

Condensed summary of potential impacts of BRTF MPA options (October 22, 2009) on commercial and recreational fisheries in the MLPA South Coast Study Region

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1. Introduction

The purpose of this project is to analyze the relative effects of marine protected area (MPA) options on commercial and recreational fisheries in the MLPA South Coast Study Region (SCSR)—in particular, those MPAs being considered by the MLPA Blue Ribbon Task Force (BRTF) as a result of its October 20-22 meeting. For detailed information on how data were collected and/or analyzed, please see our *Draft Survey Methods and Summary Statistics for Ecotrust's South Coast Study Region Fishery Uses and Values Project* (presented to the SCRSG on 3/3/2009). For information on the methods used to evaluate these data, please see Section 12 of the *SAT Draft Methods Used to Evaluate Marine Protected Area Proposals for the MLPA South Coast Region* (presented to the SCRSG on 3/27/09). Additional proposal-specific information on potential fishery-specific impacts (to study region and to total area and value) for any given MPA are available in the series of Excel files provided to the SCRSG.

To analyze the SCSR fisheries, we used data layers characterizing the spatial extent and relative importance of fishing grounds for 15 commercial fisheries, ten commercial passenger fishing vessel (CPFV) fisheries, and 17 recreational fisheries. We collected this information during the summer and fall of 2008 using a stratified, representative sample of 254 commercial fishermen and a stratified, solicited¹ sample of 119 CPFV and 504 recreational fishermen. Individual responses regarding the relative importance of ocean areas for each fishery were standardized using a 100-point scale and normalized to the reported fishing grounds. Based on this data, we evaluate the potential economic impacts on the commercial, CPFV, and recreational fishing grounds under MPAs common to all options (including Channel Islands impacts) as well as the options for four key geographical areas.

Those MPAs common to all proposals (including, if applicable, the proposal from the previous round from which the MPA was selected) include:

- Point Conception SMR (P1)
- Kashayit SMP (P1 revised to address feasibility issues)
- Naples SMCA (P1 revised to address feasibility issues)
- Campus Point SMR (P2/P3)
- Goleta Slough SMR (P1/P2/P3)
- Point Vicente SMR (P2)
- Abalone Cove SMCA (P2)
- Bolsa Chica SMCA (P1- modified to split into SMR/SMCA complex)
- Bolsa Chica SMR (P1- modified to split into SMR/SMCA complex)
- Upper Newport Bay SMCA (P2)
- Batiquitos SMR (P1)
- Famosa Slough SMR (P2)
- Cabrillo SMR (P1/P2)
- Arrowhead to Lion Cove SMCA (existing invertebrate closure boundaries)
- Bird Rock SMCA (modified P2)
- Blue Cavern SMR (modified P2)
- Long Point SMR (P3)
- Cat Harbor SMCA (P1)
- Farnsworth SMCA (modified P1)
- Casino Point SMR (P2)
- Lovers Cove SMCA (P1/P2)
- Begg Rock SMR (P1/P2)
- San Clemente Military Closure 1 (P1/P2/P3)
- San Clemente Military Closure 2 (P1/P2/P3)

¹ The use of a solicited sample may cause traditional statistical measures (e.g., confidence intervals) to be less precise. Nevertheless, it does allow us to make generalizations about preferences of the overall recreational fishing population and about the three user groups within the study area. We feel that this adds thematic resolution to the MLPA marine planning process.

The geographies where multiple options are still being considered include:

- Point Dume
 - Option 1 – Point Dume SMCA & Point Dume SMR (P1)
 - Option 2 – Point Dume SMCA & Point Dume SMR (modified P1)
 - Option 3 – Point Dume SMCA (P2)
- Palos Verde
 - Option 1 – Rocky Point SMR (new option)
 - Option 2 – Abalone Cove SMCA & Point Vicente SMR (P2)
- Orange County
 - Option 1 – Crystal Cove SMCA, Dana Point SMCA, & Laguna SMR (modified P1)
 - Option 2 – Crystal Cove SMCA, Dana Point SMCA, & Laguna SMR (modified P1)
- San Diego
 - Option 1 – Matlahuayl SMR (P3), San Diego-Scripps Coastal SMCA (P3), San Elijo Lagoon SMR (P1/P3), Swami's SMCA (P3), Tijuana River Mouth SMCA, South La Jolla Reefs SMCA (P3), & South La Jolla Reefs SMR (P3)
 - Option 2 – Matlahuayl SMR (P3), San Diego-Scripps Coastal SMCA (P3), San Elijo Lagoon SMR (P1/P3), Swami's SMCA (P3), Tijuana River Mouth SMCA, South La Jolla SMCA (modified P1), & South La Jolla SMR (modified P1)
 - Option 3 – Matlahuayl SMR (P3), San Diego-Scripps Coastal SMCA (P3), San Elijo Lagoon SMR (P1/P3), Swami's SMCA (P3), Tijuana River Mouth SMCA, Ocean Beach Pier SMCA (P2), & Sunset Cliffs SMR (P2)
 - Option 4 – Ocean Beach Pier SMCA (P2), Sunset Cliffs SMR (P2), Del Mar SMR (P1/P2), La Jolla SMR (P2), & San Dieguito Lagoon SMR (P2)

We report commercial and CPFV results by port. We report recreational results by user group (i.e., dive, kayak, and private vessel) and by county. It should be noted that this report is a condensed summary relative to reports produced as part of past rounds of evaluation.

In all tables presented, a 'dashed line' represents a fishery that does not occur or a fishery for which insufficient data were collected to merit presentation.

2. Results for Commercial Fisheries

We summarize here our analyses of the potential impacts on the 15 commercial fisheries (i.e., Ca. Halibut (Hook & Line), Ca. Halibut (Trawl), Coastal Pelagics, Ca. Spiny Lobster, N. Fishery (Hook & Line), N. Fishery (Trap), Rock Crab, Sablefish (blackcod), Sea Cucumber (Diving), Sea Cucumber (Trawl), Spot Prawn, Market Squid, Swordfish, Thornyhead, and Red Sea Urchin). The Coastal Pelagics fishery includes both Northern Anchovy and Pacific Sardine. The N. Fishery includes Cabezon, Greenling, and Rockfish. The commercial fisheries are reported for the entire study region and by port (i.e., Santa Barbara, Ventura, Port Hueneme, San Pedro, Dana Point, Oceanside, and San Diego).

2.1 Potential Impacts on Commercial Fishing Grounds (Stated Value)

Table 1 shows the number of port-fishery combinations that are most and least impacted by each option under consideration for each of the four geographies. There are 65 port-fishery combinations in total; however, since these proposed MPA options are geographically specific and may not impact fisheries outside of the geography of interest, we only report the number of port-fishery combinations where the impact is greater than 0%. Also note that in some cases, multiple MPA options may have the same impact (and therefore have been counted twice).

Each MPA proposal affects the commercial fisheries differently. On average, for each geography:

- Point Dume: Option 2 has the greatest potential impact on the fewest port-fishery combinations (1) while Option 3 has the least potential impact on the most port-fishery combinations (21).
- Palos Verde: Option 2 has the greatest potential impact on the fewest port-fishery combinations (9) and the least potential impact on the most port-fishery combinations (11).
- Orange County: Option 2 has the greatest potential impact on the fewest port-fishery combinations (5) and the least potential impact on the most port-fishery combinations (16).
- San Diego: Option 2 has the greatest potential impact on the fewest port-fishery combinations (3), while both Options 2 and 4 have the least potential impact on the most port-fishery combinations (8).

Table 1: Potential impact on stated value of commercial fisheries

	Point Dume Options			Palos Verde Options		Orange Co. Options		San Diego Options			
	1	2	3	1	2	1	2	1	2	3	4
Greatest potential impact	21	1	8	11	9	16	5	10	3	5	7
Least potential impact	8	1	21	9	11	5	16	2	8	7	5

2.2 Potential Net Economic Impacts on Commercial Fisheries

A key assumption of the net economic impact analysis is that each of MPA proposal completely eliminates fishing opportunities in areas closed to specific fisheries and that fishermen are unable to adjust or mitigate in any way. The effect of such an assumption is most likely an overestimation of the impacts, or a “worst case scenario.”

We calculate the annual net economic impact (NEI) on SCSR commercial fisheries as the percentage reduction in net economic revenue (i.e., profit). On average, of the Point Dume options, Option 3 has the lowest NEI (\$202,346); of the Palos Verde options, Option 1 has the lowest NEI (\$143,149); of the Orange County options, Option 2 has the lowest NEI (\$198,650); and of the San Diego options, Option 2 (\$308,316) has the lowest NEI. Figure 1 illustrates these results. The potential impacts from each proposal are broken down by port in Table 2 and by fishery in Table 3. Please see the appendix for results broken down by port-fishery combinations.

Figure 1: Estimated annual net economic impact on commercial fisheries (% reduction in profit)

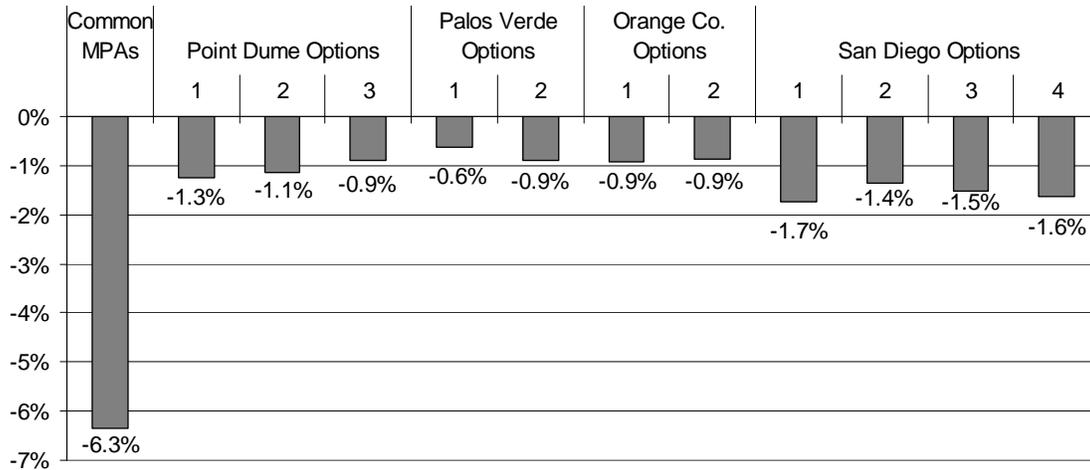


Table 2: Estimated annual net economic impact on commercial fisheries by port (reduction in profit)

Port	Baseline NER (Profit)	Common MPAs	Point Dume Options			Palos Verde Options		Orange Co. Options		San Diego Options			
			1	2	3	1	2	1	2	1	2	3	4
\$ Reduction in Profit													
Santa Barbara	\$3,141,740	\$423,893	\$7,705	\$7,419	\$7,113	\$511	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ventura	\$2,232,518	\$100,822	\$10,017	\$8,855	\$6,650	\$7,864	\$2,983	\$7,864	\$7,322	\$14,915	\$11,119	\$5,153	\$10,576
Port Hueneme	\$5,052,398	\$376,639	\$69,509	\$64,683	\$57,801	\$17,422	\$9,254	\$28,182	\$28,280	\$23,187	\$21,758	\$20,935	\$26,556
San Pedro	\$9,151,885	\$391,980	\$105,904	\$95,683	\$72,623	\$107,554	\$110,327	\$125,744	\$123,668	\$51,027	\$46,058	\$39,395	\$50,033
Dana Point	\$933,955	\$71,763	\$42,520	\$38,385	\$27,456	\$4,753	\$40,118	\$42,123	\$35,719	\$0	\$0	\$0	\$0
Oceanside	\$505,421	\$23,947	\$47,528	\$42,908	\$30,702	\$4,979	\$41,969	\$5,913	\$3,621	\$41,064	\$29,785	\$18,398	\$26,405
San Diego	\$1,630,538	\$48,458	\$78	\$65	\$0	\$65	\$233	\$39	\$39	\$266,059	\$199,597	\$257,923	\$256,299
Study Region	\$22,648,455	\$1,437,503	\$283,261	\$257,998	\$202,346	\$143,149	\$204,883	\$209,866	\$198,650	\$396,253	\$308,316	\$341,804	\$369,870
% Reduction in Profit													
Santa Barbara	54%	13.5%	0.2%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Ventura	44%	4.5%	0.4%	0.4%	0.3%	0.4%	0.1%	0.4%	0.3%	0.7%	0.5%	0.2%	0.5%
Port Hueneme	46%	7.5%	1.4%	1.3%	1.1%	0.3%	0.2%	0.6%	0.6%	0.5%	0.4%	0.4%	0.5%
San Pedro	45%	4.3%	1.2%	1.0%	0.8%	1.2%	1.2%	1.4%	1.4%	0.6%	0.5%	0.4%	0.5%
Dana Point	50%	7.7%	4.6%	4.1%	2.9%	0.5%	4.3%	4.5%	3.8%	0.0%	0.0%	0.0%	0.0%
Oceanside	51%	4.7%	9.4%	8.5%	6.1%	1.0%	8.3%	1.2%	0.7%	8.1%	5.9%	3.6%	5.2%
San Diego	53%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.3%	12.2%	15.8%	15.7%
Study Region	—	6.3%	1.3%	1.1%	0.9%	0.6%	0.9%	0.9%	0.9%	1.7%	1.4%	1.5%	1.6%

Table 3: Estimated annual net economic impact on commercial fisheries (reduction in profit)

Fishery	Baseline NER (Profit)	Common MPAs	Point Dume Options			Palos Verde Options		Orange Co. Options		San Diego Options			
			1	2	3	1	2	1	2	1	2	3	4
\$ Reduction in Profit													
Ca. Halibut (Hook & Line)	\$51,508	\$9,495	\$807	\$755	\$667	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ca. Halibut (Trawl)	—	—	—	—	—	—	—	—	—	—	—	—	—
Coastal Pelagics	\$2,613,331	\$48,931	\$4,694	\$3,195	\$0	\$15,925	\$9,975	\$67,840	\$69,242	\$16,936	\$15,257	\$14,703	\$16,757
Ca. Spiny Lobster	\$3,439,117	\$213,859	\$26,117	\$26,799	\$28,179	\$24,915	\$15,782	\$22,932	\$19,645	\$235,360	\$176,024	\$212,141	\$221,035
N. Fishery (Hook & Line)	\$105,125	\$24,023	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$226	\$178	\$286	\$331
N. Fishery (Trap)	\$182,413	\$7,453	\$845	\$924	\$1,081	\$1,666	\$1,435	\$6,611	\$6,608	\$9,020	\$7,702	\$8,174	\$7,931
Rock Crab	\$780,474	\$74,447	\$11	\$11	\$11	\$45	\$34	\$3,082	\$3,069	\$3,224	\$2,867	\$10,618	\$10,403
Sablefish (blackcod)	\$125,479	\$0	\$22,939	\$20,710	\$14,813	\$4,458	\$37,612	\$7,406	\$4,551	\$0	\$0	\$0	\$0
Sea Cucumber (Diving)	\$252,149	\$41,954	\$10,574	\$9,847	\$8,981	\$2,514	\$2,657	\$0	\$0	\$395	\$70	\$1,261	\$1,261
Sea Cucumber (Trawl)	—	—	—	—	—	—	—	—	—	—	—	—	—
Spot Prawn	\$892,881	\$148,445	\$0	\$0	\$0	\$337	\$0	\$1,232	\$1,090	\$10,444	\$10,444	\$10,444	\$9,942
Market Squid	\$9,589,146	\$460,179	\$15,833	\$11,175	\$0	\$59,367	\$26,167	\$86,928	\$85,718	\$72,194	\$63,677	\$50,780	\$70,409
Swordfish	\$123,770	\$12,814	\$78	\$65	\$0	\$65	\$233	\$39	\$39	\$39	\$39	\$39	\$39
Thornyhead	\$313,645	\$0	\$120,899	\$109,136	\$78,095	\$11,045	\$93,199	\$11,477	\$7,026	\$0	\$0	\$0	\$0
Red Sea Urchin	\$4,179,418	\$395,903	\$80,464	\$75,381	\$70,519	\$22,811	\$17,789	\$2,319	\$1,662	\$48,415	\$32,056	\$33,358	\$31,764
All Fisheries²	\$22,648,455	\$1,437,503	\$283,261	\$257,998	\$202,346	\$143,149	\$204,883	\$209,866	\$198,650	\$396,253	\$308,316	\$341,804	\$369,870
% Reduction in Profit													
Ca. Halibut (Hook & Line)	48%	18.4%	1.6%	1.5%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Ca. Halibut (Trawl)	—	—	—	—	—	—	—	—	—	—	—	—	—
Coastal Pelagics	44%	1.9%	0.2%	0.1%	0.0%	0.6%	0.4%	2.6%	2.6%	0.6%	0.6%	0.6%	0.6%
Ca. Spiny Lobster	54%	6.2%	0.8%	0.8%	0.8%	0.7%	0.5%	0.7%	0.6%	6.8%	5.1%	6.2%	6.4%
N. Fishery (Hook & Line)	48%	22.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.2%	0.3%	0.3%
N. Fishery (Trap)	49%	4.1%	0.5%	0.5%	0.6%	0.9%	0.8%	3.6%	3.6%	4.9%	4.2%	4.5%	4.3%
Rock Crab	53%	9.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.4%	0.4%	0.4%	1.4%	1.3%
Sablefish (blackcod)	44%	0.0%	18.3%	16.5%	11.8%	3.6%	30.0%	5.9%	3.6%	0.0%	0.0%	0.0%	0.0%
Sea Cucumber (Diving)	50%	16.6%	4.2%	3.9%	3.6%	1.0%	1.1%	0.0%	0.0%	0.2%	0.0%	0.5%	0.5%
Sea Cucumber (Trawl)	—	—	—	—	—	—	—	—	—	—	—	—	—
Spot Prawn	51%	16.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	1.2%	1.2%	1.2%	1.1%
Market Squid	43%	4.8%	0.2%	0.1%	0.0%	0.6%	0.3%	0.9%	0.9%	0.8%	0.7%	0.5%	0.7%
Swordfish	34%	10.4%	0.1%	0.1%	0.0%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Thornyhead	48%	0.0%	38.5%	34.8%	24.9%	3.5%	29.7%	3.7%	2.2%	0.0%	0.0%	0.0%	0.0%
Red Sea Urchin	55%	9.5%	1.9%	1.8%	1.7%	0.5%	0.4%	0.1%	0.0%	1.2%	0.8%	0.8%	0.8%
All Fisheries	—	6.3%	1.3%	1.1%	0.9%	0.6%	0.9%	0.9%	0.9%	1.7%	1.4%	1.5%	1.6%

² Santa Barbara Ca. Halibut (Trawl) and Sea Cucumber (Trawl) are not included in this total. Please see the tables in the Appendix for estimated impacts on these two fisheries.

3. Results for Commercial Passenger Fishing Vessels (CPFV)

We summarize here our analyses of the potential impacts on the ten CPFV fisheries (i.e., Pacific Barracuda, Ca. Halibut, Kelp Bass (calico bass), Lingcod, Rockfish, Ca. Scorpionfish (sculpin), Ca. Sheephead, Sand Bass, Ocean Whitefish, and White Seabass). The Sand Bass fishery includes both Barred Sand Bass (sand bass) and Spotted Sand Bass (spotted bay bass). The results for CPFV fisheries are broken out by study region and by port (i.e., Santa Barbara, Port Hueneme/Channel Islands Harbor, Santa Monica, San Pedro/Long Beach, Newport Beach, Dana Point, Oceanside, and San Diego).

3.1 Potential Impacts on CPFV Fishing Grounds (Stated Value)

Each MPA proposal affects the CPFV fisheries differently. Table 4 presents the number of CPFV port-fishery combinations that are most and least impacted under each MPA option within each of the four geographies. There are 80 port-fishery combinations in total; however, since these proposed MPA options are geographically specific and may not impact fisheries outside of the geography of interest, we only report the number of port-fishery combinations where the impact is greater than 0%. Also note that in some cases, multiple MPA options may have the same impact (and therefore have been counted twice).

Each MPA proposal affects the CPFV fisheries differently. On average, for each geography:

- Point Dume: Option 2 has the greatest potential impact on the fewest port-fishery combinations (1) while Option 3 has the least potential impact on the most port-fishery combinations (12).
- Palos Verde: Option 2 has the greatest potential impact on the fewest port-fishery combinations (9) and the least potential impact on the most port-fishery combinations (13).
- Orange County: Option 1 has the greatest potential impact on the fewest port-fishery combinations (9) and the least potential impact on the most port-fishery combinations (16).
- San Diego: Option 2 has the greatest potential impact on the fewest port-fishery combinations (3) and the least potential impact on the most port-fishery combinations (16).

Table 4: Potential impact on stated value of CPFV fisheries

	Point Dume Options			Palos Verde Options		Orange Co. Options		San Diego Options			
	1	2	3	1	2	1	2	1	2	3	4
Greatest potential impact	12	1	12	13	9	9	16	10	3	5	12
Least potential impact	11	5	12	9	13	16	9	4	16	6	6

3.2 Potential Net Economic Impacts on CPFV Fisheries

Similar to our analysis of the commercial fisheries, we calculate the potential net economic impact for the CPFV fisheries as the average percentage reduction in net economic revenue (i.e., profit) for all ten species considered. Figure 2 illustrates these results.

We calculate the annual net economic impact (NEI) on SCSR commercial fisheries as the percentage reduction in net economic revenue (i.e., profit). On average, of the Point Dume options, Option 2 has the lowest NEI (2.0%); of the Palos Verde options, Option 2 has the lowest NEI (0.5%); of the Orange County options, Option 1 has the lowest NEI (2.2%); and of the San Diego options, Option 2 (3.3%) has the lowest NEI. Figure 2 illustrates these results. The potential impacts from each proposal are broken down by port in Table 5.

Figure 2: Estimated annual net economic impact on CPFV fisheries by port (% reduction in profit)

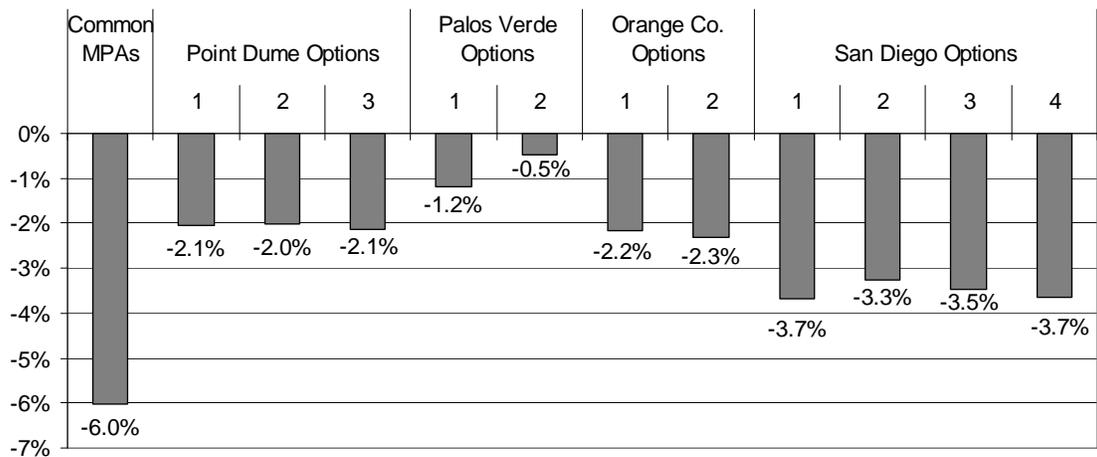


Table 5: Estimated annual net economic impact on CPFV fisheries by port (reduction in profit)

Port	Baseline NER (Profit)	Common MPAs	Point Dume Options			Palos Verde Options		Orange Co. Options		San Diego Options			
			1	2	3	1	2	1	2	1	2	3	4
Santa Barbara	33%	14.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Port Hueneme / Channel Islands Harbor	39%	12.1%	12.1%	12.1%	13.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Santa Monica	26%	0.9%	1.6%	1.0%	0.3%	9.5%	1.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
San Pedro / Long Beach	35%	4.1%	0.0%	0.0%	0.0%	1.3%	1.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Newport Beach	38%	4.2%	0.0%	0.0%	0.0%	0.0%	0.0%	7.2%	7.0%	0.1%	0.1%	0.1%	0.1%
Dana Point	21%	4.0%	0.0%	0.0%	0.0%	0.0%	0.0%	12.5%	14.8%	0.0%	0.0%	0.0%	0.0%
Oceanside	38%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	11.9%	11.7%	11.8%	13.6%
San Diego	18%	6.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	25.2%	19.8%	22.5%	21.2%
Study Region	—	6.0%	2.1%	2.0%	2.1%	1.2%	0.5%	2.2%	2.3%	3.7%	3.3%	3.5%	3.7%

4. Results for Recreational Fisheries

We summarize here our analyses of the potential impacts on the 17 recreational fisheries (i.e., Pacific Barracuda, Pacific Bonito, Ca. Halibut, Kelp Bass (calico bass), White Croaker, Ca. Spiny Lobster, Jack Mackerel, Rockfish, Rock Crab, Scallops, Ca. Sheephead, Sand Bass, Market Squid, Surfperch, Thresher Shark, White Seabass, and Ca. Yellowtail). The Sand Bass fishery includes both Barred Sand Bass (sand bass) and Spotted Sand Bass (spotted bay bass). The results for recreational fisheries are broken out by user group (i.e., dive, kayak, and private vessel) and by county (i.e., Santa Barbara, Ventura, Los Angeles, Orange, and San Diego).

5.1 Potential Impacts on Recreational Fishing Grounds (Stated Value)

MPA options vary considerably in their effects, both between and across fisheries. Due to the large number of fisheries, user groups, and counties considered, we present potential impacts on total recreational fishing grounds in the Appendix.

APPENDIX

Table A.1: Estimated annual net economic impact for Santa Barbara

Fishery	Baseline NER (Profit)	Common MPAs	Point Dume Options			Palos Verde Options		Orange Co. Options		San Diego Options			
			1	2	3	1	2	1	2	1	2	3	4
\$ Reduction in Profit													
Ca. Halibut (Hook & Line)	\$33,633	\$7,126	\$672	\$630	\$556	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ca. Halibut (Trawl)	\$135,383	\$10,438	\$596	\$737	\$1,018	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Coastal Pelagics	—	—	—	—	—	—	—	—	—	—	—	—	—
Ca. Spiny Lobster	\$842,819	\$122,923	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
N. Fishery (Hook & Line)	\$72,715	\$14,822	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
N. Fishery (Trap)	\$19,157	\$2,624	\$133	\$145	\$168	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Rock Crab	\$448,912	\$70,810	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Sablefish (blackcod)	—	—	—	—	—	—	—	—	—	—	—	—	—
Sea Cucumber (Diving)	\$10,017	\$1,954	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Sea Cucumber (Trawl)	\$122,316	\$4,281	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Spot Prawn	\$24,886	\$4,810	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Market Squid	—	—	—	—	—	—	—	—	—	—	—	—	—
Swordfish	—	—	—	—	—	—	—	—	—	—	—	—	—
Thornyhead	—	—	—	—	—	—	—	—	—	—	—	—	—
Red Sea Urchin	\$1,689,601	\$198,825	\$6,900	\$6,645	\$6,389	\$511	\$0	\$0	\$0	\$0	\$0	\$0	\$0
All Fisheries	\$3,399,438	\$438,613	\$8,302	\$8,156	\$8,131	\$511	\$0	\$0	\$0	\$0	\$0	\$0	\$0
% Reduction in Profit													
Ca. Halibut (Hook & Line)	48%	21.2%	2.0%	1.9%	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Ca. Halibut (Trawl)	68%	7.7%	0.4%	0.5%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Coastal Pelagics	—	—	—	—	—	—	—	—	—	—	—	—	—
Ca. Spiny Lobster	54%	14.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
N. Fishery (Hook & Line)	48%	20.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
N. Fishery (Trap)	49%	13.7%	0.7%	0.8%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Rock Crab	53%	15.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sablefish (blackcod)	—	—	—	—	—	—	—	—	—	—	—	—	—
Sea Cucumber (Diving)	50%	19.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sea Cucumber (Trawl)	75%	3.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spot Prawn	51%	19.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Market Squid	—	—	—	—	—	—	—	—	—	—	—	—	—
Swordfish	—	—	—	—	—	—	—	—	—	—	—	—	—
Thornyhead	—	—	—	—	—	—	—	—	—	—	—	—	—
Red Sea Urchin	55%	11.8%	0.4%	0.4%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
All Fisheries	—	12.9%	0.2%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table A.2: Estimated annual net economic impact for Ventura

Fishery	Baseline NER (Profit)	Common MPAs	Point Dume Options			Palos Verde Options		Orange Co. Options		San Diego Options			
			1	2	3	1	2	1	2	1	2	3	4
\$ Reduction in Profit													
Ca. Halibut (Hook & Line)	\$8,653	\$1,207	\$86	\$79	\$71	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ca. Halibut (Trawl)	—	—	—	—	—	—	—	—	—	—	—	—	—
Coastal Pelagics	—	—	—	—	—	—	—	—	—	—	—	—	—
Ca. Spiny Lobster	\$200,675	\$2,002	\$2,032	\$2,153	\$2,457	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
N. Fishery (Hook & Line)	—	—	—	—	—	—	—	—	—	—	—	—	—
N. Fishery (Trap)	\$17,231	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Rock Crab	\$67,134	\$3,637	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Sablefish (blackcod)	—	—	—	—	—	—	—	—	—	—	—	—	—
Sea Cucumber (Diving)	\$24,734	\$417	\$5,187	\$4,724	\$4,123	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Sea Cucumber (Trawl)	—	—	—	—	—	—	—	—	—	—	—	—	—
Spot Prawn	\$55,616	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Market Squid	\$1,858,475	\$93,560	\$2,712	\$1,898	\$0	\$7,864	\$2,983	\$7,864	\$7,322	\$14,915	\$11,119	\$5,153	\$10,576
Swordfish	—	—	—	—	—	—	—	—	—	—	—	—	—
Thornyhead	—	—	—	—	—	—	—	—	—	—	—	—	—
Red Sea Urchin	—	—	—	—	—	—	—	—	—	—	—	—	—
All Fisheries	\$2,232,518	\$100,822	\$10,017	\$8,855	\$6,650	\$7,864	\$2,983	\$7,864	\$7,322	\$14,915	\$11,119	\$5,153	\$10,576
% Reduction in Profit													
Ca. Halibut (Hook & Line)	48%	13.9%	1.0%	0.9%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Ca. Halibut (Trawl)	—	—	—	—	—	—	—	—	—	—	—	—	—
Coastal Pelagics	—	—	—	—	—	—	—	—	—	—	—	—	—
Ca. Spiny Lobster	54%	1.0%	1.0%	1.1%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
N. Fishery (Hook & Line)	—	—	—	—	—	—	—	—	—	—	—	—	—
N. Fishery (Trap)	49%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Rock Crab	53%	5.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sablefish (blackcod)	—	—	—	—	—	—	—	—	—	—	—	—	—
Sea Cucumber (Diving)	50%	1.7%	21.0%	19.1%	16.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sea Cucumber (Trawl)	—	—	—	—	—	—	—	—	—	—	—	—	—
Spot Prawn	51%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Market Squid	43%	5.0%	0.1%	0.1%	0.0%	0.4%	0.2%	0.4%	0.4%	0.8%	0.6%	0.3%	0.6%
Swordfish	—	—	—	—	—	—	—	—	—	—	—	—	—
Thornyhead	—	—	—	—	—	—	—	—	—	—	—	—	—
Red Sea Urchin	—	—	—	—	—	—	—	—	—	—	—	—	—
All Fisheries	—	4.5%	0.4%	0.4%	0.3%	0.4%	0.1%	0.4%	0.3%	0.7%	0.5%	0.2%	0.5%

Table A.3: Estimated annual net economic impact for Port Hueneme

Fishery	Baseline NER (Profit)	Common MPAs	Point Dume Options			Palos Verde Options		Orange Co. Options		San Diego Options			
			1	2	3	1	2	1	2	1	2	3	4
\$ Reduction in Profit													
Ca. Halibut (Hook & Line)	\$9,222	\$1,163	\$49	\$46	\$41	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ca. Halibut (Trawl)	—	—	—	—	—	—	—	—	—	—	—	—	—
Coastal Pelagics	\$340,771	\$7,528	\$782	\$587	\$0	\$929	\$1,173	\$6,551	\$6,648	\$636	\$587	\$684	\$782
Ca. Spiny Lobster	\$227,379	\$10,516	\$5,498	\$5,739	\$6,255	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
N. Fishery (Hook & Line)	\$24,024	\$7,817	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
N. Fishery (Trap)	\$30,073	\$0	\$602	\$658	\$769	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Rock Crab	\$70,012	\$0	\$11	\$11	\$11	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Sablefish (blackcod)	—	—	—	—	—	—	—	—	—	—	—	—	—
Sea Cucumber (Diving)	\$130,384	\$29,030	\$5,387	\$5,123	\$4,859	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Sea Cucumber (Trawl)	—	—	—	—	—	—	—	—	—	—	—	—	—
Spot Prawn	\$219,398	\$88,006	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Market Squid	\$3,154,088	\$183,638	\$6,443	\$4,602	\$0	\$16,109	\$7,824	\$21,631	\$21,631	\$22,552	\$21,171	\$20,251	\$25,774
Swordfish	—	—	—	—	—	—	—	—	—	—	—	—	—
Thornyhead	—	—	—	—	—	—	—	—	—	—	—	—	—
Red Sea Urchin	\$847,047	\$48,942	\$50,735	\$47,917	\$45,867	\$384	\$256	\$0	\$0	\$0	\$0	\$0	\$0
All Fisheries	\$5,052,398	\$376,639	\$69,509	\$64,683	\$57,801	\$17,422	\$9,254	\$28,182	\$28,280	\$23,187	\$21,758	\$20,935	\$26,556
% Reduction in Profit													
Ca. Halibut (Hook & Line)	48%	12.6%	0.5%	0.5%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Ca. Halibut (Trawl)	—	—	—	—	—	—	—	—	—	—	—	—	—
Coastal Pelagics	44%	2.2%	0.2%	0.2%	0.0%	0.3%	0.3%	1.9%	2.0%	0.2%	0.2%	0.2%	0.2%
Ca. Spiny Lobster	54%	4.6%	2.4%	2.5%	2.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
N. Fishery (Hook & Line)	48%	32.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
N. Fishery (Trap)	49%	0.0%	2.0%	2.2%	2.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Rock Crab	53%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sablefish (blackcod)	—	—	—	—	—	—	—	—	—	—	—	—	—
Sea Cucumber (Diving)	50%	22.3%	4.1%	3.9%	3.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sea Cucumber (Trawl)	—	—	—	—	—	—	—	—	—	—	—	—	—
Spot Prawn	51%	40.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Market Squid	43%	5.8%	0.2%	0.1%	0.0%	0.5%	0.2%	0.7%	0.7%	0.7%	0.7%	0.6%	0.8%
Swordfish	—	—	—	—	—	—	—	—	—	—	—	—	—
Thornyhead	—	—	—	—	—	—	—	—	—	—	—	—	—
Red Sea Urchin	55%	5.8%	6.0%	5.7%	5.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
All Fisheries	—	7.5%	1.4%	1.3%	1.1%	0.3%	0.2%	0.6%	0.6%	0.5%	0.4%	0.4%	0.5%

Table A.4: Estimated annual net economic impact for San Pedro

Fishery	Baseline NER (Profit)	Common MPAs	Point Dume Options			Palos Verde Options		Orange Co. Options		San Diego Options			
			1	2	3	1	2	1	2	1	2	3	4
\$ Reduction in Profit													
Ca. Halibut (Hook & Line)	—	—	—	—	—	—	—	—	—	—	—	—	—
Ca. Halibut (Trawl)	—	—	—	—	—	—	—	—	—	—	—	—	—
Coastal Pelagics	\$2,272,559	\$41,403	\$3,912	\$2,608	\$0	\$14,996	\$8,802	\$61,290	\$62,594	\$16,300	\$14,670	\$14,018	\$15,974
Ca. Spiny Lobster	\$530,066	\$13,219	\$18,586	\$18,907	\$19,467	\$24,915	\$15,782	\$0	\$0	\$0	\$0	\$0	\$0
N. Fishery (Hook & Line)	\$6,793	\$1,360	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
N. Fishery (Trap)	\$37,414	\$2,582	\$110	\$121	\$144	\$1,666	\$1,435	\$0	\$0	\$0	\$0	\$0	\$0
Rock Crab	\$72,748	\$0	\$0	\$0	\$0	\$45	\$34	\$11	\$11	\$0	\$0	\$0	\$0
Sablefish (blackcod)	\$30,059	\$0	\$5,495	\$4,961	\$3,548	\$1,068	\$9,010	\$1,774	\$1,090	\$0	\$0	\$0	\$0
Sea Cucumber (Diving)	\$83,127	\$10,447	\$0	\$0	\$0	\$2,514	\$2,657	\$0	\$0	\$0	\$0	\$0	\$0
Sea Cucumber (Trawl)	—	—	—	—	—	—	—	—	—	—	—	—	—
Spot Prawn	\$199,583	\$4,109	\$0	\$0	\$0	\$337	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Market Squid	\$4,576,584	\$182,981	\$6,678	\$4,675	\$0	\$35,394	\$15,360	\$57,432	\$56,764	\$34,726	\$31,387	\$25,377	\$34,059
Swordfish	—	—	—	—	—	—	—	—	—	—	—	—	—
Thornyhead	\$135,490	\$0	\$48,293	\$43,591	\$31,200	\$4,702	\$39,713	\$5,237	\$3,209	\$0	\$0	\$0	\$0
Red Sea Urchin	\$1,207,462	\$135,879	\$22,829	\$20,820	\$18,263	\$21,916	\$17,533	\$0	\$0	\$0	\$0	\$0	\$0
All Fisheries	\$9,151,885	\$391,980	\$105,904	\$95,683	\$72,623	\$107,554	\$110,327	\$125,744	\$123,668	\$51,027	\$46,058	\$39,395	\$50,033
% Reduction in Profit													
Ca. Halibut (Hook & Line)	—	—	—	—	—	—	—	—	—	—	—	—	—
Ca. Halibut (Trawl)	—	—	—	—	—	—	—	—	—	—	—	—	—
Coastal Pelagics	44%	1.8%	0.2%	0.1%	0.0%	0.7%	0.4%	2.7%	2.8%	0.7%	0.6%	0.6%	0.7%
Ca. Spiny Lobster	54%	2.5%	3.5%	3.6%	3.7%	4.7%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
N. Fishery (Hook & Line)	48%	20.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
N. Fishery (Trap)	49%	6.9%	0.3%	0.3%	0.4%	4.5%	3.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Rock Crab	53%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sablefish (blackcod)	44%	0.0%	18.3%	16.5%	11.8%	3.6%	30.0%	5.9%	3.6%	0.0%	0.0%	0.0%	0.0%
Sea Cucumber (Diving)	50%	12.6%	0.0%	0.0%	0.0%	3.0%	3.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sea Cucumber (Trawl)	—	—	—	—	—	—	—	—	—	—	—	—	—
Spot Prawn	51%	2.1%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Market Squid	43%	4.0%	0.1%	0.1%	0.0%	0.8%	0.3%	1.3%	1.2%	0.8%	0.7%	0.6%	0.7%
Swordfish	—	—	—	—	—	—	—	—	—	—	—	—	—
Thornyhead	48%	0.0%	35.6%	32.2%	23.0%	3.5%	29.3%	3.9%	2.4%	0.0%	0.0%	0.0%	0.0%
Red Sea Urchin	55%	11.3%	1.9%	1.7%	1.5%	1.8%	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
All Fisheries	—	4.3%	1.2%	1.0%	0.8%	1.2%	1.2%	1.4%	1.4%	0.6%	0.5%	0.4%	0.5%

Table A.5: Estimated annual net economic impact for Dana Point

Fishery	Baseline NER (Profit)	Common MPAs	Point Dume Options			Palos Verde Options		Orange Co. Options		San Diego Options			
			1	2	3	1	2	1	2	1	2	3	4
\$ Reduction in Profit													
Ca. Halibut (Hook & Line)	—	—	—	—	—	—	—	—	—	—	—	—	
Ca. Halibut (Trawl)	—	—	—	—	—	—	—	—	—	—	—	—	
Coastal Pelagics	—	—	—	—	—	—	—	—	—	—	—	—	
Ca. Spiny Lobster	\$494,223	\$43,996	\$0	\$0	\$0	\$0	\$0	\$22,932	\$19,645	\$0	\$0	\$0	\$0
N. Fishery (Hook & Line)	—	—	—	—	—	—	—	—	—	—	—	—	
N. Fishery (Trap)	\$15,341	\$0	\$0	\$0	\$0	\$0	\$0	\$6,611	\$6,608	\$0	\$0	\$0	\$0
Rock Crab	\$20,384	\$0	\$0	\$0	\$0	\$0	\$0	\$3,071	\$3,058	\$0	\$0	\$0	\$0
Sablefish (blackcod)	\$55,682	\$0	\$10,179	\$9,190	\$6,573	\$1,978	\$16,691	\$3,287	\$2,019	\$0	\$0	\$0	\$0
Sea Cucumber (Diving)	—	—	—	—	—	—	—	—	—	—	—	—	
Sea Cucumber (Trawl)	—	—	—	—	—	—	—	—	—	—	—	—	
Spot Prawn	\$154,224	\$14,927	\$0	\$0	\$0	\$0	\$0	\$1,232	\$1,090	\$0	\$0	\$0	\$0
Market Squid	—	—	—	—	—	—	—	—	—	—	—	—	
Swordfish	\$66,411	\$12,244	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Thornyhead	\$77,748	\$0	\$32,341	\$29,195	\$20,883	\$2,775	\$23,428	\$2,673	\$1,637	\$0	\$0	\$0	\$0
Red Sea Urchin	\$49,942	\$597	\$0	\$0	\$0	\$0	\$0	\$2,319	\$1,662	\$0	\$0	\$0	\$0
All Fisheries	\$933,955	\$71,763	\$42,520	\$38,385	\$27,456	\$4,753	\$40,118	\$42,123	\$35,719	\$0	\$0	\$0	\$0
% Reduction in Profit													
Ca. Halibut (Hook & Line)	—	—	—	—	—	—	—	—	—	—	—	—	
Ca. Halibut (Trawl)	—	—	—	—	—	—	—	—	—	—	—	—	
Coastal Pelagics	—	—	—	—	—	—	—	—	—	—	—	—	
Ca. Spiny Lobster	54%	8.9%	0.0%	0.0%	0.0%	0.0%	0.0%	4.6%	4.0%	0.0%	0.0%	0.0%	0.0%
N. Fishery (Hook & Line)	—	—	—	—	—	—	—	—	—	—	—	—	
N. Fishery (Trap)	49%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	43.1%	43.1%	0.0%	0.0%	0.0%	0.0%
Rock Crab	53%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	15.1%	15.0%	0.0%	0.0%	0.0%	0.0%
Sablefish (blackcod)	44%	0.0%	18.3%	16.5%	11.8%	3.6%	30.0%	5.9%	3.6%	0.0%	0.0%	0.0%	0.0%
Sea Cucumber (Diving)	—	—	—	—	—	—	—	—	—	—	—	—	
Sea Cucumber (Trawl)	—	—	—	—	—	—	—	—	—	—	—	—	
Spot Prawn	51%	9.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.7%	0.0%	0.0%	0.0%	0.0%
Market Squid	—	—	—	—	—	—	—	—	—	—	—	—	
Swordfish	34%	18.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Thornyhead	48%	0.0%	41.6%	37.6%	26.9%	3.6%	30.1%	3.4%	2.1%	0.0%	0.0%	0.0%	0.0%
Red Sea Urchin	55%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	4.6%	3.3%	0.0%	0.0%	0.0%	0.0%
All Fisheries	—	7.7%	4.6%	4.1%	2.9%	0.5%	4.3%	4.5%	3.8%	0.0%	0.0%	0.0%	0.0%

Table A.6: Estimated annual net economic impact for Oceanside

Fishery	Baseline NER (Profit)	Common MPAs	Point Dume Options			Palos Verde Options		Orange Co. Options		San Diego Options			
			1	2	3	1	2	1	2	1	2	3	4
\$ Reduction in Profit													
Ca. Halibut (Hook & Line)	—	—	—	—	—	—	—	—	—	—	—	—	—
Ca. Halibut (Trawl)	—	—	—	—	—	—	—	—	—	—	—	—	—
Coastal Pelagics	—	—	—	—	—	—	—	—	—	—	—	—	—
Ca. Spiny Lobster	\$216,644	\$2,423	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$39,848	\$28,585	\$17,190	\$19,777
N. Fishery (Hook & Line)	—	—	—	—	—	—	—	—	—	—	—	—	—
N. Fishery (Trap)	\$10,378	\$34	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$337	\$321	\$329	\$110
Rock Crab	\$18,686	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$12	\$12	\$12	\$0
Sablefish (blackcod)	\$39,738	\$0	\$7,264	\$6,559	\$4,691	\$1,412	\$11,911	\$2,345	\$1,441	\$0	\$0	\$0	\$0
Sea Cucumber (Diving)	—	—	—	—	—	—	—	—	—	—	—	—	—
Sea Cucumber (Trawl)	—	—	—	—	—	—	—	—	—	—	—	—	—
Spot Prawn	\$108,437	\$21,490	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Market Squid	—	—	—	—	—	—	—	—	—	—	—	—	—
Swordfish	—	—	—	—	—	—	—	—	—	—	—	—	—
Thornyhead	\$100,406	\$0	\$40,264	\$36,350	\$26,011	\$3,567	\$30,058	\$3,567	\$2,180	\$0	\$0	\$0	\$0
Red Sea Urchin	\$11,132	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$867	\$867	\$867	\$6,518
All Fisheries	\$505,421	\$23,947	\$47,528	\$42,908	\$30,702	\$4,979	\$41,969	\$5,913	\$3,621	\$41,064	\$29,785	\$18,398	\$26,405
% Reduction in Profit													
Ca. Halibut (Hook & Line)	—	—	—	—	—	—	—	—	—	—	—	—	—
Ca. Halibut (Trawl)	—	—	—	—	—	—	—	—	—	—	—	—	—
Coastal Pelagics	—	—	—	—	—	—	—	—	—	—	—	—	—
Ca. Spiny Lobster	54%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	18.4%	13.2%	7.9%	9.1%
N. Fishery (Hook & Line)	—	—	—	—	—	—	—	—	—	—	—	—	—
N. Fishery (Trap)	49%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.3%	3.1%	3.2%	1.1%
Rock Crab	53%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%
Sablefish (blackcod)	44%	0.0%	18.3%	16.5%	11.8%	3.6%	30.0%	5.9%	3.6%	0.0%	0.0%	0.0%	0.0%
Sea Cucumber (Diving)	—	—	—	—	—	—	—	—	—	—	—	—	—
Sea Cucumber (Trawl)	—	—	—	—	—	—	—	—	—	—	—	—	—
Spot Prawn	51%	19.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Market Squid	—	—	—	—	—	—	—	—	—	—	—	—	—
Swordfish	34%	—	—	—	—	—	—	—	—	—	—	—	—
Thornyhead	48%	0.0%	40.1%	36.2%	25.9%	3.6%	29.9%	3.6%	2.2%	0.0%	0.0%	0.0%	0.0%
Red Sea Urchin	55%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.8%	7.8%	7.8%	58.6%
All Fisheries	—	4.7%	9.4%	8.5%	6.1%	1.0%	8.3%	1.2%	0.7%	8.1%	5.9%	3.6%	5.2%

Table A.7: Estimated annual net economic impact for San Diego

Fishery	Baseline NER (Profit)	Common MPAs	Point Dume Options			Palos Verde Options		Orange Co. Options		San Diego Options			
			1	2	3	1	2	1	2	1	2	3	4
\$ Reduction in Profit													
Ca. Halibut (Hook & Line)	—	—	—	—	—	—	—	—	—	—	—	—	
Ca. Halibut (Trawl)	—	—	—	—	—	—	—	—	—	—	—	—	
Coastal Pelagics	—	—	—	—	—	—	—	—	—	—	—	—	
Ca. Spiny Lobster	\$927,311	\$18,780	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$195,512	\$147,440	\$194,951	\$201,258
N. Fishery (Hook & Line)	\$1,593	\$25	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$226	\$178	\$286	\$331
N. Fishery (Trap)	\$52,819	\$2,213	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$8,683	\$7,381	\$7,845	\$7,820
Rock Crab	\$82,598	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,213	\$2,856	\$10,607	\$10,403
Sablefish (blackcod)	—	—	—	—	—	—	—	—	—	—	—	—	—
Sea Cucumber (Diving)	\$3,887	\$106	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$395	\$70	\$1,261	\$1,261
Sea Cucumber (Trawl)	—	—	—	—	—	—	—	—	—	—	—	—	—
Spot Prawn	\$130,737	\$15,104	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$10,444	\$10,444	\$10,444	\$9,942
Market Squid	—	—	—	—	—	—	—	—	—	—	—	—	—
Swordfish	\$57,359	\$570	\$78	\$65	\$0	\$65	\$233	\$39	\$39	\$39	\$39	\$39	\$39
Thornyhead	—	—	—	—	—	—	—	—	—	—	—	—	—
Red Sea Urchin	\$374,234	\$11,660	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$47,548	\$31,189	\$32,491	\$25,246
All Fisheries	\$1,630,538	\$48,458	\$78	\$65	\$0	\$65	\$233	\$39	\$39	\$266,059	\$199,597	\$257,923	\$256,299
% Reduction in Profit													
Ca. Halibut (Hook & Line)	—	—	—	—	—	—	—	—	—	—	—	—	—
Ca. Halibut (Trawl)	—	—	—	—	—	—	—	—	—	—	—	—	—
Coastal Pelagics	—	—	—	—	—	—	—	—	—	—	—	—	—
Ca. Spiny Lobster	54%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	21.1%	15.9%	21.0%	21.7%
N. Fishery (Hook & Line)	48%	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	14.2%	11.2%	17.9%	20.8%
N. Fishery (Trap)	49%	4.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.4%	14.0%	14.9%	14.8%
Rock Crab	53%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.9%	3.5%	12.8%	12.6%
Sablefish (blackcod)	—	—	—	—	—	—	—	—	—	—	—	—	—
Sea Cucumber (Diving)	50%	2.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	10.2%	1.8%	32.4%	32.4%
Sea Cucumber (Trawl)	75%	—	—	—	—	—	—	—	—	—	—	—	—
Spot Prawn	51%	11.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.0%	8.0%	8.0%	7.6%
Market Squid	—	—	—	—	—	—	—	—	—	—	—	—	—
Swordfish	34%	1.0%	0.1%	0.1%	0.0%	0.1%	0.4%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Thornyhead	—	—	—	—	—	—	—	—	—	—	—	—	—
Red Sea Urchin	55%	3.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	12.7%	8.3%	8.7%	6.7%
All Fisheries	—	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.3%	12.2%	15.8%	15.7%

Table A.8: Percentage value of total recreational fishing grounds affected by county for Common MPAs

County	Sector	Pacific Barracuda	Pacific Bonito	Ca. Halibut	Kelp Bass (calico bass)	White Croaker	Ca. Spiny Lobster	Jack Mackerel	Rockfish	Rock Crab	Scallops	Ca. Sheephead	Sand Bass	Market Squid	Surfperch	Thresher Shark	White Seabass	Ca. Yellowtail
Santa Barbara	Dive			7.3%	11.9%	12.1%	9.4%		6.0%		9.0%						4.7%	0.6%
	Kayak			0.5%	7.9%		0.0%						21.6%			0.0%		
	Private Vessel	0.4%		14.2%	11.6%		0.0%		8.8%				0.0%			0.3%	5.7%	0.0%
Ventura	Dive	1.8%		0.2%	0.2%		4.1%		0.0%		3.6%	0.0%	0.0%				1.1%	12.6%
	Kayak	0.0%		0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	7.3%
	Private Vessel	6.6%	1.2%	4.0%	5.4%	0.0%	16.7%	0.0%	5.7%							0.0%	4.8%	14.1%
Los Angeles	Dive	0.0%	6.0%	1.2%	0.4%	0.0%	1.2%		20.7%		0.0%	0.0%	0.0%				2.9%	8.9%
	Kayak	0.0%	0.0%	0.2%	0.6%		0.3%	0.0%	0.0%	0.0%		0.0%	0.6%	0.0%		0.0%	3.5%	1.4%
	Private Vessel	0.2%	0.8%	0.2%	1.4%	0.0%	4.1%	0.1%	5.9%			7.1%	0.0%		0.0%	0.0%	7.1%	6.2%
Orange	Dive		13.4%	0.2%	0.8%	0.0%	2.8%		0.7%		0.7%	0.3%	0.5%				3.7%	8.4%
	Kayak	0.0%	0.0%	0.4%	0.3%		0.1%	0.0%	0.0%			0.0%	0.0%	0.0%		0.0%	0.1%	0.1%
	Private Vessel	0.3%	0.7%	0.5%	2.0%	11.0%	3.9%	0.1%	7.3%			11.2%	0.1%		0.0%	0.0%	9.2%	2.6%
San Diego	Dive	0.3%	0.1%	0.7%	0.8%	0.0%	1.1%		0.0%		0.9%	1.5%	1.0%				0.9%	1.4%
	Kayak	0.0%	0.0%	0.2%	0.6%		1.5%	0.0%	0.2%	1.6%		0.4%	0.2%	0.0%		0.0%	0.2%	0.3%
	Private Vessel	0.1%	0.0%	0.3%	1.1%	1.0%	1.7%	0.5%	0.3%			0.6%	0.1%		0.0%	0.0%	2.6%	1.1%

Table A.9: Percentage value of total recreational fishing grounds affected by county for Point Dume Option 1

County	Sector	Pacific Barracuda	Pacific Bonito	Ca. Halibut	Kelp Bass (calico bass)	White Croaker	Ca. Spiny Lobster	Jack Mackerel	Rockfish	Rock Crab	Scallops	Ca. Sheephead	Sand Bass	Market Squid	Surfperch	Thresher Shark	White Seabass	Ca. Yellowtail
Santa Barbara	Dive			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%						0.0%	0.0%
	Kayak			11.0%	4.1%		0.0%						0.0%			1.7%		
	Private Vessel	0.0%		0.0%	0.0%		0.0%		0.0%				0.0%			0.0%	0.0%	0.0%
Ventura	Dive	0.0%		19.9%	14.9%		12.3%		10.8%		10.1%	0.0%	11.6%				1.9%	0.0%
	Kayak	2.9%		15.9%	17.8%		13.6%	4.1%	15.5%	0.0%		25.0%	21.8%	11.3%		2.2%	13.8%	2.8%
	Private Vessel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%							7.3%	0.0%	0.0%
Los Angeles	Dive	0.0%	0.0%	0.0%	4.1%	0.0%	0.9%		0.0%		2.1%	0.0%	0.0%				0.4%	0.0%
	Kayak	0.0%	0.0%	1.8%	4.2%		0.0%	0.0%	9.9%	0.0%		0.0%	0.3%	0.0%		1.7%	2.6%	0.0%
	Private Vessel	0.2%	0.1%	0.9%	1.2%	0.0%	0.1%	0.0%	1.7%			0.0%	0.0%		2.0%	1.1%	0.2%	0.0%
Orange	Dive		0.0%	0.0%	0.0%	0.0%	0.0%		0.0%		0.0%	0.0%	0.0%				0.0%	0.0%
	Kayak	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%			0.0%	0.0%	0.0%		0.0%	0.0%	0.0%
	Private Vessel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
San Diego	Dive	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%		0.0%	0.0%	0.0%				0.0%	0.0%
	Kayak	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%
	Private Vessel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.0%	0.0%		0.0%	0.0%	0.0%	0.0%

Table A.10: Percentage value of total recreational fishing grounds affected by county for Point Dume Option 2

County	Sector	Pacific Barracuda	Pacific Bonito	Ca. Halibut	Kelp Bass (calico bass)	White Croaker	Ca. Spiny Lobster	Jack Mackerel	Rockfish	Rock Crab	Scallops	Ca. Sheephead	Sand Bass	Market Squid	Surfperch	Thresher Shark	White Seabass	Ca. Yellowtail
Santa Barbara	Dive			0.0%	0.0%	0.0%	0.0%		0.0%		0.0%						0.0%	0.0%
	Kayak			10.2%	2.8%		0.0%						0.0%			1.0%		
	Private Vessel	0.0%		0.0%	0.0%		0.0%		0.0%				0.0%			0.0%	0.0%	0.0%
Ventura	Dive	0.0%		18.4%	13.7%		11.0%		10.6%		9.4%	0.0%	10.7%				1.3%	0.0%
	Kayak	1.8%		14.8%	15.8%		12.2%	2.6%	15.1%	0.0%		17.7%	18.8%	10.9%		0.9%	11.9%	1.8%
	Private Vessel	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%							5.6%	0.0%	0.0%
Los Angeles	Dive	0.0%	0.0%	0.0%	3.8%	0.0%	0.6%		0.0%		1.6%	0.0%	0.0%				0.3%	0.0%
	Kayak	0.0%	0.0%	1.7%	3.7%		0.0%	0.0%	9.0%	0.0%		0.0%	0.3%	0.0%		0.7%	2.1%	0.0%
	Private Vessel	0.1%	0.0%	0.8%	1.1%	0.0%	0.0%	0.0%	1.6%			0.0%	0.0%		1.0%	0.8%	0.2%	0.0%
Orange	Dive		0.0%	0.0%	0.0%	0.0%	0.0%		0.0%		0.0%	0.0%	0.0%				0.0%	0.0%
	Kayak	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%			0.0%	0.0%	0.0%		0.0%	0.0%	0.0%
	Private Vessel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
San Diego	Dive	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%		0.0%	0.0%	0.0%				0.0%	0.0%
	Kayak	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%
	Private Vessel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.0%	0.0%		0.0%	0.0%	0.0%	0.0%

Table A.11: Percentage value of total recreational fishing grounds affected by county for Point Dume Option 3

County	Sector	Pacific Barracuda	Pacific Bonito	Ca. Halibut	Kelp Bass (calico bass)	White Croaker	Ca. Spiny Lobster	Jack Mackerel	Rockfish	Rock Crab	Scallops	Ca. Sheephead	Sand Bass	Market Squid	Surfperch	Thresher Shark	White Seabass	Ca. Yellowtail
Santa Barbara	Dive			0.0%	0.0%	0.0%	0.0%		0.0%		0.0%						0.0%	0.0%
	Kayak			8.9%	1.7%		0.0%						0.0%			2.1%		
	Private Vessel	0.0%		0.0%	0.0%		0.0%		0.0%				0.0%			0.0%	0.0%	0.0%
Ventura	Dive	0.0%		16.4%	12.0%		9.1%		8.9%		8.5%	0.0%	9.6%				0.0%	0.0%
	Kayak	7.7%		13.8%	13.3%		10.5%	14.5%	15.3%	0.0%		8.4%	14.6%	0.0%		0.0%	9.6%	0.0%
	Private Vessel	0.0%	0.0%	0.0%	0.2%	0.0%	1.9%	0.0%	0.0%							18.0%	0.1%	0.0%
Los Angeles	Dive	0.0%	0.0%	0.0%	3.3%	0.0%	0.1%		0.0%		0.8%	0.0%	0.0%				0.0%	0.0%
	Kayak	3.7%	0.0%	1.6%	3.2%		0.0%	0.0%	8.0%	0.0%		0.0%	0.3%	0.0%		3.6%	1.7%	0.0%
	Private Vessel	0.0%	0.0%	0.6%	0.9%	0.0%	0.0%	0.0%	1.5%			0.0%	0.0%		0.0%	1.8%	0.1%	0.0%
Orange	Dive		0.0%	0.0%	0.0%	0.0%	0.0%		0.0%		0.0%	0.0%	0.0%				0.0%	0.0%
	Kayak	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%			0.0%	0.0%	0.0%		0.0%	0.0%	0.0%
	Private Vessel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
San Diego	Dive	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%		0.0%	0.0%	0.0%				0.0%	0.0%
	Kayak	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%
	Private Vessel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.0%	0.0%		0.0%	0.0%	0.0%	0.0%

Table A.12: Percentage value of total recreational fishing grounds affected by county for Palos Verde Option 1

County	Sector	Pacific Barracuda	Pacific Bonito	Ca. Halibut	Kelp Bass (calico bass)	White Croaker	Ca. Spiny Lobster	Jack Mackerel	Rockfish	Rock Crab	Scallops	Ca. Sheephead	Sand Bass	Market Squid	Surfperch	Thresher Shark	White Seabass	Ca. Yellowtail
Santa Barbara	Dive			0.0%	0.0%	0.0%	0.0%		0.0%		0.0%						0.0%	0.0%
	Kayak			0.0%	0.0%		0.0%						0.0%			0.0%		
	Private Vessel	0.0%		0.0%	0.0%		0.0%		0.0%				0.0%			0.0%	0.0%	0.0%
Ventura	Dive	0.0%		0.5%	1.2%		1.2%		0.0%		0.0%	0.0%	0.0%				0.0%	0.0%
	Kayak	3.2%		0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	14.8%
	Private Vessel	2.6%	0.0%	0.0%	1.1%	0.0%	0.0%	0.0%	0.0%							0.0%	0.0%	0.0%
Los Angeles	Dive	35.4%	26.1%	10.4%	5.9%	2.1%	8.5%		0.0%		6.2%	12.8%	19.0%				8.3%	4.9%
	Kayak	8.8%	14.9%	3.3%	4.7%		17.8%	17.6%	9.8%	0.0%		17.2%	0.0%	23.7%		4.9%	6.8%	4.1%
	Private Vessel	1.9%	1.9%	1.2%	2.9%	0.0%	3.6%	0.9%	0.9%			0.4%	0.0%		0.0%	1.4%	3.9%	0.4%
Orange	Dive		0.0%	0.9%	0.0%	0.0%	2.2%		2.5%		2.2%	1.2%	0.0%				2.3%	0.3%
	Kayak	0.0%	0.0%	0.1%	0.0%		0.0%	0.0%	0.0%			0.0%	0.0%	0.0%		0.0%	0.0%	0.0%
	Private Vessel	0.1%	0.0%	0.1%	0.7%	0.0%	0.8%	0.0%	0.6%			29.2%	0.0%		0.0%	0.0%	0.3%	0.0%
San Diego	Dive	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%		0.0%	0.0%	0.0%				0.0%	0.0%
	Kayak	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%
	Private Vessel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.0%	0.0%		0.0%	0.0%	0.0%	0.0%

Table A.13: Percentage value of total recreational fishing grounds affected by county for Palos Verde Option 2

County	Sector	Pacific Barracuda	Pacific Bonito	Ca. Halibut	Kelp Bass (calico bass)	White Croaker	Ca. Spiny Lobster	Jack Mackerel	Rockfish	Rock Crab	Scallops	Ca. Sheephead	Sand Bass	Market Squid	Surfperch	Thresher Shark	White Seabass	Ca. Yellowtail
Santa Barbara	Dive			0.0%	0.0%	0.0%	0.0%		0.0%		0.0%						0.0%	0.0%
	Kayak			0.0%	0.0%		0.0%						0.0%			0.0%		
	Private Vessel	0.0%		0.0%	0.0%		0.0%		0.0%				0.0%			0.0%	0.0%	0.0%
Ventura	Dive	0.0%		0.0%	0.1%		0.5%		0.0%		0.0%	0.0%	0.0%				0.0%	0.0%
	Kayak	0.4%		0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	2.1%
	Private Vessel	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%							0.0%	0.0%	0.0%
Los Angeles	Dive	13.3%	39.5%	6.6%	4.3%	1.1%	4.6%		0.0%		18.9%	11.1%	6.3%				3.0%	2.5%
	Kayak	2.4%	3.6%	0.9%	2.8%		4.7%	4.6%	2.2%	0.0%		5.5%	0.8%	4.9%		1.2%	3.5%	1.1%
	Private Vessel	3.0%	4.8%	0.7%	2.2%	0.0%	2.1%	0.7%	0.4%			1.6%	0.2%		0.0%	1.5%	2.4%	0.3%
Orange	Dive		0.0%	0.7%	0.0%	0.0%	2.0%		2.0%		1.5%	0.9%	0.0%				0.9%	0.1%
	Kayak	0.0%	0.0%	0.1%	0.0%		0.5%	0.0%	0.0%			0.0%	0.0%	0.0%		0.0%	0.0%	0.0%
	Private Vessel	0.9%	0.0%	0.2%	0.7%	0.0%	0.5%	0.0%	0.3%			13.8%	0.0%		0.0%	0.0%	0.3%	0.1%
San Diego	Dive	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%		0.0%	0.0%	0.0%				0.0%	0.0%
	Kayak	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%
	Private Vessel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.0%	0.0%		0.0%	0.0%	0.0%	0.0%

Table A.14: Percentage value of total recreational fishing grounds affected by county for Orange County Option 1

County	Sector	Pacific Barracuda	Pacific Bonito	Ca. Halibut	Kelp Bass (calico bass)	White Croaker	Ca. Spiny Lobster	Jack Mackerel	Rockfish	Rock Crab	Scallops	Ca. Sheephead	Sand Bass	Market Squid	Surfperch	Thresher Shark	White Seabass	Ca. Yellowtail
Santa Barbara	Dive			0.0%	0.0%	0.0%	0.0%		0.0%		0.0%						0.0%	0.0%
	Kayak			0.0%	0.0%		0.0%						0.0%			0.0%		
	Private Vessel	0.0%		0.0%	0.0%		0.0%		0.0%				0.0%			0.0%	0.0%	0.0%
Ventura	Dive	0.0%		0.0%	0.0%		0.0%		0.0%		0.0%	0.0%	0.0%				0.0%	0.0%
	Kayak	0.0%		0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%
	Private Vessel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%							0.0%	0.0%	0.0%
Los Angeles	Dive	0.0%	0.0%	4.7%	4.6%	33.2%	3.6%		0.0%		0.0%	16.2%	4.6%				0.0%	0.0%
	Kayak	0.0%	0.0%	0.9%	1.6%		3.0%	0.0%	0.0%	0.0%		0.0%	0.7%	0.0%		0.0%	1.3%	0.0%
	Private Vessel	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.0%	0.2%		0.0%	3.9%	0.0%	0.1%
Orange	Dive		0.0%	14.3%	31.9%	25.4%	13.4%		6.0%		9.4%	58.6%	34.8%				7.3%	1.5%
	Kayak	1.2%	12.2%	3.6%	6.8%		30.2%	0.0%	7.3%			37.1%	6.4%	0.0%		10.0%	7.4%	2.6%
	Private Vessel	2.9%	2.3%	1.4%	3.6%	0.0%	10.5%	3.4%	1.3%			0.0%	1.9%		0.0%	4.4%	1.7%	0.3%
San Diego	Dive	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%		0.0%	0.0%	0.0%				0.0%	0.0%
	Kayak	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%
	Private Vessel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.0%	0.0%		0.0%	0.0%	0.0%	0.0%

Table A.15: Percentage value of total recreational fishing grounds affected by county for Orange County Option 2

County	Sector	Pacific Barracuda	Pacific Bonito	Ca. Halibut	Kelp Bass (calico bass)	White Croaker	Ca. Spiny Lobster	Jack Mackerel	Rockfish	Rock Crab	Scallops	Ca. Sheephead	Sand Bass	Market Squid	Surfperch	Thresher Shark	White Seabass	Ca. Yellowtail
Santa Barbara	Dive			0.0%	0.0%	0.0%	0.0%		0.0%		0.0%						0.0%	0.0%
	Kayak			0.0%	0.0%		0.0%						0.0%			0.0%		
	Private Vessel	0.0%		0.0%	0.0%		0.0%		0.0%				0.0%			0.0%	0.0%	0.0%
Ventura	Dive	0.0%		0.0%	0.0%		0.0%		0.0%		0.0%	0.0%	0.0%				0.0%	0.0%
	Kayak	0.0%		0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%
	Private Vessel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%							0.0%	0.0%	0.0%
Los Angeles	Dive	0.0%	0.0%	4.1%	4.1%	32.3%	3.1%		0.0%		0.0%	16.2%	4.2%				0.0%	0.0%
	Kayak	0.0%	0.0%	1.0%	1.6%		3.0%	0.0%	0.0%	0.0%		0.0%	0.5%	0.0%		0.0%	1.4%	0.0%
	Private Vessel	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.0%	0.2%		0.0%	3.5%	0.0%	0.1%
Orange	Dive		0.0%	13.7%	30.0%	25.4%	12.2%		5.5%		9.4%	58.6%	32.2%				6.9%	1.5%
	Kayak	0.7%	9.2%	4.0%	6.6%		30.2%	0.0%	11.0%			37.1%	6.3%	0.0%		9.1%	7.5%	2.7%
	Private Vessel	2.5%	2.1%	1.6%	3.6%	0.0%	10.5%	3.0%	1.2%			0.0%	1.9%		0.0%	4.1%	1.7%	0.3%
San Diego	Dive	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%		0.0%	0.0%	0.0%				0.0%	0.0%
	Kayak	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%
	Private Vessel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.0%	0.0%		0.0%	0.0%	0.0%	0.0%

Table A.16: Percentage value of total recreational fishing grounds affected by county for San Diego Option 1

County	Sector	Pacific Barracuda	Pacific Bonito	Ca. Halibut	Kelp Bass (calico bass)	White Croaker	Ca. Spiny Lobster	Jack Mackerel	Rockfish	Rock Crab	Scallops	Ca. Sheephead	Sand Bass	Market Squid	Surfperch	Thresher Shark	White Seabass	Ca. Yellowtail
Santa Barbara	Dive			0.0%	0.0%	0.0%	0.0%		0.0%		0.0%						0.0%	0.0%
	Kayak			0.0%	0.0%		0.0%						0.0%			0.0%		
	Private Vessel	0.0%		0.0%	0.0%		0.0%		0.0%				0.0%			0.0%	0.0%	0.0%
Ventura	Dive	0.0%		0.0%	0.0%		0.0%		0.0%		0.0%	0.0%	0.0%				0.0%	0.0%
	Kayak	0.0%		0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%
	Private Vessel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%							0.0%	0.0%	2.1%
Los Angeles	Dive	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%		0.0%	0.0%	0.0%				0.0%	0.0%
	Kayak	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	13.6%
	Private Vessel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.0%	0.0%		0.0%	0.0%	0.0%	0.1%
Orange	Dive		0.0%	0.0%	0.0%	0.0%	0.0%		0.0%		0.4%	0.0%	0.0%				0.0%	0.0%
	Kayak	0.0%	6.7%	0.0%	0.0%		0.0%	0.0%	0.0%			0.0%	0.3%	17.8%		0.0%	0.0%	21.5%
	Private Vessel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.0%	0.0%		0.0%	0.0%	0.0%	0.3%
San Diego	Dive	25.2%	44.3%	30.2%	34.9%	51.0%	22.5%		20.8%		26.8%	37.1%	22.3%				26.4%	16.6%
	Kayak	36.7%	36.7%	25.8%	34.2%		17.3%	32.7%	34.0%	27.5%		28.9%	27.6%	38.2%		29.9%	34.6%	35.0%
	Private Vessel	8.2%	5.6%	6.8%	14.7%	4.4%	9.5%	12.8%	9.3%			11.0%	5.3%		8.4%	2.3%	15.4%	3.9%

Table A.17: Percentage value of total recreational fishing grounds affected by county for San Diego Option 2

County	Sector	Pacific Barracuda	Pacific Bonito	Ca. Halibut	Kelp Bass (calico bass)	White Croaker	Ca. Spiny Lobster	Jack Mackerel	Rockfish	Rock Crab	Scallops	Ca. Sheephead	Sand Bass	Market Squid	Surfperch	Thresher Shark	White Seabass	Ca. Yellowtail
Santa Barbara	Dive			0.0%	0.0%	0.0%	0.0%		0.0%		0.0%						0.0%	0.0%
	Kayak			0.0%	0.0%		0.0%						0.0%			0.0%		
	Private Vessel	0.0%		0.0%	0.0%		0.0%		0.0%				0.0%			0.0%	0.0%	0.0%
Ventura	Dive	0.0%		0.0%	0.0%		0.0%		0.0%		0.0%	0.0%	0.0%				0.0%	0.0%
	Kayak	0.0%		0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%
	Private Vessel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%							0.0%	0.0%	0.7%
Los Angeles	Dive	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%		0.0%	0.0%	0.0%				0.0%	0.0%
	Kayak	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	10.1%
	Private Vessel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Orange	Dive		0.0%	0.0%	0.0%	0.0%	0.0%		0.0%		0.4%	0.0%	0.0%				0.0%	0.0%
	Kayak	0.0%	4.0%	0.0%	0.0%		0.0%	0.0%	0.0%			0.0%	0.3%	13.7%		0.0%	0.0%	14.9%
	Private Vessel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.0%	0.0%		0.0%	0.0%	0.0%	0.2%
San Diego	Dive	15.8%	27.9%	24.9%	26.1%	41.3%	18.6%		15.1%		20.9%	28.3%	16.8%				19.7%	10.6%
	Kayak	23.3%	22.4%	21.2%	25.1%		12.2%	21.8%	24.8%	13.2%		20.0%	18.7%	26.5%		23.7%	21.6%	21.4%
	Private Vessel	4.1%	2.8%	6.2%	11.5%	4.1%	7.8%	10.2%	7.0%			8.2%	4.8%		8.4%	1.3%	8.9%	1.8%

Table A.18: Percentage value of total recreational fishing grounds affected by county for San Diego Option 3

County	Sector	Pacific Barracuda	Pacific Bonito	Ca. Halibut	Kelp Bass (calico bass)	White Croaker	Ca. Spiny Lobster	Jack Mackerel	Rockfish	Rock Crab	Scallops	Ca. Sheephead	Sand Bass	Market Squid	Surfperch	Thresher Shark	White Seabass	Ca. Yellowtail
Santa Barbara	Dive			0.0%	0.0%	0.0%	0.0%		0.0%		0.0%						0.0%	0.0%
	Kayak			0.0%	0.0%		0.0%						0.0%			0.0%		
	Private Vessel	0.0%		0.0%	0.0%		0.0%		0.0%				0.0%			0.0%	0.0%	0.0%
Ventura	Dive	0.0%		0.0%	0.0%		0.0%		0.0%		0.0%	0.0%	0.0%				0.0%	0.0%
	Kayak	0.0%		0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%
	Private Vessel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%							0.0%	0.0%	0.7%
Los Angeles	Dive	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%		0.0%	0.0%	0.0%				0.0%	0.0%
	Kayak	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	6.0%
	Private Vessel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Orange	Dive		0.0%	0.0%	0.0%	0.0%	0.0%		0.0%		0.4%	0.0%	0.0%				0.0%	0.0%
	Kayak	0.0%	1.0%	0.0%	0.0%		0.0%	0.0%	0.0%			0.0%	0.3%	1.1%		0.0%	0.0%	9.4%
	Private Vessel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.0%	0.0%		0.0%	0.0%	0.0%	0.2%
San Diego	Dive	12.6%	5.5%	13.1%	11.5%	5.1%	12.6%		14.7%		9.3%	13.2%	9.1%				9.0%	7.2%
	Kayak	7.9%	5.5%	13.4%	10.7%		13.7%	15.9%	8.5%	3.8%		11.9%	9.4%	15.9%		17.7%	5.5%	8.9%
	Private Vessel	7.1%	4.9%	5.8%	11.9%	3.2%	8.1%	10.2%	7.0%			8.1%	4.9%		7.9%	1.4%	6.8%	2.3%

Table A.19: Percentage value of total recreational fishing grounds affected by county for San Diego Option 4

County	Sector	Pacific Barracuda	Pacific Bonito	Ca. Halibut	Kelp Bass (calico bass)	White Croaker	Ca. Spiny Lobster	Jack Mackerel	Rockfish	Rock Crab	Scallops	Ca. Sheephead	Sand Bass	Market Squid	Surfperch	Thresher Shark	White Seabass	Ca. Yellowtail
Santa Barbara	Dive			0.0%	0.0%	0.0%	0.0%		0.0%		0.0%						0.0%	0.0%
	Kayak			0.0%	0.0%		0.0%						0.0%			0.0%		
	Private Vessel	0.0%		0.0%	0.0%		0.0%		0.0%				0.0%			0.0%	0.0%	0.0%
Ventura	Dive	0.0%		0.0%	0.0%		0.0%		0.0%		0.0%	0.0%	0.0%				0.0%	0.0%
	Kayak	0.0%		0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%
	Private Vessel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%							0.0%	0.0%	0.7%
Los Angeles	Dive	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%		0.0%	0.0%	0.0%				0.0%	0.0%
	Kayak	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	11.7%
	Private Vessel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Orange	Dive		0.0%	0.0%	0.0%	0.0%	0.0%		0.0%		0.0%	0.0%	0.0%				0.0%	0.0%
	Kayak	0.0%	0.3%	0.0%	0.0%		0.0%	0.0%	0.0%			0.0%	0.0%	6.4%		0.0%	0.0%	8.5%
	Private Vessel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			0.0%	0.0%		0.0%	0.0%	0.0%	0.3%
San Diego	Dive	11.7%	4.2%	10.5%	10.9%	3.2%	10.5%		14.7%		8.6%	12.7%	8.0%				8.2%	6.7%
	Kayak	4.2%	3.3%	10.9%	7.3%		10.5%	8.7%	3.1%	3.4%		12.6%	10.0%	4.8%		14.2%	3.7%	5.8%
	Private Vessel	7.0%	5.0%	4.9%	11.0%	3.0%	8.3%	10.2%	7.0%			7.9%	2.2%		19.9%	2.4%	6.4%	2.2%