



FISH CONTAMINATION EDUCATION COLLABORATIVE

PIER SIGN SUMMARY

August 2021 – July 2022

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
QR	quick response

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 DNC pier sign conditions at nine piers while performing angler outreach activities. HTB and Cabrillo performed pier sign condition assessments on a periodic basis and reported the status to EA. HTB monitored and reported pier sign conditions at eight piers including Santa Monica, Venice, Hermosa Beach, Redondo Beach, Pier J, Rainbow Harbor, Belmont, and Seal Beach piers. Cabrillo monitored and reported pier sign condition at Cabrillo pier. The pier locations are shown in Figure 1. EA reported the conditions of the DNC pier signs from these nine piers to the Los Angeles County Department of Public Health Environmental Health Division Toxics Epidemiology Program (LACDPH) and City of Long Beach, who performed DNC pier sign cleaning and replacement, as necessary. The DNC pier signs located at Seal Beach pier fall under the jurisdiction of Orange County, which has withdrawn from FCEC's DNC fish sign monitoring and maintenance activities.

During 2015 through 2020, a range of 63 to 69 total DNC pier signs were located on 25 piers between Santa Monica and Seal Beach piers. HTB and Cabrillo monitored and reported DNC pier sign conditions at the nine piers mentioned above. The City of Long Beach monitored DNC pier signs at Pier J and Rainbow Harbor that were not being tracked by HTB. LACDPH monitored signs at the remaining 16 piers with some overlap with HTB and Cabrillo at 5 piers (Santa Monica, Venice, Hermosa Beach, Redondo Beach, and Cabrillo piers).

EA worked with FCEC partners to evaluate the locations of the DNC fish pier signs to determine if certain locations were problematic and in need of relocation. In 2015 and 2016, FCEC partners decided to remove DNC pier signs from eight piers including Burton Chase Park/Marina del Rey, Bluff/Malaga Cove, Lunada Bay, Point Vicente, Long Point, Abalone Cove, Portuguese Bend, and Point Fermin (Table A in Appendix A) that were in the Marine Protection Area, unable to access, and/or not well located for angler observation.

As of February 2020, a total of 69 DNC pier signs were tracked at 17 total piers with DNC pier signs (Table 1). 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. During the August 2020 through July 2021 reporting period, only 45 signs were observed and conditions assessed due to pier construction and the COVID-19 pandemic. LACDPH and the City of Long Beach did not conduct pier sign monitoring, tracking, cleaning, or replacement during the pandemic. In 2021, LACDPH and the City of Long Beach

both ceased participation in FCEC’s DNC fish sign monitoring and maintenance activities. The signs they had previously monitored were instead monitored by HTB.

2. PIER SIGN CONDITIONS (AUGUST 2021-JULY 2022)

In March 2020, the World Health Organization classified the COVID-19 outbreak as a pandemic. To reduce the impact of the outbreak, closures of non-essential businesses and restrictions on public gatherings were issued by the U.S. Department of Health and Human Services’ Centers for Disease Control and Prevention, the State of California, and Los Angeles County. Although many of these restrictions were lifted before this reporting period, COVID-19 related changes to operations continued to affect pier sign monitoring activities.

Prior to March 2020, LACDPH, HTB, Cabrillo, and the City of Long Beach performed pier sign tracking at 17 piers with DNC fish signage (Table 1). As mentioned previously, HTB and Cabrillo monitor the DNC fish pier signs as part of their in-person pier angler outreach activities. Prior to 2021, the City of Long Beach monitored DNC fish sign conditions at Rainbow Harbor and Pier J that were not already tracked by HTB. They cleaned and replaced signs as needed at Rainbow Harbor, Pier J, and Belmont piers in Long Beach. With exception to the piers in Long Beach and Seal Beach, LACDPH monitored, cleaned, and replaced signs at the remaining piers (Table 1) as needed. However, due to the COVID-19 pandemic, LACDPH and City of Long Beach were involved in public health activities and neither conducted pier sign monitoring and tracking, cleaning, or replacement. Since 2021 when LACDPH and the City of Long Beach ceased participation in FCEC program, their DNC fish pier sign monitoring activities were performed by HTB.

During this reporting period, HTB conducted DNC fish pier sign monitoring at the 16 piers covered by HTB, City of Long Beach, and LACDPH while Cabrillo monitored the DNC fish pier signs at Cabrillo pier. HTB was not able to locate 19 of the previously tracked signs (69) reported prior to the pandemic in February 2020. Additionally, HTB and Cabrillo reported 9 poor condition or damaged signs that are recommended for replacement. Damaged signs were primarily due to signs bent from leaning, graffiti, and environmental conditions (e.g., storm events, rust, sunlight).

Appendix A presents the pier sign condition assessment from HTB and Cabrillo, and Appendix B includes photographs of the pier signs at those piers with pier signage present. Based on the evaluations, a total of 50 signs were monitored during this reporting period. Table 1 summarizes the pier sign conditions as of July 2022.

Table 1. Pier Sign Conditions

Location	Total No. of Signs (2020)	Total No. of Signs (2022)	Sign Condition (July 2022)				Notes
			Excellent	Good	Poor	Missing	
Santa Monica Pier	6	5	0	5	0	1	Prior to the pandemic in March 2020, six total signs were present. During the last reporting period (August 2020-July 2021), HTB reported one sign was missing.

Location	Total No. of Signs (2020)	Total No. of Signs (2022)	Sign Condition (July 2022)				Notes
			Excellent	Good	Poor	Missing	
							During this reporting period, HTB reported that the sixth sign continues to be missing and is recommended for replacement.
Venice Beach Pier	6	5	0	4	1	1	<p>Prior to the pandemic in March 2020, six signs were monitored and recommended for cleaning. During the last reporting period (August 2020-July 2021), the pier was closed for renovations and HTB could not monitor the signs.</p> <p>During this reporting period, HTB reported one sign was missing, and another was illegible due to graffiti. Both are recommended for replacement.</p>
Ballona North Creek/Playa del Rey Jetty	4	2	0	1	1	2	<p>Prior to the pandemic in March 2020, four signs were tracked. During the last reporting period, HTB reported one sign was illegible and three were missing.</p> <p>During this reporting period, HTB reported that two signs were missing and one was illegible due to graffiti and recommended for replacement.</p>
Ballona South	4	0	0	0	0	4	<p>Prior to the pandemic in March 2020, four signs were tracked. During the last reporting period, HTB reported that four signs were missing.</p> <p>During this reporting period, HTB reported that the four signs continue to be missing and are recommended for replacement.</p>
Dockweiler Beach	1	0	0	0	0	1	<p>Prior to the pandemic in March 2020, one sign was tracked. During the last reporting period, HTB reported that one sign was missing.</p> <p>During this reporting period, HTB reported that the sign continues to be missing and is recommended for replacement.</p>
El Porto/El Segundo	1	1	-	1	-	-	Sign is in good condition.
Manhattan Beach	4	0	0	0	0	4	Prior to the pandemic in March 2020, four signs were tracked. During the last reporting period, HTB reported that four signs were missing.

Location	Total No. of Signs (2020)	Total No. of Signs (2022)	Sign Condition (July 2022)				Notes
			Excellent	Good	Poor	Missing	
							During this reporting period, HTB reported that four signs continue to be missing and are recommended for replacement.
Rocky Point	1	0	0	0	0	1	<p>Prior to the pandemic in March 2020, one sign was tracked. During the last reporting period, HTB reported that one sign was missing.</p> <p>During this reporting period, HTB reported that one sign continues to be missing and is recommended for replacement.</p>
Cabrillo Pier	8	8	0	8	0	0	<p>Prior to the pandemic in March 2020, eight signs were tracked. During the last and current reporting periods, Cabrillo reported eight signs were still present.</p> <p>During this reporting period, Cabrillo reported that eight signs are in good condition.</p>
Hermosa Beach Pier	5	4	0	2	2	1	<p>Prior to the pandemic in March 2020, five signs were tracked. During the last reporting period, HTB reported four signs were present.</p> <p>During this reporting period, HTB reported that one sign continues to be missing and two are in poor condition and recommended for replacement.</p>
Redondo Beach Pier	6	6	-	3	3	0	<p>Prior to the pandemic in March 2020, six signs were tracked. During the last reporting period, HTB reported six signs were present.</p> <p>During this reporting period, HTB reported that three signs are in poor condition and recommended for replacement.</p>
Pier J	4	3	0	3	0	1	<p>Prior to the pandemic in March 2020, four signs were tracked. During the last reporting period, HTB reported three signs were present.</p> <p>During this reporting period, HTB reported that one sign continues to be missing and is recommended for replacement.</p>
Rainbow Harbor	5	4	0	3	1	1	Prior to the pandemic in March 2020, five signs were tracked. During the last

Location	Total No. of Signs (2020)	Total No. of Signs (2022)	Sign Condition (July 2022)				Notes
			Excellent	Good	Poor	Missing	
							reporting period, HTB reported five signs were present. During this reporting period, HTB reported one sign is missing and one sign in poor condition are recommended for replacement.
Belmont Pier	5	5	0	5	0	0	Prior to the pandemic in March 2020, five signs were tracked. During the last reporting period, HTB reported five signs were present. During this reporting period, HTB reported five signs are present in good condition.
Seal Beach Pier	5	5	0	5	0	0	Prior to the pandemic in March 2020, five signs were tracked. During the last reporting period, HTB reported five signs were present. During this reporting period, HTB reported five signs are present in good condition.
Torrance Beach	2	0	0	0	0	2	Prior to the pandemic in March 2020, two signs were tracked. During the last reporting period, HTB reported two signs were missing. During this reporting period, HTB reported two signs continue to be missing and are recommended for replacement.
Royal Palms/White Point	2	2	0	1	1	0	Prior to the pandemic in March 2020, two signs were tracked. During the last reporting period, HTB reported two signs were present. During this reporting period, HTB reported one sign in poor condition is recommended for replacement.
Total	69	50	0	41	9	19	Prior to the pandemic in March 2020, sixty-nine total signs were tracked. During the last reporting period, HTB and Cabrillo monitored 45 total signs. Venice pier was closed for renovations so the five signs there were not monitored by HTB. During this reporting period, HTB and Cabrillo reported fifty total signs of

Location	Total No. of Signs (2020)	Total No. of Signs (2022)	Sign Condition (July 2022)				Notes
			Excellent	Good	Poor	Missing	
							which 19 signs are missing and 9 signs are in poor condition and recommended for replacement.

3. STATUS AND RECOMMENDATIONS

During this reporting period, HTB and Cabrillo monitored a total of 50 total DNC fish signs and recommended replacement of 19 missing signs and 9 signs in poor condition or damaged. The 19 missing signs are located at Santa Monica (1), Venice (1), Ballona North Creek/Playa del Rey Jetty (2), Ballona South (4), Dockweiler Beach (1), Manhattan Beach (4), Rocky Point (1), Hermosa Beach (1), Pier J (1), Rainbow Harbor (1), and Torrance Beach (2). The 16 damaged signs are located at Venice (1), Ballona North Creek/Playa del Rey Jetty (1), Cabrillo (7), Hermosa Beach (2), Redondo Beach (3), Rainbow Harbor (1), and Royal Palms/White Point (1).

As mentioned previously, LACDPH and City of Long Beach did not perform replacement activities during this reporting period and has ceased participation in FCEC programs. It is anticipated that HTB will take over the monitoring and maintenance activities for LACDPH and City of Long Beach in the next reporting period and will evaluate cleaning and/or replacement of the 28 missing and poor condition/damaged DNC fish pier signs identified. While the remaining signs are still legible, it is recommended to clean all DNC fish pier signs.

Missing signs are presumably due to theft during the pandemic and removed by cities during pier maintenance activities. Damaged signs are primarily due to environmental damage, bending from leaning, vandalism, and/or construction activities and damage is indicated most often at popular pier locations. During this reporting period and the prior reporting periods, many signs were reported as bent due to leaning (e.g., Cabrillo and Venice piers). This indicates that the pier sign height may be too low at some locations. In addition, signs located in low height makes it easier for vandalism and removal. By contrast, pier signs at Pier J are placed higher up on poles and show less evidence of being bent from leaning and vandalism. However, if signs are located too high, they are not easily readable by pier anglers. It was previously reported that the ideal height is 9 feet and has less maintenance activities (e.g., Pier J and Rainbow Harbor). However, FCEC partners have recently indicated they did not easily observe signs at this height at Pier J and Rainbow Harbor. As has been recommended in previous reports, it is recommended for FCEC partners to re-evaluate the pier sign height at all piers, particularly at Venice Beach and Cabrillo Piers, to identify signs that could be placed at a more effective height.

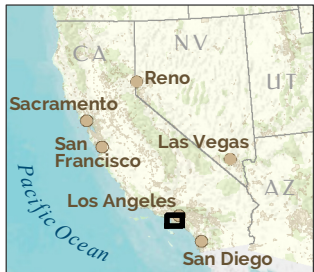
It is recommended that the FCEC partners evaluate the locations of existing DNC pier sign locations and install new and/or redistribute some of the existing signs to improve angler outreach and visibility. HTB reported that some DNC fish pier signs are not well located for anglers to easily view and should be considered for relocation. Some DNC fish pier signs located at Santa Monica, Pier J, Rainbow Harbor, Ballona Creek, El Porto/El Segundo, and Royal Palms/White Point may be redistributed to more visible locations for anglers. HTB noted that one (now missing) sign was located on a trash receptacle and recommended installing a new sign

on the north end of the pier where anglers frequent but there currently is not coverage. There are two new renovated piers at Pier J where DNC fish pier signs could be placed. At Rainbow Harbor, two DNC fish pier signs are located near parking structures and are not well located for anglers to view. HTB observed that Ballona Creek is a rocky jetty that is located far away from parking areas and that mostly sport angler fishing with a license is conducted at this location, so these signs may be evaluated for relocation. There is one DNC fish pier sign that may also be evaluated for relocation at El Porto/El Segundo where there is not much angler traffic in this area. Royal Palm/White Point pier has two pier signs that are located on a lifeguard tower which could be relocated because they are not well situated to the areas with the most angler traffic. HTB noted that there are no existing poles or structures at this pier to hang signs.

During the prior reporting period and prior FCEC meetings, partners have inquired about ultra-violet coating and/or adding a quick reference (QR) code to the pier signs that link to the FCEC website for additional information. It is recommended that ultra-violet coating and a QR code be considered for future production of the DNC fish sign inventory.

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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 Status August 2021-July 2022

Pier Angler Outreach Program
Table A: Pier Sign Status August 2021 - July 2022

	Pier Location	Total No. of Signs Present (as of July 2022)	NOTES
1	Santa Monica	5	1. Missing. Needs replacement. 2. Good condition and legible. Dirty, some scrapes, rips, and graffiti. 3. Good condition and legible. 4. Good condition and legible. Dirty, some scrapes and a rip. 5. Good condition and legible. 6. Good condition and legible. Dirty, some scrapes, sticker, and graffiti.
2	Venice	5	1. Missing. Needs replacement. 2. Good condition and legible. 3. Good condition and legible. 4. Good condition and legible. 5. Poor condition and illegible. Dirty, graffiti, sticker and bent. Needs cleaning or replacement. 6. Good, some light graffiti in top right corner. Readable.
3	Ballona North Creek/Playa del Rey Jetty	2	1. Good condition and legible. Dirty. 2. Poor condition and illegible. Dirty and graffiti. Needs cleaning or replacement.
4	Ballona South	0	1. Missing. Needs replacement. 2. Missing. Needs replacement. 3. Missing. Needs replacement. 4. Missing. Needs replacement.
5	Dockweiler Beach	0	1. Missing. Needs replacement.
6	El Porto/El Segundo	1	1. Good condition and legible.
7	Manhattan Beach	0	1. Missing. Needs replacement. 2. Missing. Needs replacement. 3. Missing. Needs replacement. 4. Missing. Needs replacement.
8	Rocky Point	0	1. Missing. Needs replacement.
9	Cabrillo	8	1. Good condition and legible. Many cracks. 2. Good condition and legible. Peeling, dirty, and bent. 3. Good condition and legible. Marked, dirty, and bent. 4. Good condition and legible. Graffiti, peeled, dirty, and bent. 5. Good condition and legible. Dirty and bent. 6. Good condition and legible. Some scrapes, dirty, and bent. 7. Good condition and legible. Graffiti, dirty, and bent. 8. Good condition and legible. Scrapes, graffiti, and bent.
10	Hermosa Beach	4	1. Missing. Needs replacement. 2. Good condition and legible. Some cracks and fading. 3. Good condition and legible. Some cracks.

Pier Angler Outreach Program
Table A: Pier Sign Status August 2021 - July 2022

	Pier Location	Total No. of Signs Present (as of July 2022)	NOTES
			<p>4. Poor condition and still legible. Graffiti, torn, and chipped. Needs replacement.</p> <p>5. Poor condition and still legible. Dirty, fading, torn, and chipped. Needs replacement.</p>
11	Redondo Beach	6	<p>1. Good condition and legible.</p> <p>2. Poor condition and still legible. Weathered, some cracks and scrapes, and chipped. Needs cleaning or replacement.</p> <p>3. Good condition and legible. Some graffiti and peeling.</p> <p>4. Good condition and legible. Some chipping on corners.</p> <p>5. Poor condition and still legible. Graffiti, chipped, and weathered. Needs cleaning or replacement.</p> <p>6. Poor condition and still legible. Graffiti. Needs cleaning or replacement.</p>
12	Torrance Beach	0	<p>1. Missing. Needs replacement.</p> <p>2. Missing. Needs replacement.</p>
13	Pier J	3	<p>1. Good condition and legible.</p> <p>2. Good condition and legible.</p> <p>3. Good condition and legible.</p> <p>4. Missing. Needs replacement.</p>
14	Rainbow Harbor	4	<p>1. Good condition and legible.</p> <p>2. Good condition and legible.</p> <p>3. Missing. Needs replacement.</p> <p>4. Good condition and legible.</p> <p>5. Poor condition and illegible. Graffiti and dirty. Needs cleaning or replacement.</p>
15	Belmont	5	<p>1. Good condition and legible.</p> <p>2. Good condition and legible.</p> <p>3. Good condition and legible.</p> <p>4. Good condition and legible.</p> <p>5. Good condition and legible.</p>
16	Seal Beach	5	<p>1. Good condition and legible.</p> <p>2. Good condition and legible.</p> <p>3. Good condition and legible.</p> <p>4. Good condition and legible.</p> <p>5. Good condition and legible.</p>
17	Royal Palms/White Point	2	<p>1. Poor condition and still legible. Dirty, scrapes, and bent. Needs cleaning or replacement.</p> <p>2. Good condition and legible.</p>
18	Burton Chase 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.

Pier Angler Outreach Program
Table A: Pier Sign Status August 2021 - July 2022

	Pier Location	Total No. of Signs Present (as of July 2022)	NOTES
19	Bluff/Malaga Cove	--	Limited beach and parking access. Not a likely place for people to fish. No sign is needed.
20	Lunada Bay	--	Unable to attach sign at beach access. There are no utilities post on site or other surfaces where one can attach signs.
21	Point Vicente	--	FCEC Partners decided to remove DNC signs within the Marine Conservation Area in 2016.
22	Long Point	--	FCEC Partners decided to remove DNC signs within the Marine Conservation Area in 2016.
23	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.
24	Portuguese Bend	--	FCEC Partners decided to remove DNC signs within Marine Conservation Area in 2016.
25	Point Fermin	--	No coastal access.

APPENDIX B

Pier Sign Photographs August 2021-July 2022

Santa Monica Pier

Six total signs were previously located at this pier. Five total signs were reported during this reporting period and the reporting period prior to that. One missing sign (#1) is recommended for replacement.



#1



#2



#3



#3



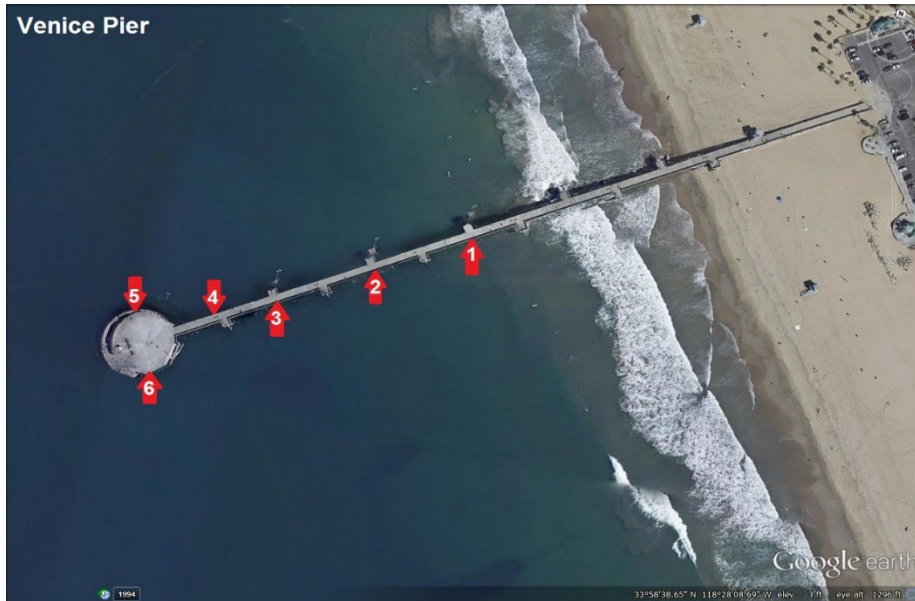
#4



#6

Venice Pier

Six signs were previously located at this pier. Five signs were reported during this reporting period. During the last reporting period Venice Pier was closed for renovations and no signs were monitored. One missing (#1) and damaged (#5) signs are recommended for replacement.



#1



#2



#3



#4



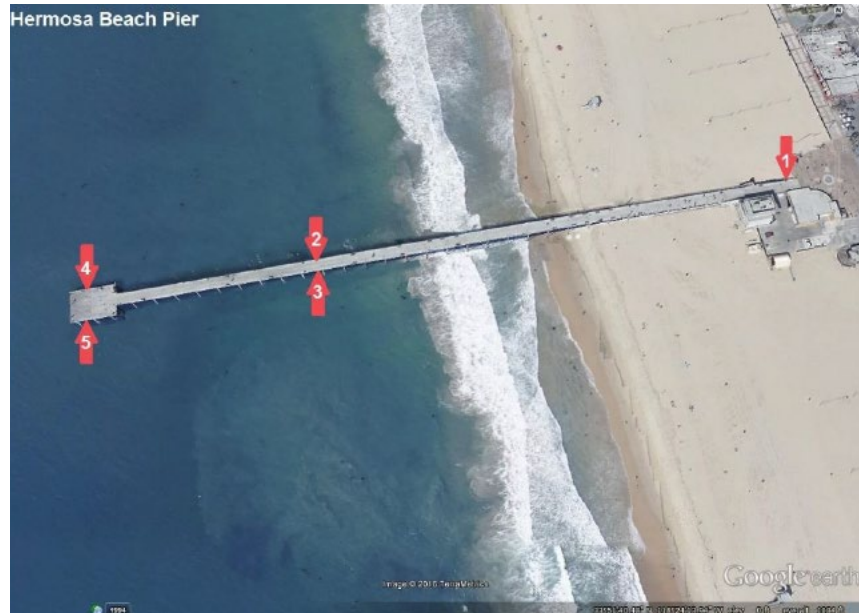
#5



#6

Hermosa Beach Pier

Five signs were previously located at this pier. Four signs were reported during this reporting period and the period prior to that. One missing (#1) and two damaged (#4 and #5) signs are recommended for replacement.



#1



#2



#3



#4



#5

Redondo Beach Pier

Six total signs are located at this pier. Three signs (#2, #5, and #6) are recommended for replacement.



#1



#2



#3



#4



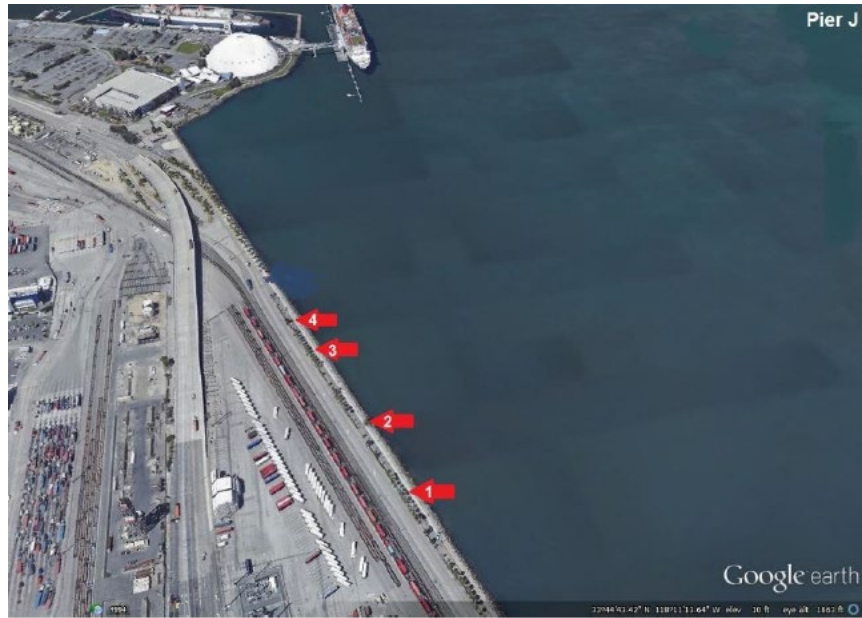
#5



#6

Pier J

Four total signs were previously located at this pier. Three total signs were reported during this period and the period prior to that. One missing sign (#4) is recommended for replacement.



#1



#2



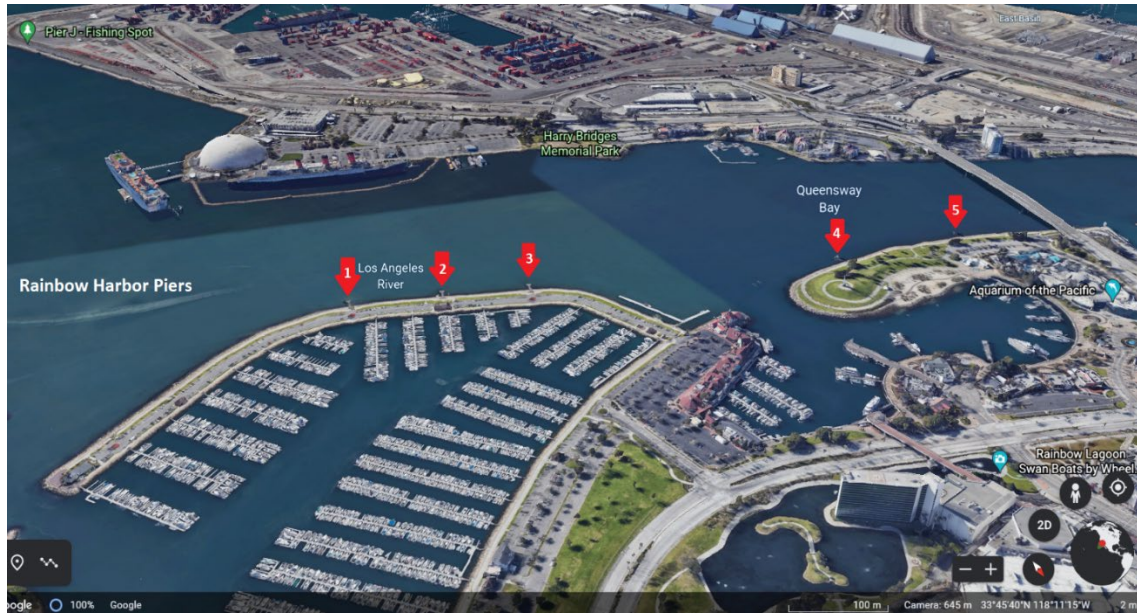
#3



#4

Rainbow Harbor Pier

Five total signs were previously located at this pier during the previous reporting periods. Four total signs were reported during this reporting period. One missing (#3) and damaged (#5) signs are recommended for replacement.



#1



#2



#3



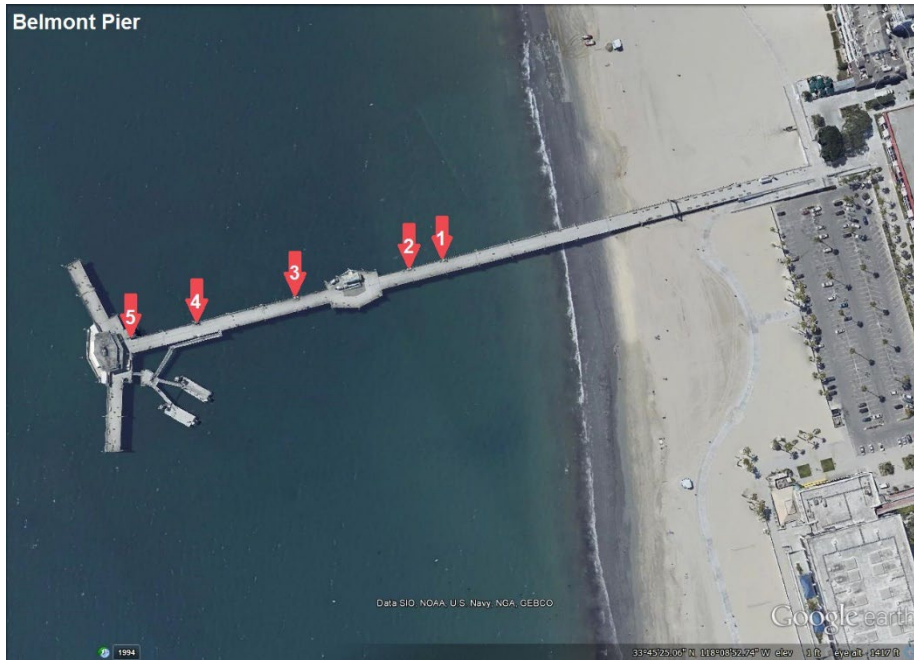
#4



#5

Belmont Pier

Five total signs are located at this pier and in good condition.



#1



#2



#3



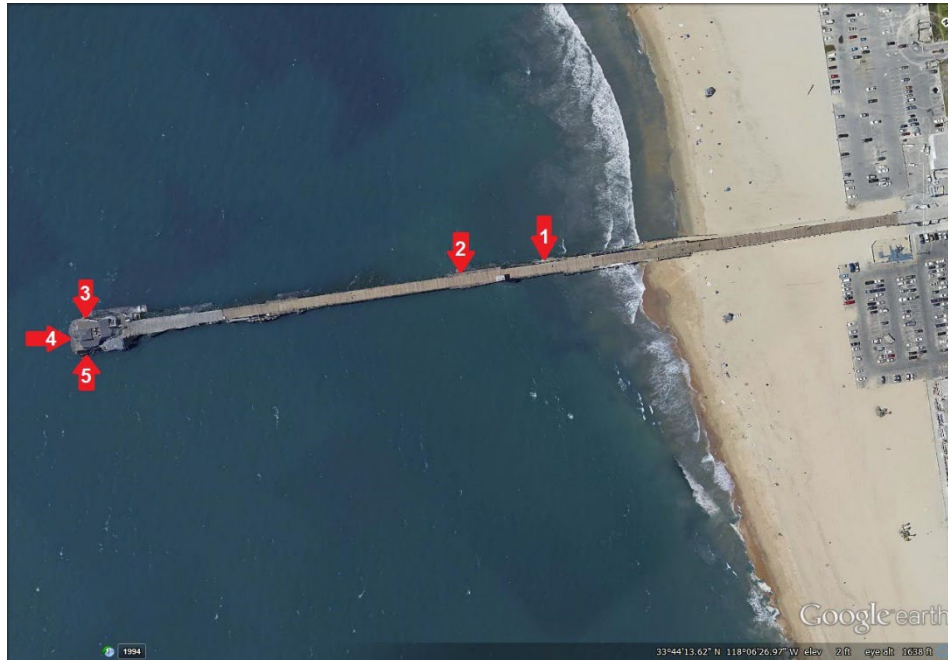
#4



#5

Seal Beach Pier

Five total signs are located at this pier and are in good condition.



#1



#2



#3



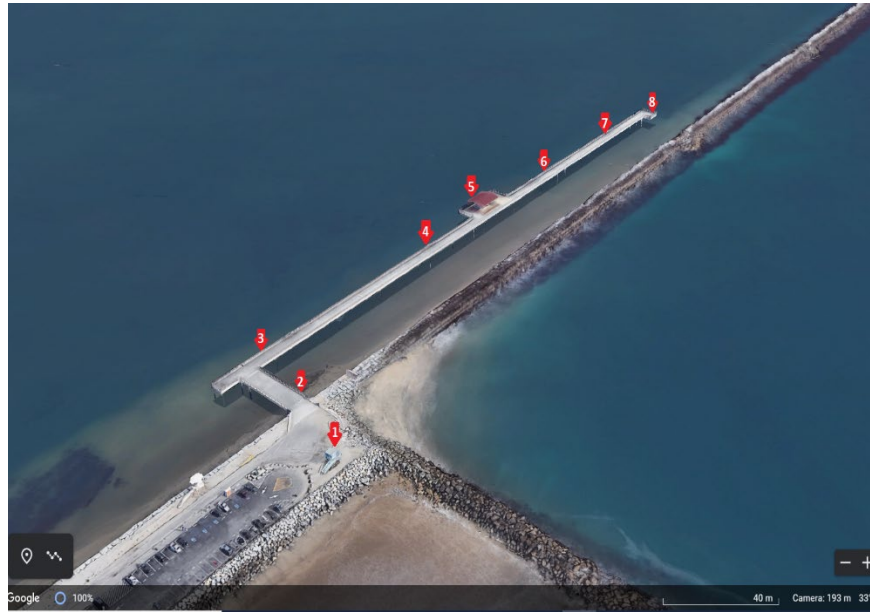
#4



#5

Cabrillo Pier

Eight total signs are located at this pier. Eight signs are in good condition.



#1



#2



#3



#4



#5



#6



#7



#8

Ballona North Creek/Playa del Rey Jetty

Four total signs were previously located at this pier. Two total signs were reported during this reporting period compared to one sign in the period prior to that. Two missing and one damaged (#2) signs are recommended for replacement. The previous locations of the two missing sign locations is unknown.



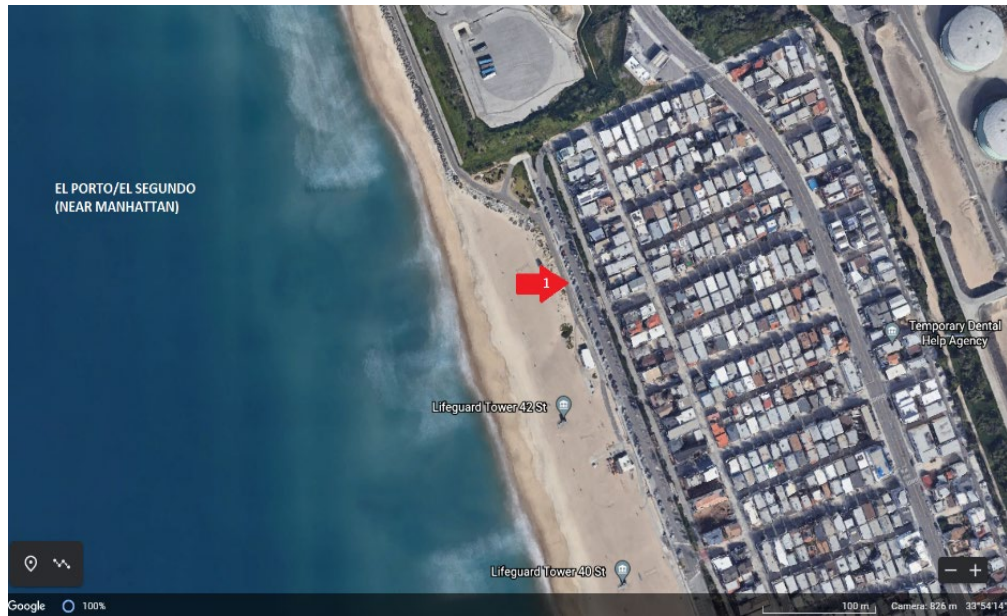
#1



#2

El Porto/El Segundo

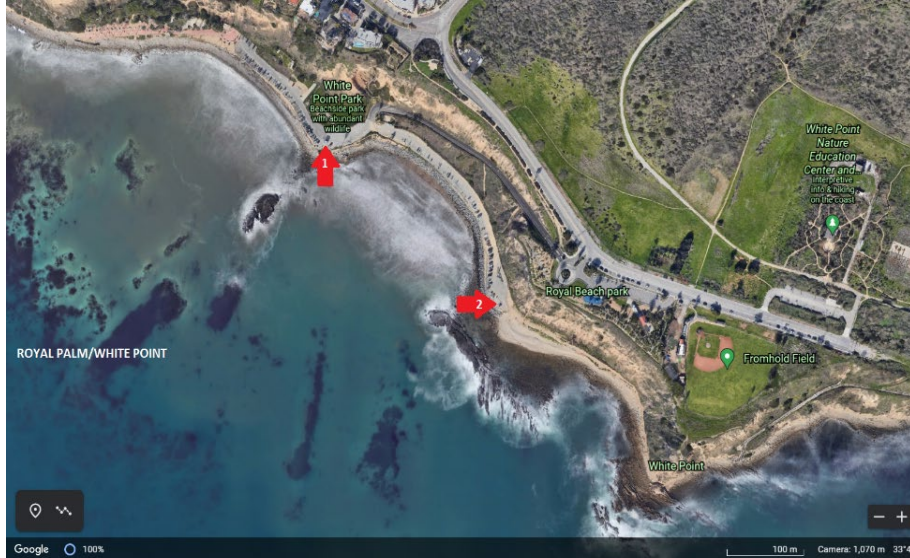
One total sign is located at this pier and is in good condition.



#1

Royal Palm/White Point

Two total signs are located at this pier. One sign (#1) is damaged and recommended for cleaning or replacement.



#1



#2