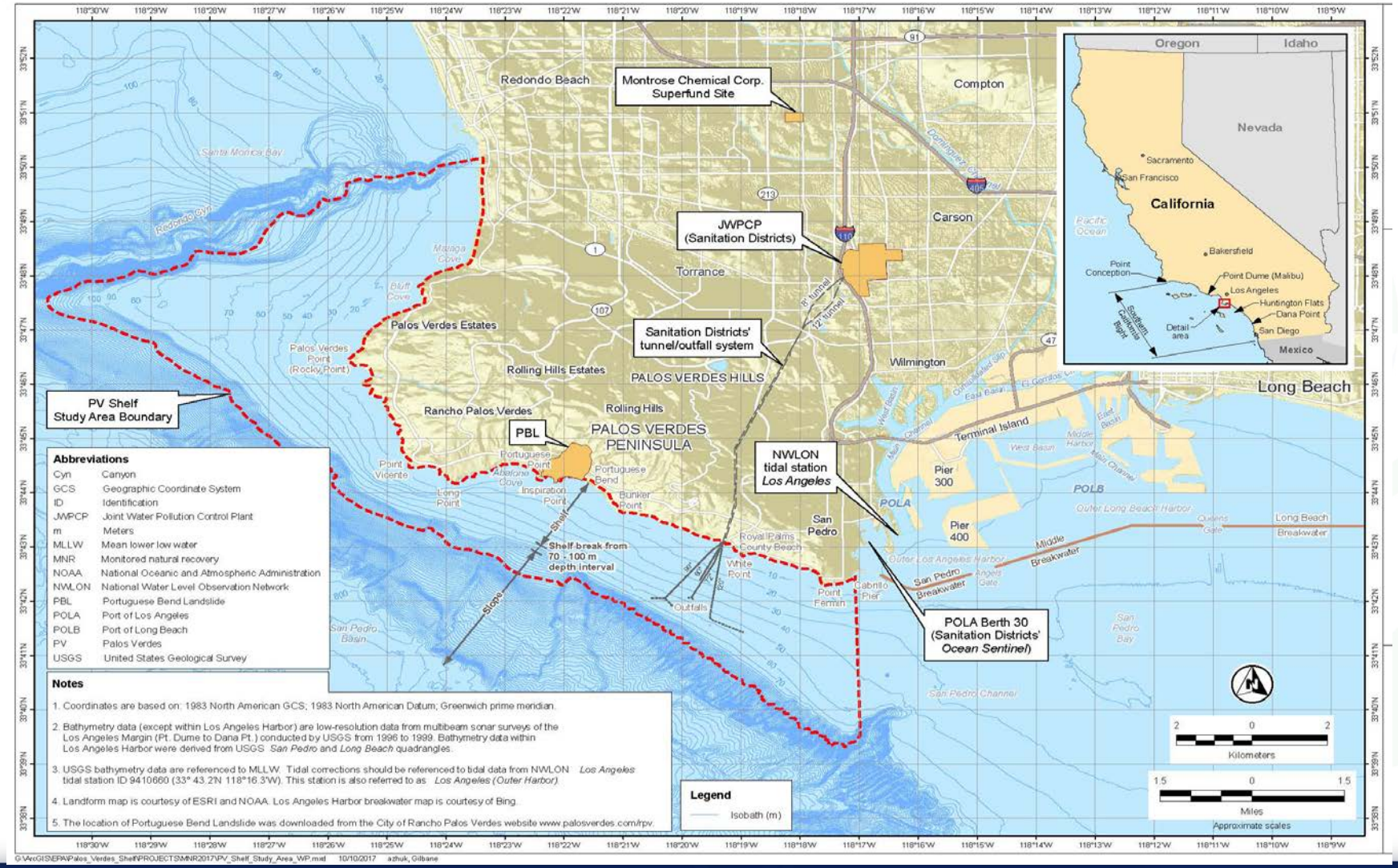
Palos Verdes Shelf
Fish Contamination Education Collaborative
Cleanup Update

January 18, 2018

PV Shelf Site Location



2009 Interim Record of Decision (IROD)

- IROD has three major components:
  - Institutional Controls (Implemented)
  - Monitored Natural Recovery (Implemented)
  - 300-Acre Clean Sediment Cap (Suspended)

Chronology

- 2009 Interim Record of Decision
- 2009 Sediment Study
- 2010 Fish Movement Study
- 2011 Sediment Flux Study
- 2013-2015 First Monitored Natural Recovery Study (Issued Nov 2017 - new sediment, water, and fish samples)

Fish Tracking Results

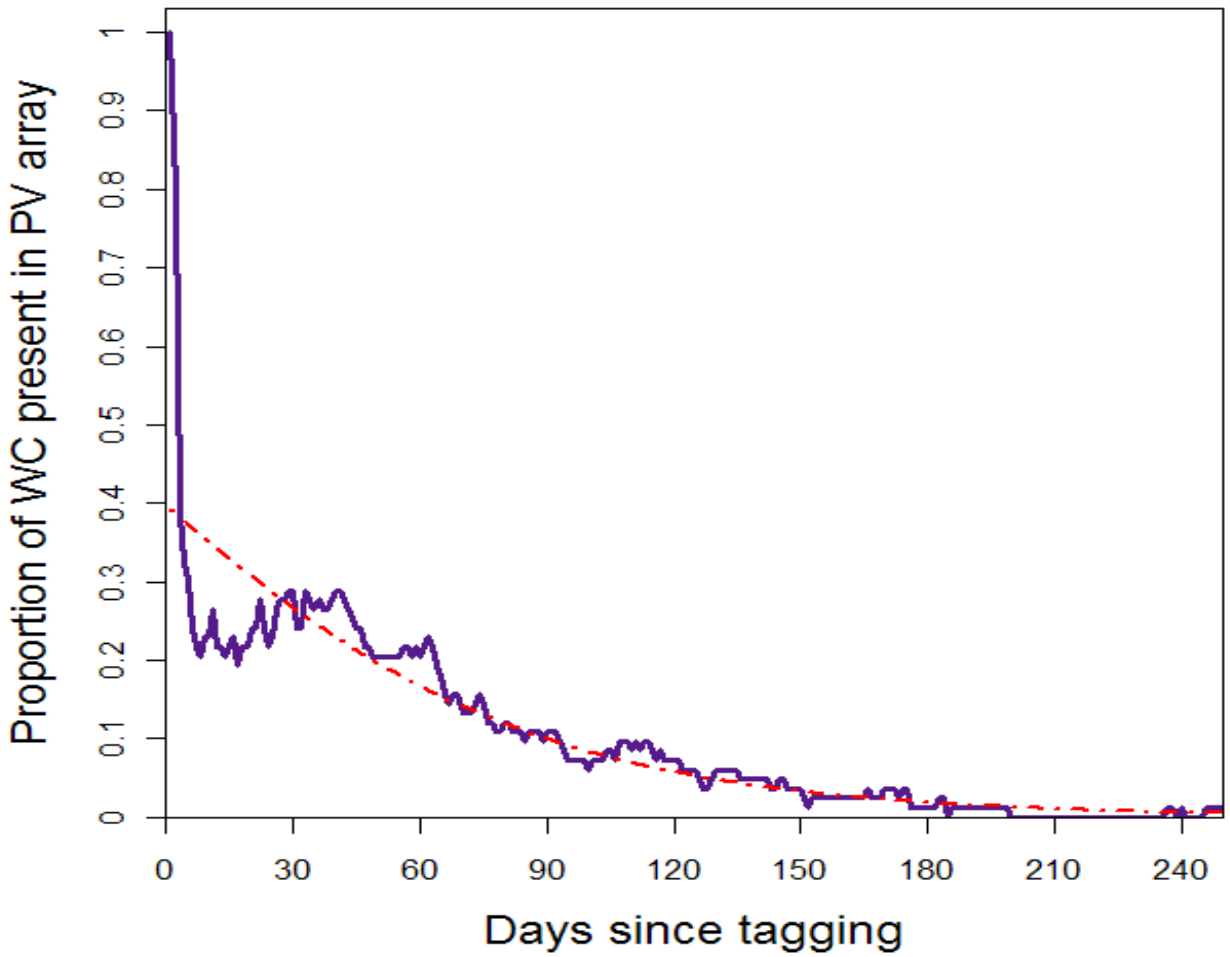
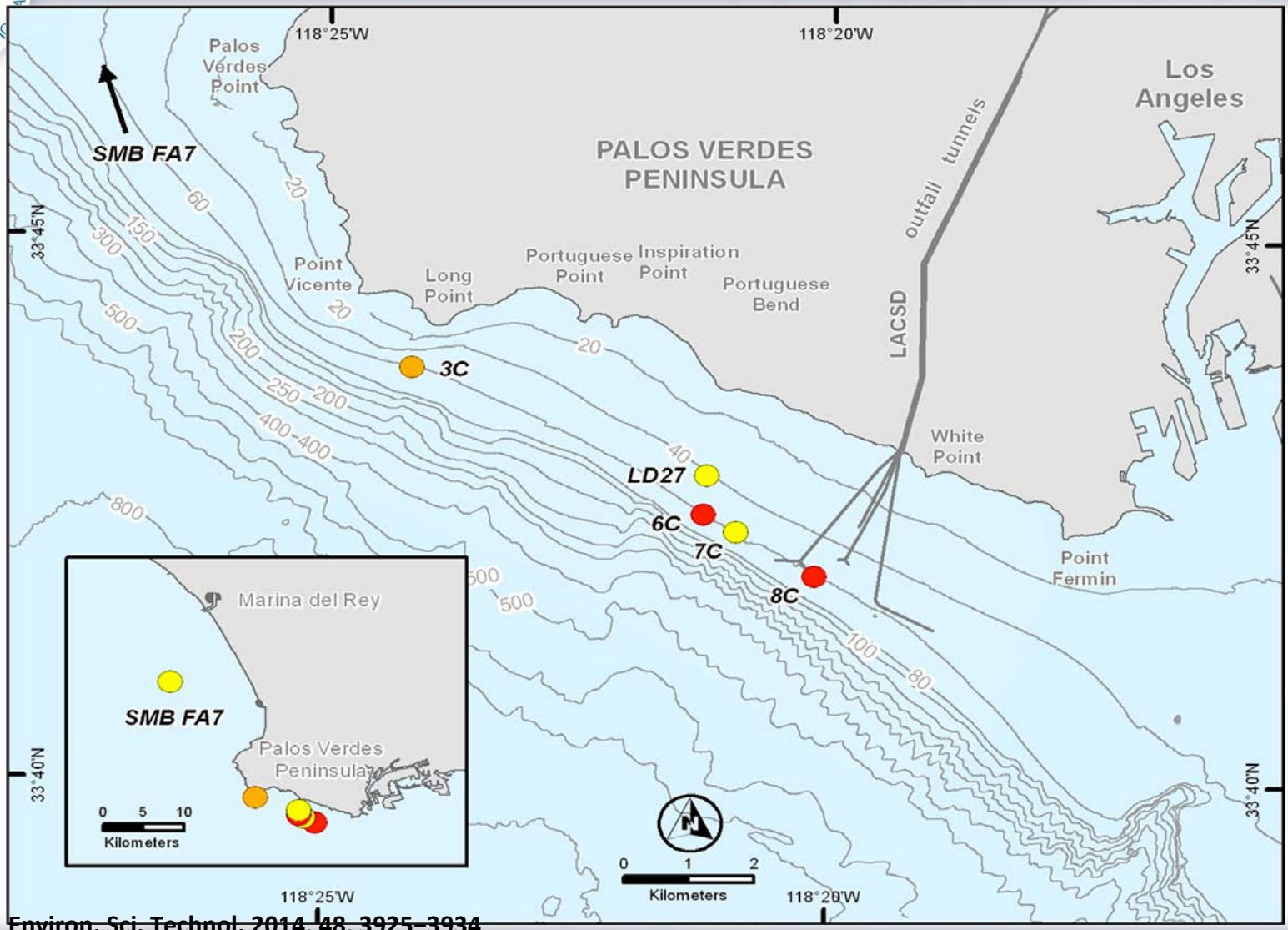


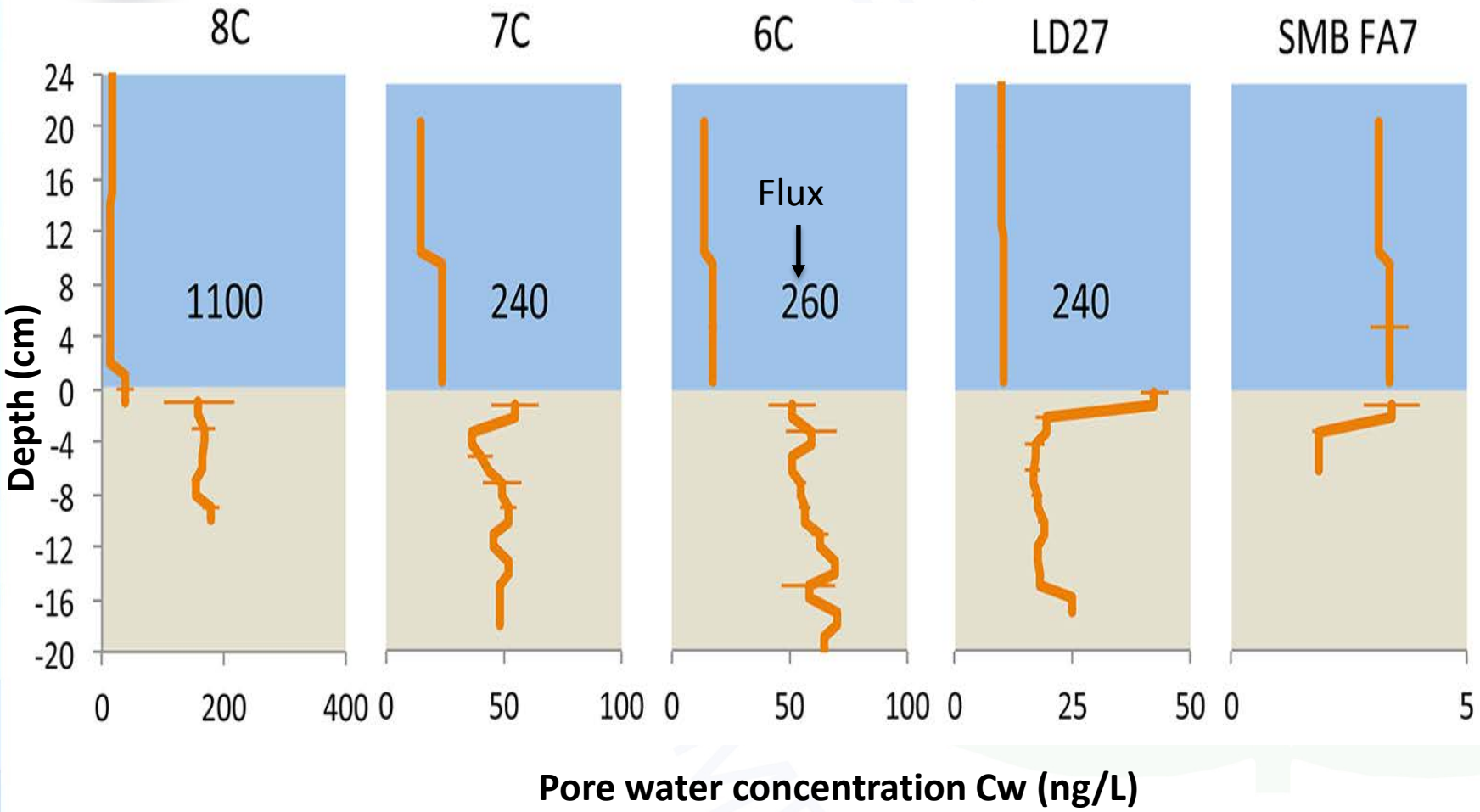
Figure 16 – WC Presence/Absence Over Study Duration. This figure shows the proportion of individual WC present in the PV Shelf array (detected by one or more receiver stations) over subsequent lengths of days post-transmitter implantation.

Flux Study Sampling Locations



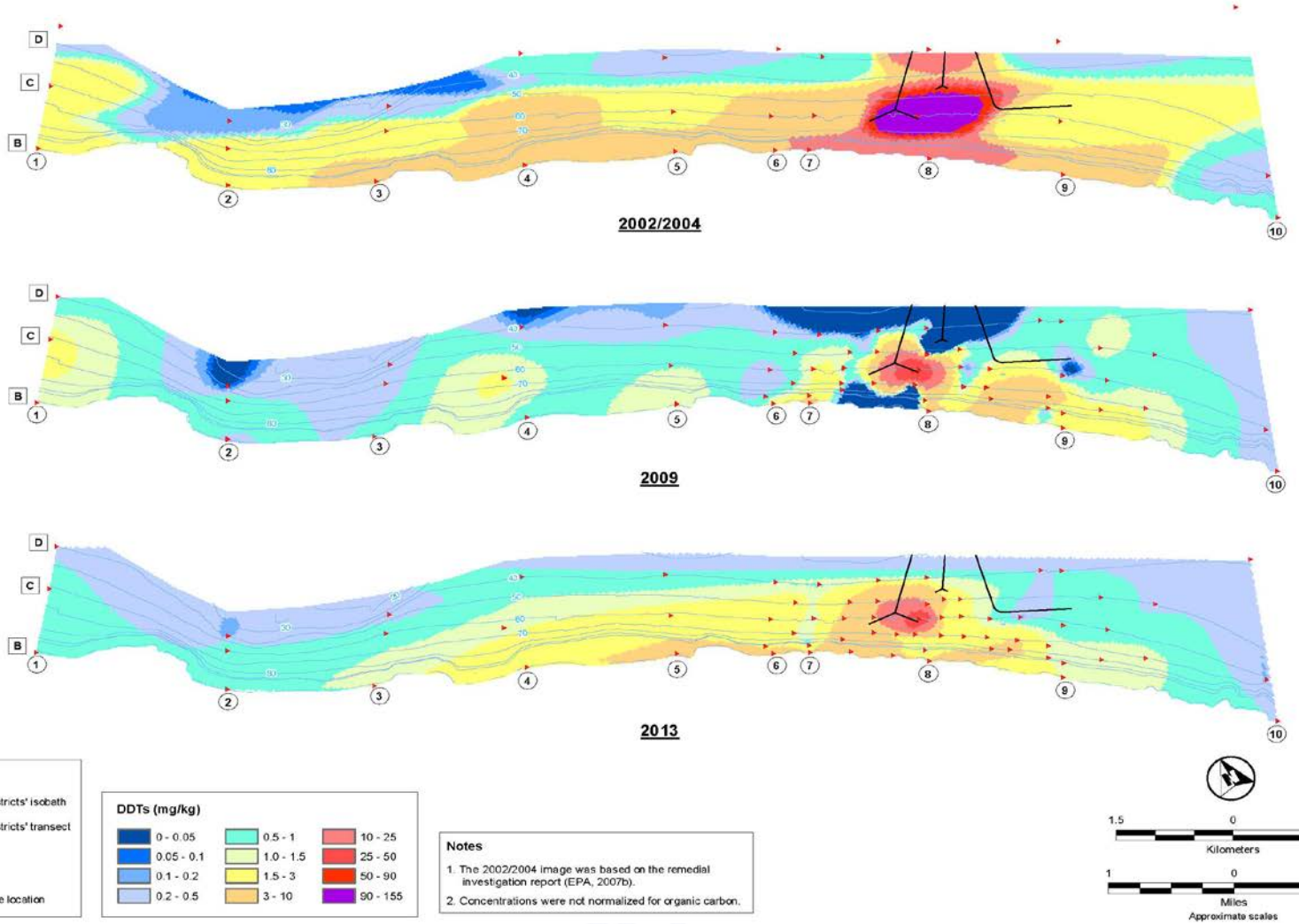
* Environ. Sci. Technol. 2014, 48, 3925−3934

p,p’ DDE (PE Average)

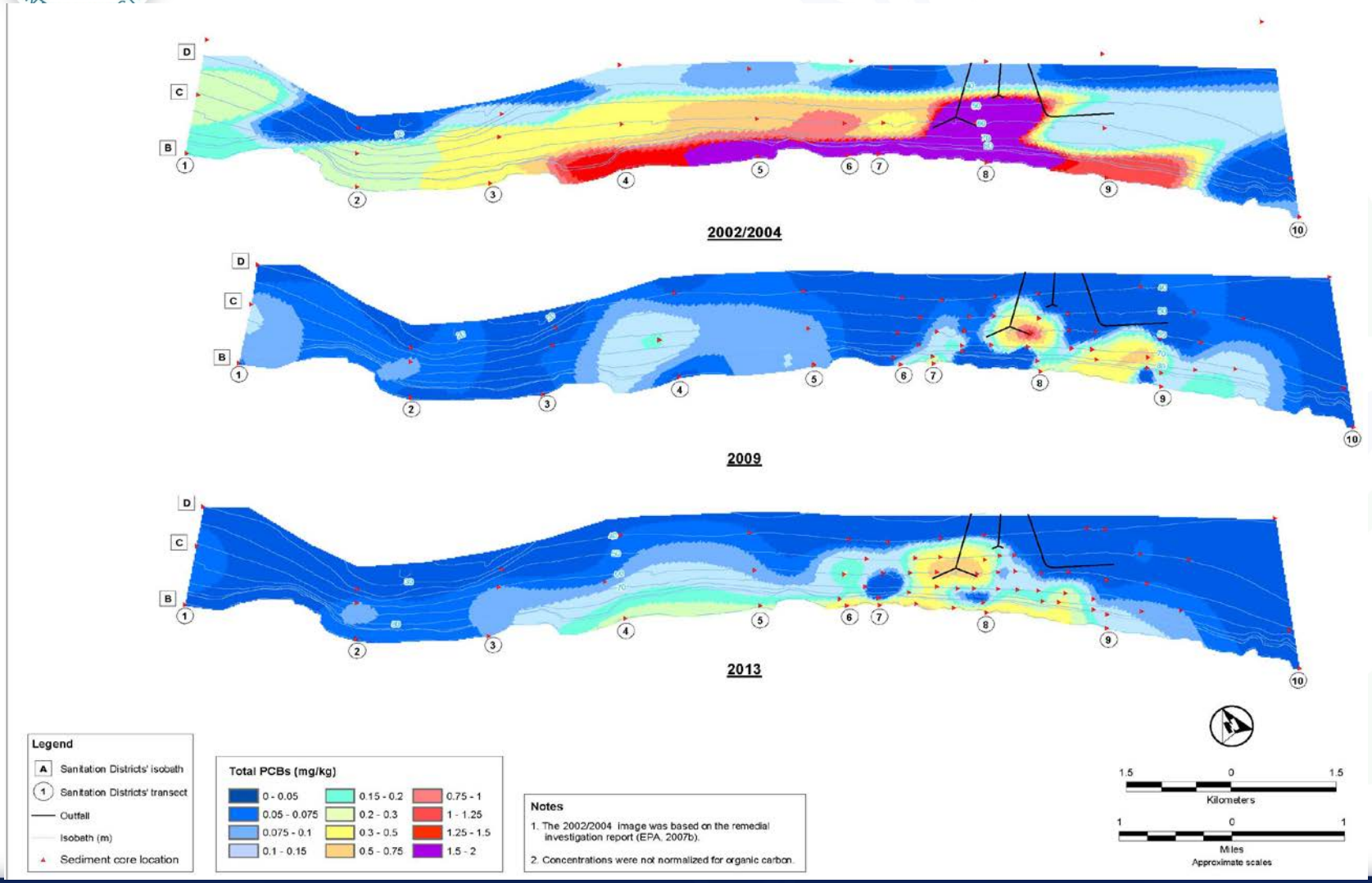


* Environ. Sci. Technol. 2014, 48, 3925−3934

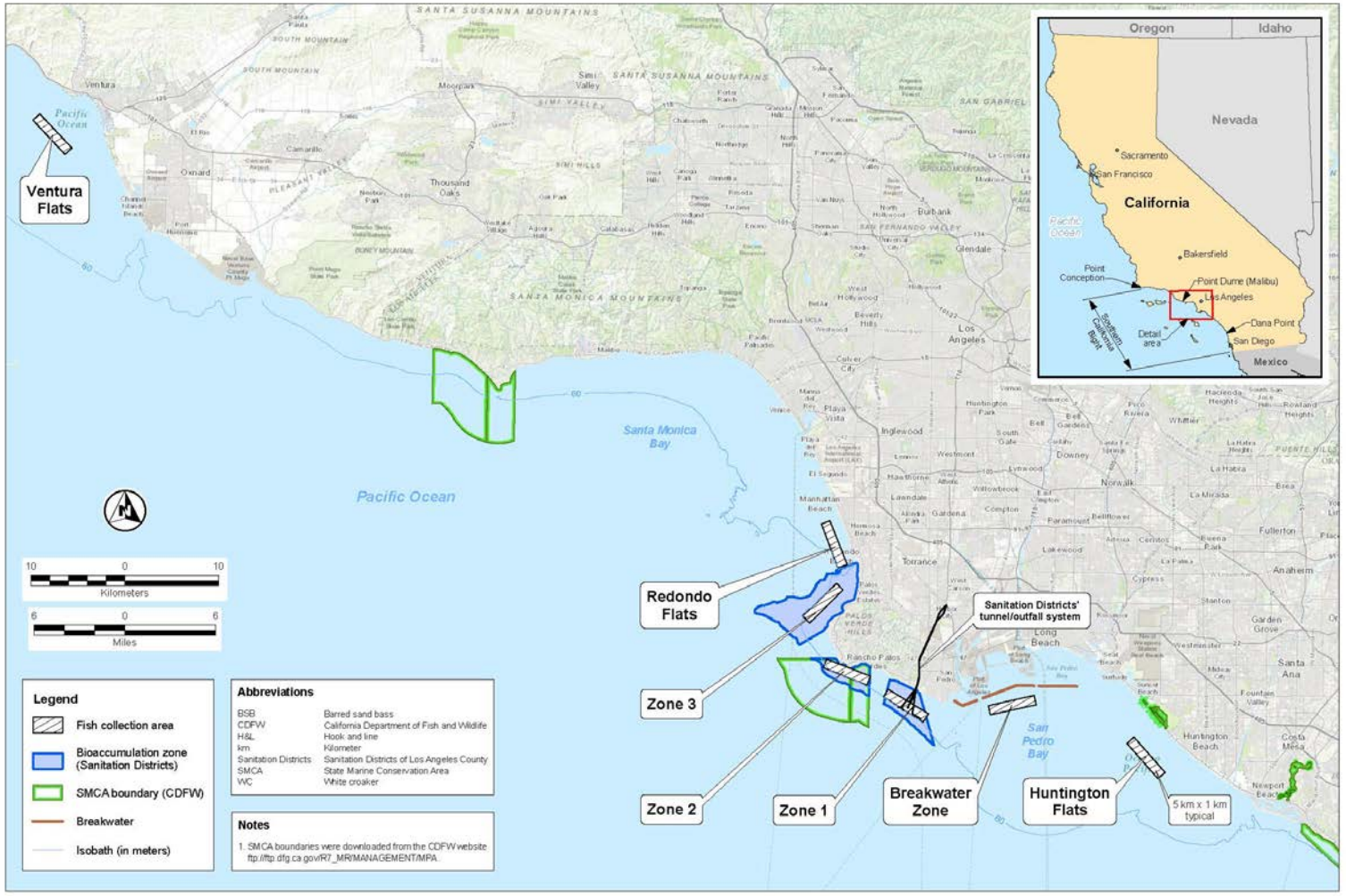
First MNR Study Results
Sediment Interpretive Contours (0-2-cm interval DDTs)



First MNR Study Results
Sediment Interpretive Contours (0-2-cm interval Total PCBs)

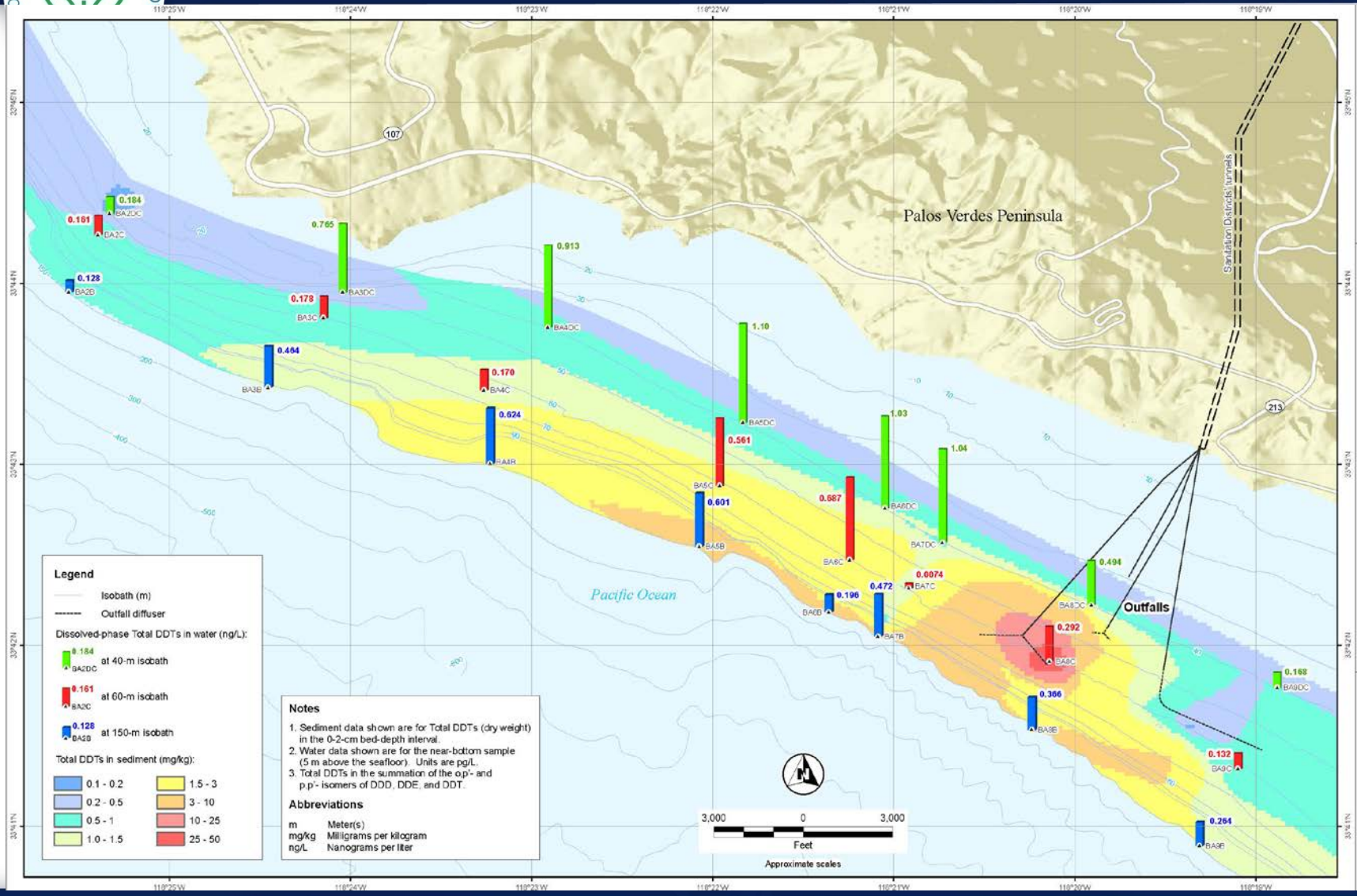


Collection Locations

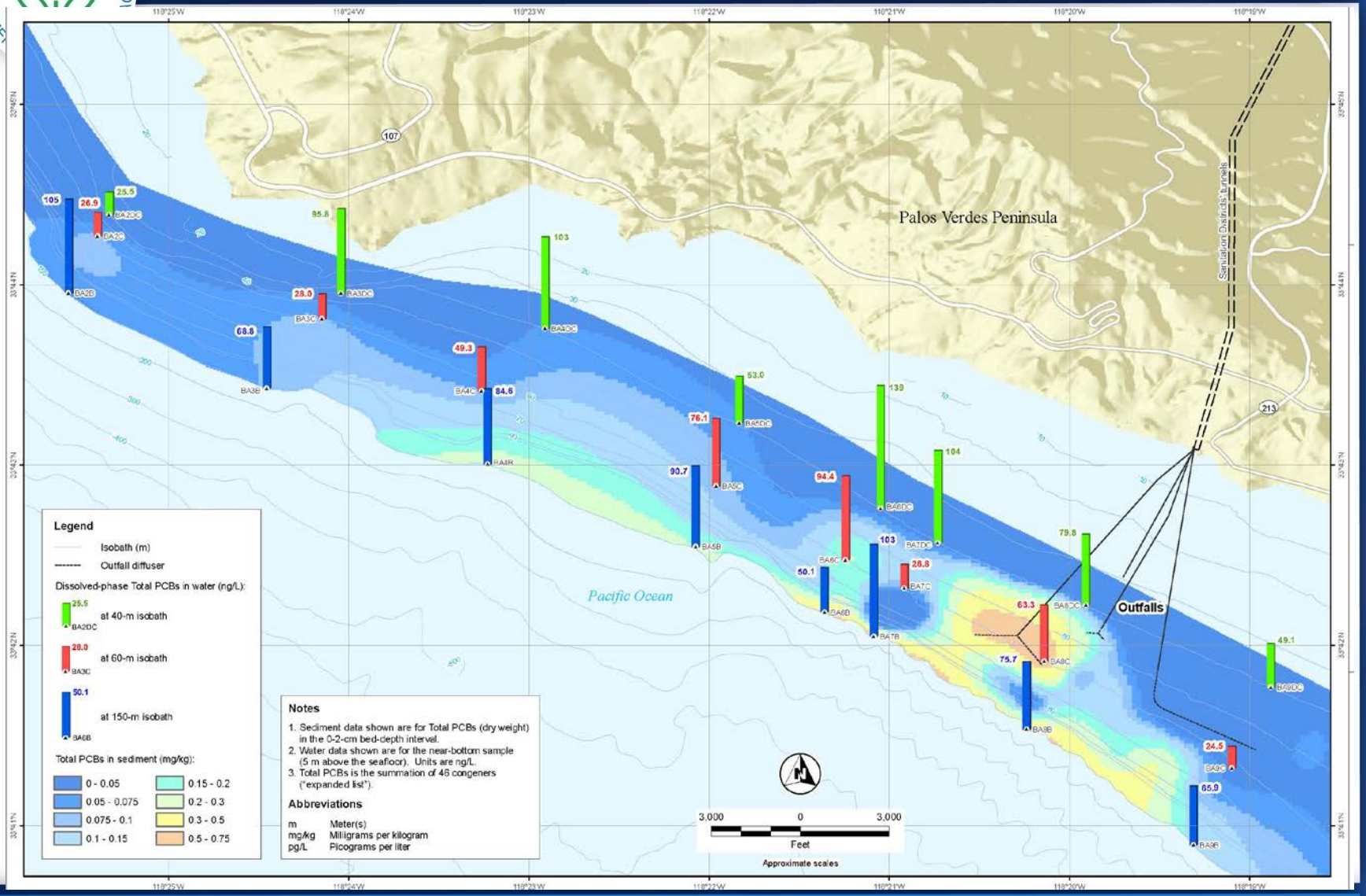


White Croaker Fish Tissue Results

Total DDTs Sediment and Water



Total PCBs Sediment and Water



Monitored Natural Recovery Progress

Media	Constituents	IROD Post Capping Goal	IROD Goal	2002/2004 (IROD)	2009 (Sediment Study [ii])	2013 (First MNR Study [ii])
Average Surface Sediment Concentration (mg/kg)	Total DDTs	78	46	150	56	77
	Total PCBs	7	7		.23 (3)	5
Sediment Mass (kg)	Total DDTs			110,000	14,000	42,000
	Total PCBs			10,000	1,000	2,900
Zone 1 White Croaker EPC[iii] (ug/kg)	Total DDTs		400	33,000		1,000
	Total PCBs[iv]		70	3,000		98
Zone 2 White Croaker EPC[iii] (ug/kg)	Total DDTs		400	8,600		940
	Total PCBs[iv]		70	920		130
Zone 3 White Croaker EPC[iii] (ug/kg)	Total DDTs		400	4,200		520
	Total PCBs[iv]		70	190		60
Water Column Eco-Protection[v] (ng/L)	Total DDTs		1	16(6C)		1.6 (4C)
	Total PCBs		30	1.1(5C)		0.19 (7C)
Water Column Human Health Protection[vi] (ng/L)	*Total DDTs*		*0.22*	16(6C)		1.6(4C)
	Total PCBs		0.064	1.1 (5C)		0.19(7C)

[i] If multiple values are reported in the IROD. Maximum value is used.
[ii] Number in purple exceeds IROD goal.
[iii] EPC stands for Exposure Point Calculation. It is the calculated 95% upper confidence limit value for the data set.
[iv] All fish tissue total PCBs are calculated using the expanded list.
[v] Maximum concentration from all grab samples. The corresponding sample station number is in the parenthesis.
[vi] Applicable 2002 Ambien Water Quality Criteria is used. Specifically, the number is for *p,p* DDE only.

Conclusions

- Sediment, water column, and fish tissue concentrations have decreased from 2002/2004 to 2013
- IROD post capping goals have been achieved without the cap, and capping method may spread contamination
- Some IROD goals may no longer be valid
  - Conceptual site model and food web model used to calculate the goals need to be updated – correlation between sediment and fish tissue are not consistent with model predictions

Next Steps

May 2018	Focused Feasibility (FS) scoping meeting with technical advisors
Fall 2019	Draft Focused FS public comment period
Spring 2020	Final Focused FS
Summer 2020	Proposed Plan Public Meeting
Fall 2020	Final ROD

Questions ?

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FIGURE 3-13
Summary of Fish Results

First MNR Report
Palos Verdes Shelf
Los Angeles County, California

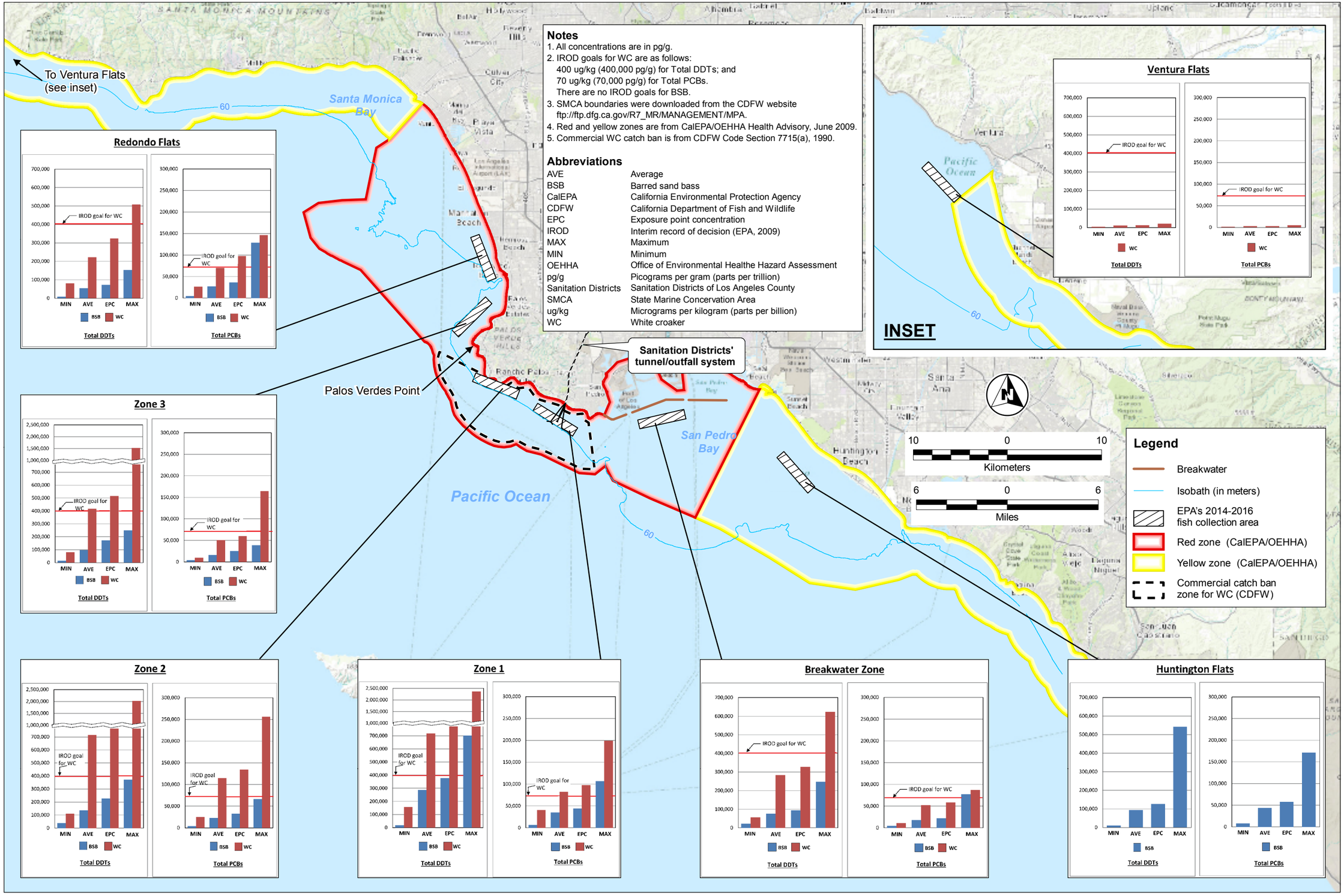
United States Environmental Protection Agency

Notes

1. All concentrations are in pg/g.
2. IROD goals for WC are as follows:
   400 ug/kg (400,000 pg/g) for Total DDTs; and
   70 ug/kg (70,000 pg/g) for Total PCBs.
   There are no IROD goals for BSB.
3. SMCA boundaries were downloaded from the CDFW website ftp://ftp.dfg.ca.gov/R7_MR/MANAGEMENT/MPA.
4. Red and yellow zones are from CalEPA/OEHHA Health Advisory, June 2009.
5. Commercial WC catch ban is from CDFW Code Section 7715(a), 1990.

Abbreviations

AVE	Average
BSB	Barred sand bass
CalEPA	California Environmental Protection Agency
CDFW	California Department of Fish and Wildlife
EPC	Exposure point concentration
IROD	Interim record of decision (EPA, 2009)
MAX	Maximum
MIN	Minimum
OEHHA	Office of Environmental Healthe Hazard Assessment
pg/g	Picograms per gram (parts per trillion)
Sanitation Districts	Sanitation Districts of Los Angeles County
SMCA	State Marine Concervation Area
ug/kg	Micrograms per kilogram (parts per billion)
WC	White croaker



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