

Pipeline P00547 Oil Spill Seafood Sampling Summary Results

December 1, 2021

Office of Environmental Health Hazard Assessment

California Department of Fish & Wildlife

Summary

In response to the Pipeline 000547 oil spill that occurred off the coast of Huntington Beach, the California Department of Fish and Wildlife (CDFW), in consultation with the Office of Environmental Health Hazard Assessment (OEHHA), closed the area of the spill to fishing on Oct. 3, 2021. On that day, OEHHA determined that a threat to public health from consuming fish in the affected area was likely. On subsequent days the original closure area was expanded to ultimately include approximately 650 square miles of marine waters and approximately 45 miles of shoreline. The closure boundaries included all bays and harbors from Seal Beach to San Onofre State Beach.

Seafood samples from the closure area were collected from October 14 to October 30, and analyzed for levels of polycyclic aromatic hydrocarbons (PAHs). PAHs can accumulate in species caught for human consumption, causing an increased risk for cancer and other adverse health conditions. OEHHA then conducted a risk assessment based on these data.

On November 30, CDFW lifted the closure after receiving notification from OEHHA that there was no further risk to public health from seafood consumption in the affected area. The declaration and additional information can be found at socallspillresponse.com/fisheries-closure.

Results of OEHHA's risk assessment on seafood samples collected in response to the Pipeline P00547 Incident are shown in Tables 1 and 2. Sample results are reported as the sum of benzo[a]pyrene equivalents (Σ BaPE) in parts per billion (ppb) and compared to OEHHA's Level of Concern for Σ BaPE of 27 ppb. Maps of the fisheries closure area and onshore and offshore sampling locations are shown in Figures 1-4.



Table 1. Sum of Benzo[a]pyrene Equivalent (Σ BaPE) Concentrations in Mussels Collected in Response to the Pipeline P00547 Incident

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Location	Sample ID	Date Collected	Number of Individuals/ Composite*	GPS Coordinates (Decimal Degrees)	Σ BaPE ppb (wet weight)**
Bolsa Chica Inlet	02A101421MUS04	10/14/2021	34	33.6824, -118.0360	0.86
Huntington Beach Pier	02101421MUS02	10/14/2021	25	33.6530, -118.0062	1.25
San Clemente Pier	01101421MUS03	10/14/2021	27	33.4194, -117.6206	1.44
San Onofre Nuclear Power Plant	01101421MUS01	10/14/2021	30	33.3675, -117.5547	0.30
Newport Pier	01101521MUS05	10/15/2021	25	33.6070, -117.9299	0.51
Balboa Pier	01101521MUS06	10/15/2021	25	33.6000, -117.9005	1.26
Little Corona Del Mar State Beach	01101521MUS08	10/15/2021	26	33.5891, -117.8685	0.31
Harbor Point Conservation Park	01101521MUS07	10/15/2021	25	33.4584, -117.7052	0.32
Newport Pier	06102221MUS01	10/22/2021	26	33.6071, -117.9298	1.43
Balboa Pier	06102221MUS02	10/22/2021	24	33.6001, -117.9005	1.15
Little Corona Del Mar State Beach	06102221MUS06	10/22/2021	25	33.5893, -117.8684	0.14
Harbor Point Conservation Park	06102221MUS04	10/22/2021	25	33.4597, -117.7065	0.13
San Clemente Pier	06102221MUS03	10/22/2021	23	33.4197, -117.6204	3.14
San Onofre Nuclear Power Plant	06102221MUS05	10/22/2021	25	33.3676, -117.5550	0.12
Bolsa Chica Inlet	06102321MUS07	10/23/2021	29	33.6823, -118.0360	0.56
Huntington Beach Pier	06102321MUS08	10/23/2021	23	33.6554, -118.0041	0.46

*The number of individual organisms analyzed as a single composite.

** Σ BaPE is the sum of benzo[a]pyrene equivalents, a measure of the ability of oil-related chemicals to cause cancer. OEHHHA's "Level of Concern" for Σ BaPE is 27 ppb wet weight. Σ BaPE concentrations below 27 ppb are considered safe. These results will be further explained in a forthcoming report.



Table 2. Sum of Benzo[a]Pyrene Equivalent (Σ BaPE) Concentrations in Finfish, Crustaceans, and Other (Non-Mussel) Invertebrates Collected in Response to the Pipeline P00547 Incident

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Sample Location	Species	Sample ID	Date Collected	Number of Individuals/ Composite*	GPS Coordinates (Decimal Degrees)	Σ BaPE ppb (wet weight)**
Zone 1	Baitfish Group***	02101421BAIT01	10/14/2021	9	33.6530, -118.0062	0.12
	Baitfish Group***	02101521BAIT02	10/15/2021	11	33.5986, -117.9011	0.04
	Baitfish Group (Sardines)	02101421BAIT00	10/14/2021	9	33.6030, -117.8990	0.24
	Barred Sand/Kelp Bass	Z1-102821-BAS	10/28/2021	9	33.5751, -117.9970; 33.6136, -117.9705	0.03
	California Halibut	Z1-102821-CH	10/28/2021	1	33.6196, -118.0716	1.01
	California Scorpionfish	Z1-102821-CSF	10/28/2021	9	33.5751, -117.9970	0.04
				1	33.5694, 118.0518	
	California Sheephead	Z1-102421-CSH	10/24/2021	7	33.6143, -117.9702; 33.6193, -117.9669	ND
	California Spiny Lobster (Shallow)	Z1-102421-CSLS	10/24/2021	11	33.5917, -117.8822; 33.6187, -117.9432; 33.6191, -117.9450	0.18
	California Spiny Lobster (Deep)	Z1-102421-CSLD	10/24/2021	9	33.5903, -117.8822; 33.5908, -117.8816; 33.5913, -117.8822; 33.6147, -117.9716; 33.6157, -117.9692; 33.6234, -117.9640; 33.6260, -117.9627	0.09
	Croaker Group***	Z1-102221-CKR	10/22/2021	5	33.5937, -117.8890; 33.6874, -118.0348;	0.18
	Giant Red Sea Cucumber	Z1-102821-GSC	10/28/2021	2	33.5776, -118.0664	0.03
	Kellet's Whelk	Z1-102421-KW	10/24/2021	10	33.5864, -117.8800; 33.6139, -117.9706; 33.6157, -117.9692	ND
	Pacific (Chub) Mackerel	02101521 MKL01	10/15/2021	4	33.5986, -117.9011	0.16
	Pacific (Chub) Mackerel	Z1-102821-PM	10/28/2021	9	33.5861, -117.8793	0.05



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Sample Location	Species	Sample ID	Date Collected	Number of Individuals/ Composite*	GPS Coordinates (Decimal Degrees)	Σ BaPE ppb (wet weight)**
	Perch Group***	02101521PER01	10/17/2021	4	33.6315, -117.9639	0.14
			10/15/2021	1	33.6304, -117.9622	
		05101721PER04	10/17/2021	3	33.6547, -118.0044	0.08
	Red Sea Urchin	Z1-103021-RSU	10/30/2021	9	33.6136, -117.9707; 33.6143, -117.9807	0.08
	Ridgeback Prawn	Z1-102821-RBP	10/28/2021	18	33.5776, -118.0664; 33.5908, -118.0856	0.04
	Rock Crab Group***	Z1-102421-RC	10/24/2021	10	33.5902, -117.8885; 33.5934, -117.9053; 33.6018, -117.9697	0.07
	Rockfish Group***	Z1-102821-RF	10/28/2021	8	33.5872, -118.0191; 33.5852, -117.9028	0.05
	Speckled Sanddab	Z1-102221-SSD	10/22/2021	9	33.6430, -117.9879; 33.6874, -118.0478	0.13
Warty Sea Cucumber	Z1-103021-WSC	10/30/2021	7	33.6136, -117.9707; 33.6146, -117.9807	0.05	
Zone 2	Baitfish Group***	03101621BAIT03	10/16/2021	3	33.4189, -117.6214	ND
	Barred Sand Bass/Kelp Bass	Z2-102821-BAS	10/28/2021	2	33.5642, -117.8391; 33.5752, -117.8559	0.03
			10/28/2021	6	33.4754, -117.7298	
	California Halibut	Z2-102821-CH	10/28/2021	1	33.4964, -117.7722	0.05
	California Scorpionfish	Z2-102821-CSF	10/28/2021	1	33.5706, -117.8521	0.04
				2	33.4964, -117.7722	
			10/29/2021	1	33.4830, -117.7780	
California Sheephead	Z2-102421-CSH	10/24/2021	8	33.4590, -117.7176; 33.4972, -117.7433; 33.5645, -117.8348	ND	
California Spiny Lobster (Shallow)	Z2-102421-CSLS	10/24/2021	9	33.4594, -117.7184; 33.4968, -117.7433; 33.5661, -117.8356	0.10	



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	California Spiny Lobster (Deep)	Z2-102421-CSLD	10/24/2021	9	33.4555, -117.7213; 33.4766, -117.7339; 33.5641, -117.8387	0.09
	Jacksmelt	Z2-102421-JSM	10/24/2021	5	33.5900, -117.8741	0.12
	Kellet's Whelk	Z2-102421-KW	10/24/2021	6	33.4552, -117.7141	ND
	Pacific (Chub) Mackerel	Z2-102421-MKL	10/24/2021	9	33.5574, -117.8218	ND
	Pacific Sanddab	Z2-102821-PSD	10/28/2021	9	33.5389, -117.8311	0.05
	Red Sea Urchin	Z2-102821-RSU	10/28/2021	9	33.4643, -117.7216; 33.5627, -117.8316; 33.5732, -117.8441	0.04
	Ridgeback Prawn	Z2-102821-RBP	10/28/2021 10/29/2021	18	33.5389, -117.8311 33.4830, -117.7780	0.02
	Rock Crab Group***	Z2-102421-RC	10/24/2021	3	33.4648, -117.7357; 33.4772, -117.7469	0.08
	Rockfish Group***	Z2-102821-RF	10/28/2021	4 6	33.5615, -117.8668 33.4554, -117.7500; 33.4555, 117.7502; 33.4552, 117.7492	0.04
Zone 3	Baitfish Group***	01101521BAIT09	10/15/2021	15	33.4580, -117.6910	0.40
	Barred Sand Bass/Kelp Bass	Z3-102821-BAS	10/28/2021	9	33.4235, -117.658; 33.4074, -117.6358; 33.3845, -117.6133	0.73
	California Halibut	Z3-102921-CH	10/29/2021	1	33.3510, -117.6102	0.05
	California Scorpionfish	Z3-102821-CSF	10/28/2021	9	33.4239, -117.6875; 33.4239, -117.6873; 33.4235, -117.6867	0.04
	California Sheephead	Z3-102421-CSH	10/24/2021	8	33.4046, -117.6174; 33.4214, -117.6334; 33.4454, -117.6902	ND
	California Spiny Lobster (Shallow)	Z3-102421-CSLS	10/24/2021	9	33.4134, -117.6197; 33.4226, -117.6319; 33.4427, -117.6533	0.10



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	California Spiny Lobster (Deep)	Z3-102421-CSLD	10/24/2021	8	33.3873, -117.6186; 33.4108, -117.6314	0.09
	Croaker Group***	Z3-102321-CKR	10/23/2021	7	33.4211, -117.6243	0.07
	Kellet's Whelk	Z3-102421-KW	10/24/2021	9	33.4553, -117.6894; 33.3873, -117.6185; 33.4242, -117.6428	ND
	Pacific (Chub) Mackerel	03101621 MKL02/SC Pier	10/16/2021	4	33.4189, -117.6214	ND
	Pacific (Chub) Mackerel	Z3-102821-PM	10/28/2021	5	33.3846, -117.6133	0.06
	Perch Group***	03101621PER02	10/16/2021	4	33.4818, -117.7260	0.07
	Perch Group***	03101621PER03	10/16/2021	4	33.4189, -117.6214	0.10
	Red Sea Urchin	Z3-102921-RSU	10/29/2021	9	33.3947, -117.6140; 33.4138, -117.6310; 33.4548, -117.7174	0.05
	Ridgeback Prawn	Z3-102921-RBP	10/29/2021	18	33.4001, -117.6894; 33.3610, -117.6575	0.03
	Rock Crab Group***	Z3-102421-RC	10/24/2021	9	33.4049, -117.6493; 33.3871, -117.6351; 33.4222, -117.6670	0.08
	Rockfish Group***	Z3-102821-RF	10/28/2021	9	33.4074, -117.6358; 33.4239, -117.6875; 33.4251, -117.7022; 33.4252, -117.7018	ND
	Speckled Sanddab	Z3-102321-SSD	10/23/2021	8	33.4523, -117.6988; 33.4148, -117.6350	0.08

*The number of individual organisms analyzed as a single composite.

** Σ BaPE is the sum of benzo[a]pyrene equivalents, a measure of the ability of oil-related chemicals to cause cancer. OEHHA's "Level of Concern" for Σ BaPE is 27 ppb wet weight. Σ BaPE concentrations below 27 ppb are considered safe. These results will be further explained in a forthcoming report.

***The Baitfish Group includes Pacific Sardine and various Smelt and Anchovy species; Croaker Group includes California Corbina, Queenfish, and White and Yellowfin Croaker; Perch Group includes Barred Surfperch, Walleye Surfperch, and other perch species; the Rockfish Group includes members of the *Sebastes* family; the Rock Crab Group includes Red Rock Crab, Brown Rock Crab, and Yellow Rock Crab.

ND = not detected.



Fisheries Closure Area, Sampling Zones, and Mussel Sampling Sites Pipeline P00547 Incident

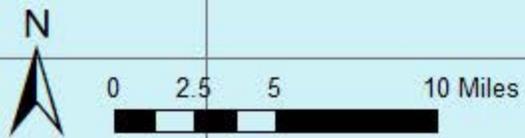
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Nov 30 2021

West Jetty of
Anaheim Bay



Southern Border of San
Onofre Nuclear Power Plant

- Mussels
- Spill Location
- Fishery Closure Area
- Commercial Fishing Blocks

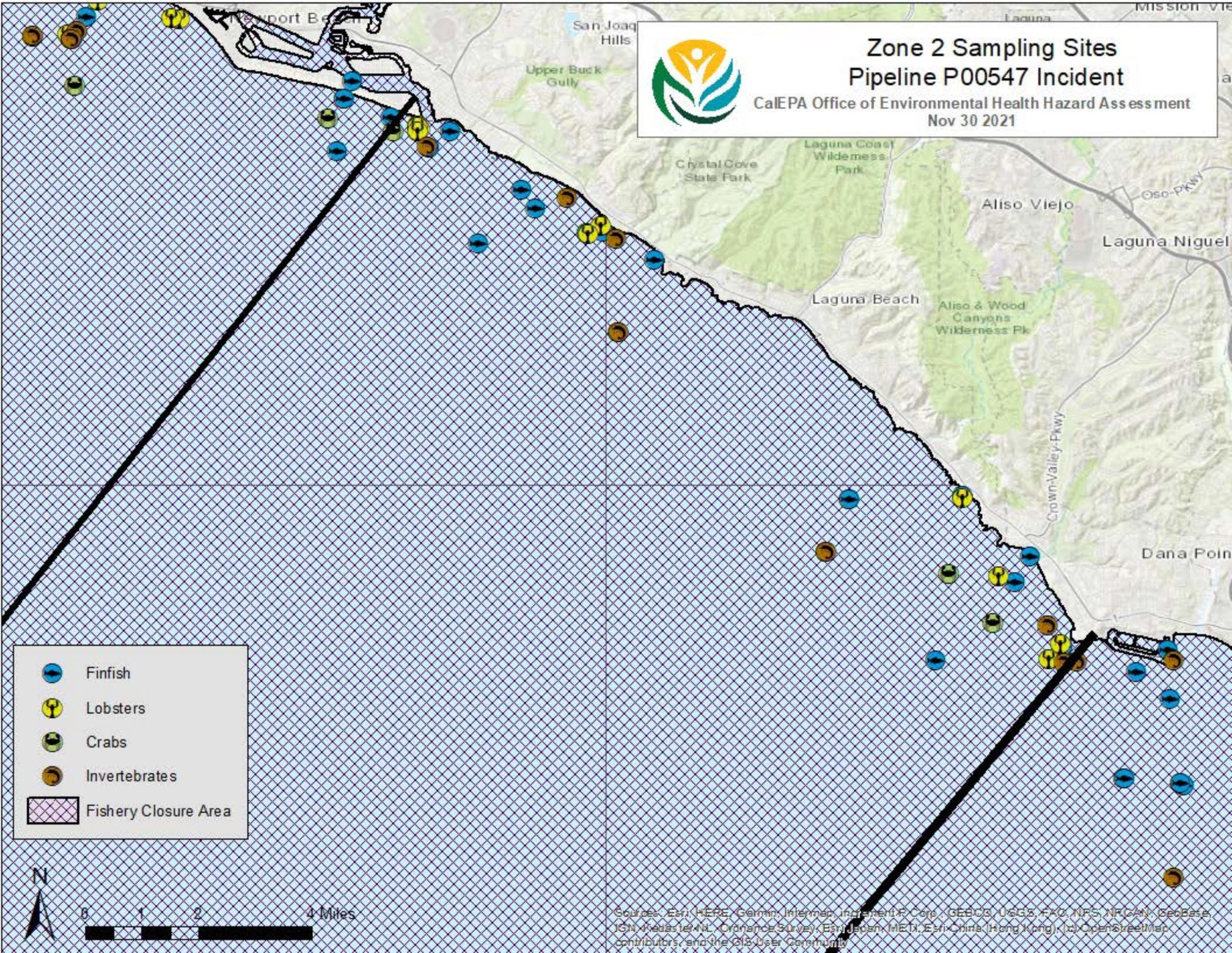


Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



Zone 2 Sampling Sites Pipeline P00547 Incident

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-  Finfish
-  Lobsters
-  Crabs
-  Invertebrates
-  Fishery Closure Area

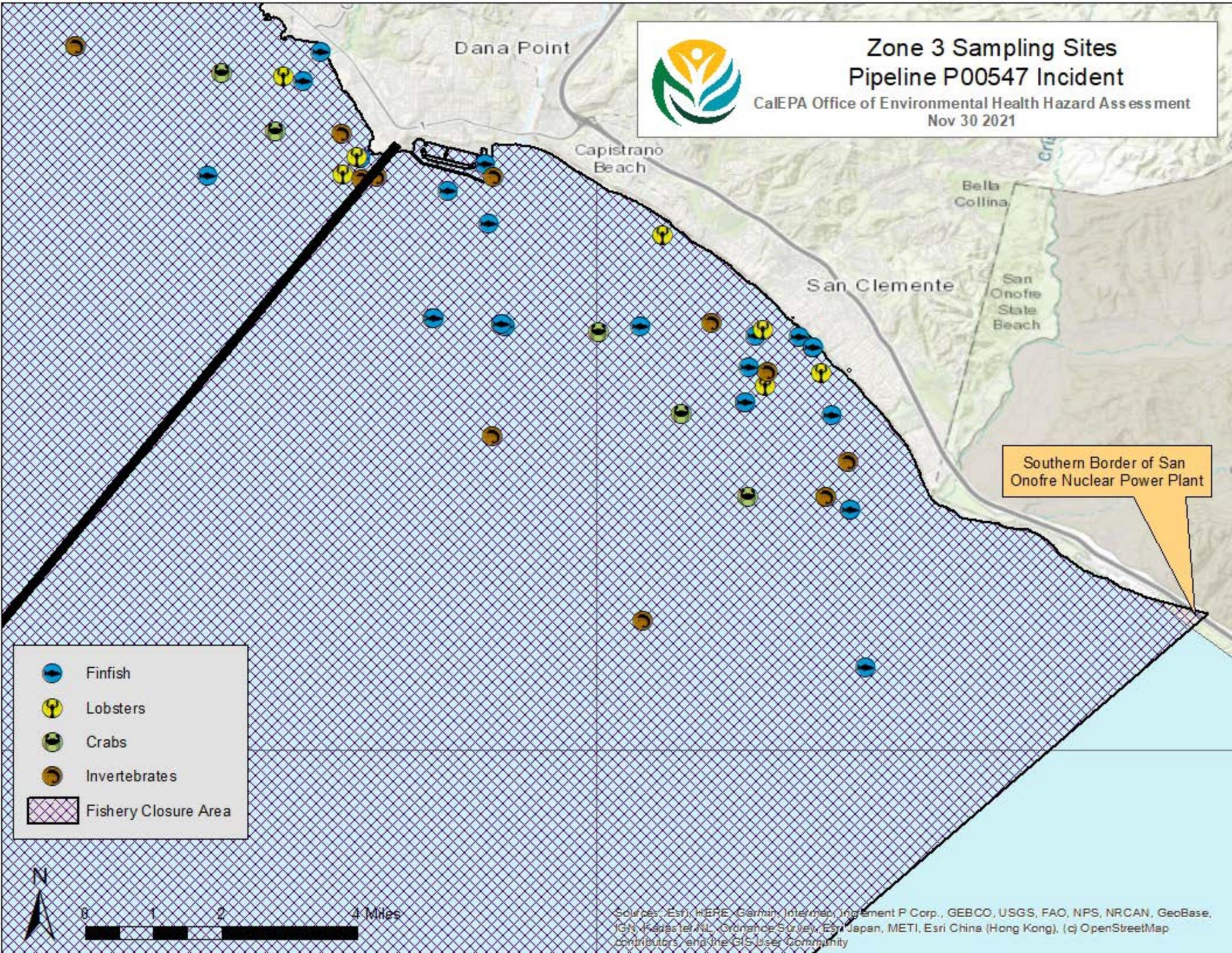


Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), Swisstopo, Mapbox Contributors, and the GIS User Community



Zone 3 Sampling Sites Pipeline P00547 Incident

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Nov 30 2021



Dana Point

Capistrano Beach

San Clemente

Bella Collina

San Onofre State Beach

Southern Border of San Onofre Nuclear Power Plant

-  Finfish
-  Lobsters
-  Crabs
-  Invertebrates
-  Fishery Closure Area



0 1 2 4 Miles

Sources: Esri, HERE, Garmin, Intermap, Ingeant P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community