

## STAFF SUMMARY FOR APRIL 13-14, 2016

**9. RECREATIONAL DUNGENESS AND ROCK CRAB EMERGENCY****Today's Item**Information Action 

Consider re-adopting emergency regulations for the emergency closure of portions of the recreational Dungeness and rock crab fisheries due to elevated levels of domoic acid.

**Summary of Previous/Future Actions**

- Adopt emergency crab regulations Nov 5, 2015; Teleconference
- **Today consider re-adopting emergency crab regulations** Apr 13-14, 2016; Santa Rosa

**Background**

On Nov 5, 2015, due to persistently high levels of domoic acid and under recommendation from the Office of Environmental Health Hazard Assessment (OEHHA) in consultation with the California Department of Public Health (CDPH), FGC adopted emergency regulations to delay the opening of the recreational Dungeness crab fishery statewide and to close the rock crab fishery north of the Ventura/Santa Barbara county line; DFW adopted similar regulations for the commercial fisheries. The FGC emergency regulations for recreational Dungeness crab and rock crab will expire on May 3, 2016 (Exhibit 1).

Prior to FGC and DFW action, a massive, toxic, algal bloom of the marine diatom *Pseudo-nitzschia* was detected along the California coastline, resulting in significant impacts to coastal resources and marine life. Some *Pseudo-nitzschia* species produce a potent neurotoxin, known as domoic acid, which can accumulate in shellfish, other invertebrates, and sometimes fish, leading to illness and death in a variety of birds and mammals. Monitoring results had shown persistently high levels of domoic acid in Dungeness crab and rock crab along the California coastline.

Pursuant to the regulations adopted by FGC, certain state waters along the California coast have reopened based on the results of domoic acid testing indicating levels below the federal action level and resulting recommendations of OEHHA in consultation with the director of CDPH:

- On Dec 31, 2015, the recreational Dungeness crab and recreational rock crab fisheries were reopened in state waters south of 35° 40' N. Latitude (near Piedras Blancas Light Station).
- On Feb 11, 2016, the recreational Dungeness crab fishery was reopened in state waters south of 38° 00' N. Latitude (near Point Reyes).
- On Mar 18, 2016, the recreational Dungeness crab fishery was reopened in state waters south of the Mendocino/Sonoma county line (near Gualala).
- On Mar 28, 2016, the recreational rock crab fishery was reopened around the Channel Islands, with the exception of state waters between Santa Cruz and Santa Rosa islands.

Current monitoring results (Exhibit 2) indicate that domoic acid levels are persisting above the federal action level in some areas of the state. An emergency closure remains in effect for the

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recreational rock crab fishery in the Channel Islands between Santa Cruz and Santa Rosa islands, and along the mainland coast north of the Piedras Blancas Light Station in San Luis Obispo County. An emergency closure remains in effect for the recreational Dungeness crab fishery north of the Sonoma/Mendocino county line. As determined by the director of OEHHA, in consultation with the director of CDPH, consuming crab from these areas poses a significant risk to public health; since current regulations will expire on May 3, 2016, readopting the emergency closure for a period of 90 days beyond the initial 180-day period is necessary for the preservation of public health.

Recognizing the need for improvements in the way California addresses harmful algal blooms (HABs) and protecting human health, a task force led by the California Ocean Protection Council (OPC) and composed of CDPH, OEHHA, DFW, and FGC staff, is proactively pursuing a science working group and a set of standard operating procedures for the state agencies. The OPC's Science Advisory Team will form a working group to answer short- and long-term questions about HAB toxins along the California coast, specifically providing insight and guidance on seafood testing protocol and monitoring efforts as well as what information is needed to better predict and plan for future events. The task force is creating a standard operating procedure for delineating the process, timing and manner in which a fishery should be closed in the event of another health concern; the procedure will also outline the process and chain of custody for monitoring efforts and is expected to be complete before the end of 2016. FGC staff has suggested that part of the procedure should also delineate the manner in which closed fisheries would be reopened.

### Significant Public Comments (N/A)

### Recommendation

**FGC staff:** Re-adopt emergency regulations to retain closure of the recreational Dungeness crab fishery in state waters north of the Mendocino/Sonoma county line (near Gualala) and to retain closure of the recreational rock crab fishery in state waters between Santa Cruz and Santa Rosa islands and north of 35° 40' N. Latitude (near Piedras Blancas Light Station). If this action is approved, the Nov 2015 statement of proposed emergency regulatory action would be adapted for the more narrow geographic scope.

### Exhibits

1. [Nov 2015 statement of proposed emergency regulatory action, approved by OAL and filed with the California Secretary of State on Nov 5, 2015, effective Nov 5, 2015 – May 3, 2016](#)
2. [Summary of Domoic Acid Levels in Crab, CDPH, received Apr 5, 2016](#)

### Motion/Direction

Moved by \_\_\_\_\_ and seconded by \_\_\_\_\_ that the Commission determines, pursuant to Section 11346.1 of the Government Code, that an emergency situations exists. The emergency situation clearly poses a danger of such an immediate, serious harm that delaying action to allow public comment would be inconsistent with the public interest.

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The Commission further determines, pursuant to Section 240 of the Fish and Game Code, that adoption of this regulation is necessary for the immediate protection of public health from ingesting elevated levels of poisonous domoic acid detected in recent samples of Dungeness and rock crab. Specifically, for Dungeness crab, all state waters north of the Mendocino/Sonoma county line (near Gualala). For rock crab, all state waters between Santa Cruz and Santa Rosa islands, and north of 35° 40' N. Latitude (near Piedras Blancas Light Station).

Therefore, the Commission amends and readopts the emergency changes to Section 29.85, Title 14, to retain a partial closure of the recreational Dungeness crab and rock crab fisheries for the immediate preservation of public health in the areas identified above.

CALIFORNIA FISH AND GAME COMMISSION  
STATEMENT OF PROPOSED EMERGENCY REGULATORY ACTION

Emergency Action to  
Amend Section 29.85,  
Title 14, California Code of Regulations  
Re: Emergency Closure of Recreational Dungeness and Rock Crab  
Fisheries Due to Elevated Levels of Domoic Acid

**I. Statement of Facts Constituting the Need for Emergency Regulatory Action**

The recreational crab fishery is a multi-million dollar business with thousands of participants each year fishing from personal boats, charter vessel operations, and public piers and docks. Under existing law, crab may be taken for recreational purposes with a sport fishing license subject to regulations prescribed by the Fish and Game Commission (Commission).

Current regulations for recreational take of crab specify seasons, size limits, bag and possession limits, closed fishing areas, and gear restrictions. The Dungeness crab season is scheduled to open on Saturday, November 7, 2015. The rock crab season is currently open year-round.

A massive toxic bloom of the marine diatom *Pseudo-nitzschia* has been detected resulting in significant impacts to coastal resources and marine life. Some *Pseudo-nitzschia* species produce a potent neurotoxin, known as domoic acid, which can accumulate in shellfish, other invertebrates, and sometimes fish, leading to illness and death in a variety of birds and mammals. Recent test results have shown persistently high levels of domoic acid in Dungeness crab and rock crab, which have been caught along the California coastline.

Symptoms of domoic acid poisoning can occur within 30 minutes to 24 hours after eating toxic seafood. In mild cases, symptoms may include vomiting, diarrhea, abdominal cramps, headache and dizziness. These symptoms disappear within several days. In severe cases, the victim may experience trouble breathing, confusion, disorientation, cardiovascular instability, seizures, excessive bronchial secretions, permanent loss of short-term memory, coma, or death.

Domoic acid levels detected in recent samples have exceeded the State's action level for the crabs' body meat as well as the viscera, commonly referred to as crab butter, and therefore pose a significant risk to the public if they are consumed, as determined by the California Department of Public Health (CDPH). As a result, the Office of Environmental Health Hazard Assessment (OEHHA), in consultation with CDPH, has recommended the fisheries be closed. The Department, CDPH, OEHHA, and the Ocean Protection Council are coordinating

efforts to monitor toxicity levels and ensure public safety. This emergency situation clearly poses such an immediate, serious harm that delaying action to allow for public comment and notice requirements, pursuant to Section 11346.1 of the Government Code, would be inconsistent with the public interest.

### **Identification of Reports or Documents Supporting Factual Emergency**

- California Department of Public Health, “CDPH Issues Warning about Dungeness and Rock Crabs Caught in Waters Along Central and Northern California Coast,” News Release, November 3, 2015.
- California Office of Environmental Health Hazard Assessment, “Domoic Acid Threat to Public Safety,” Memo, November 3, 2015.

### **Regulatory Proposal**

The proposed regulation would prohibit recreational take and possession of Dungeness crab and all rock crab from ocean waters, including bays and estuaries, north of the Ventura/Santa Barbara county line. Closure of the fisheries shall remain in effect until the Director of OEHHA, in consultation with the Director of CDPH, determines that domoic acid levels in Dungeness crab no longer pose a significant risk to public health and no longer recommends the fishery be closed.

The Department shall maintain a list of closed ocean waters of the state and update that list on Wednesday of each week by 1:00 pm. It shall be the responsibility of any person taking Dungeness crab to call the Department’s hotline or visit the Department’s website to obtain the current status of any ocean water.

## **II. Impact of Regulatory Action**

The potential for significant statewide adverse economic impacts that might result from the proposed regulatory action has been assessed, and the following determinations relative to the required statutory categories have been made:

- (a) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State:

None.

- (b) Nondiscretionary Costs/Savings to Local Agencies:

None.

- (c) Programs Mandated on Local Agencies or School Districts:

None.

- (d) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed Under Part 7 (commencing with Section 17500) of Division 4, Government Code:

None.

- (e) Effect on Housing Costs:

None.

### **III. Authority and Reference**

The Fish and Game Commission proposes this emergency action pursuant to the authority vested by sections 200, 202, 205, 220, and 240, of the Fish and Game Code and to implement, interpret, or make specific sections 200, 202, 205, 206, 220, and 240, of said Code.

### **IV. Section 240 Finding**

Pursuant to Section 240 of the Fish and Game Code, the Commission finds that the adoption of this regulation is necessary for the immediate protection of public health that may result from elevated levels of domoic acid detected in samples of Dungeness and rock crab.

## Informative Digest (Plain English Overview)

Current regulations for recreational take of crab specify seasons, size limits, bag and possession limits, closed fishing areas, and gear restrictions. The Dungeness crab season is scheduled to open on Saturday, November 7, 2015. The rock crab season is currently open year-round.

Proposed Regulatory Action: The proposed regulation would prohibit recreational take and possession of Dungeness crab and rock crab from ocean waters, including bays and estuaries, north of the Ventura/Santa Barbara county line. Closure of the fisheries shall remain in effect until the Director of the Office of Environmental Health Hazard Assessment, in consultation with the Director of the California Department of Public Health, determines that domoic acid levels in Dungeness crab no longer pose a significant risk to public health and no longer recommends the fishery be closed.

The Department shall maintain a list of closed ocean waters of the state and update that list on Wednesday of each week by 1:00 pm. It shall be the responsibility of any person taking Dungeness crab to call the Department's hotline or visit to the Department's website to obtain the current status of any ocean water.

Benefits: The proposed regulation will protect public health by prohibiting possession of crab containing elevated levels of domoic acid.

The proposed regulations are neither inconsistent nor incompatible with existing state regulations. The Legislature has delegated authority to the Commission to promulgate sport fishing regulations (sections 200, 202, 205, 220, and 240, Fish and Game Code).

## Regulatory Language

Section 29.85, Title 14, CCR, is amended to read:

29.85. Crab.

(a) Dungeness crabs (Cancer magister)

(1) ~~Closure:~~ Closures:

(A) Dungeness crab may not be taken from or possessed if taken from San Francisco Bay and San Pablo Bay, plus all their tidal bays, sloughs and estuaries between the Golden Gate Bridge and Carquinez Bridge.

(B) Dungeness crab may not be taken from or possessed if taken from ocean waters, including bays and estuaries, north of the Ventura/Santa Barbara County line where the Director of the Office of Environmental Health Hazard Assessment, in consultation with the Director of the California Department of Public Health, has determined that Dungeness crab contain unhealthy domoic acid levels and recommends closing the fishery until such time as the Director of the Office of Environmental Health Hazard Assessment, in consultation with the Director of the California Department of Public Health, determines that domoic acid levels in Dungeness crab no longer pose a significant risk to public health and no longer recommends the fishery be closed. Areas may be opened on a county-by-county basis. The department shall maintain a list of closed ocean waters of the state and update that list on Wednesday of each week by 1:00 pm. It shall be the responsibility of any person prior to taking Dungeness crab to call (831) 649-2883 or go to the department's website at [www.wildlife.ca.gov/Fishing/Ocean/Health-Advisories](http://www.wildlife.ca.gov/Fishing/Ocean/Health-Advisories) to obtain the current status of any ocean water.

(2) Open season:

(A) Del Norte, Humboldt and Mendocino counties: ~~From the first Saturday in November~~ opening date determined though subsection (a)(1)(B) through July 30.

(B) All other counties: ~~From the first Saturday in November~~ opening date determined though subsection (a)(1)(B) through June 30.

(3) Limit: Ten, except in Sonoma, Marin, San Francisco, San Mateo, Santa Cruz, and Monterey counties, when fishing aboard a commercial passenger fishing vessel required to be licensed pursuant to Section 7881 and/or Section 7920, Fish and Game Code, the limit is six.

(4) Not more than 60 crab traps are authorized to be used to take Dungeness crab from a vessel operating under authority of a Commercial Passenger Fishing Vessel License issued pursuant to Fish and Game Code Section 7920.

(5) Traps and trap buoys by a commercial passenger fishing vessel to take Dungeness crab under authority of this Section and Section 29.80 shall have the commercial boat registration number of that vessel affixed to each trap and buoy.

(6) No vessel that takes Dungeness crabs under authority of this section, or Section 29.80, shall be used to take Dungeness crabs for commercial purposes.

(7) Minimum size: Five and three-quarter inches measured by the shortest distance through the body from edge of shell to edge of shell directly in front of and excluding the points (lateral spines); except in Sonoma, Marin, San Francisco, San Mateo, Santa Cruz, and Monterey counties, when fishing aboard a commercial passenger fishing vessel required to be licensed pursuant to Section

7881 and/or Section 7920, Fish and Game Code, the minimum size is six inches measured by the shortest distance through the body from edge of shell to edge of shell directly in front of and excluding the points (lateral spines).

- (b) All crabs of the *Cancer* genus except Dungeness crabs, but including: yellow crabs, rock crabs, red crabs and slender crabs:

(1) Rock crab closure:

(A) Rock crab may not be taken from or possessed if taken from ocean waters, including bays and estuaries, north of the Ventura/Santa Barbara County line where the Director of the Office of Environmental Health Hazard Assessment, in consultation with the Director of the California Department of Public Health, has determined that rock crab contain unhealthy domoic acid levels and recommends closing the fishery until such time as the Director of the Office of Environmental Health Hazard Assessment, in consultation with the Director of the California Department of Public Health, determines that domoic acid levels in rock crab no longer pose a significant risk to public health and no longer recommends the fishery be closed. Areas may be opened on a county-by-county basis. The department shall maintain a list of closed ocean waters of the state and update that list on Wednesday of each week by 1:00 pm. It shall be the responsibility of any person prior to taking rock crab to call (831) 649-2883 or go to the department's website at [www.wildlife.ca.gov/Fishing/Ocean/Health-Advisories](http://www.wildlife.ca.gov/Fishing/Ocean/Health-Advisories) to obtain the current status of any ocean water.

~~(1)~~(2) Open season:

(A) Rock crab: The rock crab season will open on the date determined through subsection (b)(1)(A) and will remain open until [OAL to insert end date of emergency regulation].

(B) All other species: All year.

~~(2)~~(3) Limit: Thirty-five.

~~(3)~~(4) Minimum size: Four inches measured by the shortest distance through the body, from edge of shell to edge of shell at the widest part, except there is no minimum size in Fish and Game districts 8 and 9.

- (c) All crabs of the genus *Cancer*, including Dungeness crabs, yellow crabs, rock crabs, red crabs and slender crabs, may be brought to the surface of the water for measuring, but no undersize crabs may be placed in any type of receiver, kept on the person or retained in any person's possession or under his direct control; all crabs shall be measured immediately and any undersize crabs shall be released immediately into the water.

- (d) Sand crabs (*Emerita analoga*): Limit: Fifty.

Note: Authority cited: Sections 200, 202, ~~205 and 220~~205, 220 and 240, Fish and Game Code; Reference: Sections 200, 202, 205, ~~206 and 220~~206, 220 and 240, Fish and Game Code

## SUMMARY OF DOMOIC ACID LEVELS IN CRABS

April 5, 2016

PORT	SAMPLE COLLECTION DATE(S) (Dungeness crab unless otherwise specified)	NUMBER OF SAMPLES	RESULTS - RANGE (FDA ACTION LEVEL - 30 PPM)	AVERAGE LEVEL (FDA ACTION LEVEL - 30 PPM)	PERCENT OF SAMPLES EXCEEDING ACTION LEVEL
Crescent City	9/23/15	6	<2.5-120 ppm	37 ppm	66%
	10/29/15	6	28-140 ppm	66 ppm	91%
	11/18/15	9	<2.5-91 ppm	40 ppm	44%
	12/1/15	10	10-69 ppm	34 ppm	40%
	12/16/15	9	9.8-39 ppm	22.7 ppm	22%
	12/30/15 (Crescent City North)	6	8.6-25 ppm	17 ppm	0%
	12/30/15 (Crescent City South)	6	15-31 ppm	23 ppm	17%
	1/10/16 (Crescent City North)	6	4.9-49 ppm	22 ppm	17%
	1/10/16 (Crescent City South)	6	12-59 ppm	32 ppm	33%
	1/24/16 (Crescent City South)	6	16-35 ppm	24 ppm	33%
	1/24/16 (Crescent City North)	6	4.9-25 ppm	14 ppm	0%
	2/1/16 (Crescent City South)	6	<2.5-17 ppm	10 ppm	0%
	2/1/16 (Crescent City North)	6	<2.5-21 ppm	8 ppm	0%
2/7/16 (Crescent City South)	6	3.9-14 ppm	9 ppm	0%	
Trinidad	09/11/15	6	23-140 ppm	95 ppm	83%
	10/26/15	8	39-97 ppm	66 ppm	100%
	11/17/15	15	17-65 ppm	36 ppm	60%
	12/16/15	6	8.4-37 ppm	17.5 ppm	17%
	12/26/15 (Trinidad North)	6	<2.5-49 ppm	20.2 ppm	17%
	12/26/15 (Trinidad South)	6	7.4-38 ppm	19.4 ppm	17%
	1/23/16 (Trinidad North)	6	<2.5-31 ppm	13 ppm	17%
	1/23/16 (Trinidad South)	6	8.5-29 ppm	17 ppm	0%
	2/2/16 (Trinidad North)	6	15-48 ppm	28 ppm	33%
	2/2/16 (Trinidad South)	6	4.9-25 ppm	16 ppm	0%
	2/11/16 (Trinidad North)	6	6.8-34 ppm	24 ppm	50%
	2/11/16 (Trinidad South)	6	8.5-36 ppm	21 ppm	33%
	2/20/16 (Trinidad North)	6	7-25 ppm	15 ppm	0%
	2/20/16 (Trinidad South)	6	9.9-30 ppm	17 ppm	17%
	2/29/16 (Trinidad North)	6	2.8-82 ppm	30 ppm	33%
	2/29/16 (Trinidad South)	6	<2.5-56 ppm	24 ppm	33%
	3/17/16 (Trinidad North)	6	6.4-35 ppm	16 ppm	17%
	3/17/16 (Trinidad South)	6	<2.5-41 ppm	14 ppm	17%
3/24/16 (Trinidad North)	6	2.8-28 ppm	11 ppm	0%	
3/24/16 (Trinidad South)	6	7.9-40 ppm	17 ppm	17%	
Eureka	09/15/15	6	30-120 ppm	76 ppm	100%
	10/27/15	12	37-140 ppm	67 ppm	100%
	11/23/15 (Samoa)	6	13-53 ppm	36.5 ppm	83%
	11/23/15 (Eel River)	6	13-59 ppm	34.6 ppm	50%
	12/16/15 (Eel River)	6	29-54 ppm	38.2 ppm	50%
	12/16/15 (Samoa)	6	12-63 ppm	24.7 ppm	17%
	12/30/15 (Eel River)	6	16-40 ppm	31 ppm	67%
	12/30/15 (Samoa)	6	3.7-33 ppm	17.8 ppm	17%
	1/21/16 (Eel River)	6	13-29 ppm	22.2 ppm	0%
	1/21/16 (Samoa)	6	<2.5-12 ppm	7.9 ppm	0%
	2/2/16 (Samoa)	6	8.7-27 ppm	14 ppm	0%
	2/2/16 (Eel River)	6	15-27 ppm	21 ppm	0%

**California Department of Public Health**

<b>PORT</b>	<b>SAMPLE COLLECTION DATE(S)</b> (Dungeness crab unless otherwise specified)	<b>NUMBER OF SAMPLES</b>	<b>RESULTS - RANGE</b> (FDA ACTION LEVEL - 30 PPM)	<b>AVERAGE LEVEL</b> (FDA ACTION LEVEL - 30 PPM)	<b>PERCENT OF SAMPLES EXCEEDING ACTION LEVEL</b>
<b>Fort Bragg</b>	10/30/15	6	<2.5-15 ppm	6.5 ppm	0%
	11/22/15	6	46-270 ppm	118 ppm	100%
	11/23/15	6	20-150 ppm	61.5 ppm	66%
	12/16/15	6	8.2-37 ppm	20.2 ppm	17%
	12/27/15 (Pt. Arena/Manchester)	6	15-39 ppm	26.8 ppm	33%
	12/30/15 (Usal)	6	7.8-64 ppm	28 ppm	33%
	1/25/16 (Usal)	6	13-81 ppm	45 ppm	67%
	1/26/16 (Pt. Arena/Manchester)	6	4.7-57 ppm	28.6 ppm	50%
	2/2/16 (Usal)	6	11-41 ppm	27 ppm	50%
	2/10/16 (Usal)	6	9.6-71 ppm	30 ppm	33%
	2/10/16 (Pt. Arena/Manchester)	6	9.4-93 ppm	35 ppm	33%
	2/16/16 (Usal)	6	7.7-83 ppm	31 ppm	33%
	2/21/16 (Pt. Arena/Manchester)	6	8-85 ppm	33 ppm	50%
	2/23/16 (Usal)	6	12-55 ppm	29 ppm	50%
	3/17/16 (Pt. Arena/Manchester)	6	9.4-28 ppm	17 ppm	0%
3/18/16 (Usal)	6	8.9-25 ppm	19 ppm	0%	
3/26/16 (Usal)	6	3.6-39 ppm	18 ppm	33%	
<b>Bodega Bay</b>	10/20/15	6	21-40 ppm	30 ppm	50%
	10/31 - 11/1/15	6	28-91 ppm	45 ppm	83%
	11/16/15 (Point Reyes)	6	14-81 ppm	51 ppm	66%
	11/16/15 (Russian River)	6	11-34 ppm	25.8 ppm	50%
	12/1/15 (Russian River)	6	6-69 ppm	22 ppm	17%
	12/1/15 (Point Reyes)	6	<2.5-40 ppm	15 ppm	17%
	12/8/15 (Russian River)	6	6.5-100 ppm	43.6 ppm	83%
	12/8/15 (Point Reyes)	6	9.6-27 ppm	16.4 ppm	0%
	12/17/15 (Russian River)	6	7-38 ppm	17.5 ppm	17%
	12/17/15 (Point Reyes)	5	<2.5-20 ppm	10.4 ppm	0%
	12/17/15 (Bodega Bay)	6	18-120 ppm	47.7 ppm	67%
	12/27/15 (Bodega Bay)	6	<2.5-54 ppm	20 ppm	17%
	12/30/15 (Russian River)	6	3.1-30 ppm	13.4 ppm	17%
	12/30/15 (Salt Point)	6	11-29 ppm	20.8 ppm	0%
	1/25/16 (Bodega Bay)	6	<2.5-19 ppm	8 ppm	0%
	1/25/16 (Russian River)	6	3.6-13 ppm	9 ppm	0%
	1/25/16 (Salt Point)	6	<2.5-34 ppm	19 ppm	33%
	2/6/16 (Bodega Bay)	6	7.6-34 ppm	17 ppm	33%
	2/6/16 (Russian River)	6	3.9-66 ppm	26 ppm	33%
	2/6/16 (Salt Point)	6	3.7-24 ppm	11 ppm	0%
	2/20/16 (Bodega Bay)	6	<2.5-15 ppm	5 ppm	0%
	2/20/16 (Russian River)	6	4.1-35 ppm	11 ppm	17%
	2/20/16 (Salt Point)	6	5-24 ppm	11 ppm	0%
2/27/16 (Bodega Bay)	6	<2.5-7 ppm	2 ppm	0%	
2/27/16 (Russian River)	6	<2.5-27 ppm	6 ppm	0%	
3/8/16 (Russian River)	6	8.1-38 ppm	20 ppm	17%	
3/10/16 (Sonoma / Mendocino Co. Line - Block 408)	6	4.5-14 ppm	10 ppm	0%	
3/16/16 (Russian River)	6	<2.5-28 ppm	10 ppm	0%	

**California Department of Public Health**

<b>PORT</b>	<b>SAMPLE COLLECTION DATE(S)</b> (Dungeness crab unless otherwise specified)	<b>NUMBER OF SAMPLES</b>	<b>RESULTS - RANGE</b> (FDA ACTION LEVEL - 30 PPM)	<b>AVERAGE LEVEL</b> (FDA ACTION LEVEL - 30 PPM)	<b>PERCENT OF SAMPLES EXCEEDING ACTION LEVEL</b>
<b>Half Moon Bay/SF</b>	10/26/15	12	16-130 ppm	56 ppm	83%
	11/16/15 (HMB)	6	<2.5-22 ppm	11 ppm	0%
	11/16/15 (SF)	6	<2.5-21 ppm	10.7 ppm	0%
	12/1/15 (SF)	6	<2.5-19 ppm	8.8 ppm	0%
	12/1/15 (HMB)	10	<2.5-39 ppm	8.9 ppm	10%
	12/8/15 (HMB)	9	<2.5-49 ppm	20.7 ppm	33%
	12/15/15 (HMB South)	17	<2.5-130 ppm	33.0 ppm	53%
	12/27/15 (HMB North)	6	<2.5-29 ppm	9 ppm	0%
	12/27/15 (SF South)	6	6.2-25 ppm	17 ppm	0%
	1/10/16 (HMB North)	7	6.2-54 ppm	20 ppm	14%
	1/15/16 (HMB South)	6	<2.5-25 ppm	10 ppm	0%
	1/25/16 (SF South)	6	<2.5-23 ppm	12 ppm	0%
	1/25/16 (HMB North)	6	<2.5-18 ppm	4 ppm	0%
	1/25/16 (HMB South)	6	<2.5-24 ppm	5 ppm	0%
2/6/16 (HMB North)	6	<2.5-11 ppm	5 ppm	0%	
<b>Monterey</b>	9/16/15 (Red Rock Crab)	4	16-86 ppm	45 ppm	75%
	9/16/15 (Yellow Rock Crab)	1	190 ppm	190 ppm	100%
	9/16/15 (Dungeness)	2	6.8-74 ppm	40 ppm	50%
	10/31-11/1/15 (Dungeness)	11	<2.5-83 ppm	17 ppm	9%
	11/12/15 (Dungeness)	7	9.7-50 ppm	21 ppm	14%
	11/12/15 (Rock Crab)	6	7.9-94 ppm	41 ppm	50%
	11/29/15 (Dungeness)	6	3.6-11 ppm	7 ppm	0%
	12/2/15 (Rock Crab)	8	3.4-100 ppm	23.7 ppm	12.5%
	12/6/15 (Dungeness)	6	<2.5-10 ppm	5 ppm	0%
	12/10/15 (Rock Crab)	6	<2.5-100 ppm	36 ppm	50%
	12/19/15 (Rock Crab)	3	31-100 ppm	69.6 ppm	100%
	1/3/16 (Rock Crab)	6	<2.5 -47 ppm	13.2 ppm	17%
	1/10/16 (Rock Crab)	5	<2.5-25 ppm	8.4 ppm	0%
	1/12/16 (Dungeness)	6	<2.5-3.8 ppm	1.1 ppm	0%
	1/21/16 (Rock Crab)	6	<2.5-67 ppm	12.5 ppm	17%
	2/3/16 (Rock Crab)	6	<2.5-15 ppm	5 ppm	0%
	2/14 - 2/15/16 (Rock Crab)	5	6-55 ppm	20 ppm	20%
	2/24/16 (Rock Crab)	6	<2.5-27 ppm	7 ppm	0%
3/2/16 (Rock Crab)	6	2.5-42 ppm	23 ppm	50%	
3/17/16 (Rock Crab)	6	<2.5-21 ppm	7 ppm	0%	
<b>Morro Bay</b>	10/28/15 (Dungeness)	1	10 ppm	10 ppm	0%
	10/28/15 (Sheep Crab)	5	<2.5-3.9 ppm	3 ppm	0%
	10/28/15 (Red Rock Crab)	5	3.0-12 ppm	6 ppm	0%
	11/16/15 (Dungeness)	5	<2.5-9 ppm	5.7 ppm	0%
	11/16/15 (Rock Crab)	5	<2.5-4.5 ppm	0.9 ppm	0%
	11/16/15 (Spider Crab)	2	<2.5 ppm	Non-detectable	0%
	11/21/15 (Dungeness)	6	<2.5-8.1 ppm	2.6 ppm	0%
	11/21/15 (Rock Crab)	5	<2.5-7.7 ppm	3.7 ppm	0%

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PORT	SAMPLE COLLECTION DATE(S) (Dungeness crab unless otherwise specified)	NUMBER OF SAMPLES	RESULTS - RANGE (FDA ACTION LEVEL - 30 PPM)	AVERAGE LEVEL (FDA ACTION LEVEL - 30 PPM)	PERCENT OF SAMPLES EXCEEDING ACTION LEVEL
Santa Barbara	11/3/15 (Rock Crab)	6	<2.5-64 ppm	36 ppm	50%
	11/1/15 (Rock Crab-South Side Santa Rosa Island; Block #711)	6	<2.5-10 ppm	4 ppm	0%
	11/4/15 (Rock Crab-Coast; Block #656)	6	<2.5-240 ppm	49.5 ppm	17%
	11/6/15 (Rock Crab-North Side San Miguel Island; Block #690)	7	<2.5-110 ppm	38 ppm	29%
	11/13/15 (Rock Crab-North Side San Miguel Island; Block #690)	6	<2.5-170 ppm	53.5 ppm	50%
	11/11/15 (Rock Crab-Block #710)	6	<2.5-160 ppm	36 ppm	16%
	11/11/15 (Rock Crab-North Side Santa Cruz Island; Block #687)	6	<2.5-130 ppm	36 ppm	33%
	11/22/15 (Rock Crab- South Side Santa Rosa Island; Block #711)	6	<2.5-10 ppm	1.7 ppm	0%
	11/22/15 (Rock Crab-North Side Santa Cruz Island; Block #686)	6	<2.5-8.4 ppm	4.3 ppm	0%
	11/23/15 (Rock Crab-North Side San Miguel Island; Block #690)	6	4.2-1,000 ppm	235 ppm	33%
	11/23/15 (Rock Crab-Coast; Block #656)	6	<2.5-3.6 ppm	0.6 ppm	0%
	12/2/15 (Rock Crab-Coast; Block #656)	6	<2.5-14 ppm	6 ppm	0%
	12/2/15 (Rock Crab-North Side Santa Cruz Island; Block #687)	6	4.5-190 ppm	79 ppm	50%
	12/2/15 (Rock Crab-South Side Santa Rosa Island; Block #711)	6	3-120 ppm	36 ppm	50%
	12/3/15 (Rock Crab-North Side San Miguel Island; Block #690)	6	<2.5-93 ppm	46 ppm	50%
	12/9/15 (Rock Crab-North Side San Miguel Island; Block #690)	6	<2.5-4.4 ppm	0.7 ppm	0%
	12/10/15 (Rock Crab-Coast; Block #656)	6	<2.5 ppm	<2.5 ppm	0%
	12/10/15 (Rock Crab-South Side Santa Rosa Island; Block #711)	6	2.8-170 ppm	61 ppm	67%
	12/10/15 (Rock Crab-North Side Santa Cruz Island; Block #687)	6	<2.5-91 ppm	44 ppm	50%
	12/13/15 (Rock Crab-Coast; Block #652)	6	<2.5-150 ppm	36 ppm	33%
	12/14/15 (Rock Crab-Coast; Block #653)	6	<2.5-3.7 ppm	1.5 ppm	0%
	12/13/15 (Rock Crab-Coast; Block #654)	6	<2.5-32 ppm	5.8 ppm	17%
	12/18/15 (Rock Crab-North Side San Miguel Island; Block #690)	7	<2.5-14 ppm	3 ppm	0%
	12/19/15 (Rock Crab-North Side Santa Cruz Island; Block #686)	6	<2.5-210 ppm	39 ppm	17%
	12/19/15 (Rock Crab-North side of San Miguel and Santa Rosa Islands; Block #689)	6	<2.5-8.8 ppm	3 ppm	0%
	12/19/15 (Rock Crab-South Side of Santa Rosa and Santa Cruz Islands; Block #710)	6	<2.5-86 ppm	21 ppm	17%
	12/20/15 (Rock Crab-Coast; Block #652)	6	<2.5-17 ppm	3 ppm	0%

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<b>PORT</b>	<b>SAMPLE COLLECTION DATE(S)</b> (Dungeness crab unless otherwise specified)	<b>NUMBER OF SAMPLES</b>	<b>RESULTS - RANGE</b> (FDA ACTION LEVEL - 30 PPM)	<b>AVERAGE LEVEL</b> (FDA ACTION LEVEL - 30 PPM)	<b>PERCENT OF SAMPLES EXCEEDING ACTION LEVEL</b>
<b>Santa Barbara</b>	12/20/15 (Rock Crab-Coast; Block #653)	6	<2.5-6 ppm	1.6 ppm	0%
	12/20/15 (Rock Crab-Coast; Block #654)	6	<2.5-11 ppm	1.8 ppm	0%
	12/27/15 (Rock Crab-Coast; Block #652)	6	<2.5-29 ppm	6 ppm	0%
	12/27/15 (Rock Crab-Coast; Block #653)	6	Non-detectable	Non-detectable	0%
	12/27/15 (Rock Crab-Coast; Block #654)	6	<2.5-12 ppm	2 ppm	0%
	12/27/15 (Rock Crab-North Side Santa Cruz Island; Block #686)	6	<2.5-8.8 ppm	2 ppm	0%
	12/27/15 (Rock Crab-North side of San Miguel and Santa Rosa Islands; Block #689)	6	<2.5-2.8 ppm	0.5 ppm	0%
	12/27/15 (Rock Crab-North Side San Miguel Island; Block #690)	6	<2.5-24 ppm	9 ppm	0%
	12/27/15 (Rock Crab-South Side of Santa Rosa and Santa Cruz Islands; Block #710)	6	<2.5-8.4 ppm	2 ppm	0%
	1/3/16 (Rock Crab-North Side of Santa Cruz Island; Block #686)	6	<2.5-64 ppm	15.7 ppm	33%
	1/3/16 (Rock Crab-North Side of Santa Cruz Island; Block #687)	6	3.8-120 ppm	43.9 ppm	50%
	1/3/16 (Rock Crab-North Side of San Miguel and Santa Rosa Islands; Block #689)	6	<2.5-130 ppm	33 ppm	33%
	1/3/16 (Rock Crab-North Side of San Miguel Island; Block #690)	6	<2.5-11 ppm	4.6 ppm	0%
	1/3/16 (Rock Crab-South Side of Santa Rosa and Santa Cruz Islands; Block #710)	6	<2.5-89 ppm	26.7 ppm	33%
	1/3/16 (Rock Crab-South Side of Santa Rosa Island; Block #711)	6	<2.5-6.9 ppm	2 ppm	0%
	1/10/16 (Rock Crab-North Side of Santa Cruz Island; Block #686)	6	<2.5-6.3 ppm	1.9 ppm	0%
	1/10/16 (Rock Crab-North Side of Santa Cruz Island; Block #687)	6	<2.5-180 ppm	37 ppm	17%
	1/10/16 (Rock Crab-North Side of San Miguel and Santa Rosa Islands; Block #689)	6	<2.5-4.2 ppm	1.3 ppm	0%
	1/10/16 (Rock Crab-South Side of Santa Rosa and Santa Cruz Island; Block #710)	6	<2.5-460 ppm	99 ppm	33%
	1/10/16 (Rock Crab-South Side of Santa Rosa Island; Block #711)	6	<2.5-6.1 ppm	1.7 ppm	0%
1/17/16 (Rock Crab-South Side of Santa Rosa and Santa Cruz Island; Block #710)	6	2.8-31 ppm	13 ppm	17%	
1/17/16 (Rock Crab-North Side of Santa Cruz Island; Block #687)	6	<2.5-31 ppm	12 ppm	17%	

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<b>PORT</b>	<b>SAMPLE COLLECTION DATE(S)</b> (Dungeness crab unless otherwise specified)	<b>NUMBER OF SAMPLES</b>	<b>RESULTS - RANGE</b> (FDA ACTION LEVEL - 30 PPM)	<b>AVERAGE LEVEL</b> (FDA ACTION LEVEL - 30 PPM)	<b>PERCENT OF SAMPLES EXCEEDING ACTION LEVEL</b>
<b>Santa Barbara</b>	1/17/16 (Rock Crab-North Side of Santa Cruz Island; Block #686)	6	<2.5-51 ppm	18 ppm	33%
	1/17/16 (Rock Crab-North Side of San Miguel and Santa Rosa Islands; Block #689)	6	<2.5-27 ppm	9 ppm	0%
	1/24/16 (Rock Crab-South Side of Santa Rosa and Santa Cruz Island; Block #710)	6	<2.5-7.8 ppm	1.3 ppm	0%
	1/24/16 (Rock Crab-North Side of Santa Cruz Island; Block #687)	6	<2.5-3 ppm	0.5 ppm	0%
	1/24/16 (Rock Crab-North Side of Santa Cruz Island; Block #686)	6	<2.5-3.7 ppm	1.6 ppm	0%
	1/31/16 (Rock Crab-South Side of Santa Rosa and Santa Cruz Island; Block #710)	6	<2.5-89 ppm	15 ppm	17%
	1/31/16 (Rock Crab-North Side of Santa Cruz Island; Block #687)	6	<2.5-23 ppm	6 ppm	0%
	1/31/16 (Rock Crab-North Side of Santa Cruz Island; Block #686)	6	<2.5-13 ppm	4 ppm	0%
	2/7/16 (Rock Crab-South Side of Santa Rosa and Santa Cruz Island; Block #710)	6	4.7-550 ppm	280 ppm	67%
	2/19/16 (Rock Crab-North Side of Santa Cruz Island; Block #687)	6	Non-detectable	<2.5 ppm	0%
	2/19/16 (Rock Crab-North Side of Santa Cruz Island; Block #686)	6	<2.5-2.8 ppm	<2.5 ppm	0%
	2/19/16 (Rock Crab-South Side of Santa Rosa and Santa Cruz Island; Block #710)	6	Non-detectable	<2.5 ppm	0%
	2/19/16 (Rock Crab-South Side of Santa Rosa Island; Block #711)	5	Non-detectable	<2.5 ppm	0%
	2/25/16 (Rock Crab-South Side of Santa Rosa and Santa Cruz Island; Block #710)	6	Non-detectable	<2.5 ppm	0%
	3/13/16 (Rock Crab-North Side San Miguel Island; Block #690)	6	<2.5-30 ppm	5 ppm	0%
	3/13/16 (Rock Crab-South Side of Santa Rosa and Santa Cruz Island; Block #710)	6	Non-detectable	<2.5 ppm	0%
	3/23/16 (Rock Crab-North Side of San Miguel and Santa Rosa Islands; Block #689)	6	<2.5-26 ppm	7 ppm	0%
	3/23/16 (Rock Crab-North Side San Miguel Island; Block #690)	5	<2.5-8.5 ppm	3 ppm	0%