

Marine Life Protection Act Initiative



Summary of Potential Impacts of March 2008 NCCRSB MPA Proposals on Commercial and Recreational Fisheries

DRAFT

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Outline

- **Overview**
- **Commercial Fisheries**
 - Potential Impacts on Fishing Grounds (Area and Value)
 - Consideration of Existing Closures
 - Potential Impacts on Individual Fishermen
 - Potential Socioeconomic Impacts
- **Recreational Fisheries**
 - Potential Impacts on Fishing Grounds (Area and Value)



Overview

Methods: Seen many times before...

Commercial Fisheries

- Focused on eight fisheries (California Halibut, Coastal Pelagics, Market Squid, Rockfish – Deeper Nearshore, Rockfish – Nearshore, Urchin, Dungeness Crab and Salmon)
- Results reported at study region and port group level

Recreational Fisheries

- Focused on five fisheries (California halibut, Dungeness crab, salmon, rockfish/lingcod complex and striped bass –pier/shore)
- Results reported by user group and by sub-region

Impacts on Commercial Fishing Grounds



MPA Proposals

	Fisheries	MPA Proposals		
		1-3	2-XA	4
Point Arena	California Halibut	—	—	—
	Coastal Pelagics	—	—	—
	Market Squid	—	—	—
	Rockfish - Deeper Nearshore	32.0%	16.9%	33.9%
	Rockfish - Nearshore	28.4%	17.7%	30.4%
	Urchin	19.1%	16.1%	26.6%
	Dungeness Crab	13.5%	11.1%	19.2%
	Salmon	11.9%	9.3%	12.8%
	California Halibut	17.7%	19.2%	27.7%
	Coastal Pelagics	—	—	—
Bodega Bay	Market Squid	—	—	—
	Rockfish - Deeper Nearshore	22.8%	19.6%	26.0%
	Rockfish - Nearshore	25.9%	14.2%	30.9%
	Urchin	18.8%	16.9%	26.4%
	Dungeness Crab	16.3%	13.7%	21.7%
	Salmon	11.8%	9.3%	14.4%

Percentage **area** of commercial fishing grounds within the **study area** affected by landing port (Table 8)

MPA Proposals

	Fisheries	MPA Proposals		
		1-3	2-XA	4
Point Arena	California Halibut	—	—	—
	Coastal Pelagics	—	—	—
	Market Squid	—	—	—
	Rockfish - Deeper Nearshore	30.7%	7.0%	31.5%
	Rockfish - Nearshore	29.3%	11.5%	30.5%
	Urchin	7.9%	11.7%	13.0%
	Dungeness Crab	30.1%	24.5%	36.1%
	Salmon	23.6%	26.5%	26.6%
	California Halibut	7.7%	10.2%	11.1%
	Coastal Pelagics	—	—	—
Bodega Bay	Market Squid	—	—	—
	Rockfish - Deeper Nearshore	31.0%	22.5%	35.2%
	Rockfish - Nearshore	12.9%	13.1%	24.7%
	Urchin	17.9%	6.4%	41.0%
	Dungeness Crab	10.0%	8.8%	15.3%
	Salmon	9.5%	7.7%	9.9%

Percentage **value** of commercial fishing grounds within the **study area** affected by landing port (Table 10)



Impacts on Commercial Fishing Grounds

MPA Proposals

		MPA Proposals		
Fisheries		1-3	2-XA	4
San Francisco	California Halibut	0.7%	0.8%	1.0%
	Coastal Pelagics	—	—	—
	Market Squid	—	—	—
	Rockfish - Deeper Nearshore	20.0%	15.1%	22.8%
	Rockfish - Nearshore	12.0%	5.8%	15.1%
	Urchin	18.1%	7.1%	34.0%
	Dungeness Crab	2.3%	2.1%	4.1%
	Salmon	2.0%	1.6%	2.3%
	California Halibut	0.2%	0.3%	27.0%
Half Moon Bay	Coastal Pelagics	0.9%	0.5%	0.8%
	Market Squid	0.9%	0.8%	24.9%
	Rockfish - Deeper Nearshore	11.0%	6.7%	19.4%
	Rockfish - Nearshore	1.9%	1.9%	1.9%
	Urchin	—	—	—
	Dungeness Crab	2.8%	2.3%	3.1%
	Salmon	2.8%	2.2%	3.1%

Percentage value of total commercial fishing grounds affected by landing port (Table 9)

MPA Proposals

		MPA Proposals		
Fisheries		1-3	2-XA	4
San Francisco	California Halibut	0.8%	0.8%	1.1%
	Coastal Pelagics	—	—	—
	Market Squid	—	—	—
	Rockfish - Deeper Nearshore	24.9%	18.8%	28.4%
	Rockfish - Nearshore	20.9%	10.1%	26.4%
	Urchin	18.3%	7.2%	34.3%
	Dungeness Crab	5.3%	5.0%	9.6%
	Salmon	8.8%	7.2%	9.9%
	California Halibut	0.2%	0.3%	27.1%
Half Moon Bay	Coastal Pelagics	22.5%	14.0%	22.2%
	Market Squid	0.9%	0.8%	24.9%
	Rockfish - Deeper Nearshore	14.4%	8.7%	25.4%
	Rockfish - Nearshore	1.9%	1.9%	1.9%
	Urchin	—	—	—
	Dungeness Crab	14.7%	12.4%	16.5%
	Salmon	9.2%	7.3%	10.1%

Percentage value of commercial fishing grounds within the study area affected by landing port (Table 10)

Consideration of Existing Closures

MPA Proposals

Fisheries		1-3	2-XA	4
Point Arena →	Deeper Nearshore Rockfish – No RCA	30.6%	7.0%	31.4%
	Deeper Nearshore Rockfish – RCA	30.6%	5.2%	31.2%
	Nearshore Rockfish – No RCA	27.0%	10.7%	28.1%
	Nearshore Rockfish – RCA	26.3%	9.4%	27.1%
Bodega Bay →	Deeper Nearshore Rockfish – No RCA	20.6%	14.9%	23.4%
	Deeper Nearshore Rockfish – RCA	26.4%	17.6%	30.2%
	Nearshore Rockfish – No RCA	12.4%	12.6%	23.8%
	Nearshore Rockfish – RCA	12.4%	12.7%	23.9%
Bolinás	Deeper Nearshore Rockfish – No RCA	26.8%	23.8%	28.5%
	Deeper Nearshore Rockfish – RCA	37.6%	29.9%	41.5%
San Francisco →	Deeper Nearshore Rockfish – No RCA	20.0%	15.1%	22.8%
	Deeper Nearshore Rockfish – RCA	21.0%	15.7%	24.3%
	Nearshore Rockfish – No RCA	12.0%	5.8%	15.1%
	Nearshore Rockfish – RCA	11.7%	6.1%	15.3%
Half Moon Bay →	Deeper Nearshore Rockfish – No RCA	11.0%	6.7%	19.4%
	Deeper Nearshore Rockfish – RCA	11.1%	6.7%	19.5%
	Nearshore Rockfish – No RCA	1.9%	1.9%	1.9%
	Nearshore Rockfish – RCA	1.9%	1.9%	1.9%



Individual Impacts (Commercial)

Example: Proposal 4

Fishery	n=	Annual Ex-vessel Revenue Loss (%)					Annual Ex-vessel Revenue Loss (\$ 2006)				
		Less than 20%	20%-40%	40%-60%	60%-80%	More than 80%	Less than \$5k	\$5-\$10k	\$10-\$15k	\$15-\$20k	More than \$20k
C. Halibut	14	10	4	0	0	0	14	0	0	0	0
Coastal Pelagics	1	1	0	0	0	0	1	0	0	0	0
Market Squid	1	1	0	0	0	0	0	0	0	1	0
D.N. Rockfish	15	7	7	1	0	0	15	0	0	0	0
N. Rockfish	9	4	5	0	0	0	8	1	0	0	0
Urchin	22	11	9	1	0	1	20	2	0	0	0
D. Crab	102	94	8	0	0	0	89	8	4	1	0
Salmon	136	133	2	1	0	0	135	1	0	0	0
All Fisheries	172	156	18	0	0	0	150	13	6	1	2



Socioeconomic Impacts (Commercial)

Example: Point Arena

Net Economic Impact under each Alternative (in Dollars)

Fishery	Baseline GER	Baseline NER (Profit)
D. N. Rockfish	\$1,424	\$699
N. Rockfish	\$64,259	\$31,544
Urchin	\$608,226	\$366,963
Dungeness crab	\$46,951	\$24,201
Salmon	\$77,890	\$41,610
NCC	\$798,750	\$465,016

	1-3	2-XA	4
	\$377	\$77	\$346
	\$13,440	\$5,296	\$13,977
	\$33,273	\$49,288	\$54,609
	\$4,901	\$4,004	\$5,888
	\$7,558	\$8,474	\$8,511
	\$59,510	\$67,139	\$83,332

Net Economic Impact (% reduction in Profit)

Port
D. N. Rockfish
N. Rockfish
Urchin
Dungeness crab
Salmon
NCC

	1-3	2-XA	4
	48.30%	11.10%	49.50%
	42.60%	16.80%	44.30%
	9.10%	13.40%	14.90%
	20.20%	16.50%	24.30%
	18.20%	20.40%	20.50%
	12.80%	20.40%	17.90%



Socioeconomic Impacts (Commercial)

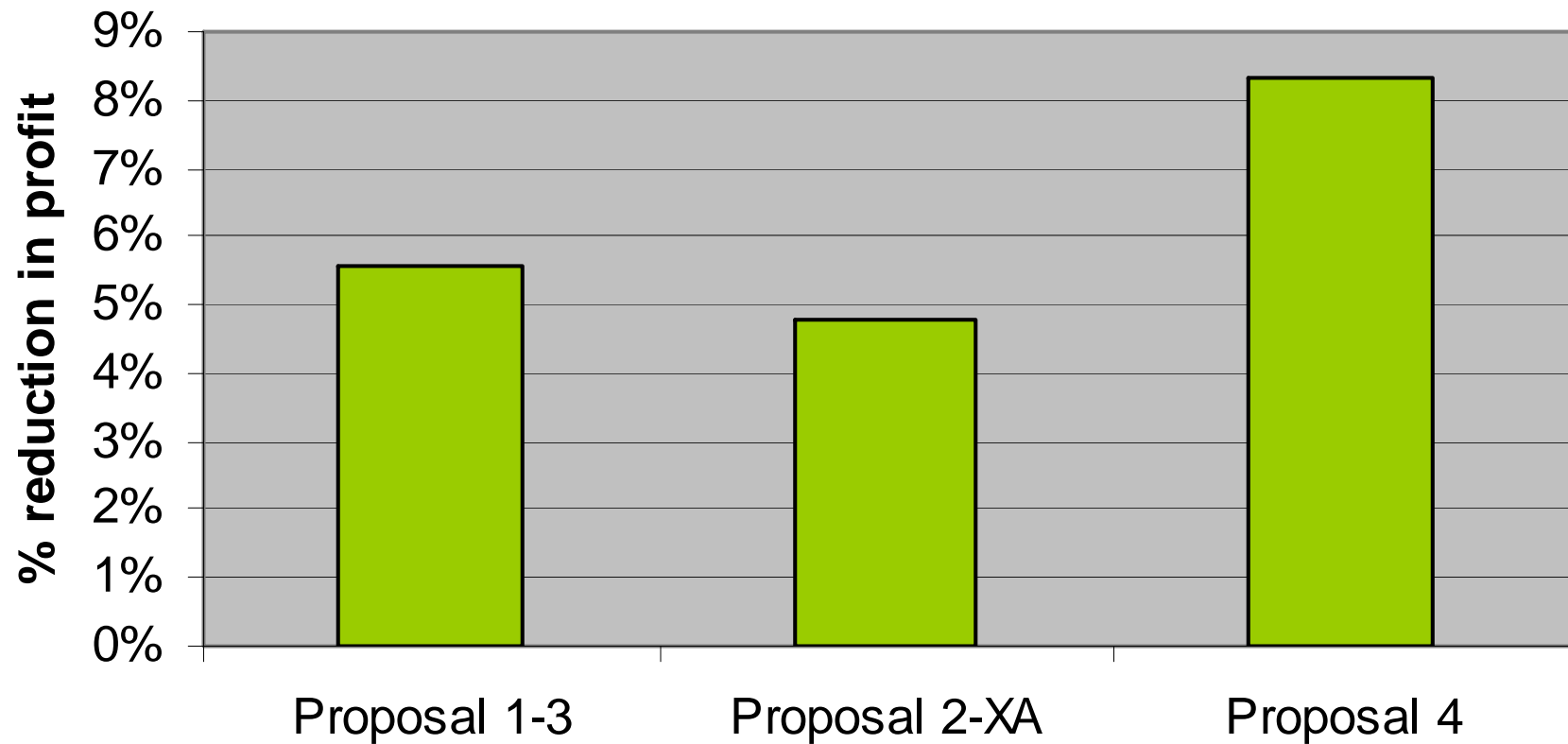
Net Economic Impact under each Alternative (in Dollars)

Port	Baseline GER	Baseline NER (Profit)	1-3	2-XA	4
Point Arena	\$798,750	\$465,016	\$59,510	\$67,139	\$83,332
Bodega Bay	\$4,654,206	\$2,457,152	\$207,776	\$161,318	\$314,474
Bolinas	\$151,214	\$78,783	\$3,297	\$4,192	\$5,988
San Francisco	\$6,059,387	\$3,166,680	\$110,421	\$95,387	\$168,861
Half Moon Bay	\$4,110,888	\$2,122,436	\$84,149	\$68,786	\$123,439
NCC	\$15,889,348	\$8,336,602	\$465,157	\$396,826	\$696,099

Net Economic Impact (% reduction in Profit)

Port	1-3	2-XA	4
Point Arena	12.8%	14.4%	17.9%
Bodega Bay	8.5%	6.6%	12.8%
Bolinas	4.2%	5.3%	7.6%
San Francisco	3.5%	3.0%	5.3%
Half Moon Bay	4.0%	3.2%	5.8%
NCC	5.6%	4.8%	8.3%

Socioeconomic Impacts (Commercial)



\$465,157

\$396,826

\$696,099

Net Economic Impact under each Alternative (in Dollars)



Recreational Fishery Impacts

- Identical approach to commercial fisheries with one exception—the analysis is done using only stated importance values from the interviews.
- The data should only be considered at the sub-region level, not at the entire study region level—Why?
 - The data are not representative of the entire population of recreational fishermen due to the less than desirable (less than statistically significant) sample size.
 - There was little or no data collected from recreational fishermen north of Bodega Bay.
 - The data represents interviewees' areas of value, not areas of effort.
 - The data represents interviewees' areas that are important to them over their entire recreational fishing experience, not necessarily the areas that are important to them currently.



Recreational Fishery Impacts

MPA Proposals

		Fisheries	MPA Proposals		
			1-3	2-XA	4
Commercial Passenger Fishing Vessels	Region 3	California Halibut	6.3%	4.6%	6.7%
		Dungeness Crab	9.9%	6.9%	15.3%
		Rockfish	12.7%	10.5%	14.7%
		Salmon	2.4%	2.0%	2.1%
	Region 2	California Halibut	11.4%	12.0%	21.7%
		Dungeness Crab	1.0%	0.7%	1.4%
		Rockfish	15.8%	7.2%	18.7%
		Salmon	3.3%	2.9%	4.0%
	Region 1	California Halibut	0.8%	2.3%	16.4%
		Dungeness Crab	3.6%	2.3%	3.7%
		Rockfish	14.7%	12.1%	19.3%
		Salmon	3.0%	2.8%	3.7%

E.g. Percentage area of total recreational fishing grounds affected by landing port



Recreational Fishery Impacts

Region 1

MPA Proposals

Fisheries		1-3	2-XA	4
CPFV	California Halibut	0.6%	2.4%	11.3%
	Dungeness Crab	28.2%	17.9%	28.7%
	Rockfish	17.5%	18.5%	25.7%
	Salmon	13.1%	10.2%	14.7%
Private Vessels	California Halibut	6.8%	9.2%	22.1%
	Dungeness Crab	16.0%	8.6%	15.4%
	Rockfish	19.7%	19.2%	29.3%
	Salmon	5.7%	4.2%	9.6%
Kayak Anglers	California Halibut	0.2%	0.5%	6.7%
	Dungeness Crab	34.8%	20.6%	34.8%
	Rockfish	8.1%	9.0%	10.2%
	Salmon	1.0%	0.9%	0.9%
Pier and Shore	California Halibut	4.0%	4.0%	12.4%
	Dungeness Crab	4.8%	0.8%	4.7%
	Rockfish	8.7%	5.0%	16.6%
	Salmon	0.0%	0.0%	0.0%
	Striped Bass	11.3%	7.4%	20.6%

e.g. % value of recreational fishing grounds within the study area affected by landing port



Next Steps

- **Final round of analysis for the MLPA North Central Coast Study Region**
- **Final report for North Central Coast**
- **Beginning to think about data collection for the MLPA South Coast Study Region**