



FINAL

FISH CONTAMINATION EDUCATION COLLABORATIVE

PIER SIGN SUMMARY

August 2017 – July 2018

Palos Verdes Shelf Superfund Site

Los Angeles County, California

EPA IDENTIFICATION NO. CAD008242711

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Prepared for

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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

1.0 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 are 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, and August 2016 through July 2017. 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 City of Long Beach. The remaining signs were addressed during the following reporting period. The report also noted discrepancies on the amount of DNC fish signs reported at the piers 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, as discussed in Section 2.0.

2.0 PIER SIGN CONDITIONS (AUGUST 2017-JULY 2018)

LACDPH, HTB, Cabrillo, and the City of Long Beach performed pier sign evaluations between August 2017 and July 2018. Tables A-1 through A-3 in Appendix A present the pier sign condition assessments. Based on the evaluations, a total of 65 signs were monitored. Two of the 67 signs tracked during the last reporting period were removed. 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. Of the 65 signs, 21 DNC fish signs were cleaned and 14 were replaced with new signs (Table A-1 in Appendix A). Eight additional DNC fish signs were identified for cleaning and/or replacement by LACDPH, Heal the Bay, and Cabrillo in July 2018. The replacements of 6 of the 8 signs will be performed by LACDPH during the next reporting period. Two of the 8 signs are located at Seal Beach pier and are in poor condition (scratched and worn but still readable). EA understands that these signs fall under the jurisdiction of Orange County of which has withdrawn from DNC fish sign monitoring and maintenance activities.

LACDPH evaluated piers between Santa Monica and Cabrillo piers (Figure 1). In January 2018, the LACDPH reported 49 signs were present, of which 21 were cleaned and 5 were replaced. LACDPH replaced 5 DNC fish signs at Venice Beach (2), El Porto/El Segundo (1), and Redondo Beach (2) in January 2018. LACDPH gave a pier sign evaluation update in July 2018 stating that the progress of the signs was consistent with the January 2018 evaluation. Damaged signs were primarily due to graffiti and environmental conditions (e.g., storm events, rust, sunlight). See Table A-1 in Appendix A for LACDPH's pier sign evaluation.

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

Based on Cabrillo and HTB pier monitoring activities, 4 of the 5 signs tracked by LACDPH were identified by HTB for replacement at the Venice (2) and Redondo Beach (2) piers. Prior to July 2018, Cabrillo identified 1 sign missing and needing replacement at Cabrillo pier. As mentioned above, these signs were reported to LACDPH. In July 2018, HTB and Cabrillo reported that 5 signs needed replacement by LACDPH at Cabrillo Pier (3) and Venice Pier (2). LACDPH plans to replace these signs during the next reporting period.

The City of Long Beach manages DNC fish sign replacements at Belmont, Pier J and Rainbow Harbor piers. As mentioned above, the City of Long Beach monitors 2 of the 5 DNC fish signs located at Rainbow Harbor that are not monitored by HTB. Nine new DNC fish signs, with the City of Long Beach logo, were posted at Pier J (4) and Rainbow Harbor (5) in April 2018. As mentioned above, 4 out of 5 DNC fish signs were posted at Pier J. The fifth sign at Pier J was removed because the City of Long Beach Marine Bureau decided to minimize signage at this location.

Discrepancies in DNC fish sign accounting and monitoring were identified during the last reporting period. The number of DNC fish signs reported by LACDPH, Cabrillo, HTB, and City

of Long Beach were inconsistent at Santa Monica, Cabrillo, Pier J, and Rainbow Harbor piers. However, these discrepancies were resolved between the entities and the total of DNC fish signs at each pier have been updated in Appendix A. Additionally, it was determined that 2 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.

Table 1 summarizes the pier sign conditions as of July 2018.

Table 1. Pier Sign Conditions – August 2017 – July 2018

Location	Total No. of Signs	Sign Condition				Notes
		Excellent	Good	OK	Poor	
Santa Monica Pier	6	-	6	-	-	2 signs were cleaned by LACDPH in January 2018.
Venice Pier	6	2	1	-	3	2 signs were replaced and 3 signs were cleaned by LACDPH in January 2018. 3 signs were identified for replacement in July 2018 and will be addressed during the next reporting period.
Marina Del Rey/ Burton Chase Platform	0	-	-	-	-	1 sign was removed by LACDPH in 2015. There is no fishing at this location.
Ballona North Creek/Playa del Rey Jetty	4	-	4	-	-	2 signs were cleaned by LACDPH in January 2018. 1 sign was reported missing but it was not replaced because LACDPH determined 4 signs are sufficient for this area.
Ballona South	4	-	4	-	-	1 sign cleaned by LACDPH in January 2018.
Dockweiler Beach	1	-	1	-	-	Signs in good condition.
El Porto/El Segundo	1	1	-	-	-	1 sign replaced by LACDPH in January 2018. Previously this pier had 2 signs. 1 sign was removed by LACDPH in 2017 because there was nowhere to place it.
Manhattan Beach	4	-	4	-	-	Signs in good condition.
Rocky Point	1	-	1	-	-	Sign cleaned by LACDPH in January 2018.
Cabrillo Pier	7	-	2	2	3	3 signs require replacement by LACDPH in the next reporting period. 1 sign is missing and 2 signs are heavily vandalized with graffiti
Hermosa Beach Pier	5	-	4	1	-	2 signs cleaned by LACDPH in January 2018. 1 sign is torn and may require replacement in the next reporting period.
Redondo Beach Pier	6	2	4	-	-	2 signs were replaced and 2 were cleaned by LACDPH in January 2018.
Pier J	4	4	-	-	-	4 signs replaced by City of Long Beach in April 2018.
Rainbow Harbor	5	5	-	-	-	5 signs were replaced by the City of Long Beach in April 2018.
Belmont Pier	5	-	5	-	-	Signs in good condition.
Seal Beach Pier	2	-	-	-	2	2 signs are in fair condition but are still readable. Signs are under the Orange County jurisdiction.
Torrance Beach	2	-	-	2	-	1 sign was cleaned by LACDPH in January 2018.
Royal Palms/White Point	2	-	2	-	-	2 signs were cleaned by LACDPH in January 2018.
Total	65	14	38	5	8	21 signs cleaned and 5 replaced by LACDPH in January 2018. 9 signs replaced by City of Long Beach in April 2018. 6 of the 8 signs in poor condition are planned

Location	Total No. of Signs	Sign Condition				Notes
		Excellent	Good	OK	Poor	
						for replacement by LACDPH in the next reporting period. 2 signs in poor condition are located on Seal Beach pier and are under the jurisdiction of Orange County.

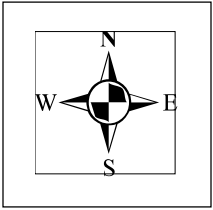
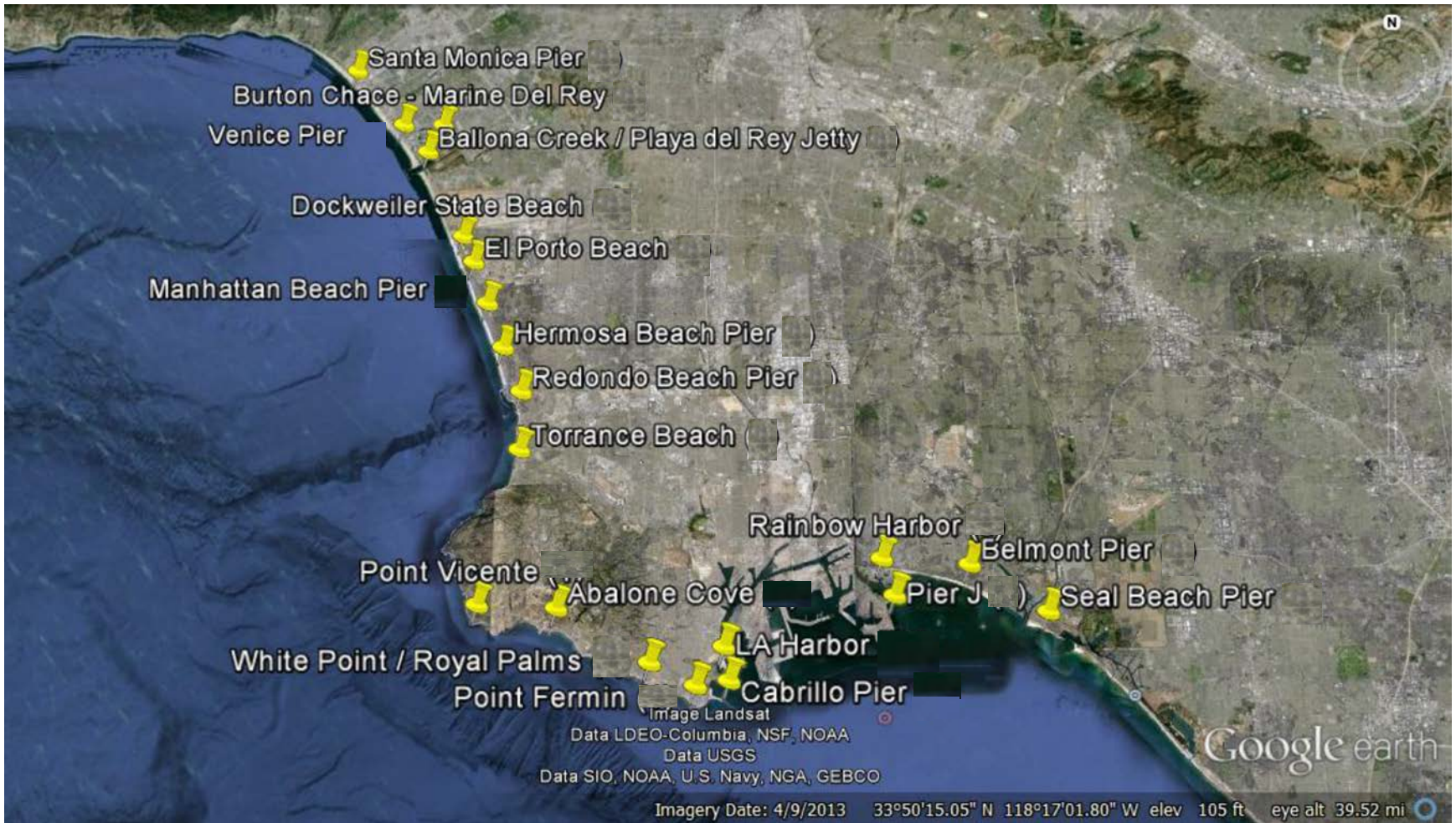


Figure 1. Do Not Consume Fish Sign Pier Locations Map

Palos Verdes Shelf Superfund Site
Los Angeles County, California

3.0 STATUS AND RECOMMENDATIONS

As part of the monitoring activities, DNC pier signs were most frequently replaced at the popular piers (e.g., Venice, Redondo Beach). Damaged and/or missing signs were primarily due to environmental damage, location, and/or vandalism. Compared to the 2017 pier sign conditions assessment, the number of signs needing replacement (19) decreased to 14 in 2018. However, 9 of the 14 signs, located at Rainbow Harbor and Pier J in Long Beach, were replaced with new DNC fish signs that contain the City of Long Beach logo. As of July 2018, 6 new signs were identified for replacement by LACDPH at Cabrillo (3), Venice (2), and Hermosa Beach (1) piers. These will be addressed by LACDPH during the next reporting period. Two signs located at Seal Beach Pier are in poor condition but still readable. These are part of Orange County's jurisdiction.

Since the last reporting period, discrepancies in the number of DNC fish signs and gap in monitoring activities were resolved. As the pier sign monitoring is dynamic, it is recommended to continue coordination between LACDPH, HTB, Cabrillo, and the City of Long Beach to ensure the accounting is up to date. Additionally, as has been recommended in previous reports, an evaluation of pier sign height is recommended. Some signs are located too low which makes it easier for vandalism and removal (e.g., Venice Pier). 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.

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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 2017 – July 2018

Pier Location (North to South)	Total No. of Signs	No. Signs Cleaned	No. Signs Replaced	No. New Signs Needed	NOTES
Santa Monica	6	2	0	0	Minimal graffiti on some of the signs. The content of the signs are visible.
Venice (Washington Blvd)	6	3	2	0	Two signs had excessive graffiti and were replaced with new signs.
Burton Chafe Park (Marina Del Rey)	X	X	X	X	In 2015, there was one sign. It was removed due to expansion of the boating bay and no more fishing.
Ballona North Creek/ Playa del Rey Jetty	4	2	0	0	One sign is missing. It was not replaced because the industrial hygienist indicated that the 4 existing signs at the pier are sufficient.
Ballona South	4	1	0	0	Construction is ongoing. Check back later to ensure the signs are still there.
Dockweiler Beach	1	0	0	0	
El Porto/El Segundo (near Manhattan)	1	0	1	0	One sign was torn off, so it was replaced it with a new one.
Manhattan Beach	4	0	0	0	Near the end of the pier, there is a fence blocking access to two of the signs. The signs were still visible for examination.
Hermosa Beach	5	2	0	1	1 sign is tearing at the corner and will likely need to be replaced soon.
Rocky Point (King Harbor Marina (100 Marina Drive, Redondo Beach)	1	1	0	0	

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 Table A-1: Pier Signage Update August 2017 – July 2018

Pier Location	Total No. of Signs	No. Signs Need Cleaning	No. Signs Replaced	No. New Signs Needed	NOTES
Redondo Beach	6	2	2	0	Two signs were replaced because they had excessive wear with scratches and dents.
Torrance Beach	2	0	0	0	
Bluff /Malaga Cove	X	X	X	X	Limited beach and parking access. Not a likely place for people to fish. No sign needed
Lunada Bay	X	X	X	X	Unable to attach sign at beach access. There are no utilities post or other surfaces where one can attach signs.
Point Vicente	X	X	X	X	FCEC Partners decided to remove DNC signs in Marine Conservation Area in 2016.
Long Point	X	X	X	X	FCEC Partners decided to remove DNC signs in Marine Conservation Area in 2016.
Abalone Cove	X	X	X	X	Limited Access. No Signs were placed in 2015 and 2016 due to unstable ground. FCEC Partners decided to remove DNC signs in Marine Conservation Area in 2016.
Portuguese Bend	X	X	X	X	FCEC Partners decided to remove DNC signs in Marine Conservation Area in 2016.
Royal Palms/White's Point	2	2	0	0	
Point Fermin	X	X	X	X	No signs posted due to no coastal access.
Cabrillo Pier	7	6	0	1	One missing sign needs replacement.

Table prepared by Los Angeles County Department of Public Health and modified by EA.

Los Angeles County Department of Public Health
Environmental Health Division
Toxicology and Environmental Assessment Branch
Table A-1: Pier Signage Update August 2017 – July 2018

	Total No. of Signs	No. Signs Need Cleaning	No. Signs Replaced	No. New Signs Needed
2015	59	16	--	25
2016	53	24	--	9
2017	49	15	--	12
2018	49	21	5	2

Table prepared by Los Angeles County Department of Public Health and modified by EA.

Heal the Bay
Pier Angler Outreach Program

Table A-2: Pier Signage Update August 2017 - July 2018

Pier Location	Total No. of Signs Present	NOTES
Santa Monica	6	<ol style="list-style-type: none"> 1. Good condition. Somewhat dirty. 2. Good condition. Some scratches. 3. Fairly good condition. Some scratches but still readable. 4. Good condition. 5. Good condition. 6. Good condition.
Venice	6	<ol style="list-style-type: none"> 1. Poor condition. Broken and needs replacement. 2. Good condition. Some scratches. 3. Good condition. Some scratches. 4. Good condition. Somewhat bent from leaning and dirty. 5. Poor condition. Broken and needs replacement. 6. Fairly good condition. Somewhat bent from leaning and scratches.
Hermosa Beach	5	<ol style="list-style-type: none"> 1. Good condition. Somewhat dirty. 2. Good condition. Somewhat dirty. 3. Good condition. 4. Fairly good condition. Somewhat dirty and bottom right corner is peeling. 5. Fairly good condition. Somewhat dirty with a few scratches but it is readable.
Redondo Beach	6	<ol style="list-style-type: none"> 1. New. 2. Good condition. 3. Good condition. Somewhat dirty with a few scratches and peeling at the bottom. 4. Good condition. 5. New. 6. Good condition.

Heal the Bay
Pier Angler Outreach Program

Table A-2: Pier Signage Update August 2017 - July 2018

Pier Location	Total No. of Signs Present	NOTES
Pier J	4	1. Good condition. 2. Good condition. 3. Good condition. Somewhat dirty. 4. New. Sign 5 was removed because the City of Long Beach’s Marine Bureau minimized signage at this location.
Rainbow Harbor	5	1. New. (monitored by Heal the Bay) 2. New. (monitored by Heal the Bay) 3. New. (monitored by Heal the Bay) 4. New. (monitored by City of Long Beach) 5. New. (monitored by City of Long Beach)
Belmont	5	1. Good condition. Some scratches. 2. Good condition. Some scratches and a sticker on bottom right hand side. 3. Good condition. Some scratches. 4. Good condition. Some scratches and a sticker on upper right hand side. 5. Good condition. Some scratches.
Seal Beach	2	1. Fair condition. Scratched with cracks but still readable. 2. Fair condition. Scratched with graffiti but still readable.

Cabrillo Pier

Pier Angler Outreach Program

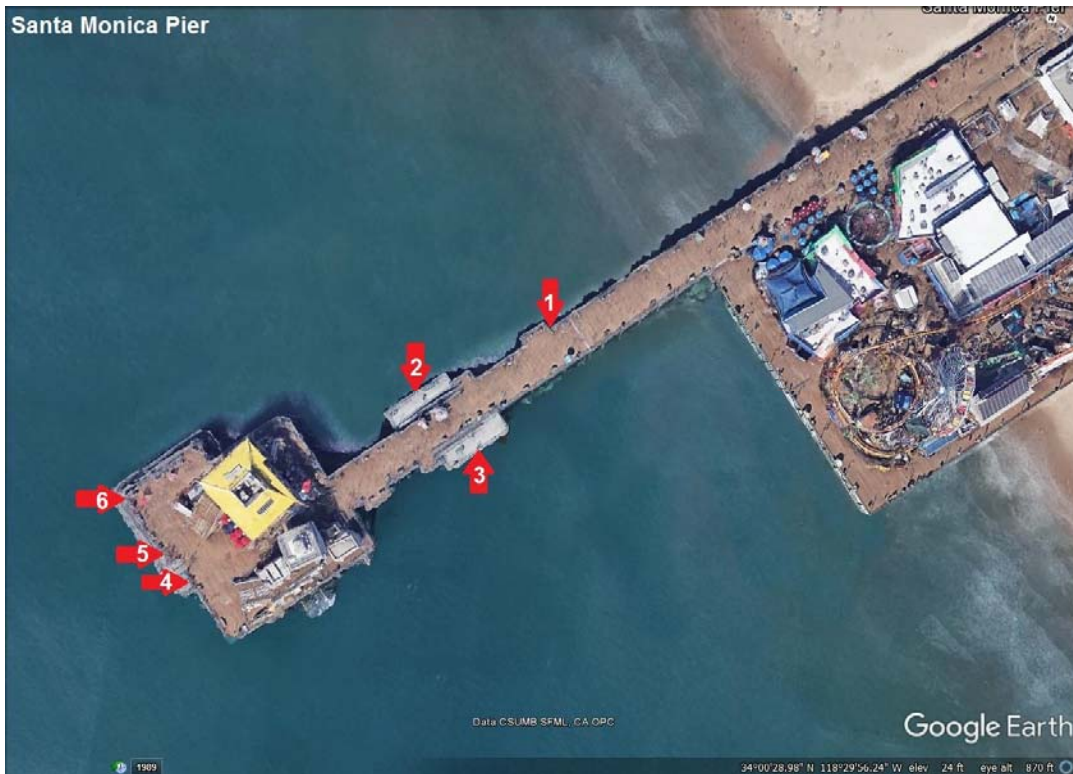
Table A-3: Pier Signage Update August 2017 - July 2018

Pier Location (North to South)	Total No. of Signs	No. New Signs Needed	NOTES
Cabrillo	7	3	<ol style="list-style-type: none"> 1. Good condition. Bent on bottom, bottom right corner starting to peel, with some rust and markings. 2. Good condition. Bent on bottom with sticker tag on top right. 3. OK condition. Bent on bottom with scratches, graffiti, paint and rust. It is still readable. 4. Poor condition. (Needs replacement). Heavy graffiti and scratches with old sticker residue and rust. Marginally readable. 5. Good condition. Some scuffs and scratches. 6. Poor condition. (Needs replacement). Heavy graffiti. Marginally readable. 7. Missing sign. (Needs replacement).

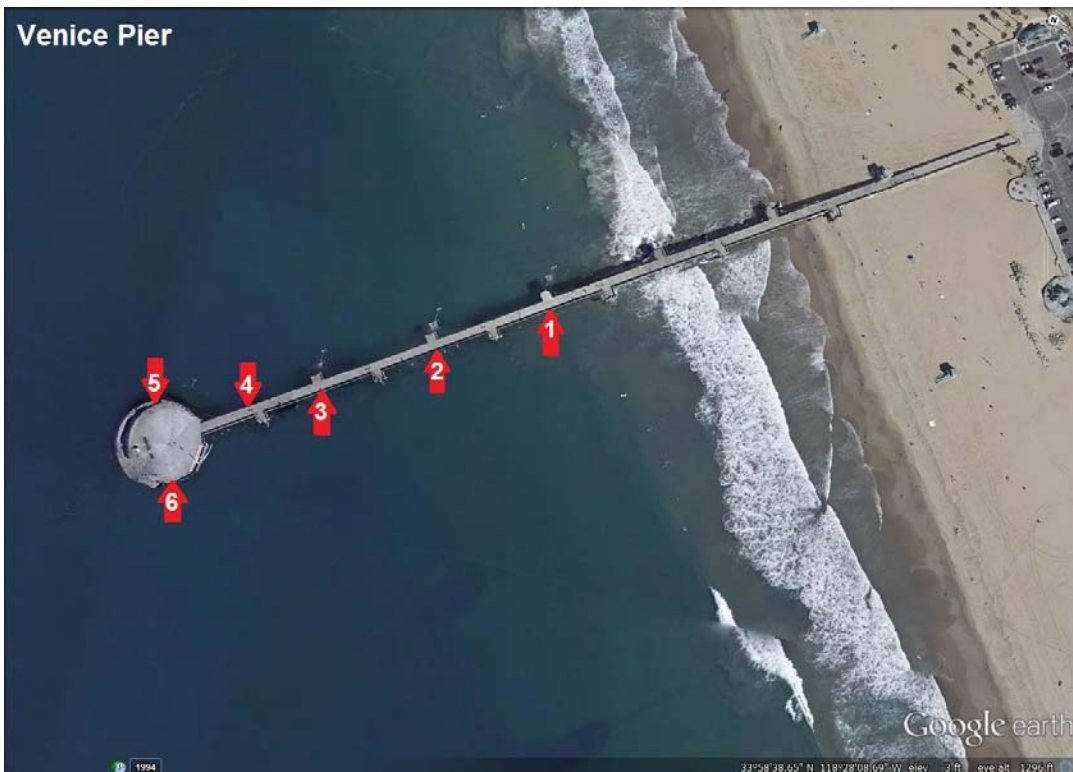
APPENDIX B

Pier Sign Locations Photographs

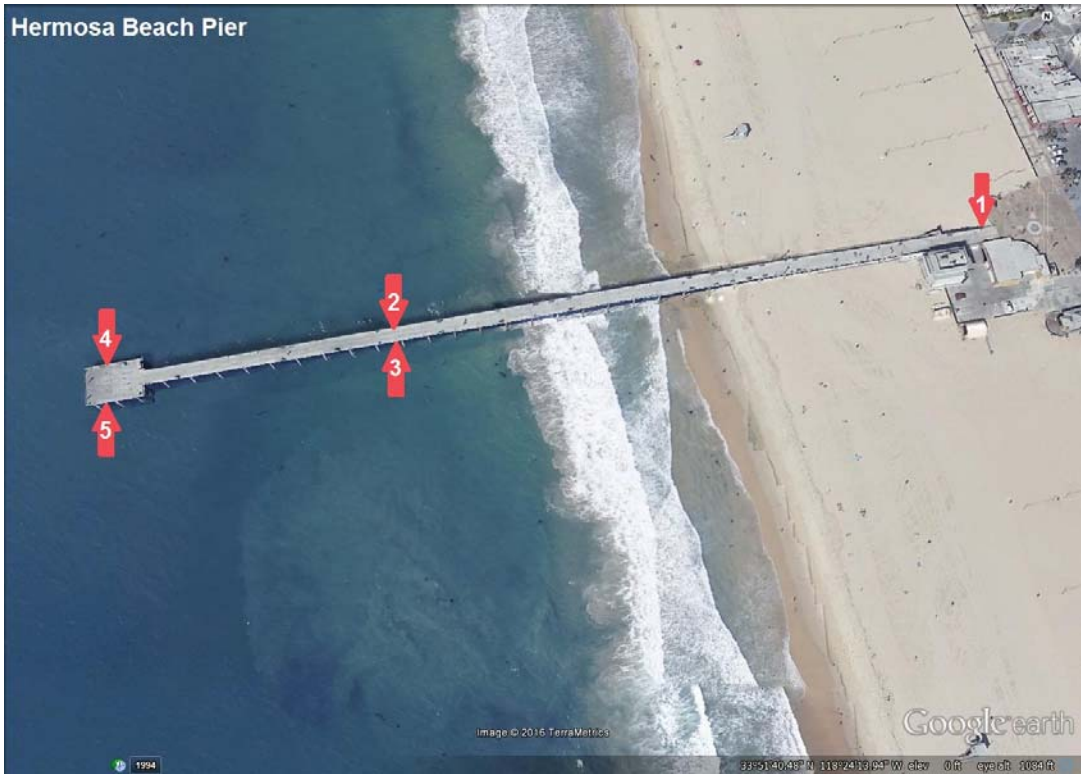
(Heal the Bay, Cabrillo, and City of Long Beach)



Santa Monica Pier: Six total signs present. No signs need replacement.



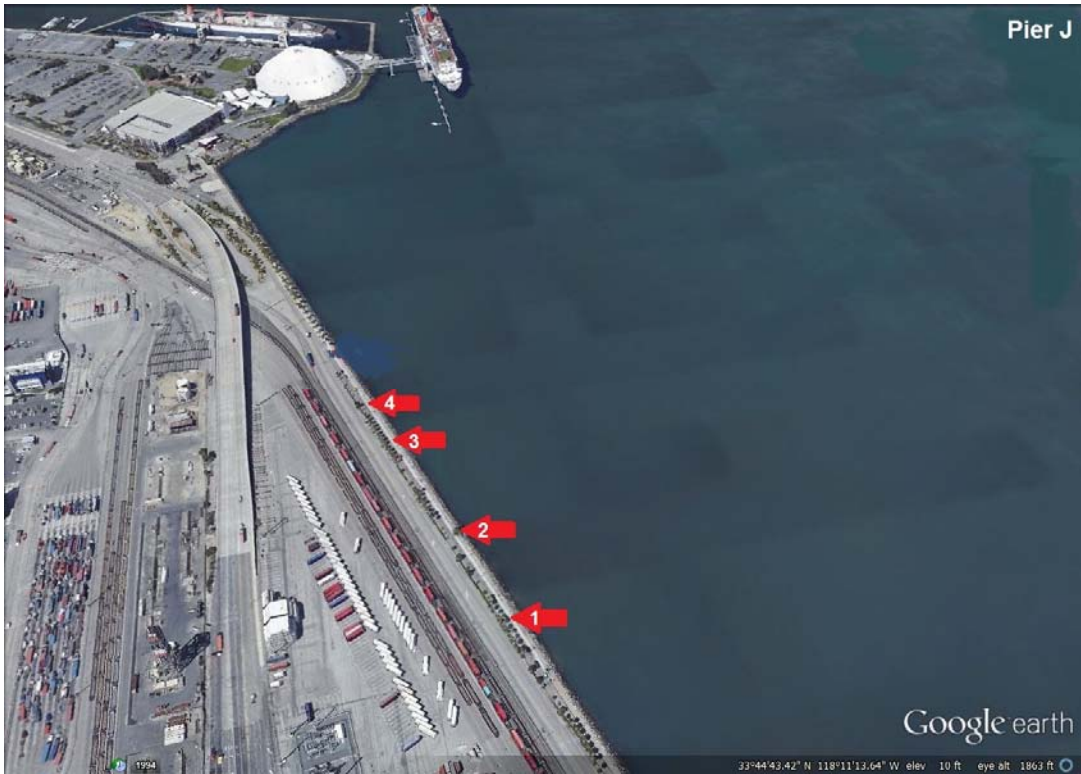
Venice Pier: Six total signs present. Two broken signs (#1 and #5) need replacement.



Hermosa Beach Pier: Five signs total. No signs need replacement.



Redondo Beach Pier: Six total signs. No signs need replacement.



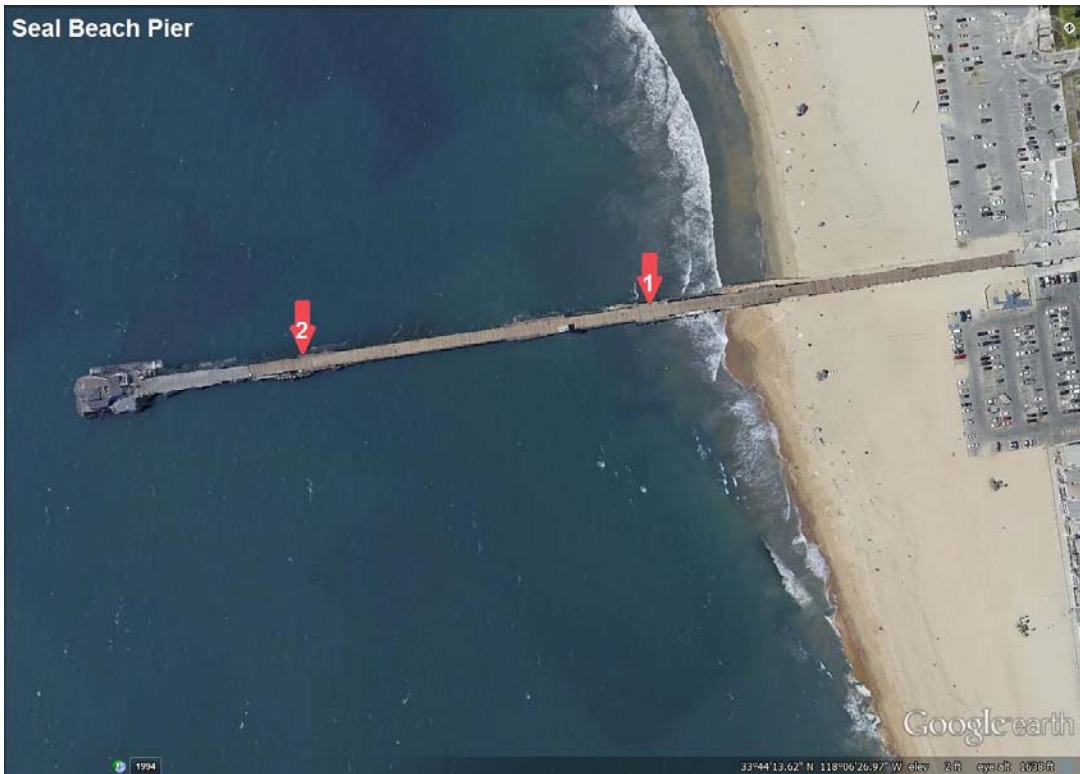
Pier J: Four signs total. Four new Signs #1-4. Sign #5 was removed from monitoring.



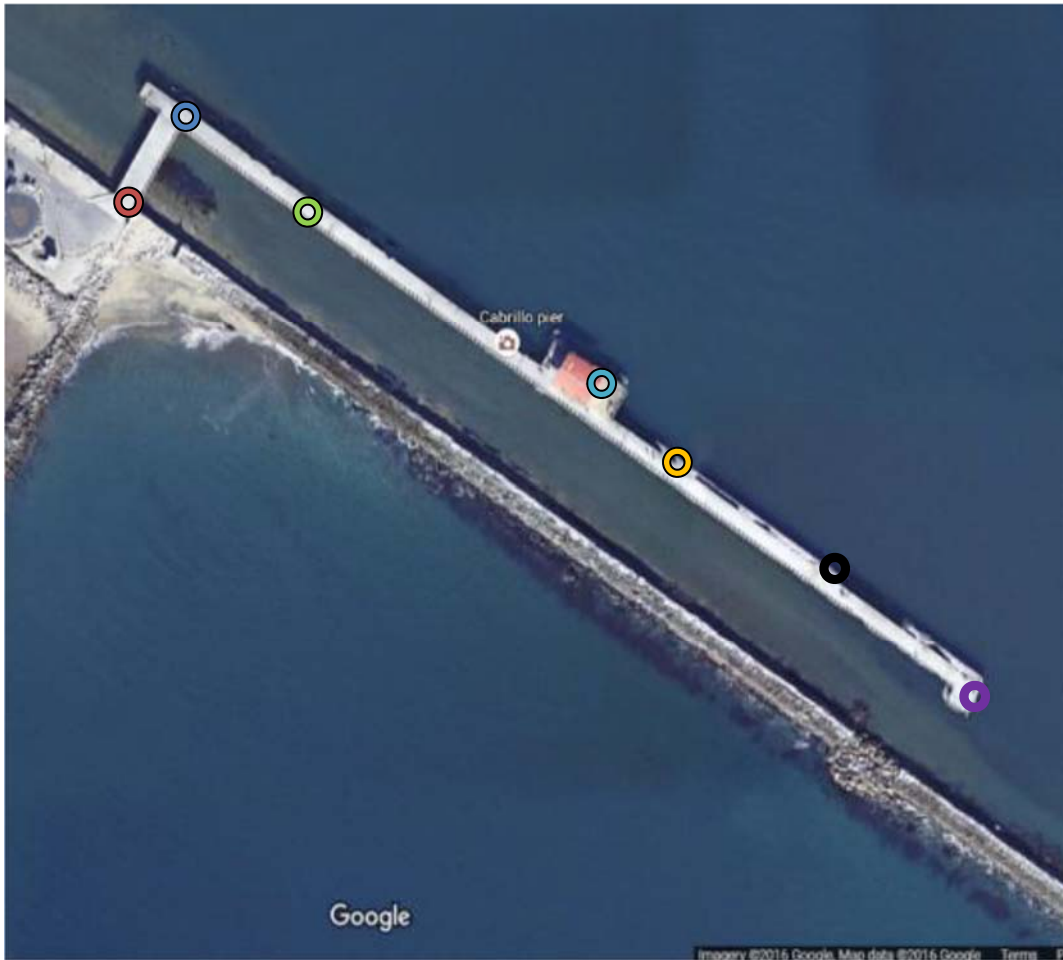
Rainbow Harbor Pier: Five new signs total, three monitored by Heal the Bay, two monitored by City of Long Beach. No signs need replacement.



Belmont Pier: Five signs total. No signs need replacement.



Seal Beach Pier: Two signs total. Two signs are in poor condition and fall under the jurisdiction of Orange County.



Cabrillo Pier: Seven signs total. Sign #4 and #6 are heavily vandalized and #7 is missing and requires replacement