FISH CONTAMINATION EDUCATION COLLABORATIVE

FINAL ENFORCEMENT REPORT

February 2016 – July 2017

Palos Verdes Shelf Superfund Site

Los Angeles County, California

EPA IDENTIFICATION NO. CAD008242711

REMEDIAL ACTION CONTRACT 3 FULL SERVICE

CONTRACT: EP-S9-14-01

Prepared for

U.S. Environmental Protection Agency Region 9
75 Hawthorne Street
San Francisco, California 94105

Prepared by

EA Engineering, Science, and Technology, Inc.
1000 Atlantic Avenue, Suite 101
Alameda, California 94501

July 2017
Revision: 00

EXECUTIVE SUMMARY

The United States Environmental Protection Agency (EPA) created the Fish Contamination Education Collaborative with representatives of federal, state, and local agencies, as well as community-based organizations that carry out various outreach and education activities. Enforcement represents one of the four Institutional Controls implemented to address the sediment contamination at the Palos Verdes Shelf Superfund Site (the Site). Enforcement consists of enforcing existing white croaker regulations for commercial and recreational anglers, along with inspections of retail food facilities and enforcement of market protocol under the California Health and Safety Code. Efforts also include monitoring and enforcing the daily catch limit and the commercial no-take zone for white croaker.

In February 2015, the EPA contracted EA Engineering, Science, and Technology, Inc. (EA) to coordinate with enforcement agencies/inspectors to support enforcement activities and provide outreach materials as needed. Additionally, EA conducted fish identification training to Los Angeles County Department of Public Health (LACDPH) and City of Long Beach Department of Health and Human Services, Bureau of Environmental Health (City of Long Beach) inspectors in September 2015 and July 2017.

Enforcement inspection data (markets and restaurants) was collected by the City of Long Beach and LACDPH. The inspections were performed at restaurants and markets that are primarily located in east and downtown Los Angeles. There are 27 restaurants and 34 markets that were identified by EPA and stakeholder input. Some of these restaurants and markets previously sold white croaker illegally. Based on EPA grant funding, the City of Long Beach began inspections in March 2017 and LACDPH will begin in July/August 2017. Based on information provided by the City of Long Beach, 138 market and restaurant inspections were conducted between July 2016 and March 2017). Since March 2017, 14 market and restaurant inspections were performed. LACDPH will begin their inspections in July/August 2017. No commercial landings of white croaker were observed over the past 3 years.

Enforcement inspection data (recreational and commercial) was collected by the California Department of Fish and Wildlife (CDFW) between September 2016 and April 2017. The following tables summarize the results of these inspections.

CDFW Recreational Fishing Inspections Overview: September 2016-April 2017

CDFW Recreational Inspections	
# of inspections	60
# inspections when fisherman reported they would keep white croaker if they caught it	19
# of inspections: white croaker observed	20
# of white croakers seized	0
# of inspections: barracuda observed	2
# of barracudas seized	0
# of inspections: topsmelt observed	13
# of topsmelt seized	0
# of inspections: barred sand bass observed	13
# of barred sand bass seized	0
# of inspections: black croaker observed	3
# of black croaker seized	0

CDFW Commercial Fishing Inspections Overview: January 2017

CDFW Commercial Inspections (Old Form)	
# of inspections	1
# of white croaker observed	0
# of white croaker seized	0
# of violations reported	0
# of tip cards distributed	1

Based on the inspection data, Do Not Consume (DNC) fish, specifically the white croaker, was not observed during the commercial inspection. This indicates that the commercial fishing industry is aware of the enforcement goals. White croakers were more commonly found among recreational fishermen in 33 percent of the inspections. Other DNC fish were less frequently observed. Recreational anglers are mostly aware of fish contamination issues; in both the commercial and recreational inspections, over 80 percent of anglers reported awareness. More anglers reported awareness during piers and beach inspections compared to boat inspections. Intentions to keep white croaker were more often reported during piers and jetties and beach inspections patrols than during boat patrols. In over 30 percent of overall inspections, fishermen reported they would keep white croaker if they caught it, which suggests there may be need for more outreach about the health effects of consuming contaminated fish.

TABLE OF CONTENTS

LIST OF TABLES

ACRONYMS AND ABBREVIATIONS

CDFW	California Department of Fish and Wildlife
City of Long Beach	City of Long Beach Department of Health and Human Services, Bureau of Environmental Health
DNC	Do Not Consume
EA	EA Engineering, Science, and Technology, Inc.
EPA	United States Environmental Protection Agency
FCEC	Fish Contamination Education Collaborative
LACDPH	Los Angeles County Department of Public Health
SGA	S. Groner Associates
Site	Palos Verdes Shelf Superfund Site

This page intentionally left blank

1.0 INTRODUCTION

The United States Environmental Protection Agency (EPA) created the Fish Contamination Education Collaborative (FCEC) with representatives of federal, state, and local agencies, as well as community-based organizations that carry out various outreach and education activities. Enforcement represents one of the four Institutional Controls implemented to address the sediment contamination at the Palos Verdes Shelf Superfund Site (the Site). Enforcement consists of enforcing existing white croaker regulations for commercial and recreational anglers, along with inspections of retail food facilities and enforcement of market protocol under the California Health and Safety Code. Efforts also include monitoring and enforcing the daily catch limit and the commercial no-take zone for white croaker.

EPA, Los Angeles County Department of Public Health (LACDPH), and Orange County started collecting market data in 2004 to determine whether white croaker caught in and around the Site were reaching local markets. Overtime, anecdotal reports began to suggest that white croaker was no longer being found in the markets. In 2012, EPA's previous contractor, S. Groner Associates (SGA), compiled a report analyzing the data collected between 2008 and June 2011 with the purpose of providing a basic status report and to describe general observations related to white croaker. In May 2013, SGA compiled a report analyzing the data collected between July 2011 and September 2012. Additionally, SGA prepared a report in April 2014 summarizing data collected by California Department of Fish and Wildlife (CDFW) between October 2012 and September 2013 and the data collected through market surveys between September 2012 and September 2013, with the scope of providing observations related to white croaker.

In February 2015, EPA contracted EA Engineering, Science, and Technology, Inc. (EA) to coordinate with enforcement agencies/inspectors to support enforcement activities and provide outreach materials as needed. Additionally, EA conducted fish identification training for LACDPH and City of Long Beach Department of Health and Human Services, Bureau of Environmental Health (City of Long Beach) inspectors in September 2015 and July 2017. A previous enforcement report was prepared by EA for the period between February 2015 and July 2016. The report includes enforcement data collected by CDFW recreational and commercial enforcement inspections. The City of Long Beach and LACDPH did not perform inspections during the reporting period.

In accordance with EPA grant funding, the CDFW performed inspections between September 2016 and the present. The EPA grant funding for the City of Long Beach and LACDPH was awarded in March 2017. This enforcement report covers the period of July 2016 through May 2017.

2.0 ENFORCEMENT INSPECTIONS

CDFW staff conducts inspections of in-water commercial and recreational anglers, shoreline recreational anglers, as well as businesses that buy and sell fish commercially. In the past, LACDPH staff conducted market surveys in Los Angeles County; the City of Long Beach conducted the surveys of markets and restaurants in Long Beach, and Orange County Health

Care Agency, Environmental Health Division conducted the surveys of markets and restaurants in Orange County. Based on the data collected prior to EA's involvement in the project, Orange County determined that white croaker was not being sold in markets and declined to continue involvement in this program. The inspections are planned to resume in July 2017. Additionally, market/restaurant inspections were conducted by the City of Long Beach between July 2016 and the present. The recreational and commercial inspections were performed by CDFW between September 2016 and April 2017. The inspections consisted of the following:

- Market and restaurants (City of Long Beach and LACDPH)
- Recreational (shoreline and in-water) fishermen (CDFW)
- Commercial (in-water and wholesale) fishing operations (CDFW).

The City of Long Beach conducts 15 retail inspections per quarter and outreach to restaurants and markets that are primarily located in east and downtown Los Angeles. As part of the inspections, the market or restaurant is asked where the fish is from and the invoice is checked. Retailers are required to purchase fish from licensed vendors. The markets and restaurants targeted include 27 restaurants and 34 markets that are ethnic, sell seafood, and/or have sold white croaker illegally in the past.

The recreational inspections were focused along the Palos Verdes Peninsula shoreline (including areas between Malaga Cove and Long Point, Abalone Cove and Inspiration Point, and Royal Palms and Cabrillo Beach Jetty). CDFW conducts at least one shoreline patrol and one water sport patrol per month. Recreational fishing inspections include inspecting piers, jetties, boats, and beaches. During recreational fishermen inspections, the wardens check bags for illegal fish and size limits and conduct outreach about the dangers of white croaker and other relevant topics. The bag limit for recreational fishermen is 10 white croakers. CDFW wardens fill out one inspection form per fishing mode a day.

CDFW has focused inspections of commercial vessels in the red zone, in particular the areas surrounding the white croaker catch ban off of Palos Verdes and Fish Harbor where a large amount of fishermen dock their boats. CDFW usually performed four commercial and business inspections per quarter and one catch ban patrol per month.

3.0 ENFORCEMENT INSPECTION RESULTS

An analysis of the enforcement inspections was performed to summarize major findings from the inspections. The analysis focused on providing a general descriptive summary (or descriptive statistics) of the inspections. In some cases, there were repeat inspections done at the same sites during the year. As a result, some observations were correlated and thus inferential statistics could not be calculated.

3.1 MARKETS AND RESTAURANTS

The City of Long Beach performed 152 market and restaurant inspections between July 2016 and July 2017. The City of Long Beach targeted new ethnic restaurants (e.g., Thai, Chinese, Mexican) and found that they were not aware of the contamination. No commercial landings of white croaker were found during the past 3 years of inspections.

3.2 RECREATIONAL FISHING

Inspection modes included piers and jetties, boat patrol, and beach and intertidal areas. The recreational inspection data was collected between September 2016 and April 2017 using one data sheet per inspection mode. There were 60 inspections conducted in this time period. Out of those, approximately 57 percent (n=34) were pier and jetties inspections, 15 percent (n=9) were boat patrols, and 28 percent (n=17) were beach and intertidal inspections.

3.2.1 Awareness of Fish Contamination Issues

At least one angler interviewed reported being aware of the fish contamination issues during 49 out of 60 inspections. This includes 30 out of 34 pier and jetties inspections, 14 out of 17 beach inspections, and 5 out of 9 boat inspections. Additional information is included in the following table.

Table 1. Reported Awareness of Fish Contamination by Fishing Mode.

Fishing Mode	Reported Awareness					
	Yes	% Yes by Mode	% Yes All Modes	No	% No by Mode	% No All Modes
Piers and Jetties	30	88.24%	50.00%	4	11.76%	6.67%
Boat Patrol	5	55.56%	8.33%	4	44.44%	6.67%
Beach and Intertidal	14	82.35%	23.33%	3	17.65%	5.00%
Total	49	-	81.66%	11	-	18.34%

3.2.2 Intentions to Keep White Croaker

When asked about intentions to keep white croaker if they caught it, at least one angler responded “yes” on 1 9 of the 60 inspections. Intentions to keep white croaker were more often reported during piers and jetties (13 out of 34) and beach inspections (5 out of 17) than boat patrol inspections (1 out of 9). Additional information is included in the following table.

Table 2. Intentions to Keep White Croaker.

	Would fishermen keep White Croaker if they caught it?					
Fishing Mode	Yes	% Yes by Mode	% Yes All Modes	No	% No by Mode	% No All Modes
Piers and Jetties	13	38.24%	21.67%	21	61.76%	35.00%
Boat Patrol	1	11.11%	1.67%	8	88.89%	13.33%
Beach and Intertidal	5	29.41%	8.33%	12	70.59%	20.00%
Total	19	-	31.67%	41	-	68.33%

3.3 DO NOT CONSUME (DNC) FISH OBSERVED AND SEIZED

3.3.1 White Croaker

White croaker was observed in approximately 33 percent (n=20) of the inspections. No white croaker were seized during inspections. White croaker were observed while inspecting the following locations: Seal Beach Pier, Marina Bridge, Alamitos Jetties, 72nd Place Jetty, Long Beach, Long Beach Surf Fishermen, Belmont Pier, Seal Beach Pier, King Harbor and Redondo Pier, Marina Del Rey Harbor and Launch Ramp, Cabrillo Pier/Launch Ramp, Shoreline Village, Cherry Beach to 72nd Street, Los Angeles Harbor off shore, Long Beach harbor off shore, San Pedro coastline, and Huntington Harbor.

3.3.2 Other DNC fish

Barracuda was observed in approximately 3 percent (n=2) of the inspections. No barracuda were seized during inspections. Barracuda was observed while inspecting the following locations: Marina Del Rey Harbor and launch ramp, Marina Bridge, 72nd Place Jetty, Belmont Pier, Long Beach, Shoreline Marina, and Seal Beach Pier.

Topsmelt was observed in approximately 22 percent (n=13) of the inspections. There were no topsmelt seizures reported. Topsmelt was observed while inspecting the following locations: Marina Bridge, San Gabriel River, Belmont Pier, Long Beach, Huntington Harbor, Shoreline Marina, Cabrillo Pier, Abalone Cove, 72nd Place Jetty, Seal Beach Pier, Seal Beach Surf Fishermen, King Harbor and Redondo Pier, Los Alamitos Jetties, Alamitos Bay, and San Pedro Pier.

Barred sand bass was identified in approximately 22 percent (n=13) of the inspections. No barred sand bass were seized during inspections. Barred sand bass was observed while inspecting the following locations: Marina Bridge, 72nd Place Jetty, Belmont Pier, Long Beach, Long Beach coastline and launch ramps, Shoreline Marina, Seal Beach Pier, King Harbor Pier, King Harbor Jetty, Redondo Pier, Santa Monica Pier, Venice Pier, Marina Del Rey Jetty, Manhattan Beach Pier, Marina Del Rey Harbor and Launch Ramp, Alamitos Jetties, Los Angeles Harbor off shore, Long Beach harbor off shore, Cabrillo Pier/launch ramp on shore, San Pedro Coastline, and Long Beach to Huntington Harbor.

Black croaker was observed in approximately 5 percent (n=3) of the inspections. There were no black croaker seizures reported. Black croaker was observed while inspecting the following locations: Belmont Pier, 72nd Place Jetty, Marina Bridge, Seal Beach Pier, Los Angeles Harbor, San Pedro, and Long Beach to Huntington Harbor.

3.3.3 Citations, Warning, and Violations

At least one fisherman did not adhere to the bag limit in one of the 60 inspections. There were no citations or warnings related to white croaker. There were a total of 30 warnings and 28 citations for other fish violations issued. Citations and violations were generally not related to the DNC fish, they were generally related to possession of undersized fish, and fishing without a license.

3.3.4 Information Provision

Tip cards and/or enforcement brochures were distributed during inspections. During the inspections, the materials were provided in English (~57 percent [n=34]), Spanish (~12 percent [n=6]), English and Spanish (~10 percent [n=6]) and English and Vietnamese (~3 percent [n=2]). Approximately 18 percent (n=11) of the data sheets indicate that no tip cards were distributed during the inspections.

3.4 COMMERCIAL FISHING

The commercial fishing inspection data was collected on 22 January 2017. The dataset included one inspection conducted at a supermarket.

3.4.1 Awareness of Fish Contamination Issues

The entity operator reported awareness of the white croaker catch ban area. The reported source of information about the white croaker catch ban area was from an outreach worker.

3.4.2 White Croaker Identified

Throughout the collection period, no white croakers were observed. There were no white croakers seized or collected. During an FCEC partners meeting in April 2017, CDFW reported that no commercial landings of white croaker were observed over the past 3 years of inspections.

3.4.3 DNC Fish Observed and For Sale

There were no DNC fish intended for sale.

3.4.4 Violations

There were no violations related to white croaker reported.

3.4.5 Information Provision

One tip card was handed out during the inspection.

4.0 ENFORCEMENT INSPECTION RESULTS DISCUSSION

4.1 RECREATIONAL FISHING

Anglers interviewed stated that they were aware of the fish contamination issues in approximately 82 percent of the recreational inspections. A higher percentage of angler awareness was reported from inspections performed at piers and jetties (~50 percent) in comparison to other fishing modes (i.e., ~8 percent boat patrol, ~23 percent beach and intertidal). Intentions to keep white croaker were also highest in pier and jetties inspections (~21 percent intended to keep) compared to boat patrol (~2 percent) and beach and intertidal (~8 percent) inspections. This indicates that while anglers on piers and jetties are most aware of contamination issues, they are also most likely to keep white croaker. Over 30 percent of inspections indicated that fishermen reported they would keep white croaker if they caught it, which suggests there may be a need for more outreach concerning the health effects of consuming contaminated fish. Approximately 33 percent of inspections reported white croaker, 22 percent of topsmelt, 22 percent of barred sand bass, and 5 percent of black croaker were observed during the inspections.

Data from multiple fishermen are included per inspection which presents potential limitations on the data evaluation. The inspections did not collect information on the fishermen interviewed, therefore it could not be determined whether there is a bias in the data due to the same fishermen being interviewed during each inspection. Alternatively, because the statistics are being generated for each inspection event rather than for each fisherman interviewed, without a better understanding of the variability in responses per inspection event, there is no way to develop and apply a weighting factor to the response counts for the different fishing modes. Additionally, a selection bias could have occurred if the subset of fishermen were selected for repeated inspections due to a specific reason, which could limit the broader applicability of the results. Another limitation to the datasets is the small sample size. Due to limited sample size, findings generated from the dataset may only apply for the specific sample population, and may not be applicable to the population of the counties.

4.2 COMMERCIAL FISHING

In the inspection performed, the entity indicated they were aware of the white croaker catch ban area. There were no white croakers observed and there were no white croaker violations issued. This suggests that commercial fishing operations were in compliance with white croaker regulations. Due to limited sample size, findings generated from the dataset may only apply for the specific sample population, and may not be applicable to the population of the counties.

5.0 FISH IDENTIFICATION TRAINING

EA facilitated fish identification training for the City of Long Beach and LACDPH inspectors on 16 September 2015 and 20 July 2017. During the training, the inspectors were provided instruction on their role including the recreational advisory and catch ban, enforcement, embargo, inspection forms, and inspector tools. Additionally, they learned how to identify the white croaker and a fresh fish specimen demonstration was performed by EA subcontractor Dr. Michael Franklin (California State University – Northridge).

6.0 CONCLUSIONS

Enforcement is a key Institutional Control as part of FCEC program. Based on the inspection data, DNC fish, specifically the white croaker, was not observed during the commercial inspection. White croakers were more commonly found among recreational fishermen in approximately 33 percent of the inspections. Other DNC fish were less frequently observed. Recreational anglers are mostly aware of fish contamination issues; in both the commercial and recreational inspections, over 82 percent of anglers reported awareness, which is an increase compared to the previous reporting period (68 percent). More anglers reported awareness during piers and beach inspections compared to boat inspections. Intentions to keep white croaker were more often reported during piers and jetties and beach inspections patrols than during boat patrols. In over 30 percent of overall inspections fishermen reported they would keep white croaker if they caught it. This percentage is down from the previous reporting period (40 percent), indicating that outreach is effective. However, there may still be a need for more outreach concerning the health effects of consuming contaminated fish.

This page intentionally left blank