



**FISH CONTAMINATION EDUCATION COLLABORATIVE**

**PIER SIGN SUMMARY**

**August 2020 – July 2021**

**Palos Verdes Shelf Superfund Site**

**Los Angeles County, California**

**EPA IDENTIFICATION NO. CAD008242711**

**REMEDIAL ACTION CONTRACT 3 FULL SERVICE**

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*Prepared for*

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**ACRONYMS AND ABBREVIATIONS**

Cabrillo	Cabrillo Marine Aquarium
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
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 Department of Health and Human Services, Bureau of Environmental Health (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, August 2018 through July 2019, and August 2019 through July 2020. 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, were reported to be in poor condition. However, 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 a gap in monitoring activities that had been identified were resolved during the reporting period from 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 reporting 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.

Pier sign evaluations were performed between August 2019 and February 2020 during the August 2019 through July 2020 reporting period. 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 August 2019 through July 2020 reporting period, a total of 69 signs were monitored. Of the 69 signs, 33 DNC fish signs were cleaned and 7 were replaced with new signs.

## **2. PIER SIGN CONDITIONS (AUGUST 2020-JULY 2021)**

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. The closures and restrictions were implemented in March 2020 and continued through this reporting period.

Typically, LACDPH, HTB, Cabrillo, and the City of Long Beach perform pier sign tracking at 18 piers (Figure 1). HTB and Cabrillo typically monitor the pier signs as part of their in-person pier angler outreach activities. HTB typically monitors sign conditions located at 8 piers including Santa Monica Pier, Hermosa Pier, Redondo Pier, Pier J, Rainbow Harbor, Belmont Pier, Seal Beach Pier, and Venice Pier. Cabrillo monitors sign conditions at Cabrillo pier. The City of Long Beach monitors sign conditions at Rainbow Harbor and Pier J (that are not already tracked by HTB) and cleans and replaces signs as needed. With exception to the piers in Long Beach, LACDPH tracks and monitors the 18 pier locations, cleans, and replaces signs as needed.

The City of Long Beach decided not to continue participating in the FCEC Program. Therefore, the City of Long Beach did not perform pier sign monitoring, cleaning, or replacement activities on behalf of EPA during this reporting period. Additionally, due to the COVID-19 pandemic, LACDPH was involved in public health activities and did not conduct pier sign monitoring, cleaning, or replacement during this reporting period.

HTB and Cabrillo suspended in-person angler outreach at the piers in March 2020. HTB resumed pier angler outreach activities in May 2021 in accordance with Federal, State, and local COVID-19 guidelines and under an EPA-approved Health and Safety Plan. Cabrillo did not resume pier angler outreach activities during this reporting period.

In June 2021, HTB performed a pier sign evaluation at the 18 piers previously covered by HTB, Cabrillo, City of Long Beach, and LACDPH. During the monitoring event, Venice Pier was closed for repairs and 6 signs at this pier were not assessed. HTB reported that 18 of the previously tracked signs by LACDPH were missing. Therefore, HTB only assessed a total of 45 of the 69 signs during this reporting period. HTB did not perform sign cleaning and replacement. Damaged signs were primarily due to signs bent from leaning, graffiti, and environmental conditions (e.g., storm events, rust, sunlight).

Appendix A present the pier sign condition assessment from HTB in June 2021, and Appendix B includes photographs of the pier signs. Table 1 summarizes the pier sign conditions as of July 2021.

**Table 1. Pier Sign Conditions**

Location	Total No. of Signs (2020)	Total No. of Signs (2021)	Sign Condition (June 2021)				Notes
			Excellent	Good	OK	Poor	
Santa Monica Pier	6	5	-	5	-	-	<p>Six signs were present during the last reporting period and were in excellent (3) and good condition (3).</p> <p>HTB reported five of the six signs in good condition and one missing sign during this reporting period.</p> <p>Based on the sign conditions assessed during this reporting period and the one prior, one missing sign requires replacement when LACDPH resumes activities.</p>
Venice Beach Pier	6	0	-	-	-	-	<p>Six signs were present during the last reporting period, all of which were identified for cleaning.</p> <p>The pier was closed for renovations during the reporting period and therefore the signs were not monitored.</p>

Location	Total No. of Signs (2020)	Total No. of Signs (2021)	Sign Condition (June 2021)				Notes
			Excellent	Good	OK	Poor	
							Based on the conditions assessed during this reporting period and the one prior, six signs may require cleaning or replacement when the pier is re-opened and LACDPH resumes pier sign activities.
<b>Marina Del Rey/ Burton Chase Park</b>	0	0	-	-	-	-	One sign was removed by LACDPH in 2015. There is no fishing at this location.
<b>Ballona North Creek/Playa del Rey Jetty</b>	4	1	-	-	-	1	Four signs were present during the previous reporting period, three of which were identified for replacement.  HTB reported one sign is illegible (from paint, graffiti, and decals) and three signs were missing during this reporting period.  Based on the conditions assessed during this reporting period and the one prior, four signs require replacement when LACDPH resumes pier sign activities.
<b>Ballona South</b>	4	0	-	-	-	-	Four signs were present during the previous reporting period. One sign could not be accessed due to construction, and three signs were identified for replacement.  HTB reported that 4 signs were missing during this reporting period.  Based on the conditions assessed during this reporting period and the one prior, four signs require replacement when LACDPH resumes pier sign activities.
<b>Dockweiler Beach</b>	1	0	-	-	-	-	One sign, replaced in April 2019, was present during the previous reporting period.  HTB reported that one sign is missing during this reporting period.  Based on the conditions assessed during this reporting period and the one prior, one sign requires replacement when LACDPH resumes pier sign activities.
<b>El Porto/El Segundo</b>	1	1	-	1	-	-	Sign is in good condition.
<b>Manhattan Beach</b>	4	0	-	-	-	-	Four signs were present during the previous reporting period, four of which

Location	Total No. of Signs (2020)	Total No. of Signs (2021)	Sign Condition (June 2021)				Notes
			Excellent	Good	OK	Poor	
							were identified for replacement. HTB reported 4 signs missing during this reporting period. Based on the conditions assessed during this reporting period and the one prior, four signs require replacement when LACDPH resumes pier sign activities.
<b>Rocky Point</b>	1	0	-	-	-	-	One sign was present during the previous reporting period and was identified for replacement. HTB reported one sign missing during this reporting period. Based on the conditions assessed during this reporting period and the one prior, one sign requires replacement when LACDPH resumes pier sign activities.
<b>Cabrillo Pier</b>	8	8	-	5	3	-	Five signs are in good condition. Three signs in fair condition are dirty, peeling, and/or bent from leaning.
<b>Hermosa Beach Pier</b>	5	4	-	2	1	1	Five signs were present during the last reporting period and two were identified for replacement. HTB reported three signs in Good or OK condition, one sign in poor condition, and one sign missing during this reporting period. Based on the sign conditions assessed during this reporting period and the one prior, two signs require replacement when LACDPH resumes pier sign activities.
<b>Redondo Beach Pier</b>	6	6	-	5	1	-	Signs in fairly good condition, one is dirty, peeling, and covered in scrapes, but is still legible.
<b>Pier J</b>	4	3	-	3	-	-	Four signs were present during the previous reporting period. HTB reported three signs signs in good condition and one missing during this reporting period. Based on the sign conditions assessed during this reporting period and the one



Location	Total No. of Signs (2020)	Total No. of Signs (2021)	Sign Condition (June 2021)				Notes
			Excellent	Good	OK	Poor	
							prior, one sign requires replacement when LACDPH resumes pier sign activities.
<b>Rainbow Harbor</b>	5	5	-	5	-	-	Signs are in good condition.
<b>Belmont Pier</b>	5	5	-	5	-	-	Signs in fairly good condition, four are covered in scrapes and have decals stuck to them, but all signs are still legible.
<b>Seal Beach Pier</b>	5	5	-	5	-	-	Signs are in good condition.
<b>Torrance Beach</b>	2	0	-	-	-	-	Two signs were present during the previous reporting period.  HTB reported two missing signs during this reporting period.  Based on the conditions assessed during this reporting period and the one prior, two signs require replacement when LACDPH resumes pier sign activities.
<b>Royal Palms/White Point</b>	2	2	-	2	-	-	Signs are in good condition.
<b>Total</b>	<b>69</b>	<b>45</b>	<b>0</b>	<b>38</b>	<b>5</b>	<b>2</b>	During the previous reporting period, 69 total signs were present at the piers.  Due to Venice Beach pier construction, 6 signs at this pier were not monitored. Eighteen signs were missing at the remaining piers. Therefore, 45 of the previously recorded 69 signs were present during this reporting period.

### 3. STATUS AND RECOMMENDATIONS

During the last reporting period, 69 total DNC fish signs were tracked and 14 of the signs were identified for replacement by LACDPH. 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). Due to the Covid-19 pandemic, LACDPH did not perform replacement activities during this reporting period.

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 discrepancy when they resume pier sign inspections.

In June 2021, HTB evaluated conditions of the 69 total DNC fish signs at 18 piers. HTB did not monitor 6 signs located on Venice Beach Pier due to construction. HTB reported that 18 DNC fish signs previously recorded, including the 14 signs identified for replacement during the

previous reporting period, were missing. These 18 signs will need to be replaced when LACDPH resumes pier sign inspections, cleanings, and/or replacements. 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 and comparable to other partners (i.e., HTB and Cabrillo) that monitor the DNC fish signs at overlapping piers.

Of the 45 signs assessed by HTB, 2 were identified for replacement during the next reporting period at Ballona North Creek/Playa del Rey Jetty (1) and Hermosa Beach Pier (1). 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 anglers at multiple piers, including Cabrillo pier during this reporting period, and Venice Beach pier during the prior reporting period. This indicates that pier sign height is too low at these and possibly at other locations. In addition, signs located in low height makes it easier for vandalism and removal. By contrast, pier signs at Rainbow Harbor are placed higher up 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 and Cabrillo piers. 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).

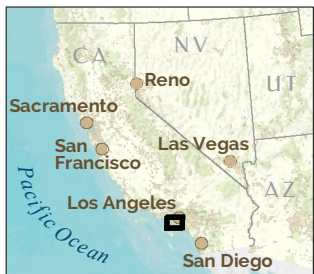
During the 2018-2019 reporting period, HTB noticed that one sign on the Hermosa Beach pier was moved to the side of a trash receptacle, making it harder for anglers to see. That sign was missing during this reporting period. Additionally, HTB observed that four Santa Monica pier signs are located very 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 that these locations are re-evaluated and that signs are relocated to more visible areas on the piers. In addition, two signs, one from Santa Monica Pier and one from at Pier J were missing during this reporting period. The circumstances of missing signs are not known. It is recommended that these discrepancies be resolved during the next reporting period after LACDPH resumes monitoring, maintenance, and reporting activities.

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

During the prior reporting period and prior FCEC meetings, partners have inquired about ultra-violet coating on the pier signs. It is recommended that ultra-violet coating be considered for future production of the DNC fish sign inventory. In the next reporting period, it is also recommended to find another entity to conduct the sign inspection, cleaning, and replacement efforts previously conducted by the City of Long Beach at Rainbow Harbor and Pier J.

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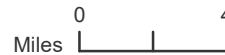
**Figure 1 – Do Not Consume Fish Sign Pier Locations Map**



**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**

Heal the Bay  
Pier Angler Outreach Program  
Table A: Pier Signage Update August 2020 - July 2021

Pier Location	Total No. of Signs Present	NOTES
Santa Monica	5	<ol style="list-style-type: none"> <li>1. Good condition. A few scrapes, small graffiti on top.</li> <li>2. Good condition</li> <li>3. Good condition. A few scrapes and a rip on bottom right corner.</li> <li>4. Good condition.</li> <li>5. Good condition. A few scrapes and a sticker on upper right corner.</li> </ol>
Venice	0	Pier closed for construction during this reporting period.
Hermosa Beach	4	<ol style="list-style-type: none"> <li>1. Good condition. A few scrapes</li> <li>2. Good condition. Many scrapes</li> <li>3. Poor condition. Needs to be replaced.</li> <li>4. Fairly good condition. Dirty with scratches but readable.</li> </ol>
Redondo Beach	6	<ol style="list-style-type: none"> <li>1. Good condition. A bit dirty.</li> <li>2. Fairly Good condition. Dirty with many scrapes. Bottom is peeling.</li> <li>3. Good condition. Dirty. Bottom is peeling.</li> <li>4. Good condition. A bit dirty.</li> <li>5. Good condition. Many scrapes.</li> <li>6. Good condition. A few scrapes. Upper left corner is peeling.</li> </ol>
Pier J	3	<ol style="list-style-type: none"> <li>1. Good condition.</li> <li>2. Good condition.</li> <li>3. Good condition.</li> </ol>
Rainbow Harbor	5	<ol style="list-style-type: none"> <li>1. Good condition. Small sticker.</li> <li>2. Good condition.</li> <li>3. Good condition.</li> <li>4. Good condition.</li> <li>5. Good condition.</li> </ol>

Heal the Bay  
Pier Angler Outreach Program  
Table A: Pier Signage Update August 2020 - July 2021

Pier Location	Total No. of Signs Present	NOTES
Belmont	5	<ol style="list-style-type: none"> <li>1. Good condition. Many scratches.</li> <li>2. Good condition. A bit dirty. Some scratches and a decal on bottom right side.</li> <li>3. Good condition. A bit dirty. Some scratches and a decal on bottom left side.</li> <li>4. Good condition. Many scratches and a sticker on upper right side.</li> <li>5. Good condition. Some scratches.</li> </ol>
Seal Beach	5	<ol style="list-style-type: none"> <li>1. Good condition.</li> <li>2. Good condition. Decal on upper right.</li> <li>3. Good condition. Decal on upper right.</li> <li>4. Good condition. A few scrapes.</li> <li>5. Good condition.</li> </ol>
Cabrillo	8	<ol style="list-style-type: none"> <li>1. Good condition. Many cracks.</li> <li>2. Fairly good condition. Bottom right corner is peeling. Sign is bent from leaning.</li> <li>3. Good condition. Marker marks.</li> <li>4. Fairly good condition. Multiple decals. Peeled on top.</li> <li>5. Good condition. Bend from leaning. A bit dirty.</li> <li>6. Good condition. A few scrapes.</li> <li>7. Good condition. Bent due to leaning. Decal on the upper right corner.</li> <li>8. Fairly good condition. Bent due to leaning. Scrapes on top and marker marks.</li> </ol>
Ballona North Creek/Playa del Rey Jetty	1	<ol style="list-style-type: none"> <li>1. Poor condition. Many decals. Covered in paint. Requires replacement.</li> </ol>
El Porto/El Segundo	1	<ol style="list-style-type: none"> <li>1. Good condition. Some graffiti. A bit dirty.</li> </ol>
Royal Palm/White Point	2	<ol style="list-style-type: none"> <li>1. Good condition. Some scrapes.</li> <li>2. Good condition. Some decals.</li> </ol>

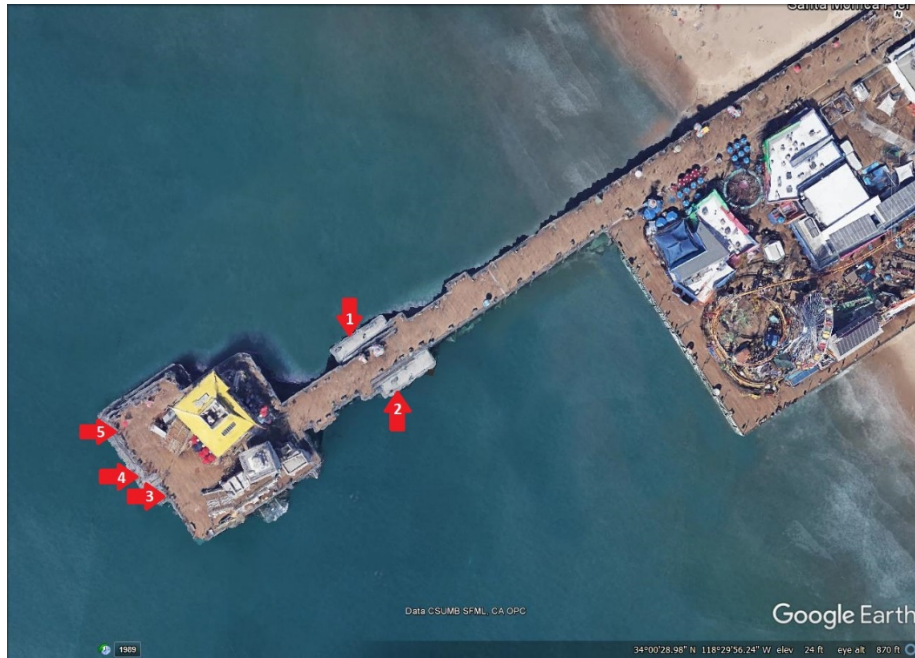


**APPENDIX B**

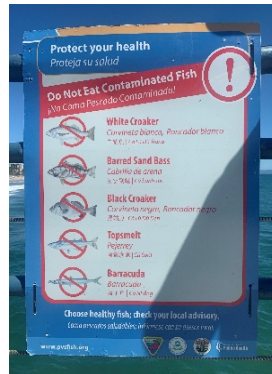
**Pier Sign Locations Photographs**

## Santa Monica Pier

Five total signs were reported compared to six during the previous reporting period. No signs were cleaned or replaced during this reporting period.



#1



#2



#3



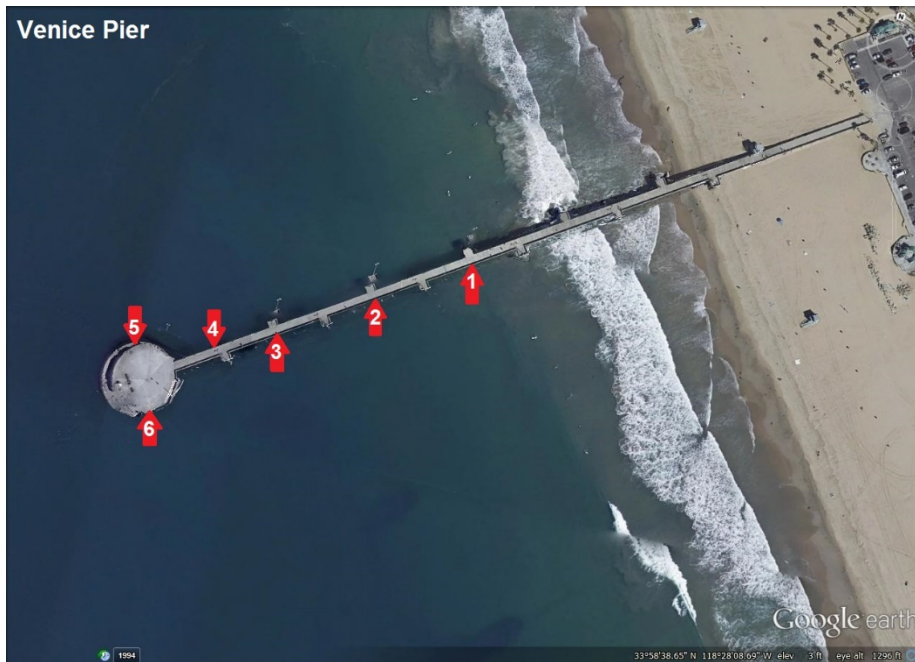
#4



#5

## Venice Pier

Venice Pier was closed for repair during this reporting period. The pier reopened in Summer 2021.



Sign not observed  
during this  
reporting period

#1

Sign not observed  
during this  
reporting period

#2

Sign not observed  
during this  
reporting period

#3

Sign not observed  
during this  
reporting period

#4

Sign not observed  
during this  
reporting period

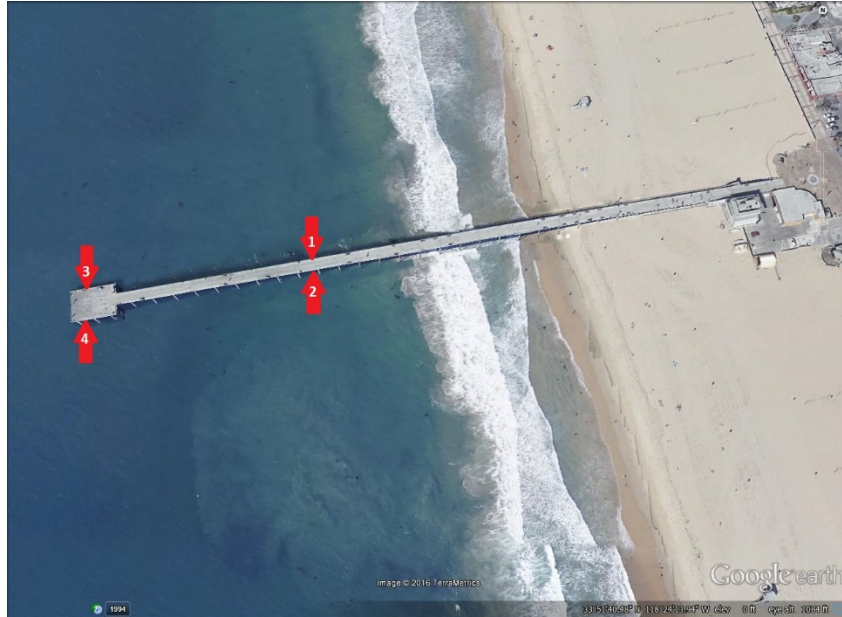
#5

Sign not observed  
during this  
reporting period

#6

## Hermosa Beach Pier

Four total signs were reported compared to five during the previous reporting period. One sign (#3) identified for replacement, and one sign needs to be cleaned (#4). No signs were cleaned or replaced during this reporting period.



#1



#2



#3



#4



# Redondo Beach Pier

Six total signs. No signs were cleaned or replaced during this reporting period.



#1



#2



#3



#4



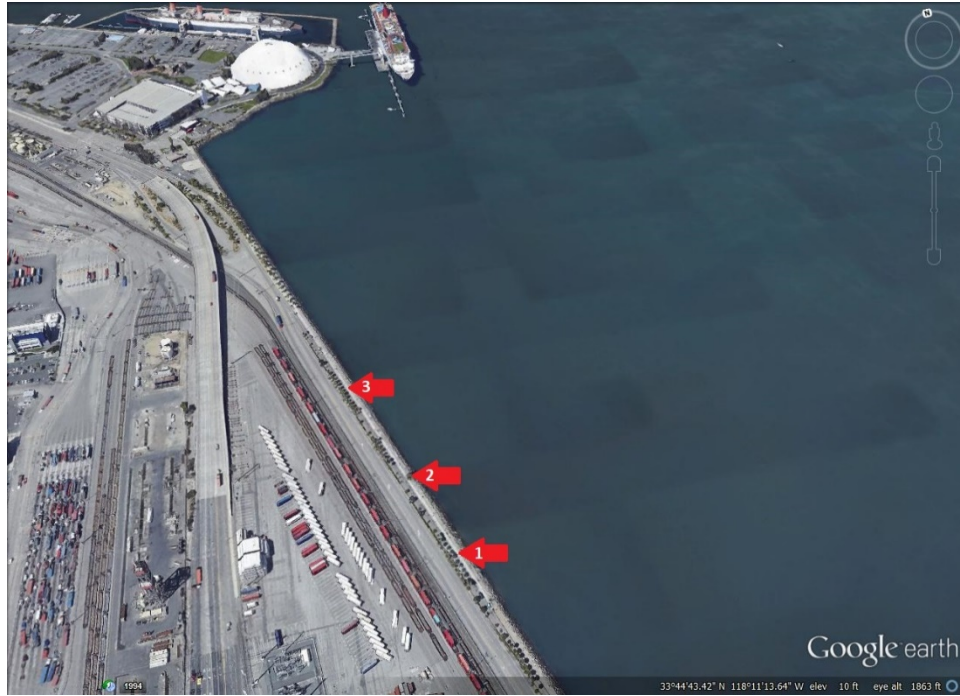
#5



#6

**Pier J**

Three total signs were reported compared to four during the previous reporting period. No signs were cleaned or replaced during this reporting period.



#1



#2

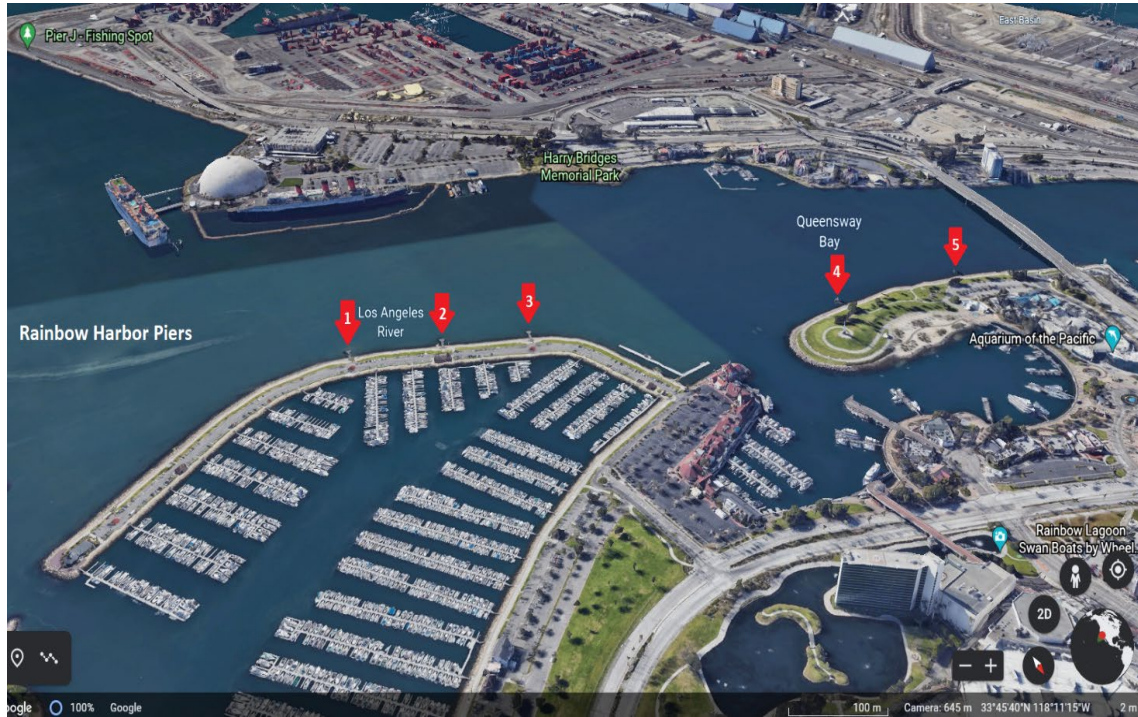


#3



# Rainbow Harbor Pier

Five total signs. No signs were cleaned or replaced during this reporting period.



#1



#2



#3



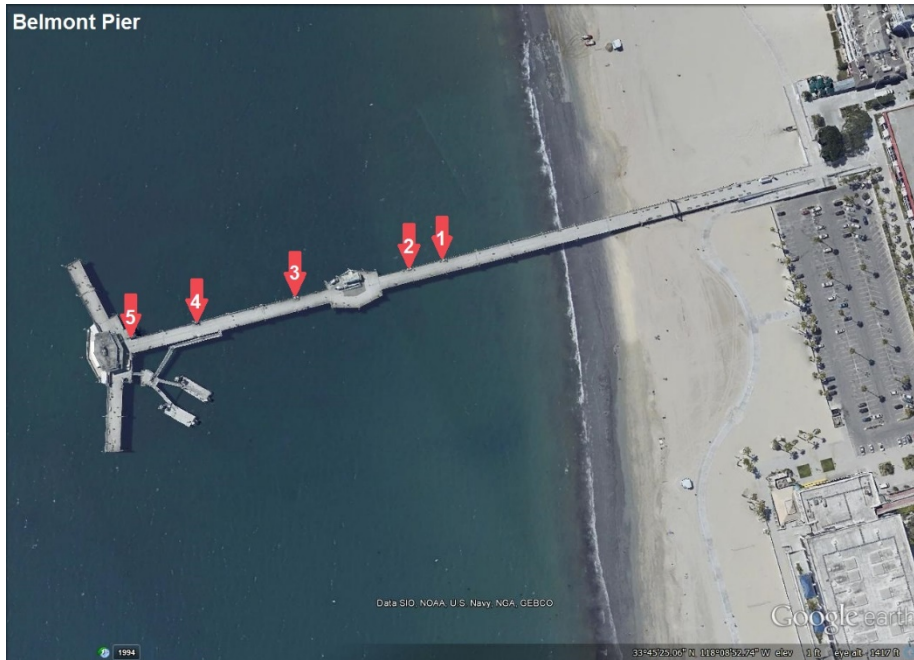
#4



#5

# Belmont Pier

Five signs total. Three signs (#1-#3) need cleaning. No signs were cleaned or replaced during this reporting period. No signs need replacement



#1



#2



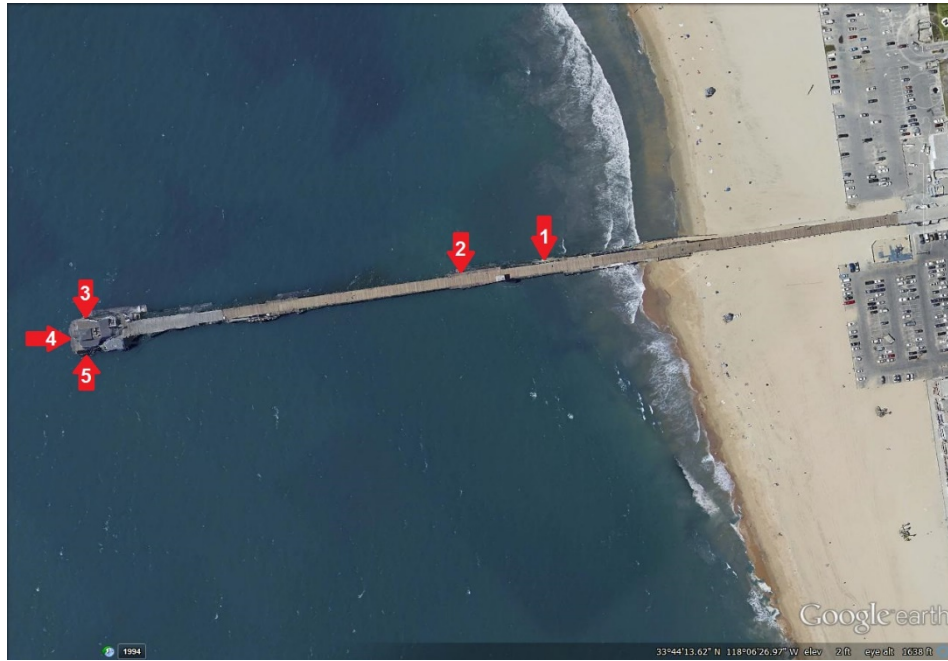
#3





# Seal Beach Pier

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



#1



#2



#3



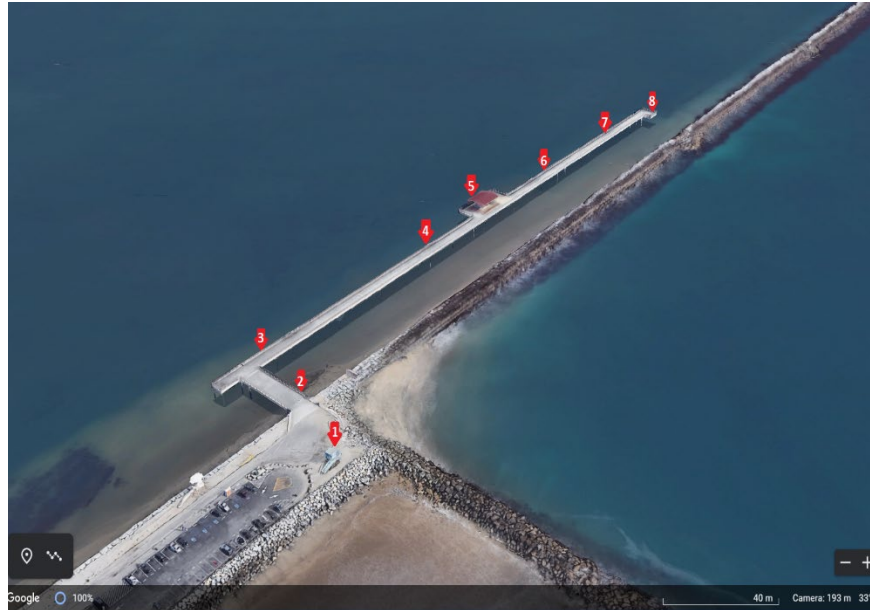
#4



#5

# Cabrillo Pier

Eight total signs. No signs were cleaned or replaced during this reporting period. No signs need replacement



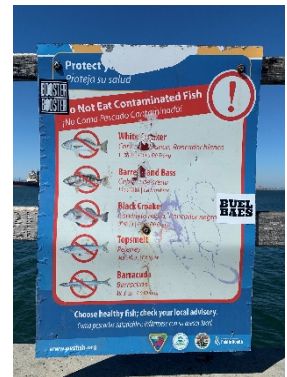
#1



#2



#3



#4



#5



#6



#7



#8



## Ballona North Creek/Playa del Rey Jetty

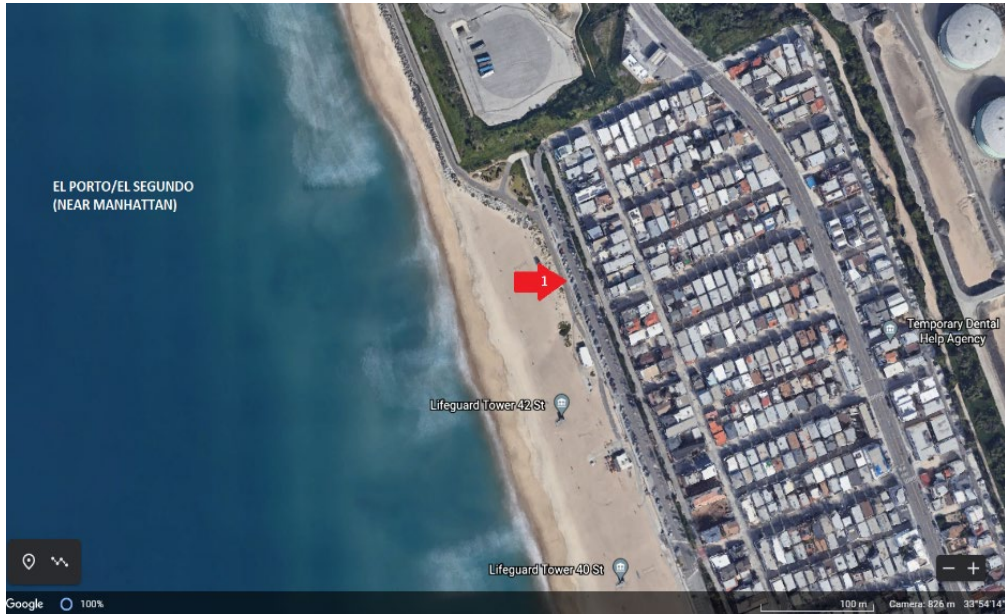
One total sign that was identified for replacement. Four total signs were reported during the prior reporting period. No signs were cleaned or replaced during this reporting period.



#1

## El Porto/El Segundo

One total sign. No signs were cleaned or replaced during this reporting period.



#1

## Royal Palm/White Point

Two total signs. No signs were cleaned or replaced during this reporting period.



#1



#2