)

Specific reopening criteria:

1. *Low threat of exposure* – Threat of exposure will be based on past observations and the status of the spill and conditions.
2. *Evaluation of oil movement* – Confirmation that the closure area is free of fresh oil on the surface by visual observation and/or aerial reconnaissance (allowing for consideration of background conditions), or the presence of oil in the water column through visual observation or water testing.
3. *Assessment of seafood contamination by sensory testing* – Determine if the seafood is contaminated by tissue collection and sensory testing. The acceptable conditions are that all specimens must pass sensory testing conducted by a NOAA-FDA expert sensory panel or a NOAA-FDA trained panel of state assessors.
4. *Assessment of seafood contamination by chemical analyses* – Chemical analyses are performed on samples that pass sensory assessment to confirm that PAH concentrations are below the applicable FDA levels of concern for human health. Final determinations may take into consideration what is known regarding background information for specific harvest areas.

6 Disposal of Contaminated Foods

Most of the agency authorities described in Section 4 focus on preventing the contamination of food sources or preventing the harvest of oiled species. However, there are cases where contamination occurs after the species is harvested or caught.

The Alaska Regional Contingency Plan (2018) and associated Area Plans describe the management of oily wastes during an oil spill response, including various methods of disposal available in Alaska as well as procedures for separation, labeling, and documentation of waste streams resulting from the spill or response operations. The Responsible Party, if there is one, will be responsible for developing a waste disposal plan for the applicable waste streams. ADEC has primary oversight of this plan to ensure its compliance with state permits and regulations, including a requirement that ADEC approve the final disposal of a hazardous substance (including oil) at 18 AAC 75.360(3).

Disposal of "food waste" is not specifically mentioned in the Regional Contingency Plan or Area Plans. However, disposal of animal carcasses is covered under wildlife management: "Bird and animal carcasses should be bagged, tagged, and segregated. Tags should include location of the recovery. Bird and animal carcasses will be handled as directed by the appropriate authority." (Arctic and Western Alaska Area Contingency Plan, 2018, p. 93). The *Arctic Marine Mammal Disaster Response Guidelines* (2017) describe the procedures for handling dead animals believed to be contaminated with oil (as well as other contexts). Likewise, USFWS has procedures for handling dead migratory birds in *Best Practices for Migratory Bird Care During Oil Spill Response* (2003). Any animal found oiled during a spill response may be treated as evidence and analyzed and documented for NRDA purposes.

If a commercial food product – fish or otherwise – is found to be unfit for sale, it must be disposed of in accordance with both ADEC's FSS regulations and the state and federal waste regulations. (Analysis for NRDA purposes could also apply.)

The following considerations apply to the disposal of chemically-contaminated *commercial* food products:

1. **Disposal to marine waters:** Disposal in marine waters is *not* allowed under the Marine Protection Research and Sanctuaries Act, which prohibits dumping contaminated foods seaward of the baseline (see Figure 1) and thus includes state and federal waters out to the

edge of the EEZ. Disposal of chemically contaminated food items would also violate the Clean Water Act and international treaties such as the International Convention for the Prevention of Pollution from Ships (MARPOL).

2. **Disposal on land:** Disposal of contaminated foods to a landfill is allowed, with the permission of that landfill. Permitted landfills are not required to accept food waste due to concerns about attracting wildlife. ADEC's Solid Waste Program should be contacted for assistance and to ensure compliance with state and local requirements. Under the state's waste regulations, contaminated food items would be treated as contaminated soils under 18 AAC 60.025. That regulation specifies that contaminated soils (or food) may only be disposed in a Class 1 landfill unless certain criteria are met. Other land-based disposal options are outlined in the Area Plans based on the facilities available in each region.

3. **Other considerations:** ADEC's FSS will issue a "Voluntary Destruction Form" to the owner of the product for insurance purposes. This requires proof of destruction, which may be satisfied by photos of damaged cargo but could also require photos or documentation from a landfill.

There are also times when commercial food products may be unfit for sale due to spoilage but are *not* contaminated with oil, such as in a case where commercially caught fish become unfit for sale in the hold of a vessel that has grounded. In these cases, items 2 and 3, above, will still apply. However, disposal at sea may be an option if there is no chemical contamination with EPA approval. EPA is developing a general permit for this purpose, but permission can be requested verbally via EPA's Environmental Review and Sediment Management Unit Manager. If disposal to the marine environment is being contemplated, ADEC's Environmental Health Wastewater Discharge Program should be contacted. While a formal permit is not required, ADEC personnel can provide guidance to ensure that the dumping does not occur near fishing grounds or aquaculture operations. ADEC generally prefers that spoiled (not oiled) fish be discarded outside state waters. This is coordinated with EPA.[16]

Finally, while ADEC only regulates the disposal of commercially caught fish waste, it recommends that any fish waste caught for non-commercial purposes should be disposed of in a landfill if possible to avoid attracting bears or other animals.[17]

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[16] Information on disposal options for commercial food products was compiled by Rick Bernhardt, ADEC.

[17] See: https://dec.alaska.gov/eh/solid-waste/fish-waste/

7 Discussion

This report and associated appendices identify authorities related to a wide range of food species in Alaska in the context of an oil spill or other pollution event. Through gathering information from the agencies, it was evident that agencies are accustomed to sharing expertise and resources with each other and, in some cases, with other organizations. There is also more experience dealing with food safety issues in the marine environment than terrestrial, including specific regulations under state law for dealing with commercial fisheries in the event of an oil spill.

This report does not represent ARRT policy nor does it finish the ARRT Food Safety Workgroup's efforts. The following potential follow up activities are proposed for that group's consideration.

- **Exercise communications and authorities regarding food safety for terrestrial/freshwater spills specifically.** In many conversations with agencies, the context for terrestrial or freshwater spills in Alaska was typically hypothetical whereas there was more experience with marine spill events. A tabletop exercise could be conducted to practice communications that would be necessary for a large, complex marine spill such as a release into the Yukon River from the Trans-Alaska Pipeline System. Even spills to small streams may warrant some additional clarity; exercising or drafting food-safety scenarios building on response scenarios in operator contingency plans could serve a similar purpose and provide a useful guide for the future.

- **Develop best management practices and examples for risk communications.** This report mentions the dissemination of information regarding food safety issues but does not address the many nuances associated with crafting the right message for different target audiences, nor does it identify all the potential partners who may assist. This process is more straight forward and better practiced for commercial operations since many of the active participants receive other types of communications directly from managing agencies already.

  For subsistence messages, tribal health organizations (many of which are based locally or regionally), public health agencies, and agencies such as USWFS which have their own liaison staff would be well positioned to recommend appropriate communications tools, pathways, and language. Other land-managing agencies, municipalities, or harbormasters may also be well positioned to help depending on the location.

In addition to communicating information when an advisory is in place, it is equally important to provide information when there is *not* believed to be a health risk following a spill, or to ensure that activities can resume as normal when the risk has passed. Identifying partners and mechanisms to bring information from those engaged in subsistence activities to agencies is also important, particularly in remote areas where agency personnel may not be present. Development of best practices should also include identifying key terms and language for different communities, or at least the partners within a given region who can advise on this quickly and appropriately when risk communications are warranted.

- **Collaborative review of information developed following Deepwater Horizon spill for application in Alaska.** Managing fisheries closures and reopenings following the Deepwater Horizon spill in the Gulf of Mexico triggered NOAA Fisheries and the FDA to develop protocols used by both federal and state agencies there. The State of Alaska manages many fisheries in Alaska (including some delegated by NOAA Fisheries) and regulates commercial seafood processing regardless of whether fish come from a federal- or state-managed fishery. NOAA Fisheries in Alaska, FDA, ADEC, and ADF&G could review the protocols and compare them to Alaska's regulations and procedures (including those developed after the *M/V Selendang Ayu,* which built on previous NOAA work by Yender et. al, 2002) to determine their alignment and suitability for use should an offshore oil spill in Alaska affect commercial fisheries here.

- **Address subsistence food safety via new standing Area Committees.** While some types of activities occur throughout the state, many of the subsistence harvest or hunting activities described in Section 2 vary regionally. For this reason, some of these next steps may be appropriately addressed by the newly established Area Committees responsible for the four Area Contingency Plans in Alaska. Region-specific consideration of the applicable regulations, processes in place, and potential partnering organizations would deliver a level of detail beyond this report. Key partnering organizations such as tribal health organizations (and others that play similar roles), Alaska Native co-management organizations, universities and science centers, or museums and cultural centers should be invited to a discussion to gain their views on what food "safety" means to them and the best way that agencies can protect the health of communities dependent on subsistence resources following an oil spill while implementing their statutory mandates. This effort could also provide information to groups that are not otherwise steeped in spill response practices regarding ICS and the way regional stakeholders provide and receive information during an oil spill.

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Appendix A – State of Alaska Zero Tolerance Policy

FACT SHEET:

The State of Alaska's "Zero Tolerance" Regulations for Preventing Oil Contamination of Seafood Products

When an oil spill occurs in Alaska state waters, there is always the potential that the spilled oil may contaminate commercial fish species. For health and safety reasons, the Alaska Department of Environmental Conservation's (ADEC) Food Safety and Sanitation Program has always had a "zero tolerance" policy toward any contamination of food processed Alaska. In the event of an oil spill, State regulations (18 AAC 34 Article 6) were adopted outlining the responsibilities for fishing vessels, tenders, and processing facilities to ensure contamination of commercial finfish and shellfish species does not reach the consumer.

Fishing vessel operators, tenders, buying stations, and seafood processors are required to undertake special inspection procedures when harvesting and processing seafood products from an area that may be impacted by an oil spill. ADEC may inspect any of the above to make sure that they are free of oil contamination. ADEC will certify vessels as being free of contamination, and the vessels must provide this information to tenders, buyers, and seafood processors to verify safety. Vessels involved in cleanup operations are not permitted to participate in commercial fishing activities until they have been certified clean by ADEC.

- Fishing vessel operators are required to inspect the seafood for signs of contamination as it is brought onboard. They must also inspect the fishing gear, hull, deck, fish hold, work clothes, and any other equipment that might be in contact with the seafood or fishing gear. If contaminated seafood product or fishing gear is found, the vessel operator is required to segregate the entire contaminated load from uncontaminated seafood/gear, notify ADEC upon arrival at the processor facility, and submit to an ADEC inspection.

- Tender vessels or buying stations may not accept seafood from a vessel that has been fishing in an area where spilled oil may be present, unless that vessel has been inspected by or received a waiver from ADEC. The tender or buying station must inspect the fishing gear, hull, deck, fish hold, work clothes, and any other equipment that may have been in contact with the seafood or fishing gear. If a fishing vessel is permitted to offload, the tender vessel or buying station must inspect the initial offload for signs of contamination and continue to do random inspections thereafter. The tender or buying station must maintain detailed records, and must report any contaminated seafood to ADEC.

- Seafood processors must also ensure that any vessels, tenders, or buying stations that deliver to the processor have been inspected and certified by ADEC. Processors must inspect seafood for signs of contamination both upon initial delivery and throughout the processing cycle. Upon any sign of contamination, the processor must cease operations and notify ADEC.

Alaska Department of Environmental Conservation
Division of Environmental Health
December 16, 2004

Appendix B – Descriptions of State Agency Food Safety Responsibilities

Alaska Department of Fish and Game

The ADF&G Commissioner has the authority to "manage, protect, maintain, and extend the fish, game, and aquatic plant resources of the state in the interest of the economy and general well-being of the state" under AS 16.05.050(3). This includes the authority to allow the harvest or other "take" of fish, game, or eggs for the purposes of science or public safety (as well as stocking) under AS 16.05.050(5). In the event of a spill, a statutory provision for ADF&G authority during emergencies may be applied. AS 16.05.060(a) states,

> *This chapter does not limit the power of the commissioner or an authorized designee, when circumstances require, to summarily open or close seasons or areas or to change weekly closed periods on fish or game by means of emergency orders. [AS 16.05.060(a)]*

It goes on to add:

> *An emergency order has the force and effect of law after field announcement by the commissioner or an authorized designee. An emergency order adopted under this section is not subject to AS 44.62 (Administrative Procedure Act). [AS 16.05.060(c)]*

The statute grants the emergency order authority to the "commissioner or an authorized designee" and it is typically delegated to certain positions on an annual basis (e.g., area management biologists, assistant area management biologists, regional supervisors, etc.) ADF&G's decision to close a fishery or hunting activity is made based on incident specifics (type, volume, and trajectory of the spill as well as expected level of fishing or hunting activity) and generally based on the known or potential exposure of species to the spilled substance. In past cases, this is more likely determined based on the spill location, predicted trajectory, and potential oiling of fishing vessel(s), gear, and catch than the results of sampling plan or toxicological analysis. It may also be made if ADEC has classified a water body as threatened.

ADF&G announces emergency orders via press releases and on the ADF&G website. The public can also sign up for notifications related to specific activities of interest (e.g., based on fishery, area, or gear type). Faxes are used to disseminate information to tribal and city offices where internet access is limited. News releases are also broadcast on marine VHF and local radio stations as

appropriate to the area. Area management biologists may also keep lists of regional stakeholders to contact with this type of information.

ADF&G's involvement in different types of fish and game activities come under different divisions within the department. These are the Division of Commercial Fisheries, Division of Sport Fish, and Division of Wildlife Conservation.

Division of Commercial Fisheries

Commercial fisheries are typically closed until opened through either an emergency order or based on dates in regulation. If an oil spill occurs, ADF&G could effectively close a fishery by either: 1) not issuing an emergency order to open a fishery that had not yet opened or 2) issuing an emergency order to close a fishery that was already open.

Division of Sport Fish

Sport or recreational fisheries are typically opened by regulation and may be closed or restricted by emergency order in the event of a spill.

Division of Wildlife Conservation

Hunting opportunities, such as seasons for each species, unit, and type (registration, draw, subsistence, etc.) are defined in regulation but may be closed or restricted by emergency order in the event of a spill. It is each hunter's personal responsibility to be aware of any restrictions and ensure they can legally hunt in their chosen area, whether it is on state, federal, private, or other lands.

Two resource categories do not have a specific division but are managed under one or more of the divisions named above:

Subsistence Fishing and Hunting

In general, subsistence fishing and hunting is typically open by regulation (management plan or Area-specific provisions), unless restricted by emergency order. Subsistence harvest of fish or game has an elevated priority over other uses [AS 16.05.258(b)]. Management of subsistence fisheries is typically delegated to the Division of Commercial Fisheries while subsistence hunting is delegated to the Division of Wildlife Conservation.

An advisory may be issued to alert subsistence users of an incident rather than an emergency order being issued to close opportunities.

Personal Use Fisheries

Personal use fisheries are managed by either the Division of Commercial Fisheries or Division of Sport Fish. They are generally open by regulation and can be restricted or closed by emergency order in the event of a spill.

Overall, subsistence uses are presumed to be *allowed unless restricted*, whereas commercial, sport, or personal use fisheries are *restricted unless allowed*, as in the opening of a fishing or hunting season.[18]

Alaska Department of Health and Social Services

The Alaska Department of Health and Social Services' (ADHSS) Environmental Health Program provides public health advice to state and federal agencies regarding food safety in the event of an oil spill (or other sources of contamination). They do not have a regulatory authority over any specific resources or lands, and do not conduct sampling or analyses themselves. Instead, they review information regarding the levels of contamination detected in food sources – along with data on the expected harvest levels – to suggest whether an advisory is warranted. If so, they will provide input to the advisory language itself and may develop additional incident-specific information to post on their website. This role relates primarily to non-commercial species gathered, fished, or hunted for personal use or recreation.

When subsistence uses are involved, they work closely with the Alaska Native Tribal Health Consortium. The Environmental Health Program may also work with the federal Centers for Disease Control, Agency for Toxic Substances and Disease Registry, and Environmental Protection Agency when determining the appropriate course of action to protect public health.[19]

Alaska Department of Environmental Conservation

The Alaska Department of Environmental Conservation (ADEC) provides the State On-Scene Coordinator during a response and plays many other roles in the response as well. ADEC is the lead state agency involved in determining the spill location, type, volume, persistence, potential effects, fate, and trajectory. This information informs the efforts of ADEC along with ADF&G and others in the Environmental Unit to identify resources at risk.

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[18] Based on information provided by Jeanette Alas, ADF&G; via email September 3 and 13, 2018.

[19] Based on information provided by Kristin Bridges, ADHSS, via phone interview, September 5, 2018.

If food sources may be impacted, ADEC's Food Safety and Sanitation (FSS) Program and the State Veterinarian (both located within the Division of Environmental Health) play roles directly related to commercial and subsistence/recreational food safety. Alaska has a Zero Tolerance Policy for any contamination of food processed in Alaska (see Appendix A). FSS coordinates with the U.S. FDA when foods involved in interstate commerce are impacted or potentially impacted by a spill.

Food Safety and Sanitation Program

FSS's primary authority comes from the Alaska Food, Drug, and Cosmetic Act (AS 17.20). This statute is broad, encompassing all food offered to the public or sold, including fish and other food products. The statute also directs FSS to oversee molluscan shellfish operations, aquatic farms, and related hatcheries to protect the public.

FSS issues permits to seafood processors and shellfish harvesters, certifies molluscan shellfish growing/harvest waters, routinely inspects permitted operations, collects product and environmental samples, and provides technical expertise and support. Its role during an emergency may be limited to planning and recovery, but inspection staff may also be deployed during response. In many cases, FSS collaborates with other agencies to establish a fisheries sampling plan, as was done after the *M/V Selendang Ayu* spill in 2004, and to develop appropriate advisories regarding food safety.

In the event of a spill to marine waters, FSS implements regulations at 18 AAC 34.600 – 18 AAC 34.625 (under AS 17.20.005) after determining that a water body used for commercial fishing is threatened. These provisions not only broaden the scope of the entities under FSS regulatory oversight, they also outline requirements to prevent contamination to seafood products. The regulations require that:

- Fishing or tender vessels be inspected prior to fishing or receiving fish products. Inspections include the vessel, gear, clothing and any other equipment.
    - If oil is detected, the contaminated load must be segregated from uncontaminated fish or gear (18 AAC 34.516).
    - Vessel operators must present proof of satisfactory inspection by ADEC or a waiver to the tender vessel or buyer with each delivery.
    - ADEC may identify fishing vessels involved in the cleanup to tenders, buying stations, and processing facilities (18 AAC 34.605). (Fishing vessels that have been involved in a response must go through the inspection process prior to resuming fishing activity and have the necessary documentation.)

- Tender vessels and buying stations not accept fish from vessels without documentation of their successful inspection (or a waiver) and must inspect and document the vessel and seafood delivered.
    - The tender vessels and buying stations must notify ADEC if oil contamination is detected on the vessel, tender, or in seawater taken on for refrigeration (18 AAC 34.620).
- Processor requirements follow regulations similar to those described for tender vessels and buying stations, though regulations are more specific regarding inspections at delivery and require continuous inspection during processing (18 AAC 34.625).

If contamination is detected, FSS will issue a "notice of suspension" to a permitted facility; a "notice of closure" to a non-permitted facility; or an embargo on cargo to detain and prevent transfer of adulterated commercial food items.[20]

For commercial molluscan shellfish growing/harvest areas, including those for wild geoduck fisheries and shellfish farms, FSS may implement provisions of 18 AAC 34.600 – 18 AAC 34.625 described above (depending on whether the situation involves the geoduck fishery), and implements appropriate provisions of the FDA's *National Shellfish Sanitation Program Model Ordinance*, which is adopted by reference at 18 AAC 34. If FSS determines a certified water body is threatened, FSS will close the area, meaning that shellfish may not be harvested from the area until FSS determines that shellfish in that area are no longer contaminated. Aquaculture sales may be managed by temporarily suspending a permit to sell products until those products have been verified to be fit for consumption.[21] If contaminated shellfish has been released to commerce, FSS may require a recall.

FSS may also work with other agencies to establish a fisheries sampling plan, as was done after the *M/V Selendang Ayu* spill in 2004.

In water bodies where subsistence, recreational, or personal fisheries or harvest areas are impacted, FSS supports and works collaboratively with the Office of the State Veterinarian, co-located within the Division of Environmental Health at ADEC, as well as DHHS' Division of Public Health, Environmental Health Program, and ADF&G. Additionally, FSS may reach out to the Alaska Native Tribal Health Consortium and other tribal health organizations or non-governmental organizations.

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[20] Information provided by Jeremy Ayers, ADEC FSS, to Rick Bernhardt, ADEC SPAR.

[21] Information provided by Jeremy Ayers, ADEC FSS, to Rick Bernhardt, ADEC SPAR.

For a spill affecting agricultural land or any other foods processed or sold (e.g., berries sold as jam), FSS's responsibility to ensure that food processed or sold is free of contamination is the same as described above.[22]

State Veterinarian

Within ADEC's Division of Environmental Health, the State Veterinarian supports the collection and analysis of tissues to assess contamination levels in fish or animals that may be consumed for subsistence or personal use. The State Veterinarian will work with SPAR and the Department of Health and Social Services (DHSS) to issue an appropriate consumption advisory depending on the level of contamination found. Advisories may range from "do not harvest or eat any marine or freshwater species" in a particular area to more focused precautions related to handling, cleaning, processing, and cooking species. Advisories may also focus on subsets of the population (such as children or women who are pregnant or may become pregnant) to avoid or limit consumption.[23]

Alaska Department of Natural Resources

The Alaska Department of Natural Resources (ADNR) manages and controls access to State-managed lands and water including uplands, tide lands and submerged lands to the three-mile territorial limit and the resources there under Alaska Statutes, Chapter 38. This includes commercially harvested food resources through the Non-Timber Forest Products Permits [(11 AAC 96.035], as well as gathering for subsistence, personal use or recreation on ADNR-managed lands [11 AAC 96.020]. (ADNR does not manage hunting or fishing.)

ADNR does not have any explicit authority related to determining whether foods harvested from ADNR-managed lands remain safe following an oil spill; however, ADNR may restrict access if warranted due to an emergency. There are no recent cases of ADNR restricting access to State-managed lands due to an oil spill; however, there have been recent cases when DNR requests that access to certain lands be limited to protect public safety. In those cases, ADNR then works with law enforcement to restrict access.[24]

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[22] Based on information provided by Kim Stryker, ADEC FSS Program, via interview August 14 and via email September 14 and 21, 2018; unless otherwise noted.

[23] Based on information provided by Dr. Robert Gerlach, State Veterinarian, August 14, October 8, and October 15, 2018.

[24] Based on information provided by email from Clifford Larson, August 28, 2018 and September 12, 2018.

Appendix C – Descriptions of Federal Agency Food Safety Responsibilities

U.S. Coast Guard

The U.S. Coast Guard serves as the Federal On-Scene Coordinator (FOSC) for most oil spills occurring in the coastal zone.[25] In Alaska, the USCG's FOSC will be the Captain of the Port for the relevant Captain of the Port Zone (Western Alaska, Prince William Sound, or Southeast Alaska). Federal regulations at 33 CFR 125.05 define the Captain of the Port as follows: *"The officer of the Coast Guard, under the command of a District Commander, so designated by the Commandant for the purpose of giving immediate direction to Coast Guard law enforcement activities within the general proximity of the port in which he is situated."*

Specific to the FOSC role, 40 CFR 300.130(a) states that the FOSC – whether the USCG or Environmental Protection Agency – is authorized to, *"…act for the United States to take response measures deemed necessary to protect public health or welfare or environment from discharges of oil or releases of hazardous substances, pollutants or contaminants…"*. The USCG may limit public access to a particular area either to protect public safety or to avoid disruption of response activities. This could also have the effect of prohibiting access to food resources that have been – or may be – contaminated. This also includes communicating public health information.

U.S. Environmental Protection Agency

The U.S Environmental Protection Agency (EPA) serves as Federal On-Scene Coordinator (FOSC) in the event of an oil spill that affects – or may affect – inland waters under the Clean Water Act.[26] An EPA FOSC has the same authorities as the USCG under 40 CFR 300.130(a) to protect public health or welfare. EPA also has a more explicit role regarding food safety (whether commercial, recreational, or subsistence uses). This may include conducting sampling, toxicological analysis,

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[25]The FOSC role and exceptions (such as when contamination involves radiation or nuclear weapons, or originates from a Department of Defense or Department of Energy vessel or facility) are found at 40 CFR 300.130.

[26] The Clean Water Act is specific to inland waters. Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), EPA has the authority to respond to any release or threat of a release of a wide range of chemicals listed at 40 CFR 302.4.

and risk assessments regarding oil contamination and identifying cleanup levels that are protective of human health and the environment, including the use of a resource as a food source. EPA coordinates with the Centers for Disease Control's (CDC) Agency for Toxic Substances and Disease Registry (ATSDR) to receive technical assistance for preventing and reducing the harmful effects of human exposure to hazardous substances. EPA does *not* have the authority to determine whether commercial, recreational, or subsistence caught fish or animals are safe for human consumption. Implementation of any type of public health advisory or closure is left to state or local authorities.[27]

U.S. Department of Agriculture

USDA has two sections that may play a role regarding food safety in Alaska: the Food Safety and Inspection Service (FSIS) and the Forest Service.

USDA's FSIS is responsible for ensuring the safety of commercial poultry, meats, eggs and egg products, and meat and meat products that are not otherwise regulated by FDA as identified in Section 2. Foods that are processed or produced for sale in Alaska would also be subject to state requirements as described for ADEC's FSS program.[28]

The U.S. Forest Service manages lands designated under the Alaska National Interest Lands Conservation Act (ANILCA). The Forest Service would identify and mitigate the risks to food resources on Forest Service lands in the event of a spill. The Forest Service would coordinate with state and federal public health agencies as appropriate to implement closure or issue advisories regarding food safety in the event of a spill, but does not have any explicit statutory authority regarding food safety.[29]

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[27] Based on information provided by Calvin Terada, Mary Goolie, and Beth Sheldrake, EPA, September 11, 2018.

[28] Based on information at: https://www.fsis.usda.gov/wps/portal/fsis/home and https://www.registrarcorp.com/resources/fda-usda-food-regulations/. Provided by Karen Waldvogel, USDA.

[29] Based on information provided by Gary Sonnenberg, U.S. Forest Service on September 5, 2018.

U.S. Department of Commerce

The National Oceanic and Atmospheric Administration (NOAA) is the sole entity within the Department of Commerce involved in an oil spill response. NOAA may play a number of roles broadly related to food safety, including developing spill trajectories to determine potential areas or species at risk and providing expertise to maximize resource protection and minimize additional damage. The Emergency Response Division also provides NOAA's Scientific Support Coordinator who coordinates with and represents NOAA's team of scientific advisors. Both NOAA Fisheries and the Office of Response and Restoration may provide more direct input related to food safety. NOAA Fisheries (formerly called the National Marine Fisheries Service, or NMFS) has two divisions with direct roles related to food safety: Sustainable Fisheries Division (commercial fisheries) and the Protected Resources Division (marine mammals). The Office of Response and Restoration may conduct sampling or analysis as part of a Natural Resources Damage Assessment that can be used to inform public health decisions regarding food safety.

NOAA Fisheries - Sustainable Fisheries Division

The Magnuson Stevens Fisheries Act gives NOAA Fisheries the authority to close areas of federal waters to commercial fishing activity. The Sustainable Fisheries Division has the authority to open and close access to federally-managed fisheries activities in federal waters under an emergency rule [16 USC 1855(c)] which states, "*If the Secretary finds that <u>an emergency exists</u> or that interim measures are needed to reduce overfishing for any fishery, he may promulgate emergency regulations or interim measures necessary…without regard to whether a fishery management plan exists for such fishery*." This does not always mean that an entire fishery would be closed, as the closure would be as targeted as possible to the affected locations. The Division would also disseminate information about a spill including any closures or advisories issued by the Unified Command via its network of fishing vessels, processors, and fishing associations. That same network can serve as a source of information about observations of oil or impacted species or gear.

The Sustainable Fisheries Division will work with state agencies and the federal Food and Drug Administration (FDA) to determine the public health need for a fishery closure. If federally-managed fishing activity is closed due to known spill impacts, the FDA will work with NOAA and other parties to determine when fishing activity can begin again. However, regardless of whether fish are caught in a state or federal fishery (or one that is co-managed), ADEC's inspection authority applies to any commercial fish processing in Alaska.

The NOAA Seafood Inspection Program can provide seafood inspections via the Western Inspection Branch in Seattle, WA (NOAA, n.d.).

NOAA Fisheries - Protected Resources Division

The Protected Resources Division (PRD) has authority under the Marine Mammal Protection Act (16 USC 31) and Endangered Species Act (16 USC 1531) to protect species under NMFS's jurisdiction. This authority includes co-management of some of these species with designated Alaska Native organizations. Marine mammals managed by NOAA Fisheries include:

- Beluga whales (co-managed with the Alaska Beluga Whale Commission)
- Bowhead whales (co-managed with the Alaska Eskimo Whaling Commission)
- Ice seals (co-managed with the Ice Seal Commission)
- Northern fur seals (co-managed with the Aleut communities of St. Paul and St. George)
- Steller sea lions (co-managed with the Aleut communities of St. Paul and St. George and the Aleut Marine Mammal Commission) (NMFS, 2017).

In 2017, the National Marine Fisheries Service (now NOAA Fisheries) completed the *Arctic Marine Mammal Disaster Response Guidelines* (NFMS, 2017). This document describes the policies and procedures that would be implemented by the PRD and others in the event of different types of marine mammal disasters in the Arctic, including oil spills or oil contamination of species. The Guidelines describe sampling and analytic protocols as well as communications pathways that would be used. These include defining tissue sampling/necropsy protocols that were identified in conjunction with state and tribal health agencies. The protocols defined in the Guidelines are specifically intended to align with food safety sampling protocols referenced therein (NMFS, 2017).

PRD is not a public health agency and does not have the authority to determine whether a particular species is safe to eat following a spill. Instead, they will actively participate throughout the response – including coordinating with the Alaska Marine Mammal Stranding Network and other local partners – to respond to and determine impacts or potential impacts to marine mammals under their authority. The collection and analysis of dead animals is conducted as part of the response, and the information is used to inform food safety decisions. Where PRD collects tissue samples, data and samples will be shared with the Alaska Department of Health and Social Services (ADHSS) and ADEC. The state public health agencies will then use that information to make a public health decision and issue an advisory or recommendation to mitigate public health impacts from consuming the species if they deem it necessary. This authority regarding specific marine mammals applies regardless of where individual animals are found.[30]

[30] Based on information provided by Sadie Wright, NOAA on September 6 and November 2, 2018 except where otherwise noted.

Office of Response and Restoration (OR&R)

NOAA's Office of Response and Restoration (OR&R) has developed guidance on seafood safety issues during an oil spill response, including describing routes of exposure, methods for monitoring seafood contamination, toxicological risk assessments, best practices for risk communication, and lessons learned from past spills (Yender et al., 2002).

One of the functions of OR&R's Damage Assessment, Remediation, and Restoration Program is to implement Natural Resource Damage Assessments (NRDA) following an oil spill under 33 USC 2706(b-e). This includes determining the extent of injury to the environment and its uses (including food sources, but recognizing other values such as recreation, etc.). As part of the response, NOAA may conduct sampling or toxicological analyses for damage assessment purposes that also can be shared with other federal or state public agencies to evaluate for food safety concerns. Data collected on seafood or to inform food safety decisions during the response may also be used in the NRDA process (Michel and Lord, 2002).

U.S. Department of Health and Human Services

The Department of Health and Human Services includes two sections that may become involved in food safety issues following an oil spill: Agency for Toxic Substances and Disease Registry (ATSDR) and the FDA.

Agency for Toxic Substances and Disease Registry (ATSDR) & Centers for Disease Control (CDC)

ATSDR, part of the Centers for Disease Control, "protects communities from harmful health effects related to exposure to natural and man-made hazardous substances" as the lead agency on public health under the Comprehensive Environmental Response, Compensation, and Restoration Act of 1980 (CERCLA). The agency provides technical assistance in cases where there are concerns about exposure to contaminants. This can include food safety in the context of an oil spill, but also includes non-food exposures and contaminants beyond oil. ATSDR does not routinely conduct sampling, but reviews data collected by other agencies to advise them of the potential for a negative public health impact from consuming foods contaminated or potentially contaminated by an oil spill. ATSDR may also provide input to risk communication efforts. Where subsistence foods are affected, ATSDR can engage its partners around the state to reach the appropriate parties.

ATSDR's advisory role can be triggered by a request from the FOSC, or could also be brought by a state agency partner or federally recognized tribe.[31]

Food and Drug Administration (FDA)

The Food and Drug Administration (FDA) operates a mandatory safety program for seafood (fish and shellfish) products under the provisions of the Federal Food, Drug and Cosmetic Act, the Public Health Service Act and related regulations. As a federal agency, FDA's authority applies to fish and shellfish products intended for interstate commerce. Whenever federally-managed commercial fisheries are closed, FDA will work with NOAA Fisheries to determine when reopening is appropriate. FDA provides technical assistance to conduct sampling and analysis to determine whether fish caught (or shellfish harvested) from a certain area are safe for human consumption. This may include both sensory methods and analytical chemistry; following the Deepwater Horizon oil spill in the Gulf of Mexico, FDA also conducted testing for dispersants in seafood (FDA and NOAA, 2010). In Alaska, FDA would work in conjunction with ADEC as well as NOAA.

FDA is also responsible for the safety of commercially produced meat and poultry products that are not regulated by USDA,[32] which would include oil spill impacts if any were to occur (though no past spill examples were identified).

U.S. Department of the Interior

The U.S. Department of the Interior (DOI) includes three entities that manage federal lands in Alaska and thus have responsibilities related to the use or access to resources on those lands. These are the Bureau of Land Management (BLM), the National Park Service (NPS), and the U.S. Fish and Wildlife Service (FWS). DOI has a Department-wide policy regarding communicating fish advisories for use on DOI-managed lands where people are allowed to fish or harvest shellfish.[33]

DOI-managed lands in Alaska were designated under the Alaska National Interest Lands Conservation Act (ANILCA). Each agency operates under specific management language, but all fall

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[31] Based on information provided by Joe Sarcone, ATSDR, September 19, 2018 and retrieved from https://www.atsdr.cdc.gov/about/congress.html and https://www.cdc.gov/nceh/oil_spill/overview.htm

[32] Based on information from FDA website: https://www.fda.gov/food/ucm210970.htm, https://www.fda.gov/food/ucm217601.htm, and https://www.fda.gov/Food/RecallsOutbreaksEmergencies/Emergencies/ucm221563.htm

[33] Chapter 5: Communication of Fish and Shellfish Consumption Advisories, Environmental Quality Programs. Office of Environmental Policy and Compliance (February 23, 2012).

under an overarching framework that prioritizes subsistence uses: "Except as otherwise provided in this Act and other federal lands, the taking on public lands of fish and wildlife for non-wasteful subsistence uses shall be accorded priority over the taking on such lands of fish and wildlife for other purposes [16 U.S. Code § 3114]. Additionally, the Secretary (of the Interior) "shall ensure that rural residents engaged in subsistence uses shall have reasonable access to subsistence resources on the public lands" [16 U.S. Code § 3121]. In case of emergency, subsistence access may be closed temporarily:

> *If the Secretary determines that an emergency situation exists and that extraordinary measures must be taken for public safety or to assure the continued viability of a particular fish or wildlife population, the Secretary may immediately close the public lands or any portion thereof, to the subsistence uses of such population and shall publish the reasons justifying the closure in the Federal Register. Such emergency closure shall be effective when made, shall not extend for a period exceeding sixty days, and may not subsequently be extended unless the Secretary affirmatively establishes, after notice and public hearing, that such closure should be extended. [16 U.S.C. 3126(b)]*

While subsistence access is a priority, any of the three DOI land-managing agencies may work with the Unified Command to restrict public access to a limited area in order to avoid disturbing response activities. They will also participate in the response and restoration process to ensure that resources – including foods – are protected and restored to the extent possible, and appropriate damages are received.

Bureau of Land Management (BLM)

BLM manages several designated National Conservation Lands Units, including a National Conservation Area, six wild and scenic rivers, the Iditarod National Historic Trail, a National Recreation Area, and the Central Arctic Management Area.[34]

Fish and Wildlife Service (USFWS)

USFWS plays two roles relevant to food safety following an oil spill: managing National Wildlife Refuges (Refuges) in Alaska and co-managing subsistence hunting of migratory birds and certain marine mammal species.

[34] Based on BLM website: https://www.blm.gov/programs/national-conservation-lands/alaska

Most Refuges in Alaska were established or expanded under ANILCA, which requires FWS to "provide…the opportunity for continued subsistence uses by local residents" consistent with the other purposes of each refuge [16 U.S.C. 302-303].

If subsistence resources on Refuge land or waters are potentially contaminated, the USFWS will collect and/or analyze samples of fish, shellfish, birds, terrestrial, or other resources, or cooperate with others to do so. While the Service applies its analytical abilities to conduct the sampling, ADHSS's Environmental Health Program would determine whether a Refuge resource is safe for public consumption. Once a determination is made, USFWS would communicate public health information to subsistence users from the communities that live within or use Refuges via its liaison staff.

USFWS is responsible for managing migratory birds, including setting hunting regulations nationwide and subsistence hunting regulations for Alaska in cooperation with the Alaska Migratory Bird Co-Management Council.

USFWS is also responsible for several marine mammal species under the Marine Mammal Protection Act (16 U.S.C. 1388) and, where applicable, the Endangered Species Act. These laws prohibit hunting marine mammals (along with other protections) except for managed subsistence harvests. The Marine Mammals Management Office of the USFWS-Alaska Region co-manages subsistence hunting with Alaska Native organizations established for that purpose (see Table 2). While these groups co-manage the resources overall, if oil contamination is a concern, the USFWS would play a similar role to that described above for Refuge resources: identifying the potential impact, conducting sampling as needed, and conveying risk communication if deemed necessary by a public health agency. USFWS would also reach out to the co-management groups as part of normal government-to-government consultation.[35]

National Park Service (NPS)

ANILCA also designated national monuments, parks, and preserves managed by the National Park Service (NPS). The only wild food uses allowed in national parks or park monuments are recreational fishing or subsistence [16 U.S.C. § 3126(a)]. ANILCA defines the purpose of each NPS-managed protected area, in many cases specifying that "subsistence uses by local residents shall be permitted in the park, where such uses are traditional." [16 U.S.C. § 410hh] Generally, NPS will not restrict subsistence users' access to NPS lands based on concerns about oil contamination.[36]

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[35] Information based on phone interview and emails with Angela Matz, USFWS, August -September 2018.

[36] Information based on phone interview with Tahzay Jones, NPS, September 12, 2018.

Appendix D – Example Notices of Closures and Advisories and Associated Communications

Shellfish Alert

Shellfish in this area may have been impacted by the recent petroleum spill.

To avoid any potential health risk, harvesting and consumption of shellfish should be avoided where oil and/or sheens can be seen or smelled on the beach or water. Don't eat shellfish if you see or smell oil on the animals.

The Department of Health and Social Services and the Department of Environmental Conservation **recommend against harvesting shellfish at this location.**

Additional information will be released to the community when it becomes available.

For more information contact DHSS: 269-8000

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES
NEWS RELEASE

Sam Cotten, Commissioner
Scott Kelley, Director

Contact:
Tim Sands Westside Area Biologist
Jordan Head Assistant Area Biologist
Phone: (907) 842-5227
Fax: (907) 842-5937

Dillingham Area Office
P.O. Box 230
Dillingham Alaska, 99576
Date Issued: 7/26/18
Time: 12:00 p.m.

Westside Salmon Announcement 43
Emergency Order 45

This is the Alaska Department of Fish and Game in Dillingham with an announcement regarding commercial and subsistence fishing in the Nushagak District. This is Westside salmon announcement number 43 issued Thursday, July 26 at 12:00 p.m.

Department staff flew a survey of the district today and observed significant amounts of fuel spreading out from the site of the sunken vessel. This fuel was already pooling in tide rips and is likely to spread across the bay with the wind and back toward Dillingham as the tide begins to flood. Because there is a significant chance of gear and fish being exposed to fuel we are closing the entire Nushagak District to all commercial fishing effective at 1:00 p.m. today July 26.

We will continue to monitor the situation and consider reopening commercial fishing when there is no longer a danger of contamination.

Subsistence users on Dillingham beaches should also be aware that there is the potential for their gear and fish to be contaminated.

This has been the Alaska Department of Fish and Game in Dillingham.

EO 2F-T-45-18

FACT SHEET FOR SCAMMON BAY:
ASKINUK TANK FARM GASOLINE RELEASE SUBSISTENCE RESOURCES

SHOULD YOU BE CONCERNED ABOUT PETROLEUM IN SUBSISTENCE RESOURCES?

Use the following guidelines, traditional knowledge, and common sense to avoid animals that are oiled or ones that don't metabolize oil quickly. (If animals don't metabolize oil quickly, it stays in their bodies for a long time).

- As the elders teach, don't collect or eat subsistence food animals that behave oddly or have unusual lesions. **Report any organism that smells or looks like it has been oiled**.
- Shellfish, like mussels, don't metabolize oil very quickly, so it stays in their bodies a long time. They may also be re-exposed from oil trapped in sediments. Avoid harvesting these animals from oiled beaches and within one mile upstream or three miles downstream of the spill until the amount of spilled product and distance of spreading has been determined.
- The rate that intertidal organisms like chitons, limpets, and octopus metabolize oil varies widely. They are also vulnerable to being re-exposed to trapped oil in sediments. Avoid harvesting these animals from oiled beaches and within one mile upstream or three miles downstream of the release site until the amount of spilled product and distance of spreading has been determined.
- Finfish, like salmon, can retain harmful compounds long after visible signs of oil are gone. Avoid harvesting fish within one mile upstream or three miles downstream of the release site until the amount of spilled product and distance of spreading has been determined.
- Birds and mammals can retain harmful compounds long after visible signs of oil are gone. Avoid harvesting any bird or mammal that shows signs of being oiled, no matter where it is located, and avoid harvesting small or non-migratory animals within a mile of the spill site or within a mile of the river starting one mile upstream and continuing three miles downstream of the spill site until the amount of spilled product and distance of spreading has been determined. Birds and large, migratory mammals should not be harvested within a three mile radius of the spill site until the amount of spilled product and distance of spreading has been determined. Avoid eating organ, such as the liver and kidneys if further concerned about an animal.
- Plants can be impacted by a petroleum spills. Avoid consuming any plant material that has come from areas that may have been affected. Indicators such as a non-vegetated area or "dead zone", visible sheen, and fuel smell are all signs that the area might be contaminated and eating or consuming plants should be avoided. Plants may also exhibit signs of contamination, such as brown or dead leaves, wilting, or have leaves with unusual dark spots or edges.
- Contact with gasoline could cause skin irritation and inflammation. If possible, avoid direct contact with spill materials. If you have no choice but to handle objects or wildlife that have been in contact with gasoline, make sure you prevent contact with your skin. If you get gasoline on your skin, wash with soap and water, and launder clothing as you normally would.

If you have health questions about use of subsistence resources please contact the Alaska Department of Health and Social Services, Division of Public Health at **269-8000**.

FEBRUARY 25, 2005

NOTICE TO FISHING VESSELS OPERATING IN STATE WATERS FROM SPRAY CAPE SOUTH TO UMNAK PASS

Cooperative efforts between the fishing industry, the State of Alaska and the M/V Selendang Ayu Unified Command continue with the goal of collecting data and taking steps to minimize the risk of oil contamination in fish/shellfish.

Results from overflights, shoreline surveys, and water quality sampling in state waters from Spray Cape south to Umnak Pass have shown that random, widely dispersed, small tar balls may be present in these waters. The risk to commercial fisheries is believed to be minimal; however the Unified Command recommends that all fishing vessel operators who operate in this area be aware of the following information:

- Aerial observations from overflights conducted from 12/12/04 through the present have shown little or no oil on the surface of the water. Occasionally, sheens have been observed immediately adjacent to areas of heavy shoreline oiling in Skan and Makushin Bays during spring tides.

- Shoreline surveys conducted from 12/27/04 to 2/5/05 have shown isolated areas of light to moderate oiling of the shoreline from Spray Cape south to Kismaliuk Bay.

- A water quality sampling program conducted in state waters from Spray Cape south to Umnak Pass from 2/5/05 through 2/12/05 showed the presence of small, randomly scattered tarballs in the upper water column (depths ranging from 2-10 feet below the surface) in Umnak Pass, Chernofsky Harbor, Kismaliuk Bay, Alimuda Bay, Kashega Bay, and Pumicestone Bay. Intermittent sampling of the seafloor in these areas using longline gear rigged with sorbent snares found no evidence of bottom oiling.

- Shoreline cleanup activities have been suspended through approximately April 15, 2005. When cleanup activities are resumed, the potential may exist for remobilization of oil in cleanup areas. Vessel operators should be aware of this potential when fishing in areas near shoreline cleanup sites.

- For the latest information on oiling observations, visit the Unified Command website at http://www.state.ak.us/dec/spar/perp/response/sum_fy05/041207201/041207201_index.htm#oiling

The Alaska Department of Environmental Conservation (ADEC) Division of Environmental Health will continue with enhanced seafood inspections for seafood caught in the Unalaska area, including state waters from Spray Cape to Umnak Pass. Processors are requested to contact ADEC for deliveries from this area. Vessel operators and crew are encouraged to inspect catch and gear for signs of oiling, and to report any oil observations to ADEC at 1-800-478-9300. A complete advisory on the seafood inspection process is available at: http://www.state.ak.us/dec/spar/perp/response/sum_fy05/041207201/fish/041207201_seaf_adv_01.pdf

INTERNATIONAL PACIFIC HALIBUT COMMISSION

News Release

FEBRUARY 27, 2005

NOTICE TO COMMERCIAL AND RECREATIONAL HALIBUT FISHING VESSELS OPERATING IN STATE WATERS FROM CAPE KOVRIZHKA SOUTH TO UMNAK PASS

Results from overflights, shoreline surveys, and water quality sampling in state waters from Cape Kovrizhka south to Umnak Pass have shown that random, widely dispersed, small tar balls may be present in these waters. Tar ball concentrations appear to be highest in Makushin Bay and in Skan Bay east of the wreck. The risk to commercial fisheries is believed to be minimal; however the Unified Command recommends that all fishing vessel operators who operate in this area be aware of the following information:

- Aerial observations from overflights conducted from 12/12/04 through the present have shown occasional, light sheens to be present immediately adjacent to areas of heavy oiling in Skan and Makushin Bays, particularly during spring tides.

- Shoreline surveys conducted from 12/27/04 to 2/5/05 have shown areas of light, moderate, and heavy oiling in Skan and Makushin Bays and isolated areas of light to moderate oiling of the shoreline from Spray Cape south to Kismaliuk Bay.

- Results from water quality sampling surveys have shown oil to be present in the water column and on the seafloor in Makushin and Skan Bays. Longline gear set on the seafloor encountered isolated tarballs at depths ranging from 15 to 105 fathoms. No oil was observed on crab or fish caught in this area.

- The State of Alaska has closed the area from Cape Kovrizhka south to Spray Cape to all commercial fishing. This closure does not extend to halibut vessels, however commercial halibut catcher vessels should be aware that the state's "zero tolerance" policy is in effect for seafood caught in this area. If oil is observed anywhere on the catch, gear, or vessel, the load cannot be landed. A complete advisory on the seafood inspection process is available at: http://www.state.ak.us/dec/spar/perp/response/sum_fy05/041207201/fish/041207201_seaf_adv_01.pdf

- Small, randomly scattered tarballs have also been encountered in state waters from Spray Cape south to Umnak Pass. Intermittent sampling of the seafloor in these areas using longline gear rigged with sorbent snares found no evidence of bottom oiling.

Shoreline cleanup activities have been suspended through approximately April 15,2005. When cleanup activities are resumed, the potential may exist for remobilization of oil in cleanup areas. Vessel operators should be aware of this potential when fishing in areas near shoreline cleanup sites.

For the latest information about oiling observations, visit the Unified Command website at http://www.state.ak.us/dec/spar/perp/response/sum_fy05/041207201/041207201_index.htm#oiling

SEAFOOD INSPECTION ACTIVITIES IN RESPONSE TO M/V SELENDANG AYU OIL SPILL

Monday, January 10, 2005

Goal:
To ensure that all seafood products from areas being harvested adjacent to the oil spill impact area are wholesome and safe for the consuming public.

Outreach:
The Department of Environmental Conservation (DEC) has contacted seafood processing facilities, and has asked them to be extra vigilant in their inspection of all products being delivered to their facilities, and the vessels making the deliveries.

Fishing Vessels:

- check fishing gear, hull, deck, equipment, work clothing, and all other items that come in contact with catch.
- check catch for signs of oil contamination.
- report any signs oil, contaminated gear or product to DEC.

Processor:

- visually inspect fishing vessel hull, deck, fish hold, equipment, work clothing, and all other items that come in contact with catch at time of delivery.
- will ask for location vessels were fishing if in proximity to impact area.
- will inspect all seafood products, and report any signs of contamination to DEC.
- segregate any loads of seafood in question, and inspect handling equipment.
- maintain detailed records.

DEC:

- will have additional inspection staff in Dutch Harbor/Unalaska during the upcoming fisheries.
- will monitor all activities in the area for signs of oil contamination.
- will inspect vessel hull, deck, fish hold, equipment, work clothing, and all other items that come in contact with catch.
- will inspect processing facility unloading, handling and processing equipment, worker clothing, and all other items that come in contact with product.
- will inspect seafood products for signs of oil contamination.
- any oil contaminated product will be isolated and held pending a final investigation.

For more information contact:
Seafood Processing and Development, Environmental Health Division, Alaska Department of Environmental Conservation
555 Cordova St., Anchorage, AK 99501-5948
Phone: (907) 269-7501, FAX: (907) 269-7510

IMC • United States Coast Guard • Alaska Department of Environmental Conservation

IMC

U.S. Department of Homeland Security
United States Coast Guard

Alaska Department of Environmental Conservation

Unified Command: *M/V Selendang Ayu Grounding*

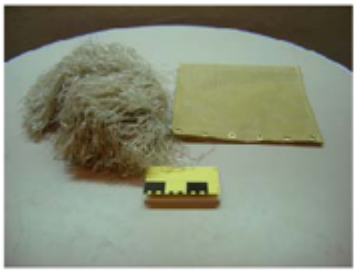
JANUARY 31, 2005

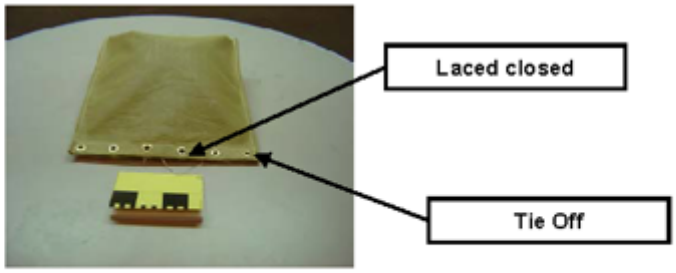
NOTICE TO PACIFIC COD CATCHER BOATS

Cooperative efforts between the fishing industry, the State of Alaska and the M/V Selendang Ayu Unified Command continue with the goal of collecting data and taking steps to minimize the risk of oil contamination in fish/shellfish.

Pacific cod catcher boats delivering their catches into the Dutch Harbor/Unalaska area are being asked to install and maintain oil detection "pom pom packs" in their RSW tanks.

The "pom pom packs" will consist of a mesh bag enclosing "pom pom snare material" designed to attract and capture floating oil contaminants. The bag assemblies will be provided to catcher boats.





Each vessel is also asked to provide a small trawl float and to secure each "pom pom pack" with the float to keep the bag near the surface of the water inside each RSW tank.

Please secure the "pom pom pack" in the tank prior to tank down. **REMOVE THE PACK FROM THE TANK** and check it for signs of oil contamination before the fish are placed in the tank. Inspection should include smelling for oil and looking for tar balls or others contamination both on the outside of the bag and on the pom poms inside. Also, please check the tank for any oil sheen. If oil contamination is found please :

- Please place the contaminated pack in the plastic bag provided and enter the date, vessel name and location (lat x long) into the vessel's log and on the bag.
- Notify your processor who will notify the Alaska Department of Environmental Conservation, (Rebecca Sheffield, tel 581-4632 and cell 391-2118)
- Alaska Department of Environmental Conservation inspectors will retrieve the contaminated pack upon vessels return to port.
- Follow your regular tank cleaning procedures.

If no oil contamination is detected store the pack where it will not be contaminated. The mesh bags and pom poms are made to be reused during the season.

IMC • United States Coast Guard • Alaska Department of Environmental Conservation

IMC

U.S. Department of Homeland Security
United States Coast Guard

Alaska Department of Environmental Conservation

Unified Command: *M/V Selendang Ayu Grounding*

Subsistence Advisory for Unalaska Island
March 8, 2005

Known Facts:

- Oil observations from the Selendang Ayu oil spill show that oil may be present along the shoreline, in the water column, and on the seafloor in certain areas of Unalaska Island.
- State waters from Cape Kovrizhka to Spray Cape are presently closed to commercial fisheries.
- The largest amounts of stranded oil is in areas of Skan Bay and Makushin Bay; however random, scattered tar balls and tar patties have been observed as far south as Umnak Pass and in areas of Unalaska Bay.
- Many shoreline areas seem to be free of oil impacts; however, it is known that the oil may be transferred from one beach to another, so it is important to check the whole shoreline before gathering items for consumption.
- Beaches that appear clean on the surface may have oil below the surface. When digging for resources, check the subsurface for signs of oil before collecting subsurface resources such as clams.
- Oil from the Selendang Ayu freighter generally appears to be brown or black in color, with a thick, sticky consistency.
- Tar balls and tar patties on the shoreline often have beach grass, sand, and other materials mixed in.

If you are a subsistence user:

- Take care when collecting fish, shellfish, plants, or intertidal species in areas where oil has been observed.
- Special care should be taken in inspecting consumable items prior to use.
- Oil may be detected on food by visually inspecting and smelling for oil.
- If you suspect or find oil on a subsistence item, do not use or consume the item.
- Please remember that other environmental contaminants may be present in local areas, so pay attention to any and all signs, advisories, and other local cautions reported about subsistence foods.

If you find any signs of oil on items harvested in the Unalaska area, or if you observe tar balls or tar patties on the beach or in the water, please report your findings to the Alaska Department of Environmental Conservation at 1-800-478-9300.