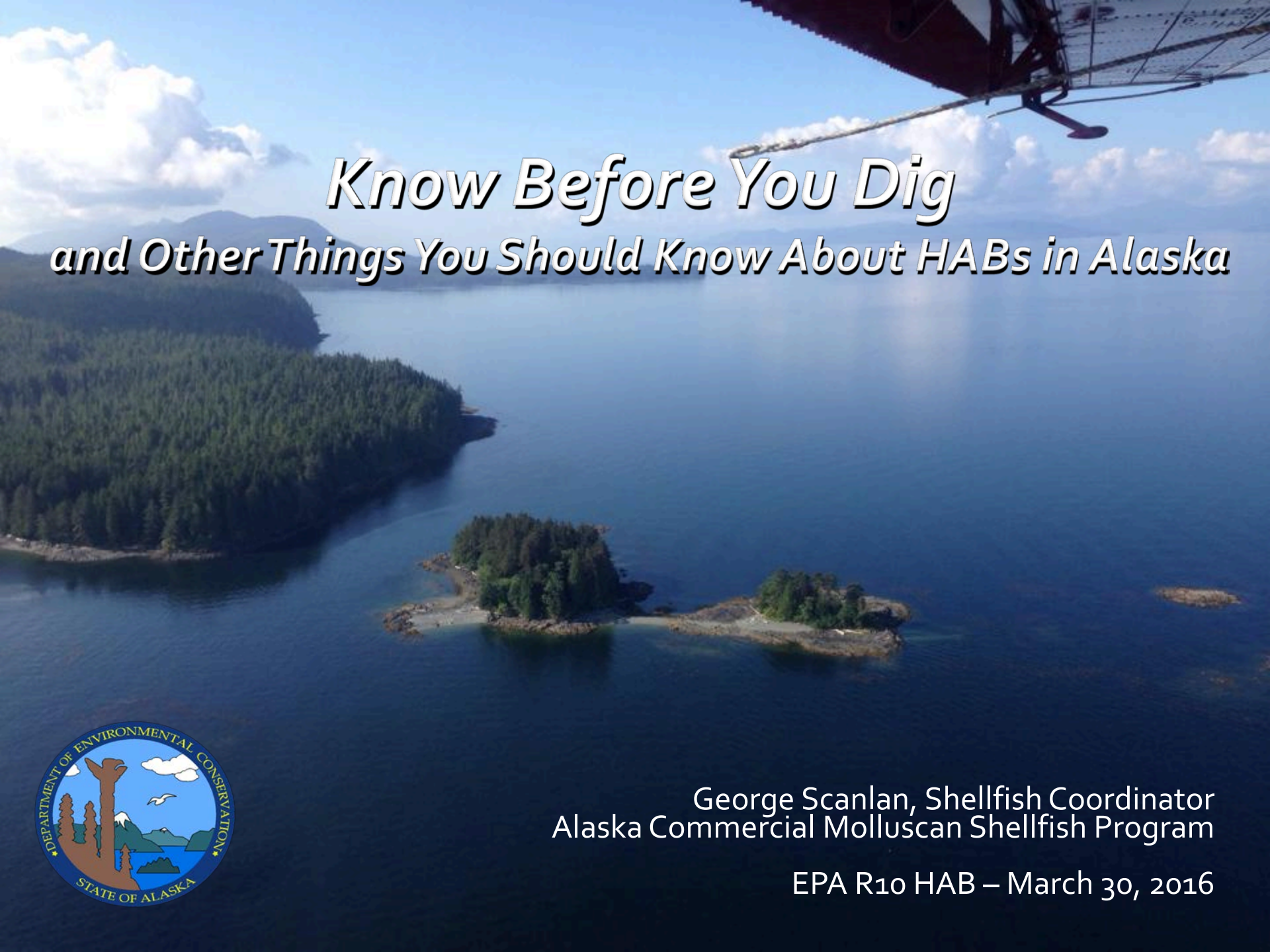


Know Before You Dig

and Other Things You Should Know About HABs in Alaska

George Scanlan, Shellfish Coordinator
Alaska Commercial Molluscan Shellfish Program

EPA R10 HAB – March 30, 2016

Overview

I. Alaska Orientation, Program Overview
II. History
III. Monitoring
IV. Bloom, Toxin Trends
V. Coordination, Communication
VI. Areas of Need

Alaska Orientation

Food Safety and Sanitation

What We Oversee

- Molluscan Shellfish
- Retail Food & Food Service
- Manufactured Food
  - Seafood Processing
  - General Food
- Body Art
- Pools and Spas
- Other Sanitation
- Smoking Law

Food Safety and Sanitation

What We Do

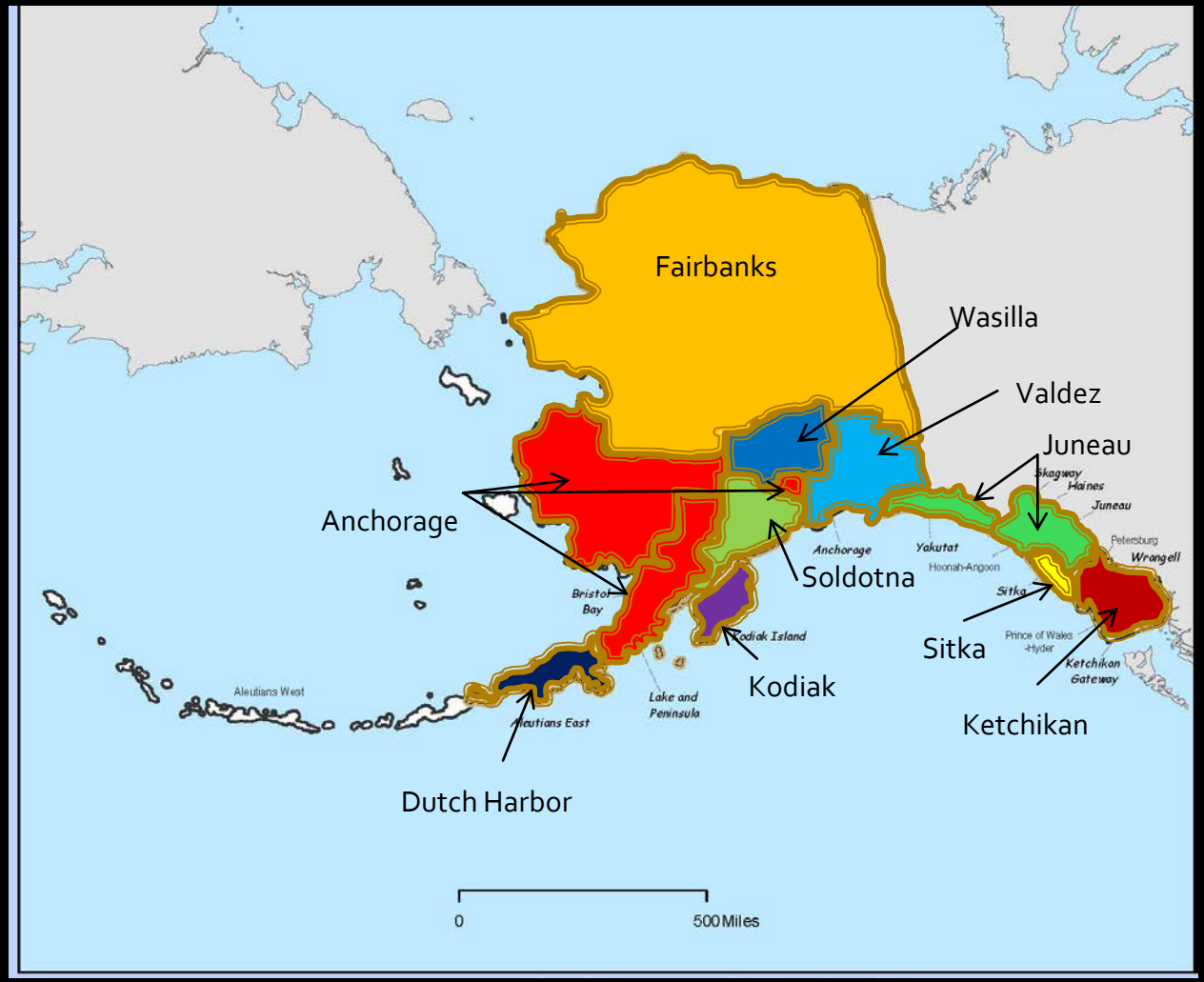
- Establish standards, permit, inspect and enforce standards for food processing, retail and food service, and shellfish facilities

- Establish standards and inspect, on a complaint basis, certain public facilities for sanitation

- Provide education and training on the safe handling of food

Food Safety and Sanitation

Office Coverage



Molluscan Shellfish Sanitation

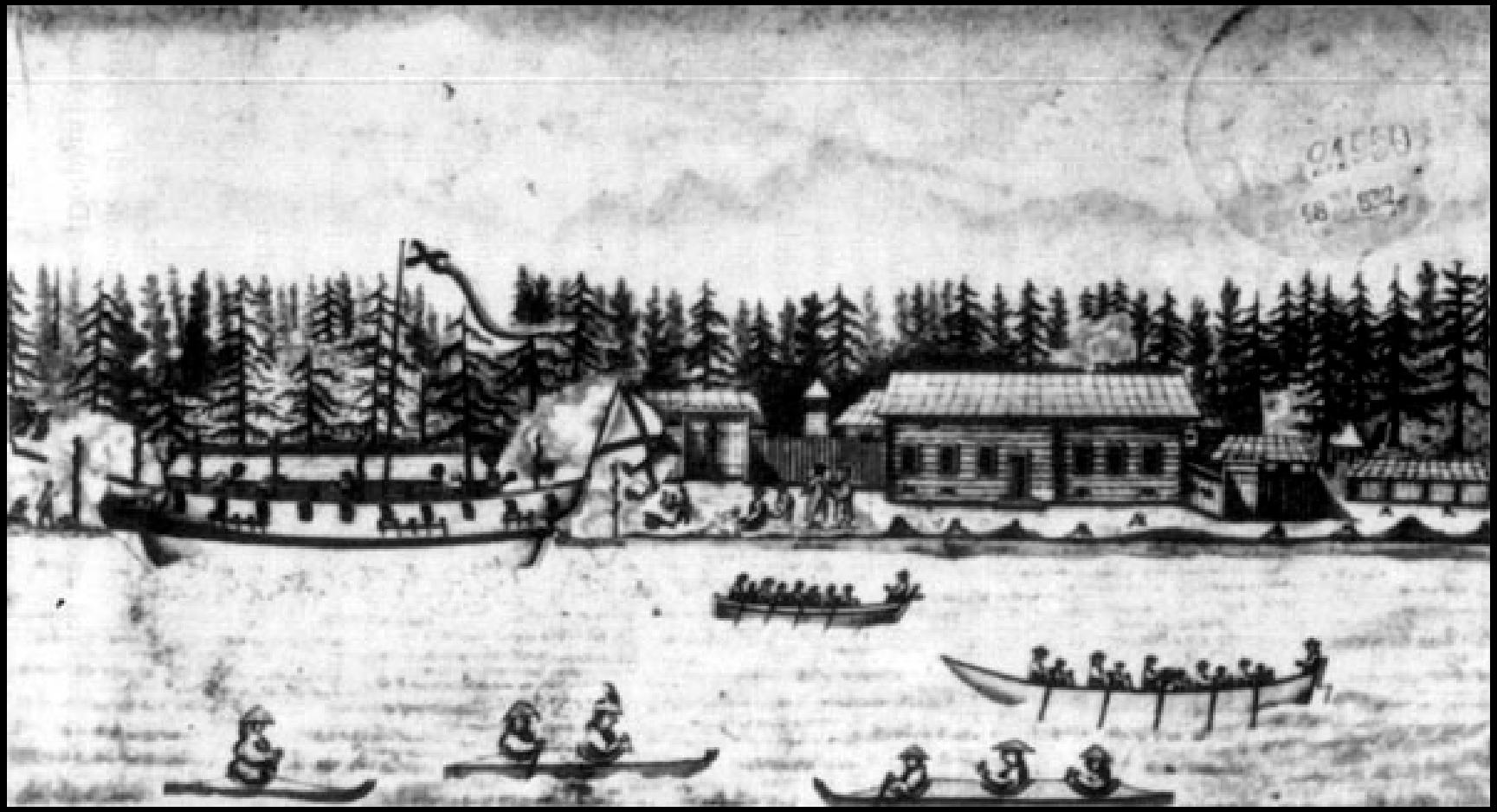
- 25 Growing Areas
  - ~29 Farms
  - 205 Harvesters
    - 93 Vessels
    - 34 Dealers

Mariculture - < $1M
Geoduck - ~625,000 lb

SHELLFISH GROWING/HARVEST AREAS IN ALASKA
Fairbanks
ALASKA
YUKON TERRITORY
Anchorage
~130 miles
Cook Inlet
~800 miles
Gulf of Alaska
Juneau
ADFG Permitted Aquatic Farms
Aquatic Farm
Hatchery
Nursery

History

Living with HABs in Alaska



History
Shellfish & Biotoxins in Alaska

http://hdl.handle.net/2027/umn.31951d021069055

Kukak Bay – Surf Canneries 1935-36
www.nps.gov

◀ HEMRICH'S OCEAN CLAMS LABEL: *Elmer Hemrich guarantees the "The contents of this can are packed from the Famous Washington and Alaska Coast Razor Clams under the most modern and sanitary conditions for an appreciative public." Courtesy of Dorothy Fribrock, circa 1919, private collection.*

History Continued…

National Archives

10999. Adulteration of frozen clams. U. S. v. 2 Boxes, etc. (F. D. C. No. 19654. Sample No. 37483–H.)

LIBEL FILED: April 24, 1946, Western District of Washington.

ALLEGED SHIPMENT: On or about November 10, 1945, by Knut Thompson for Chris Dahl, from Petersburg, Alaska.

PRODUCT: 2 250-pound boxes and 6 2½-pound bricks of frozen clams at Seattle, Wash.

NATURE OF CHARGE: Adulteration, Section 402 (a) (1), the product contained a poisonous and deleterious substance, *Gonyaulax* toxin, which may have rendered the product injurious to health.

DISPOSITION: July 30, 1946, No claimant having appeared, judgment of condemnation was entered and the product was ordered destroyed.

11000. Adulteration of frozen clams. U. S. v. 34 Cases * * *. (F. D. C. No. 19595. Sample No. 59307–H.)

LIBEL FILED: April 10, 1946, Western District of Washington.

ALLEGED SHIPMENT: On or about March 16, 1946, by Chris Dahl, from Petersburg, Alaska.

PRODUCT: 34 cases, each containing 12 No. 10 cans, of frozen clams at Seattle, Wash.

LABEL, IN PART: "Frozen Clams From Haines Oyster Company Seattle."

NATURE OF CHARGE: Adulteration, Section 402 (a) (1), the article contained a poisonous and deleterious substance, *Gonyaulax* toxin, which may have rendered the article injurious to health.

DISPOSITION: May 31, 1946. No claimant having appeared, judgment of condemnation was entered and the product was ordered destroyed.

11001. Adulteration of frozen clams. U. S. v. 109 Cases * * *. (F. D. C. No. 19638. Sample No. 37485–H.)

LIBEL FILED: On or about April 17, 1946, Western District of Washington.

ALLEGED SHIPMENT: On or about February 13, 1946, by the Alaskan Glacier Sea Food Co., from Petersburg, Alaska.

PRODUCT: 109 Cases, each containing 6 cans, of frozen clams at Seattle, Wash.

NATURE OF CHARGE: Adulteration, Section 402 (a) (1), the product contained a poisonous and deleterious substance, *Gonyaulax* toxin.

DISPOSITION: July 30, 1946. No claimant having appeared, judgment of condemnation was entered and the product was ordered destroyed.

History Continued…

Reprints

PUBLIC HEALTH SIGNIFICANCE OF PARALYTIC SHELLFISH POISON:

A REVIEW OF LITERATURE AND UNPUBLISHED RESEARCH

E. F. McFarren, M. L. Schafer, J. E. Campbell, and K. H. Lewis

Robert A Taft Sanitary Engineering Center,
Cincinnati, Ohio

E. T. Jensen

Milk and Food Program
Public Health Service
Washington, D. C., and

E. J. Schantz

Chemical Corps, Ft. Detrick, Frederick, Md.
Consultant to the Robert A. Taft Sanitary Engineering Center

The prevention of poisoning due to the ingestion of toxic shellfish has been a problem of mutual concern to public health and fishery authorities in Canada and United States for many years and has been recognized for over a century as a clinical entity. From the standpoint of public health, paralytic shellfish poisoning or so-called "mussel poisoning" cannot be classified as a major problem; however, it has caused considerable concern because of its extreme toxicity and the fact that there is no known antidote. Less than one millionth of a gram is sufficient to kill a mouse, and the fatal dose for man is only a few milligrams.

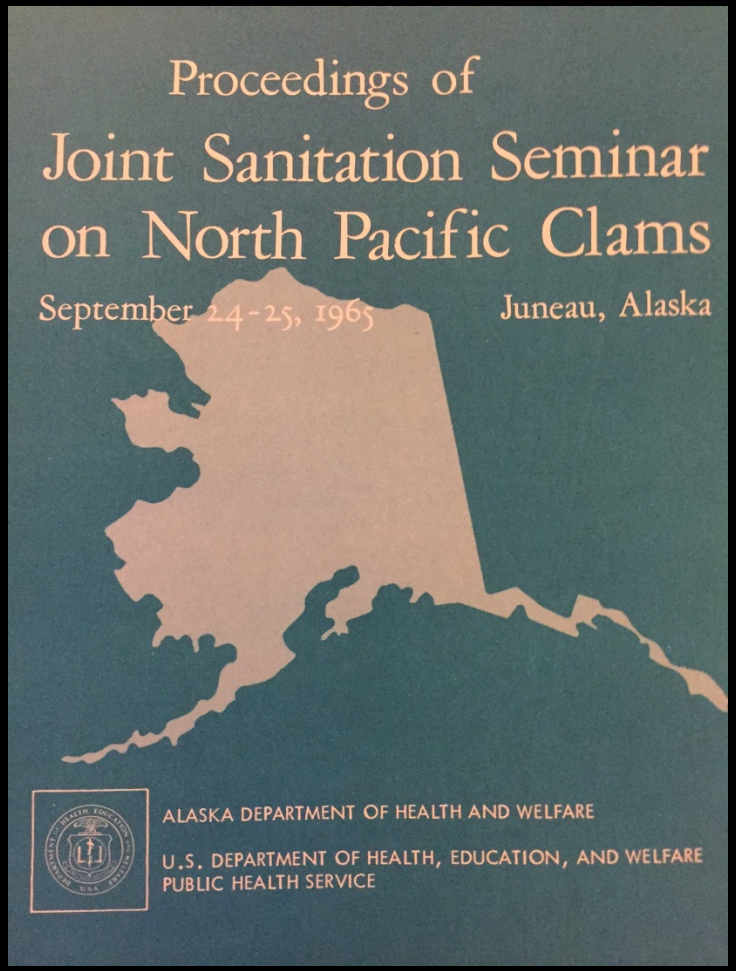
During the 1945-46 clam canning season, which was cut short by the regulatory action of the Food and Drug Administration, Southeastern Alaska operators produced packs of frozen and canned butter clams, Saxidomus, valued at over $170,000. As this industry was a winter operation, offering employment and income during an otherwise slack season, it was of special importance to resident Alaskan economy. Likewise, the Maritime Provinces of eastern Canada are an important producing area for soft shell clams, Mya, normally exporting about four million pounds per year to the United States.

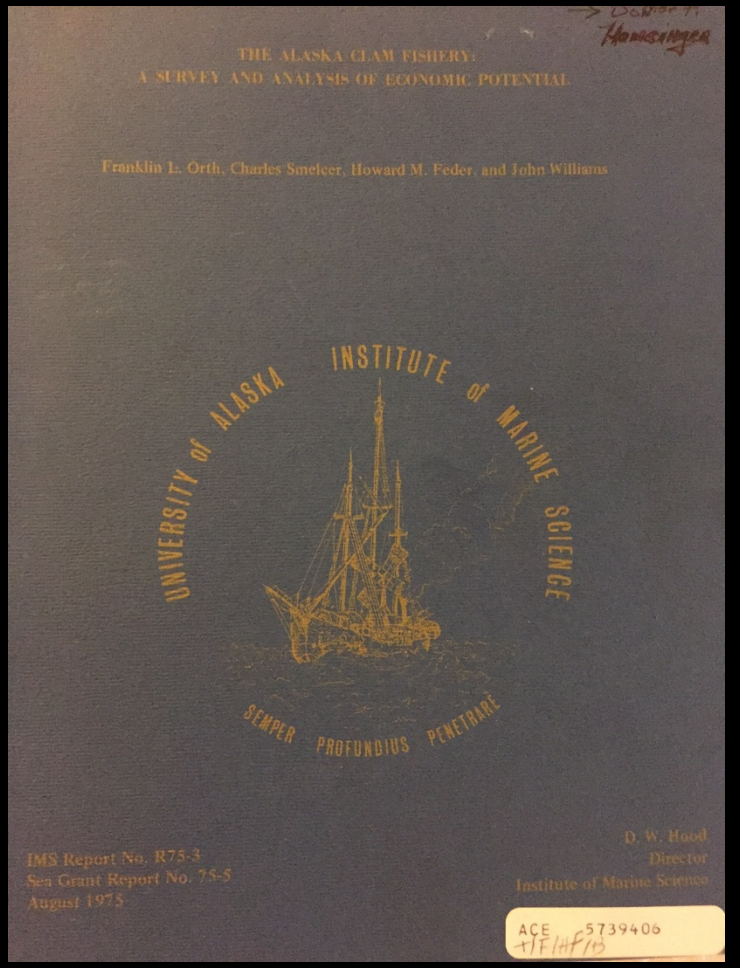
Along the Pacific Coast of North America and the Canadian Atlantic Coast, as well as a few other parts of the world, mussels, Mytilus, may also become poisonous. The chief danger in these areas is that individuals may gather the shellfish and roast them on the beach. Because of this popular summer sport of beach parties or "clam bakes" and the commercial operations mentioned above, it is obvious that unless adequate control measures are maintained mass intoxication would result.

Fairbanks Daily News Miner

History Continued...

History continued…





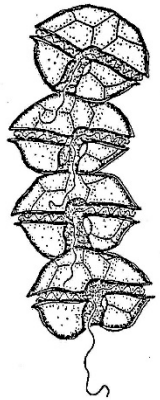
Living With Paralytic Shellfish Poisoning

A Conference to Develop PSP Research and Management Strategies for Safe Utilization of Shellfish in Alaska

Prepared by

Raymond RaLonde
University of Alaska Fairbanks
School of Fisheries and Ocean Sciences
Marine Advisory Program

Rodger Painter
Alaskan Shellfish Growers Association



June 1995

Harmful Algal Blooms on the North American West Coast

Edited by Raymond RaLonde

University of Alaska Sea Grant College Program

DEC warns of PSP danger in consuming crab "butter"

July 17, 2002
Wednesday - 12:20 am

Anchorage - The Alaska Department of Enviro
warning on Tuesday to crab lovers of the dan
shell fish poisoning from eating the viscera of
of the state.

Consumers of crab harvested around Kodiak I
south of Cape Kumlik, and Bairdi Tanner crab
make sure the guts are removed before the c
presence of PSP in those locations. "If you bu
from these areas, you can prevent a potential
removing the guts before you cook and eat it,
Coordinator of the Division of Environmental H

DEC recently informed commercial crabbers th
for PSP testing of crab harvested in Alaska for
caveat that crab from those locales which con
toxins must have the guts removed before sal
prevent anyone from getting sick, while at the
we do not need to continue the rigorous samp
remained consistent over a number of years.
longer necessary for crab harvested in Alaska
however, take samples periodically to determi

DEC continues to warn seafood lovers that cla
beaches can be dangerous any time of the ye
should not be eaten except those harvested fr

Highest levels of PSP toxin ever recorded

PSP considered a public health emergency, alerts issued

June 10, 2011
Friday

State of Alaska Department of Health's Section of
ytic shellfish poisoning (PSP) in Metlakatla
n by marine scientists in Southeast Alaska
f toxin ever recorded.

al Health Consortium (SEARHC), in recent weeks
suspected paralytic shellfish poisoning (PSP)
te different types of shellfish harvested from
la/Annette Island. Several of the people with PSP
g a couple who spent time in intensive care.
including the first two PSP-related deaths in
nes, with the Haines case also listing heart failure

sh they gather through subsistence and
a very dangerous practice," said Dr. David
Care Services Medical Director. "There are many
ly gather shellfish in months that contain an 'R,'
away the toxins. Unfortunately, these shellfish
ill or even kill them. We join state and federal
aska residents not to eat shellfish gathered from
involved, especially with the recent PSP levels."

admitted to a local hospital in Ketchikan on
ymptoms of PSP after eating mussels harvested

more than 80 micrograms of toxin per hundred
s taken May 25, 2011, at a boat dock in
at over 30,000 micrograms per hundred grams of

Crab PSP reported in Haines; Man found deceased Tuesday AM

June 21, 2010
Monday

Anchorage, Alaska - Epidemiologists with the Department of Health and Social Services received a report Sunday of another case of paralytic shellfish poisoning (PSP).

According to officials at Bartlett Regional Hospital in Juneau, the patient, 57-year old John Michael Saunders from Haines, reportedly developed symptoms consistent with PSP after eating Dungeness crab in Haines on Friday. It is believed that the PSP came from the viscera (guts). PSP is not normally found in the crab meat. Symptoms included tingling in his lips, numbing in his body, weakness and poor coordination. Saunders was medevaced to Juneau on Saturday and released from the hospital this morning.

The crab was reportedly caught in front of Jenkins Rock near the Chilkat Inlet of Lynn Canal. No one else who ate crab caught at the same time reported any symptoms.

DEC and DHSS officials warn the public not to consume the viscera from recreational and subsistence harvested crabs. Crab meat is not considered to be a source of PSP. Additionally, DEC plans to begin testing crab from the implicated southeastern area.

This is the fifth case of paralytic shellfish poisoning reported to the state in the

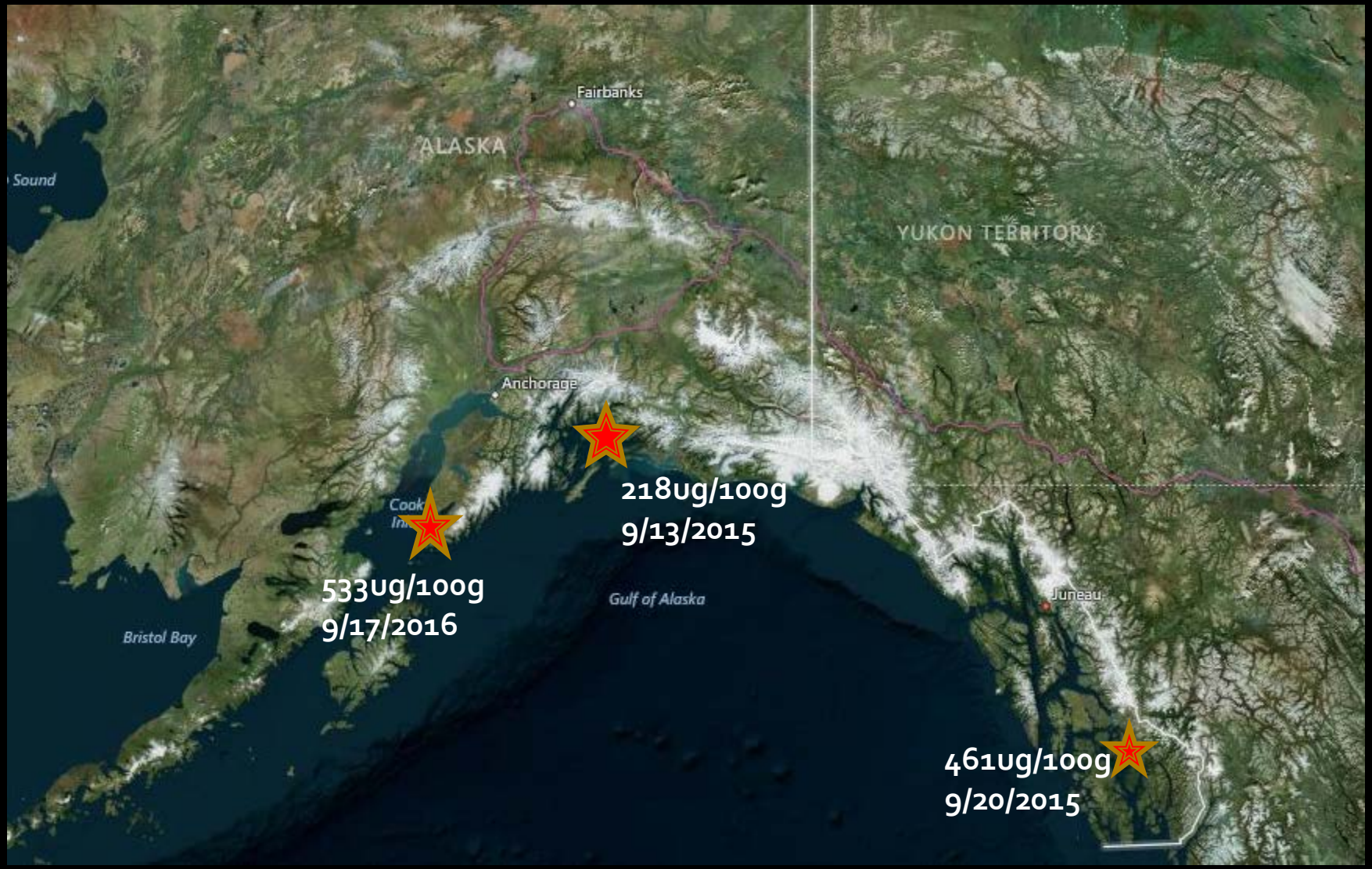
Monitoring Toxins in Commercially Harvested shellfish

Geoduck Clams Biotoxin Monitoring Plan

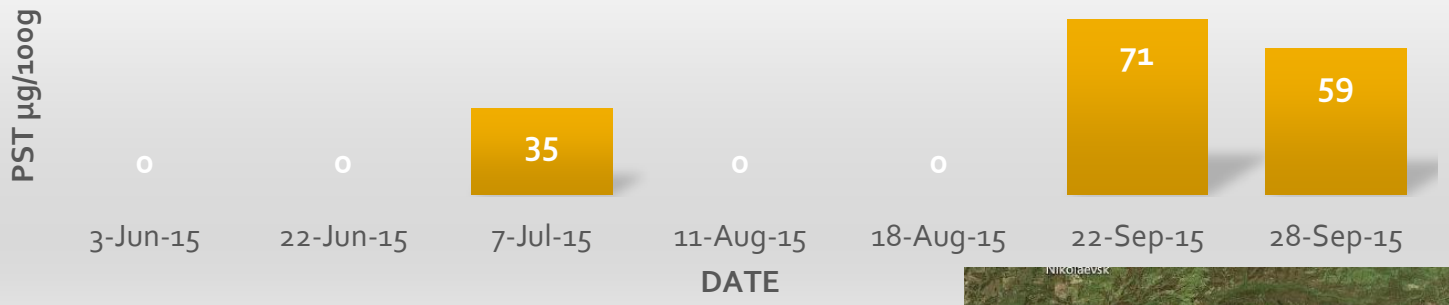
Bivalve Shellfish Other Than Geoduck Clams Biotoxin Monitoring Plan

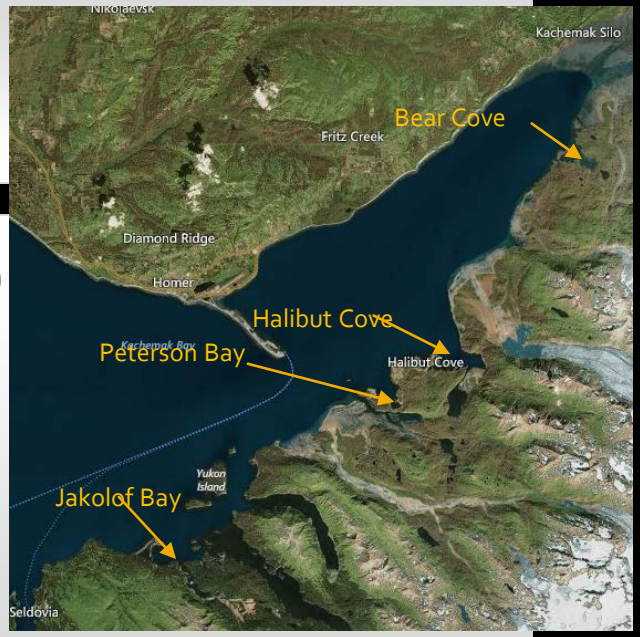
http://dec.alaska.gov/eh/fss/seafood/Shellfish_Home.html

2015 PST Events in Oysters & Mussels

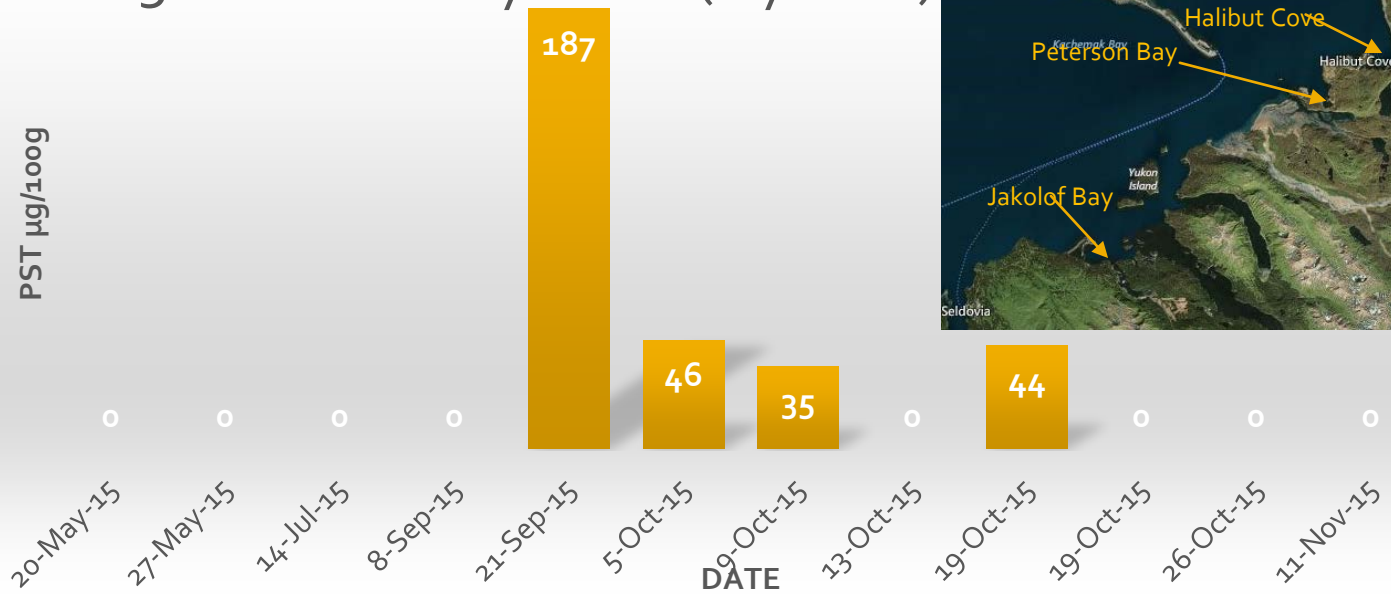


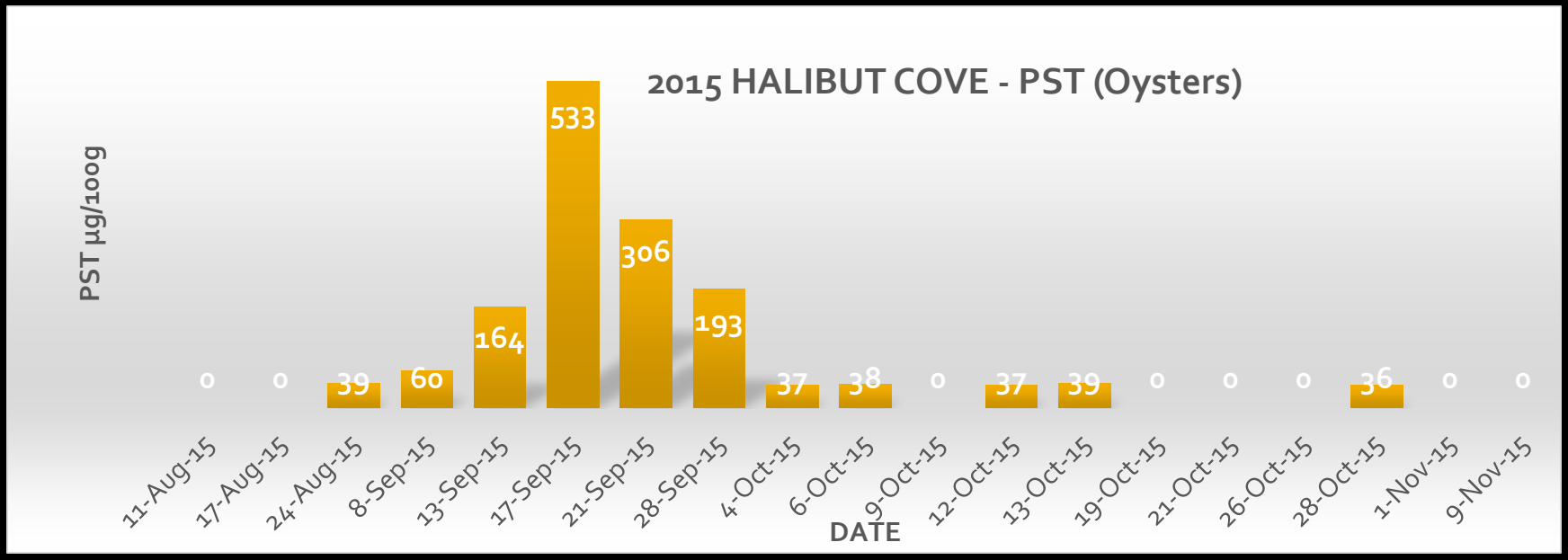
2015 Bear Cove - PST (Oysters)

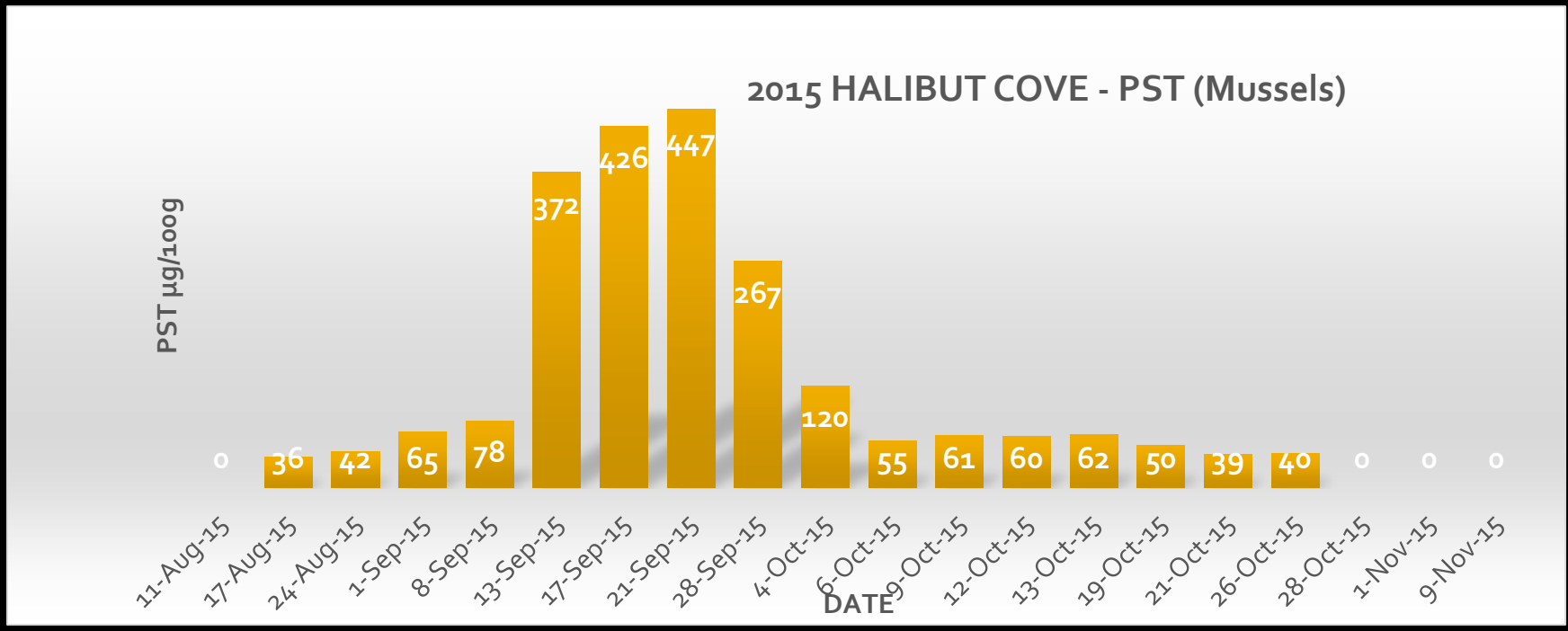




2015 Peterson Bay - PST (Oysters)

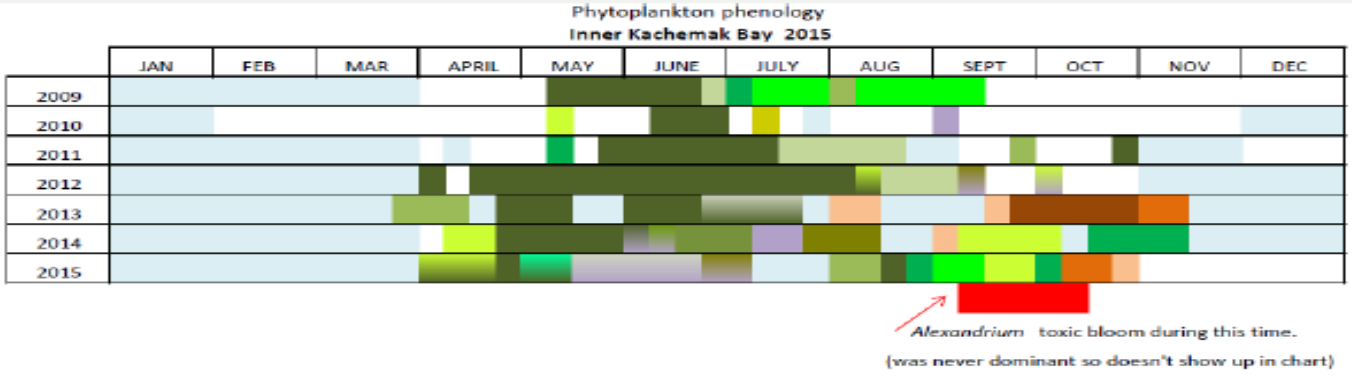



2015 HALIBUT COVE - PST (Oysters)
PST µg/100g
0
0
39
60
164
533
306
193
37
38
0
37
39
0
0
0
36
0
0
11-Aug-15
17-Aug-15
24-Aug-15
8-Sep-15
13-Sep-15
17-Sep-15
21-Sep-15
28-Sep-15
4-Oct-15
6-Oct-15
9-Oct-15
12-Oct-15
13-Oct-15
19-Oct-15
21-Oct-15
26-Oct-15
28-Oct-15
1-Nov-15
9-Nov-15
DATE


2015 HALIBUT COVE - PST (Mussels)
PST µg/100g
0
36
42
65
78
372
426
447
267
120
55
61
60
62
50
39
40
0
0
0
11-Aug-15
17-Aug-15
24-Aug-15
1-Sep-15
8-Sep-15
13-Sep-15
17-Sep-15
21-Sep-15
28-Sep-15
4-Oct-15
6-Oct-15
9-Oct-15
12-Oct-15
13-Oct-15
19-Oct-15
21-Oct-15
26-Oct-15
28-Oct-15
1-Nov-15
9-Nov-15
DATE

KACHEMAK BAY RESEARCH RESERVE

Harmful Algal Bloom Monitoring in Kachemak Bay

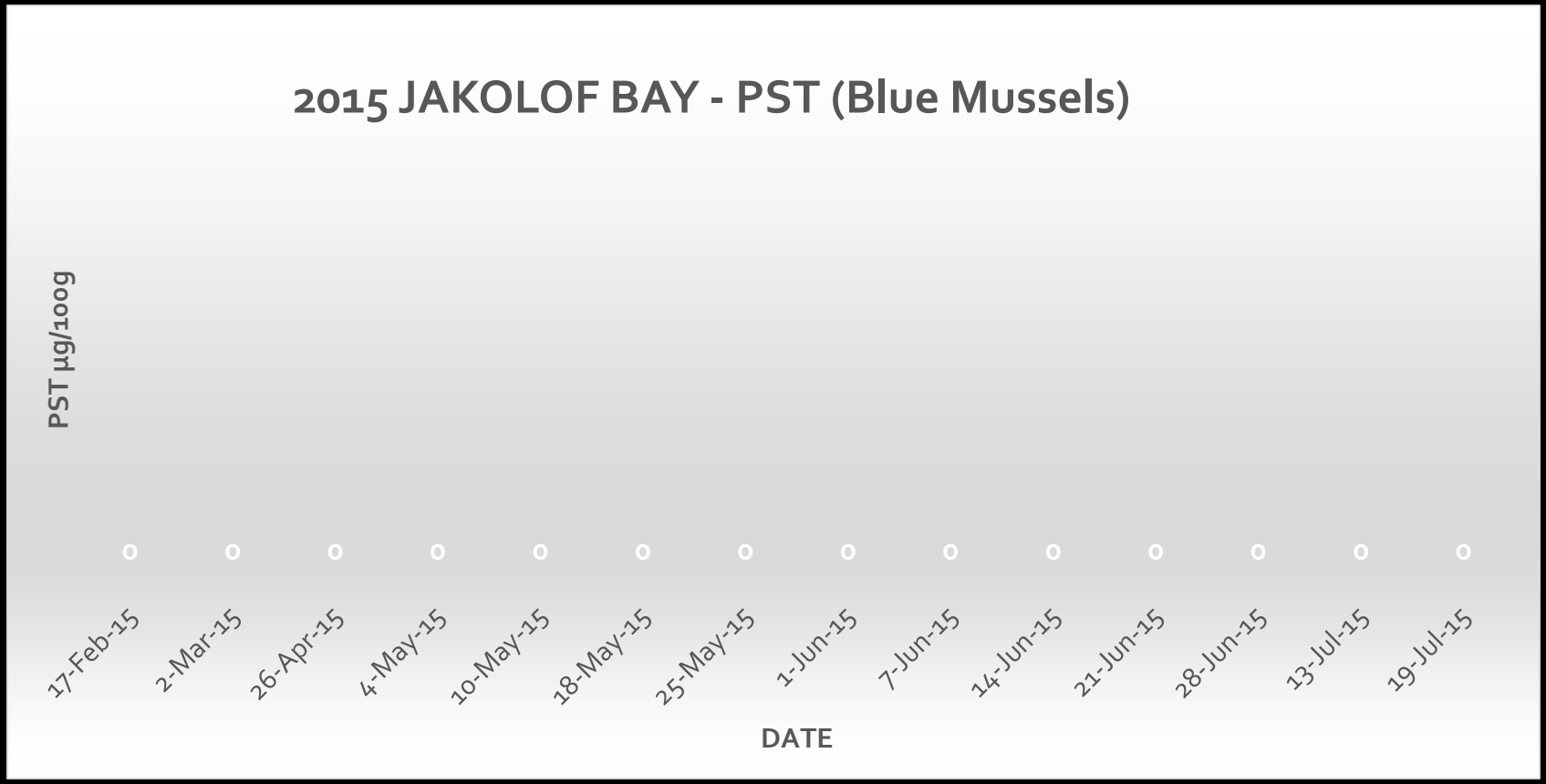


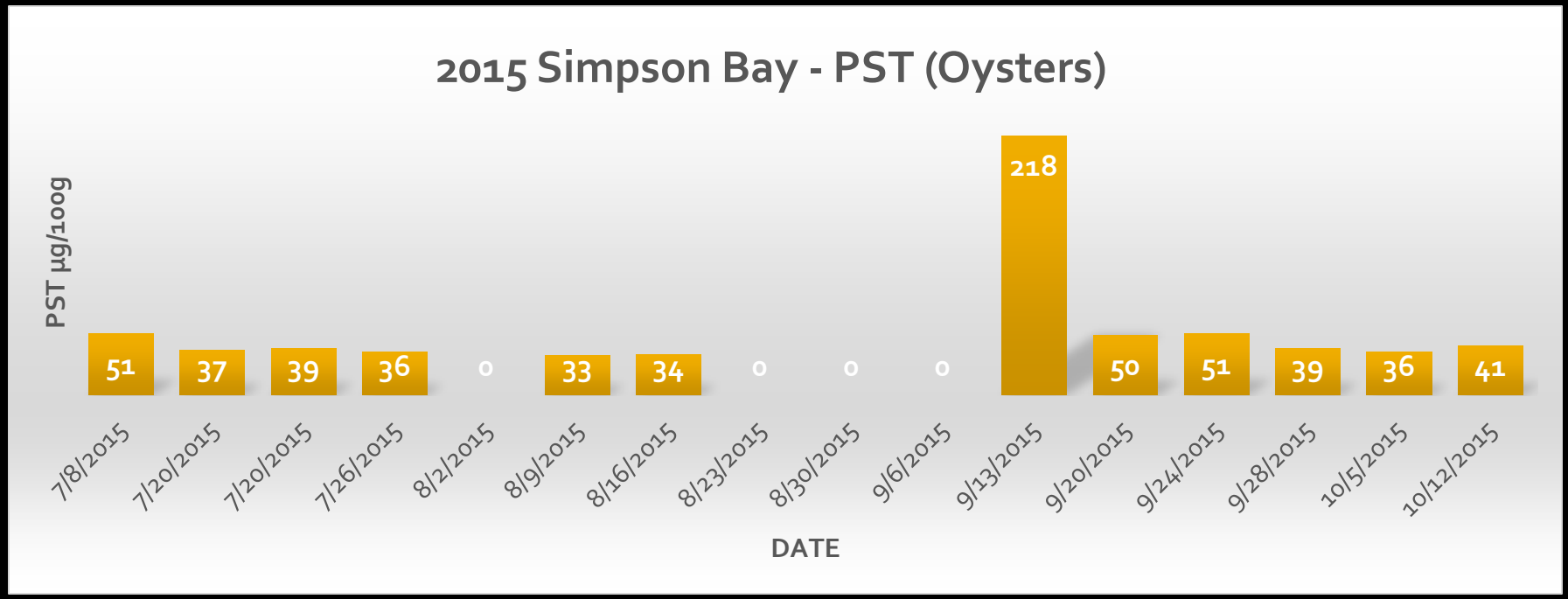
Phytoplankton Phenology

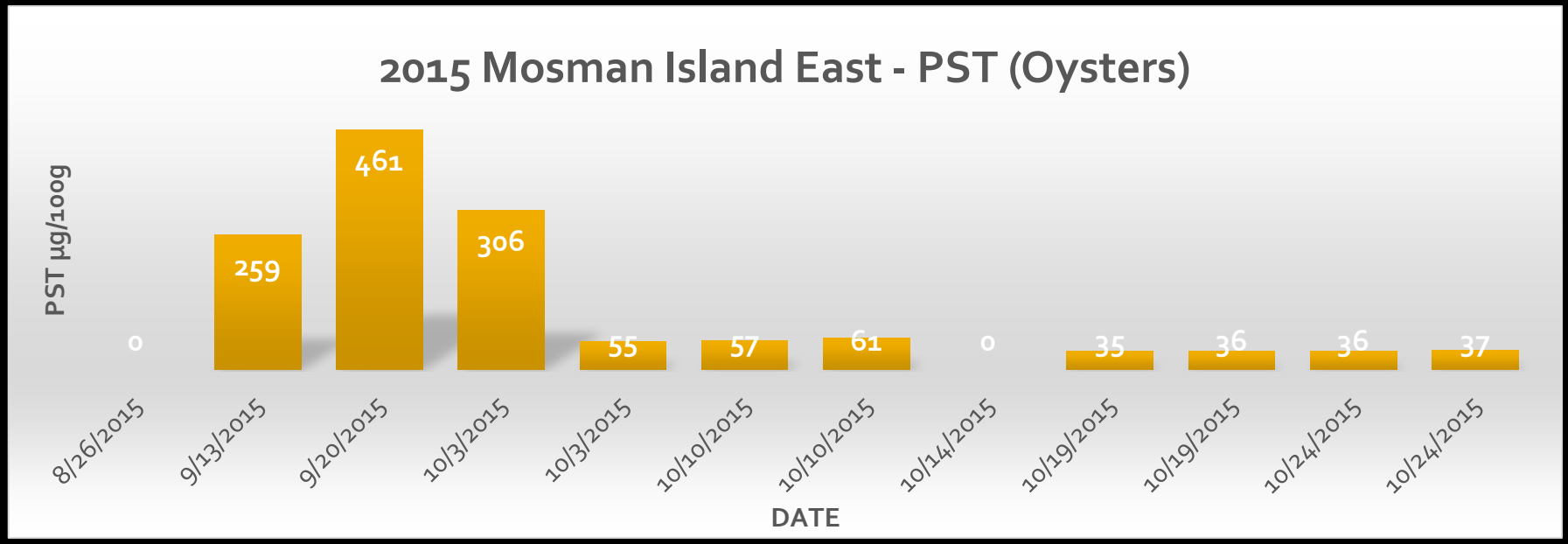
This is what our phytoplankton timing looks like over the course of a year. This 'phenology' chart doesn't say anything about how **much** plankton there was, but it tells us which group dominated inner Kachemak Bay waters and when. Look how *Chaetoceros* dominates for a shorter period of time now compared to 2012. Some other bodies of water have a consistent switch to dinoflagellates in the fall. (dinos are colored in oranges and reds on the chart) They definitely come into their own in the later part of our summer, but it is not very consistent. Kudos to our wonderful volunteers who are responsible for no data gaps this year!!!

Kachemak Bay Research Reserve
2181 Kachemak Drive
Phone: 907-235-4799; Fax: 907-235-4794

UNIVERSITY of ALASKA ANCHORAGE


2015 JAKOLOF BAY - PST (Blue Mussels)
PST µg/100g
0
0
0
0
0
0
0
0
0
0
0
0
0
0
17-Feb-15
2-Mar-15
26-Apr-15
4-May-15
10-May-15
18-May-15
25-May-15
1-Jun-15
7-Jun-15
14-Jun-15
21-Jun-15
28-Jun-15
13-Jul-15
19-Jul-15
DATE


2015 Simpson Bay - PST (Oysters)
PST µg/100g
51
37
39
36
0
33
34
0
0
0
218
50
51
39
36
41
7/8/2015
7/20/2015
7/20/2015
7/26/2015
8/2/2015
8/9/2015
8/16/2015
8/23/2015
8/30/2015
9/6/2015
9/13/2015
9/20/2015
9/24/2015
9/28/2015
10/5/2015
10/12/2015
DATE


2015 Mosman Island East - PST (Oysters)
PST µg/100g
0
259
461
306
55
57
61
0
35
36
36
37
8/26/2015
9/13/2015
9/20/2015
10/3/2015
10/3/2015
10/10/2015
10/10/2015
10/14/2015
10/19/2015
10/19/2015
10/24/2015
10/24/2015
DATE

Outreach, Communication

Larry Hartig
Commissioner
P.O. Box 111800
Juneau, AK 99811-1800
www.dec.alaska.gov

STATE OF ALASKA
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
COMMISSIONER'S OFFICE

Candice Bressler
Public Information Officer
907.465.5009
candice.bressler@alaska.gov

Press Release

FOR IMMEDIATE RELEASE – September 18, 2015
CONTACT: George Scanlan, Shellfish Permit Coordinator, (907) 269-7638, george.scanlan@alaska.gov

DEC Advises Caution in Harvesting Shellfish
No "safe" months for recreational harvesting

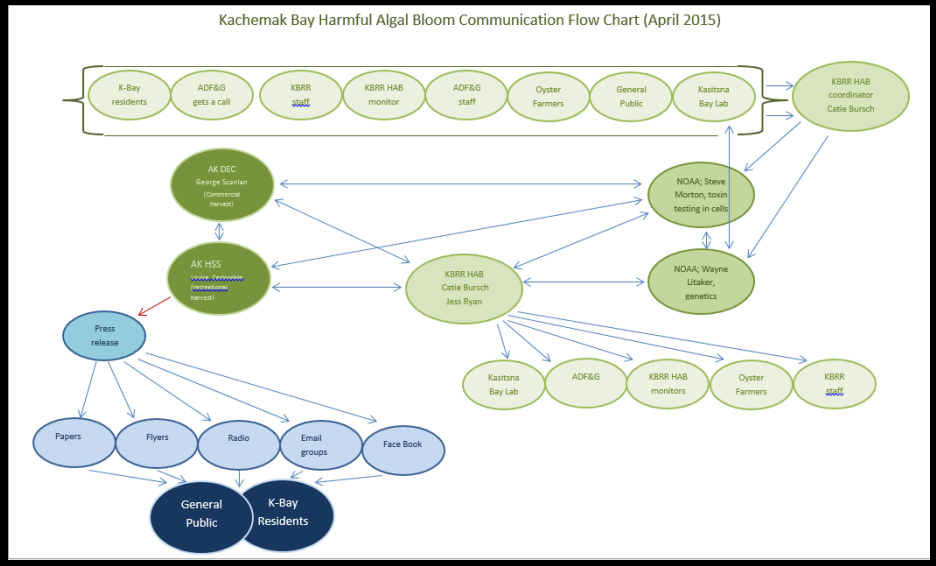
(JUNEAU, AK) – The Alaska Department of Environmental Conservation (DEC) confirms the closure of commercial shellfish harvesting on the east side of Kachemak Bay. DEC's Environmental Health Lab confirmed Paralytic Shellfish Poison (PSP) levels above the regulatory limit of 80 µg. These elevated PSP levels were detected from blue mussel and oyster samples collected from an oyster farm on September 13 from Halibut Cove.

Shellfish gatherers should be cautious of the dangers of Paralytic Shellfish Poison (PSP) from clams and mussels gathered on beaches across Alaska. There are **NO** beaches that are certified or designated as "safe" beaches for shellfish harvesting in Alaska. All recreationally-harvested shellfish – including clams, mussels, oysters, geoducks, and scallops – may contain paralytic shellfish toxin (PST) that, if ingested, can cause death. **PSP cannot be cooked, cleaned, or frozen out of shellfish.**

If you choose to harvest shellfish in Alaska, it is important that you know the facts about PST, know the species you plan to harvest, and know the symptoms of paralytic shellfish poisoning so you can seek help quickly.

PSP comes from algae, a food source for filter-feeding shellfish, like clams and mussels. The shellfish store the toxin from the algae in their tissues. The toxin can be present even when there is no visible discoloration or so-called red tides in the ocean water, and there is no discoloration of the shellfish.

Symptoms of PSP may appear in less than an hour after ingestion. Initial symptoms are a tingling or numbness in the lips and tongue, often followed by tingling and numbness in the fingertips and toes. These symptoms may progress to loss of muscle coordination, dizziness, weakness, drowsiness, and incoherence. The only treatment for severe cases is the use of a



mechanical respirator and oxygen. If symptoms are exhibited, call 911, or get to a medical facility immediately.

For more information on shellfish harvesting and PSP, go to:

http://dec.alaska.gov/eh/fss/seafood/rec_shellfish_harvest.html
http://dhss.alaska.gov/dph/chronic/documents/02-internal/paralyticshellfishpoisoningfactsheet.pdf
http://www.cdc.gov/nczved/divisions/dfbmd/diseases/marine_toxins/

###

Know Before You Dig - Recreational Shellfish Harvesting

There are **NO** beaches that are certified or designated as "safe" beaches for shellfish harvesting in Alaska. All recreationally-harvested shellfish- including clams, mussels, oysters, geoducks, and scallops - may contain paralytic shellfish toxin (PST) that, if ingested, can cause death.

If you choose to harvest shellfish in Alaska, it is important that you know the facts about PST, know the species you plan to harvest, and know the symptoms of paralytic shellfish poisoning and get help quickly!

Get medical help immediately if you experience nausea, vomiting, diarrhea, abdominal pain, and tingling or burning lips, gums, tongue, face, neck, arms, legs, and toes, shortness of breath, dry mouth, a choking feeling, confused or slurred speech, and lack of coordination.

In The News

- Paralytic Shellfish Poisoning: An ever-present risk in Alaska

Know The Facts

- Paralytic Shellfish Poisoning (PSP)
- Illnesses in Alaska
- Myths and Misconceptions
- Algal Blooms (aka Red Tide)

Know The Species

- Common Alaska Shellfish
- Alaska Shellfish Photos
- Key for Alaska Shellfish
- Species Information

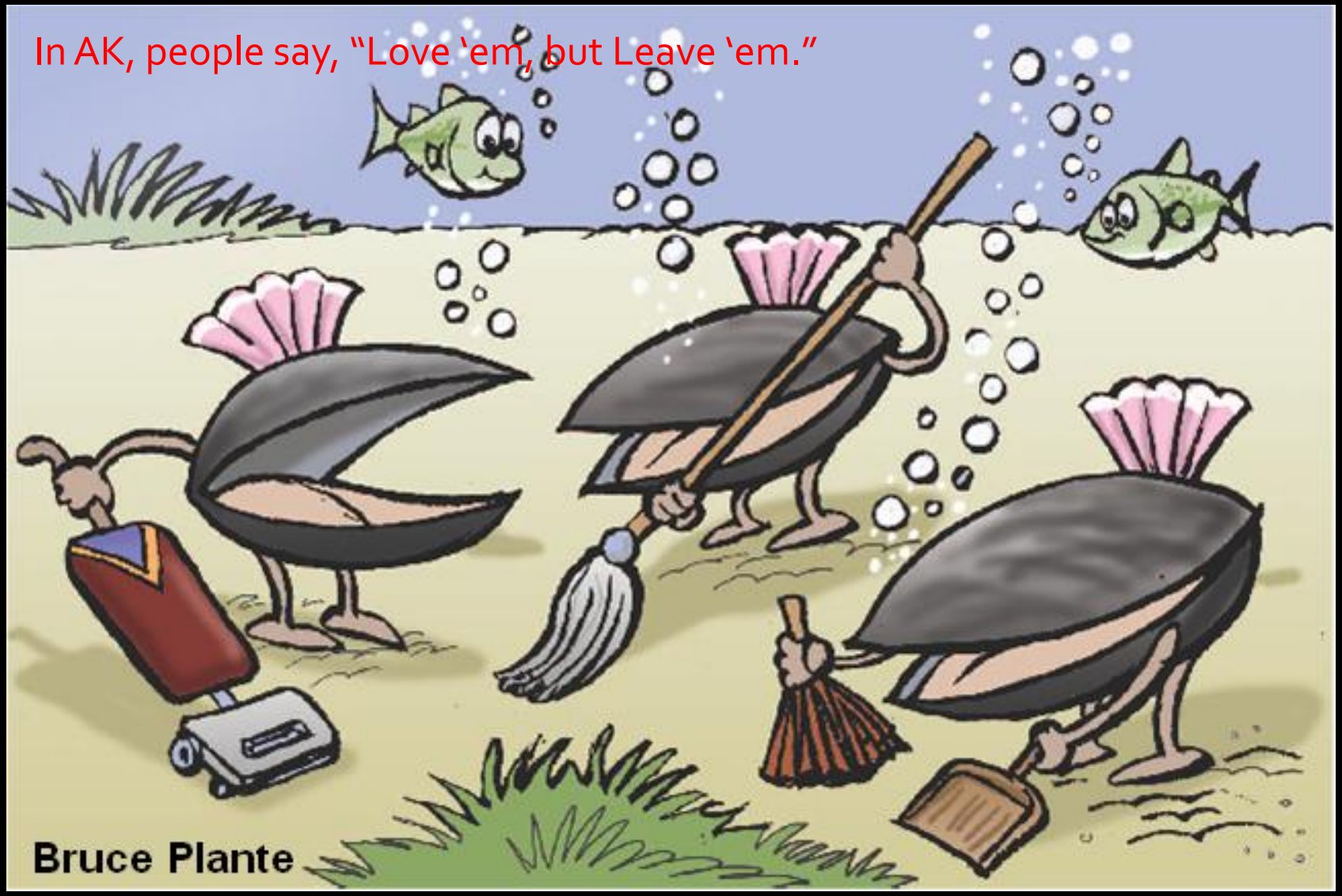
Know The Symptoms

- First Aid

Alaska Links

- Community Beach Monitoring
- Section of Epidemiology
- Fish and Game - Sport and Personal Use Guidelines
- Aleutian Pribilof Islands Association
- Environment Alaska

Resources

- Handling, Storing and Cooking Practices
- Health Resources
- Diseases of Shellfish in Alaska
- Alaska Sea Grant PSP Resources
- How To Protect Yourself

Thank You – Questions?