



FISH CONTAMINATION EDUCATION COLLABORATIVE

PIER SIGN SUMMARY

August 2019 – July 2020

Palos Verdes Shelf Superfund Site

Los Angeles County, California

EPA IDENTIFICATION NO. CAD008242711

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ACRONYMS AND ABBREVIATIONS

Cabrillo	Cabrillo Marine Aquarium
DNC	Do Not Consume
EA	EA Engineering, Science, and Technology, Inc.
EPA	United States Environmental Protection Agency
FCEC	Fish Contamination Education Collaborative
HTB	Heal the Bay
LACDPH	Los Angeles County Department of Public Health Environmental Health Division Toxics Epidemiology Program

1. INTRODUCTION

The United States Environmental Protection Agency (EPA) created the Fish Contamination Education Collaborative (FCEC) with representatives of federal, state, and local agencies, and community-based organizations that carry out various outreach and education activities. The goal of the outreach activities is to protect the most vulnerable populations from the health effects of consuming contaminated fish related to the Palos Verdes Shelf Superfund Site. Pier signs containing Do Not Consume (DNC) fish messaging are posted on piers to help anglers identify which fish are on the DNC list and therefore should not be eaten.

In February 2015, the EPA contracted EA Engineering, Science, and Technology, Inc. (EA) to coordinate with the angler outreach groups, Heal the Bay (HTB) and Cabrillo Marine Aquarium (Cabrillo), to monitor pier sign conditions while performing angler outreach activities. HTB and Cabrillo performed pier sign condition assessments on a periodic basis and reported the status to EA. Based on the results, EA reported the damaged and missing signs to the Los Angeles County Department of Public Health Environmental Health Division Toxics Epidemiology Program (LACDPH) and City of Long Beach, as necessary. The locations of the DNC fish signs on the piers were also evaluated to determine if certain locations were problematic and in need of evaluation for new placement.

EA previously prepared reports summarizing the pier sign conditions from February 2015 to July 2016, August 2016 through July 2017, August 2017 through July 2018, and August 2018 through July 2019. The results of the initial evaluation (February 2015 to July 2016) found a total of 63 signs were reported at piers between Santa Monica and Seal Beach. Of the 63 signs, 9 signs needed replacement. The FCEC partners agreed that overlap of the DNC fish signs in the Marine Protection Areas could potentially send mixed messages and should be removed. EA evaluated the overlap and determined that signs at four piers should be removed. EA worked with LACDPH to remove signs from Point Vincent, Long Point, Portuguese Bend, and Abalone Cove. In May 2016, LACDPH removed these signs.

During the August 2016 through July 2017 period, a total of 67 signs were tracked. Of these signs, 19 were identified for replacement at Santa Monica (3), Venice (3), Manhattan Beach (2), Redondo Beach (3), Ballona North Creek/Playa del Rey Jetty (1), Rainbow Harbor (5), and Pier J (2). At the time of the report, 11 of the 19 signs were replaced by LACDPH and the City of Long Beach. The remaining 8 signs were addressed during the following reporting period. The report also noted discrepancies on the amount of DNC fish signs reported by partners at some of the piers (Santa Monica, Cabrillo, Pier J, and Rainbow Harbor) and identified gaps in monitoring activities at Rainbow Harbor Pier. It was recommended that LACDPH, HTB, Cabrillo, and City of Long Beach coordinate to resolve the discrepancies.

During the August 2017 through July 2018 period, a total of 65 signs were monitored. This was down from 67 signs tracked in the previous reporting period. One sign was removed from Pier J because the City of Long Beach's Marine Bureau decided to minimize signage at this location. The second sign was removed from Ballona North Creek/Playa del Ray Jetty because the LACDPH's Industrial Hygienist concluded that the four existing signs are sufficient, and a fifth

sign was not necessary. As of July 2018, 8 signs were identified for replacement by LACDPH at Cabrillo (3), Seal Beach (2), Venice (2), and Hermosa Beach (1) piers. LACDPH planned to replace 6 of the 8 signs during the August 2018 to July 2019 reporting period. The remaining 2 signs, located at Seal Beach pier, are in poor condition (scratched and worn but still readable). EA understands that these signs fall under the jurisdiction of Orange County, which has withdrawn from FCEC's DNC fish sign monitoring and maintenance activities.

The discrepancies in the number of DNC fish signs and gap in monitoring activities previously identified were resolved during the reporting period (August 2017 through July 2018). EA worked with the partners (LACDPH, Cabrillo, HTB, and City of Long Beach) to update the pier sign accounting inconsistencies at Santa Monica, Cabrillo, Pier J, and Rainbow Harbor piers. Additionally, it was determined that two piers at Rainbow Harbor were not being tracked by HTB. During the FCEC partners meeting on 18 January 2018, the City of Long Beach agreed to monitor these signs.

During the August 2018 through July 2019 period, a total of 69 signs were tracked. Four new signs were added. One sign was added to Cabrillo pier by LACDPH and three were added to the Seal Beach pier by Orange County. Of the 69 signs, 38 DNC fish signs were cleaned and 9 were replaced with new signs during the reporting period.

2. PIER SIGN CONDITIONS (AUGUST 2019-JULY 2020)

LACDPH, HTB, Cabrillo, and the City of Long Beach performed pier sign evaluations between August 2019 and February 2020. Due to the COVID-19 pandemic, in-person pier angler outreach and pier sign monitoring activities were suspended in mid-March 2020 in compliance with State restrictions and closures of public spaces. Tables A-1 through A-3 in Appendix A present the pier sign condition assessments. Based on the evaluations, a total of 69 signs were monitored. Of the 69 signs, 33 DNC fish signs were cleaned and 7 were replaced with new signs during this reporting period (Table A-1 in Appendix A).

LACDPH evaluated piers between Santa Monica and Cabrillo piers (Figure 1) in September 2019. During this reporting period, LACDPH reported 50 signs were present, of which 33 were cleaned, 7 were replaced, and 14 require replacement. LACDPH replaced signs at the Santa Monica (3) and Cabrillo (4) piers. Three signs were replaced at Santa Monica pier: two new signs replaced missing signs at locations that LACDPH was not able to access due to pier construction activities during the previous reporting period and one new sign was added to replace a damaged sign identified during this reporting period. Additionally, four new signs were added at Cabrillo pier to replace damaged signs identified during this reporting period. Damaged signs were primarily due to bent signs from leaning, graffiti, and environmental conditions (e.g., storm events, rust, sunlight). Fourteen signs were identified by LACDPH to be replaced at Ballona North Creek/Playa del Rey Jetty (3), Ballona South (3), Manhattan Beach (4), Hermosa Beach (2), Rocky Point (1), and Redondo Beach (1). See Table A-1 in Appendix A for LACDPH's pier sign evaluation.

HTB and Cabrillo also monitored sign conditions while they performed angler outreach activities. Cabrillo monitored signs located at Cabrillo Pier, and HTB tracked signs located at Santa Monica Pier, Venice Pier, Hermosa Pier, Redondo Pier, Pier J, Rainbow Harbor (2 signs cleaned), Belmont Pier, and Seal Beach Pier. The signs at Cabrillo Pier, Santa Monica Pier, Venice Pier, Hermosa Pier, and Redondo Pier are also monitored by LACDPH. Additionally, the City of Long Beach monitors 2 of the 5 DNC fish signs located at Rainbow Harbor that are not monitored by HTB. Signs needing replacement were reported to EA. EA then coordinated the replacement with EPA, LACDPH, and the City of Long Beach.

One new sign at Cabrillo pier was identified by LACDPH during the last reporting period. The sign is located at a lifeguard station, near the parking lot of the pier. This sign was not previously identified or tracked by LACDPH and Cabrillo. Therefore, this sign was added to Cabrillo's monitoring activities during this reporting period. See Tables A-2 and A-3, respectively, in Appendix A for HTB and Cabrillo pier sign evaluations and Appendix B for photographs of pier signs.

Table 1 summarizes the pier sign conditions as of July 2020.

Table 1. Pier Sign Conditions – August 2019– July 2020

Location	Total No. of Signs	Sign Condition				Notes
		Excellent	Good	OK	Poor	
Santa Monica Pier	6	3	3	-	-	Three signs were replaced in September 2019. Two new signs replaced missing signs during pier construction activities and one damaged sign was replaced with a new sign.
Venice Beach Pier	6	-	6	-	-	Five signs are bent from anglers leaning. The Pier is closed to the public during dock renovations.
Marina Del Rey/ Burton Chase Platform	0	-	-	-	-	One sign was removed by LACDPH in 2015. There is no fishing at this location.
Ballona North Creek/Playa del Rey Jetty	4	-	-	1	3	Three signs need replacement. Five signs were previously located at this pier. One missing sign was not replaced in 2018 because the LACDPH industrial hygienist indicated that the 4 existing signs are sufficient.
Ballona South	4	-	1	-	3	Three signs need replacement. Unable to access 1 sign due to ongoing bridge construction.
Dockweiler Beach	1	-	1	-	-	Sign was replaced in April 2019.
El Porto/El Segundo	1	-	1	-	-	Sign is in good condition.
Manhattan Beach	4	-	2	-	4	Four signs need replacement.
Rocky Point	1	-	-	-	1	One sign needs replacement. Sign was last replaced in April 2019.
Cabrillo Pier	8	-	6	2	-	Pier is closed with no public access.
Hermosa Beach Pier	5	-	3	-	2-	Two signs in fairly good condition need replacement.

Location	Total No. of Signs	Sign Condition				Notes
		Excellent	Good	OK	Poor	
Redondo Beach Pier	6	-	5	-	1	One sign in fairly good condition needs replacement.
Pier J	4	-	4	-	-	Signs are in good condition.
Rainbow Harbor	5	-	5	-	-	One sign was replaced in April 2019.
Belmont Pier	5	-	5	-	-	Signs are in good condition.
Seal Beach Pier	5	-	5	-	-	Five new signs were installed by Orange County in July 2019, all remain in good condition.
Torrance Beach	2	-	2	-	-	Signs in good condition.
Royal Palms/White Point	2	-	2	-	-	Sign was replaced in April 2019.
Total	69	2	52	3	14	Due to construction, 68 of 69 signs had sign condition assessed.

3. STATUS AND RECOMMENDATIONS

As of July 2020, 14 signs have been identified for replacement by LACDPH during the next reporting period. These signs are located at Ballona North Creek/Playa del Rey Jetty (3), Ballona South (3), Manhattan Beach (4), Hermosa Beach (2), Rocky Point (1), and Redondo Beach (1). See Table A-1 in Appendix A for LACDPH's pier sign evaluation.

During the previous reporting period, a new pier sign at Cabrillo pier was identified by LACDPH on a lifeguard tower near the parking lot of the pier. This sign was not previously identified or monitored by LACDPH or Cabrillo. During this reporting period, Cabrillo added this 8th sign to their pier sign monitoring activities.

In June 2020, a DNC fish sign was observed at Point Vicente pier near the Point Vicente Light House. This location was identified in 2016 as one of the Marine Protection Areas and the sign was removed per LACDPH's documentation. It is recommended that LACDPH resolve this during the next reporting period. Additionally, discrepancies were noted at piers that are tracked by both LACDPH and HTB. This may be partly due to different time periods that each party conducted the monitoring activities. It is recommended that LACDPH include photos of the sign conditions and exact dates of monitoring, cleaning, and replacement activities so that they are more easily tracked for piers that other partners do not monitor and are comparable to the tracking by HTB and Cabrillo at the overlapping piers.

As part of the monitoring activities, DNC pier signs continue to be most frequently replaced at the popular piers (e.g., Venice Beach). Damaged and/or missing signs were primarily due to pier construction activities, environmental damage, bending from leaning, and/or vandalism. Compared to the 2019 pier sign conditions assessment, the number of signs needing replacement (3) increased to 14 in 2020. The number of signs needing cleaning increased slightly from 32 (in 2019) to 33 in 2020. These results are comparable to previous reporting years. However, the increase from the last reporting period may be partly due to COVID-19 because LACDPH was

busy with public health issues that may have prevented time spent for cleaning between March and July 2020. It is recommended to address the sign cleanings and replacements, and resolve discrepancies with HTB once pier activities resume.

During this reporting period, many signs were reported as bent due to leaning anglers, at multiple piers. Specifically, five of six signs at Venice Beach pier were bent from leaning. This indicates that the pier sign height at this pier is too low. For example, pier signs at Rainbow Harbor are placed at height on poles and show less evidence of being bent from leaning and vandalism. As has been recommended in previous reports, it is recommended to re-evaluate the pier sign height, particularly at Venice Beach pier. Similarly, signs located in low height makes it easier for vandalism and removal. However, if signs are located too high, they are not easily readable by pier anglers. It has been reported that the ideal height is 9 feet. This is evidenced at piers where the signs are located at height and have less maintenance activities (e.g., Pier J, Rainbow Harbor).

During the last reporting period, HTB noticed that one sign on the Hermosa Beach pier was moved to the side of a trash receptacle, making it harder for anglers to see. Additionally, HTB observed that four Santa Monica pier signs are located very close to each other, which leaves areas of the pier where the signs are not visible to anglers. This issue was not addressed during the reporting period and it is recommended to re-evaluate these locations and relocate the signs to more visible areas on the piers.

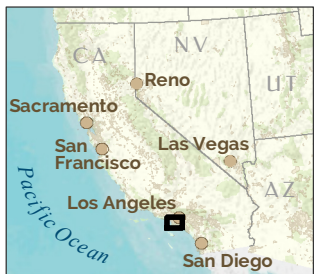
HTB monitors the pier signs at Belmont pier, however this pier does not show up in the maintenance tracking from LACDPH and City of Long Beach. It is recommended that LACDPH add this to their pier sign monitoring activities during the next reporting period.

During the reporting period and previous FCEC meetings, partners have inquired about ultra-violet coating on the pier signs. It is recommended that ultra-violet coating be added on future production of the DNC fish sign inventory.

As mentioned previously, COVID-19 pandemic State restrictions on public gatherings were implemented during March 2020. During this time, only essential businesses (e.g., medical facilities, grocery stores, restaurant food take-out/delivery) were open to the public. Visits to the piers were only again permitted by Los Angeles County toward the end of this reporting period. There remains a need to continue monitoring and maintenance of the DNC signs to outreach to the pier anglers. These activities may be performed during the COVID-19 pandemic and help to accelerate activities once the State restrictions are lifted.

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Figure 1 – Do Not Consume Fish Sign Pier Locations Map



Legend

- ◆ Pier/Coastal Structure

Date: September 2021
 Data Sources: CSMW, esri,
 Los Angeles County, US Census Bureau



Palos Verdes Shelf Superfund Site
 Los Angeles County, California

Do Not Consume Fish Sign Pier Locations Map

Figure 1

APPENDIX A

Pier Sign Evaluations

(LACDPH, Cabrillo, and Heal the Bay)

Los Angeles County Department of Public Health
Environmental Health Division
Toxicology and Environmental Assessment Branch
Table A-1: Pier Signage Update August 2019 – July 2020

Pier Location (North to South)	Total No. of Signs	No. Signs Cleaned	No. Signs Replaced	No. New Signs Needed	NOTES
Santa Monica	6	3	3	0	Three signs were replaced in September 2019. Two new signs replaced missing signs at the Southwest end of the pier due to construction. One damaged sign was replaced with a new sign.
Venice (Washington Blvd)	6	6	0	0	The Pier is closed to the public due to dock renovations.
Burton Chafe Park (Marina Del Rey)	--	--	--	--	In 2015, there was one sign. It was removed due to expansion of the boating bay and there is no fishing.
Ballona North Creek/ Playa del Rey Jetty	4	3	0	3	Three signs need replacement. Five signs were previously located at this pier. One missing sign was not replaced in 2018 because the LACDPH industrial hygienist indicated that the 4 existing signs are sufficient.
Ballona South	4	3	0	3	Three signs need replacement. Unable to access 1 sign due to ongoing bridge construction.
Dockweiler Beach	1	0	0	0	Missing or damaged sign replaced with new sign in April 2019.
El Porto/El Segundo (near Manhattan)	1	1	0	0	
Manhattan Beach	4	2	0	4	Four signs need replacement.
Hermosa Beach	5	5	0	2	Two signs need replacement

Los Angeles County Department of Public Health
Environmental Health Division
Toxicology and Environmental Assessment Branch
Table A-1: Pier Signage Update August 2019 – July 2020

Pier Location	Total No. of Signs	No. Signs Cleaned	No. Signs Replaced	No. New Signs Needed	NOTES
Rocky Point (King Harbor Marina (100 Marina Drive, Redondo Beach)	1	0	0	1	One sign needs replacement.
Redondo Beach	6	5	0	1	One sign needs replacement.
Torrance Beach	2	2	0	0	
Bluff /Malaga Cove	--	--	--	--	Limited beach and parking access. Not a likely place for people to fish. No sign is needed.
Lunada Bay	--	--	--	--	Unable to attach sign at beach access. There is no utilities post on site or other surfaces where one can attach signs.
Point Vicente	--	--	--	--	FCEC Partners decided to remove DNC signs within the Marine Conservation Area in 2016.
Long Point	--	--	--	--	FCEC Partners decided to remove DNC signs within the Marine Conservation Area in 2016.
Abalone Cove	--	--	--	--	Limited Access. No Signs were placed in 2015 and 2016 due to unstable ground. FCEC Partners decided to remove DNC signs within the Marine Conservation Area in 2016.
Portuguese Bend	--	--	--	--	FCEC Partners decided to remove DNC signs within Marine Conservation Area in 2016.
Royal Palms/White's Point	2	2	0	0	
Point Fermin	--	--	--	--	No coastal access.
Cabrillo Pier	8	1	4	0	Pier is currently closed, no public access since March 2020.

Los Angeles County Department of Public Health
 Environmental Health Division
 Toxicology and Environmental Assessment Branch
 Table A-1: Pier Signage Update August 2019 – July 2020

	Total No. of Signs	No. Signs Cleaned	No. Signs Replaced	No. New Signs Needed
2015	59	16	--	25
2016	53	24	--	9
2017	49	15	--	12
2018	49	21	5	2
2019	50	32	8	4
2020	50	33	7	14

Table prepared by Los Angeles County Department of Public Health and modified by EA based on comparable data from Heal the Bay and Cabrillo.

Heal the Bay
Pier Angler Outreach Program
Table A-2: Pier Signage Update August 2019 - July 2020

Pier Location	Total No. of Signs Present	NOTES
Santa Monica	6	<ol style="list-style-type: none"> 1. Good condition. A few scrapes 2. New. 3. Good condition. 4. Good condition. 5. New. 6. Good condition. A little dirty.
Venice	6	<ol style="list-style-type: none"> 1. Good condition. Bent due to leaning. 2. Good condition. Bent due to leaning. Decal and graffiti on top, few scratches. 3. Good condition. A few scrapes, decal and graffiti on top. 4. Good condition. Bent due to leaning, scrapes on top. 5. Good condition. Bent due to leaning. 6. Good condition. Bent due to leaning. Scratches and puncture.
Hermosa Beach	5	<ol style="list-style-type: none"> 1. Good condition. Bottom left corner is peeling. 2. Good condition. 3. Good condition. 4. Fairly good condition. Bottom right corner is peeling. 5. Fairly good condition. Dirty with scratches but readable.
Redondo Beach	6	<ol style="list-style-type: none"> 1. Good condition. 2. Fairly Good condition. Very Dirty. 3. Good condition. A few scratches. Bottom is peeling. 4. Good condition. 5. Good condition. 6. Good condition. Upper left corner is peeling.

Heal the Bay
Pier Angler Outreach Program
Table A-2: Pier Signage Update August 2019 - July 2020

Pier Location	Total No. of Signs Present	NOTES
Pier J	4	<ol style="list-style-type: none"> 1. Good condition. 2. Good condition. 3. Good condition. 4. Good condition.
Rainbow Harbor	5	<ol style="list-style-type: none"> 1. Good condition. Cleaned. A little dirty. (monitored by Heal the Bay) 2. Good condition. A little dirty. (monitored by Heal the Bay) 3. Good condition. Cleaned. A little dirty with some graffiti. (monitored by Heal the Bay) 4. Good condition. (monitored by City of Long Beach) 5. Good condition. (monitored by City of Long Beach)
Belmont	5	<ol style="list-style-type: none"> 1. Good condition. Some scratches. 2. Good condition. Some scratches and a decal on bottom right side. 3. Good condition. Some scratches and bottom left side is peeling. 4. Good condition. Some scratches and a sticker on upper right side. 5. Good condition. Some scratches.
Seal Beach	5	<ol style="list-style-type: none"> 1. Good condition. 2. Good condition. 3. Good condition. 4. Good condition. 5. Good condition.

Cabrillo Pier
Pier Angler Outreach Program
Table A-3: Pier Signage Update August 2019- July 2020

Pier Location (North to South)	Total No. of Signs	No. New Signs Needed	NOTES
Cabrillo	8	0	<ol style="list-style-type: none"> 1. Good Condition. Beat up and bent along the bottom edge. New sticker in upper right corner. Metal peeling along lower right edge. 2. Good Condition. Some old tagging paint lines, but still readable and in decent shape. 3. Fair Condition. Very tagged up and stickered; getting harder to read. Large patch of paint removed from top of sign. 4. Fair Condition. Stickered, tagged with scratches and heavily soiled. Entire sign is getting bent and frayed along top edge. Mostly readable. 5. Good Condition. Some scratching and soiling. 6. Good Condition. Residual tagging marks. 7. Good Condition. Very bent and has a few dents and rust and some new tagging and stickers. 8. Good Condition. Very weathered, cracked and rusted.

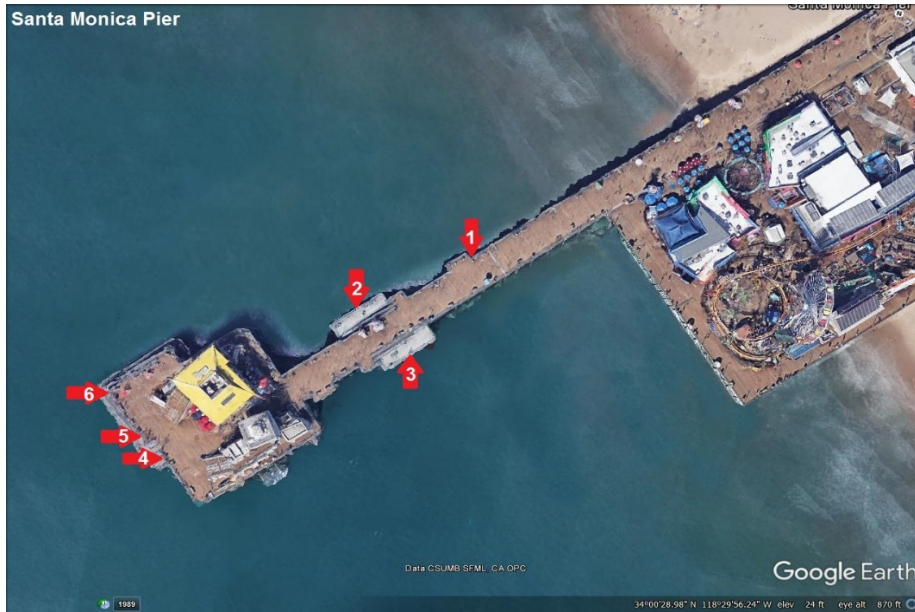
APPENDIX B

Pier Sign Locations Photographs

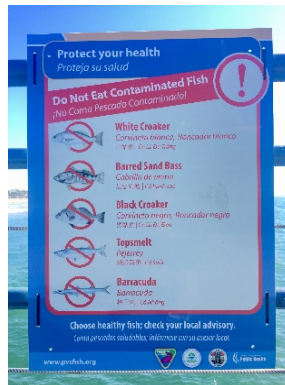
(Heal the Bay, Cabrillo, and City of Long Beach)

Santa Monica Pier

Six total signs. Two missing signs (#1 and #3) were replaced following pier construction. One damaged sign (#2) was replaced. Three signs were cleaned.



#1



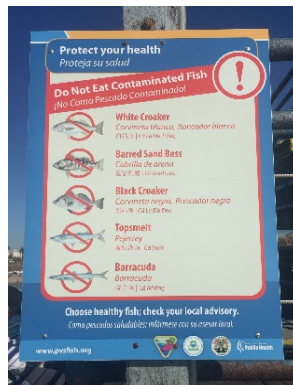
#2



#3



#4



#5



#6

Venice Pier

Six total signs. Six signs were cleaned. All six signs are bent.



#1



#2



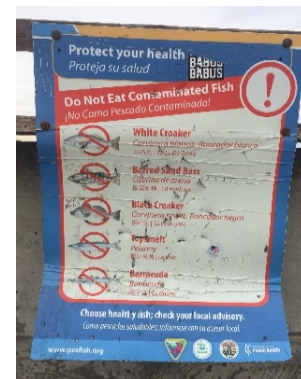
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#4



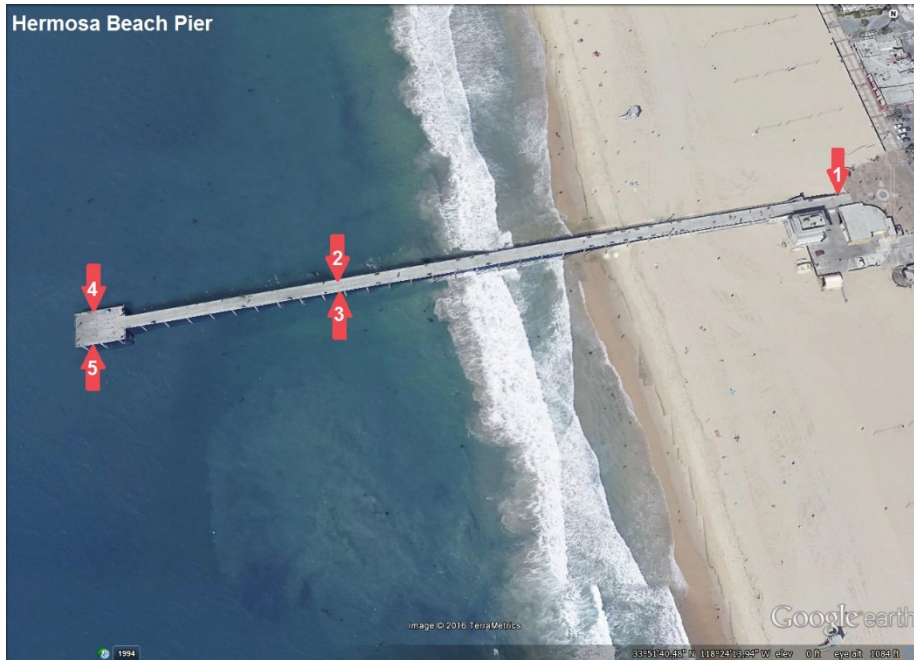
#5



#6

Hermosa Beach Pier

Five total signs. Two signs (#4 and #5) in fair condition and need replacement. 5 signs were cleaned.



#1



#2



#3



#4



#5

Redondo Beach Pier

Six total signs. One sign (#2) needs replacement. Five signs were cleaned.



#1



#2



#3



#4



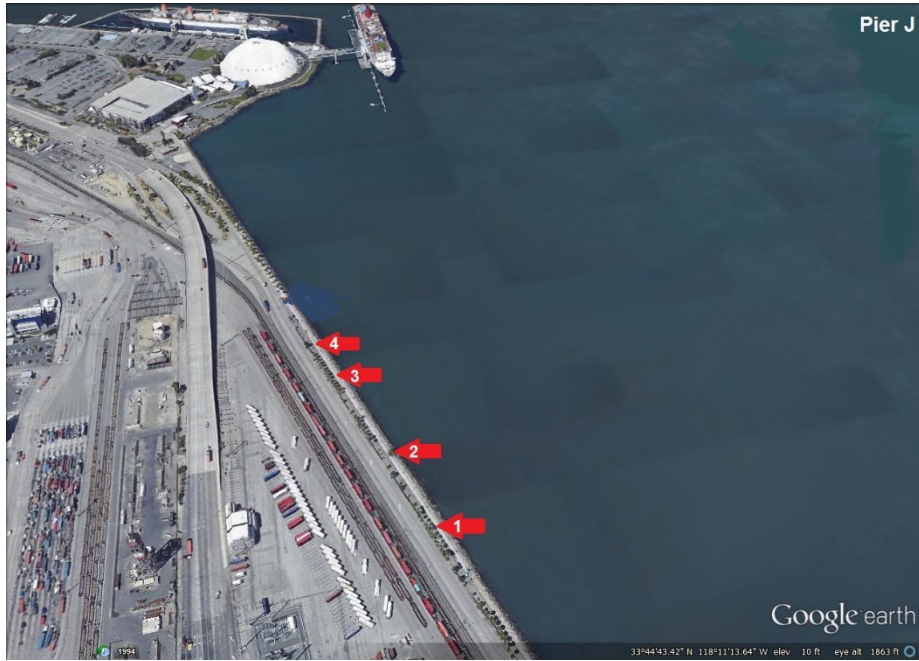
#5



#6

Pier J

Four signs total. No signs need replacement.



#1



#2



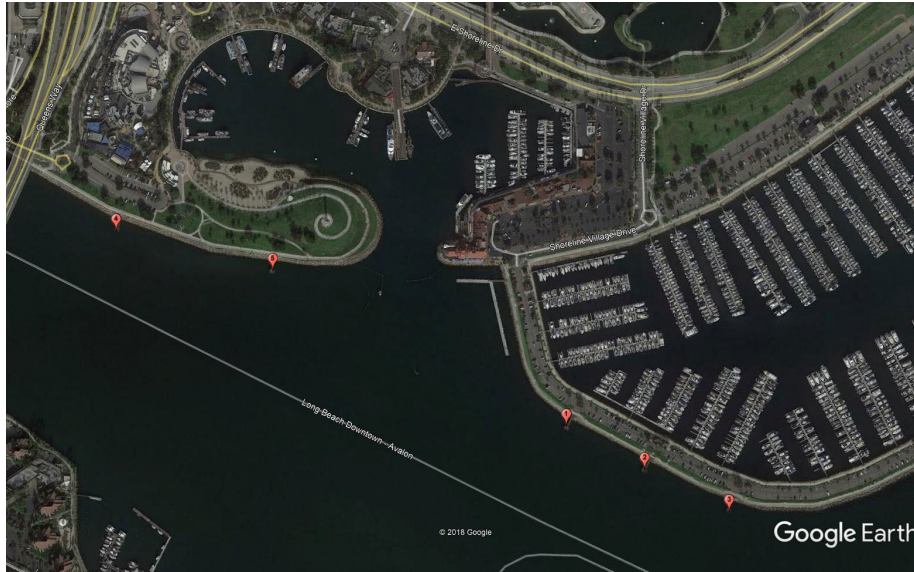
#3



#4

Rainbow Harbor Pier

Five total signs. Signs #1-#3 monitored by Heal the Bay and #4-#5 monitored by City of Long Beach. Three signs were cleaned. No signs need replacement.



#1



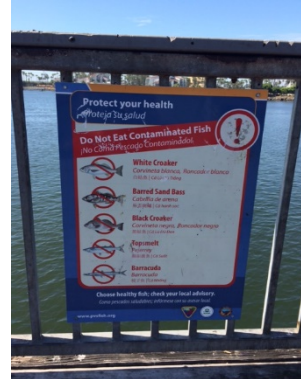
#2



#3



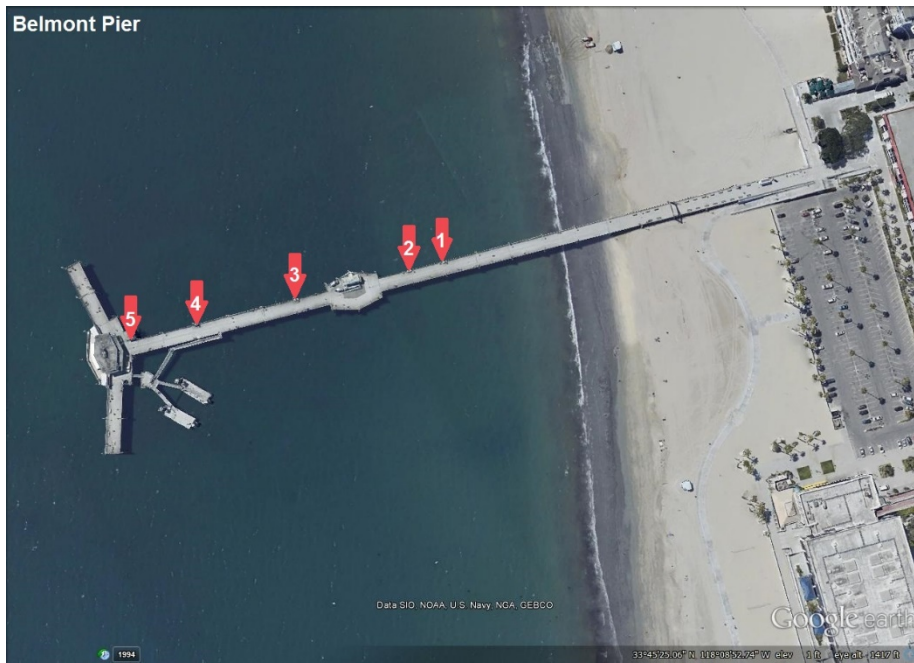
#4



#5

Belmont Pier

Five signs total. Three signs (#1-#3) need cleaning. No signs need replacement



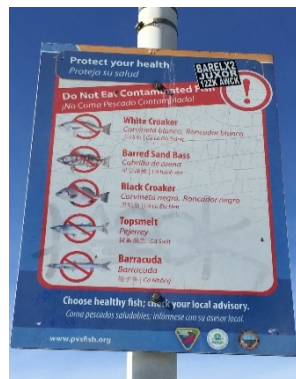
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#2



#3



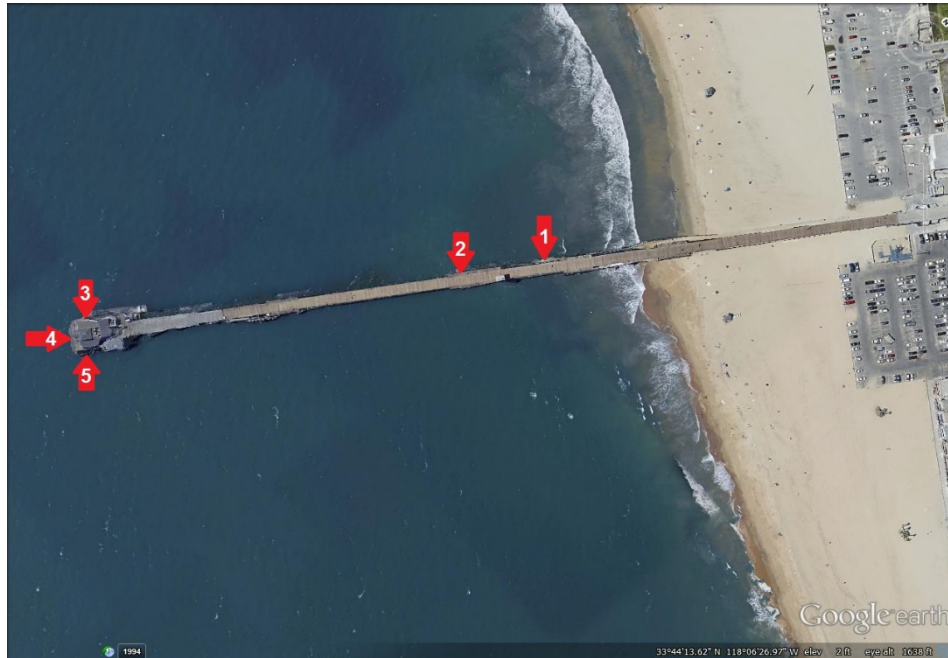
#4



#5

Seal Beach Pier

Five signs. All signs are under the jurisdiction of Orange County.



#1



#2



#3



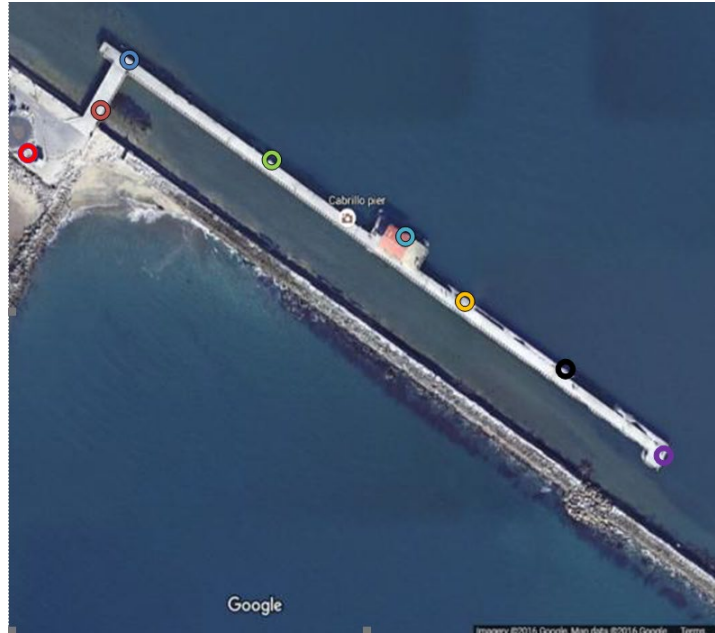
#4



#5

Cabrillo Pier

Eight total signs. Four signs (#3-#6) were replaced. Cabrillo is monitoring sign #8 located at the lifeguard station, near the parking lot of the pier. This sign was previously tracked by LACDPH.



#1



#2



#3



#4



#5



#6



#7



#8