

# TABLE OF CONTENTS

	<u>Page</u>
COVER SHEET .....	iii
TABLE OF CONTENTS .....	v
LIST OF TABLES .....	xiii
LIST OF FIGURES .....	xv
EXECUTIVE SUMMARY .....	ES-1
ES.1.0 INTRODUCTION .....	ES-1
ES.1.1 How This Amendment is Organized .....	ES-1
ES.1.2 Purpose and Need .....	ES-2
ES.1.2.1 The Proposed Action .....	ES-2
ES.1.2.2 Need (Problems for Resolution) .....	ES-2
ES.1.2.3 Purpose of the Proposed Action .....	ES-3
ES.2.0 Description of the Alternatives .....	ES-3
ES.2.1 The No Action Alternative .....	ES-4
ES.2.2 Action Alternative 1 .....	ES-5
ES.2.3 Action Alternative 2 .....	ES-6
ES.2.4 Action Alternative 3 .....	ES-6
ES.2.5 Action Alternative 4 .....	ES-7
ES.2.6 The Council-Preferred Alternative .....	ES-7
ES.3.0 Impacts of the Alternatives .....	ES-8
ES.3.1 Impacts to Habitat and Ecosystem .....	ES-9
ES.3.2 Impacts to Protected Species .....	ES-9
ES.3.3 Impacts to Overfished Species Subject to Rebuilding Plans Evaluated in this EIS .....	ES-10
ES.3.4 Impacts to Co-occurring Species .....	ES-10
ES.3.5 Impacts to the Public Sector and Management Regime .....	ES-10
ES.3.6 Impacts to the Socioeconomic Environment .....	ES-11
1.0 INTRODUCTION .....	1
1.1 How This Amendment is Organized .....	1
1.2 Purpose and Need .....	3
1.2.1 The Proposed Action .....	3
1.2.2 Need (Problems for Resolution) .....	3
1.2.3 Purpose of the Proposed Action .....	4
1.3 Background .....	5
1.3.1 Requirements for Rebuilding Plans .....	5
1.3.2 Stock Status of the Four Species Considered in this Amendment .....	6
1.3.2.1 Bocaccio Stock Status .....	6
1.3.2.2 Cowcod Stock Status .....	7
1.3.2.3 Widow Rockfish Stock Status .....	7

1.3.2.4	Yelloweye Rockfish Stock Status	8
1.3.3	Summary of the Current Management Regime	8
1.3.4	Summary of Litigation over Amendment 12	9
1.3.5	Development of Rebuilding Plan Adoption Strategy	9
1.3.6	Relationship Between the Contents of Rebuilding Plans and the Contents of this EIS	10
1.4	Scoping Summary	11
1.4.1	Background to Scoping	11
1.4.2	Council Scoping and Agency NEPA Scoping	12
1.4.3	Summary of Scoping Comments Received by the Council	12
1.4.4	Criteria Used to Evaluate the Impacts of the Amendment 16-3 Proposed Action	15
2.0	REBUILDING PLAN ALTERNATIVES	23
2.1	No Action Alternative (40-10 Rule)	24
2.1.1	Bocaccio	24
2.1.2	Cowcod	25
2.1.3	Widow Rockfish	25
2.1.4	Yelloweye Rockfish	25
2.2	Action Alternative 1	25
2.2.1	Bocaccio (P <sub>MAX</sub> = 60%)	25
2.2.2	Cowcod (P <sub>MAX</sub> = 55%)	26
2.2.3	Widow Rockfish (P <sub>MAX</sub> = 60%)	26
2.2.4	Yelloweye Rockfish (P <sub>MAX</sub> = 60%)	26
2.3	Action Alternative 2	26
2.3.1	Bocaccio (P <sub>MAX</sub> = 70%)	26
2.3.2	Cowcod (P <sub>MAX</sub> = 60%)	27
2.3.3	Widow Rockfish (P <sub>MAX</sub> = 70%)	27
2.3.4	Yelloweye Rockfish (P <sub>MAX</sub> = 70%)	27
2.4	Action Alternative 3	27
2.4.1	Bocaccio (P <sub>MAX</sub> = 80%)	27
2.4.2	Cowcod (P <sub>MAX</sub> = 60%)	28
2.4.3	Widow Rockfish (P <sub>MAX</sub> = 80%)	28
2.4.4	Yelloweye Rockfish (P <sub>MAX</sub> = 80%)	28
2.5	Action Alternative 4	28
2.5.1	Bocaccio (P <sub>MAX</sub> = 90%)	28
2.5.2	Cowcod (P <sub>MAX</sub> = 60%)	29
2.5.3	Widow Rockfish (P <sub>MAX</sub> = 90%)	29
2.5.4	Yelloweye Rockfish (P <sub>MAX</sub> = 90%)	29
2.6	Action Alternative 5 (Council-Preferred)	29
2.6.1	Bocaccio (P <sub>MAX</sub> = 70%, Using the Base Model STATc)	29
2.6.2	Cowcod (P <sub>MAX</sub> = 60%)	29
2.6.3	Widow Rockfish (P <sub>MAX</sub> = 60%, Using the Base Model 8)	30
2.6.4	Yelloweye Rockfish (P <sub>MAX</sub> = 80%)	30
2.7	Alternatives Considered, But Eliminated From Further Detailed Analysis	30
2.8	Summary of the Alternatives for Each of the Four Overfished Species	31
2.8.1	Bocaccio	31
2.8.2	Cowcod	31
2.8.3	Widow Rockfish	32
2.8.4	Yelloweye Rockfish	32

3.0 WEST COAST MARINE ECOSYSTEMS AND ESSENTIAL FISH HABITAT .....	39
3.1 Affected Environment: West Coast Marine Ecosystems .....	39
3.2 Affected Environment: Essential Fish Habitat .....	39
3.2.1 Bocaccio EFH .....	40
3.2.2 Cowcod EFH .....	40
3.2.3 Widow Rockfish EFH .....	40
3.2.4 Yelloweye Rockfish EFH .....	41
3.3 Criteria Used to Evaluate Impacts .....	41
3.4 Discussion of Direct and Indirect Impacts .....	42
3.5 Discussion of Cumulative Impacts .....	43
3.5.1 Potential Unintended Consequences .....	44
3.6 Summary of Impacts .....	45
3.6.1 No Action Alternative .....	45
3.6.2 The Action Alternatives .....	46
3.6.3 The Council-Preferred Alternative .....	47
4.0 PROTECTED SPECIES .....	49
4.1 Affected Environment .....	49
4.2 Criteria Used to Evaluate Impacts .....	50
4.3 Discussion of Direct and Indirect Impacts .....	51
4.4 Discussion of Cumulative Impacts .....	52
4.4.1 Cumulative Impacts–ESA-Listed Salmon .....	52
4.4.2 Cumulative Impacts–Sea Turtles .....	53
4.4.3 Cumulative Impacts–Marine Mammals .....	54
4.4.4 Cumulative Impacts–Seabirds .....	54
4.4.5 Potential Unintended Consequences .....	55
4.5 Summary of Impacts .....	56
4.5.1 No Action Alternative .....	56
4.5.2 The Action Alternatives .....	56
4.5.3 The Council-Preferred Alternative .....	56
5.0 OVERFISHED SPECIES SUBJECT TO REBUILDING PLANS EVALUATED IN THIS EIS ..	61
5.1 Affected Environment .....	61
5.1.1 Management History .....	61
5.1.1.1 Bocaccio .....	61
5.1.1.2 Cowcod .....	63
5.1.1.3 Widow Rockfish .....	64
5.1.1.4 Yelloweye Rockfish .....	65
5.2 Criteria Used to Evaluate Impacts .....	67
5.3 Discussion of Direct and Indirect Impacts .....	67
5.3.1 Bocaccio .....	67
5.3.2 Cowcod .....	67
5.3.3 Widow Rockfish .....	68
5.3.4 Yelloweye Rockfish .....	70
5.4 Cumulative Impacts .....	70
5.4.1 Potential Unintended Consequences .....	71
5.5 Summary of Impacts .....	71
5.5.1 No Action Alternative .....	71
5.5.2 Action Alternative 1 .....	71
5.5.3 Action Alternative 2 .....	71
5.5.4 Action Alternative 3 .....	72

5.5.5	Action Alternative 4	72
5.5.6	Action Alternative 5 (Council-Preferred)	72
6.0	SPECIES CO-OCCURRING WITH THE OVERFISHED SPECIES SUBJECT TO REBUILDING PLANS EVALUATED IN THIS EIS	111
6.1	Affected Environment	111
6.1.1	Species Co-occurring with Bocaccio	111
6.1.2	Species Co-occurring with Cowcod	111
6.1.3	Species Co-occurring with Widow Rockfish	111
6.1.4	Species Co-occurring with Yelloweye Rockfish	111
6.2	Criteria Used to Evaluate Impacts	112
6.3	Discussion of Direct and Indirect Impacts	112
6.3.1	Impacts to Species Co-occurring With Bocaccio	112
6.3.2	Impacts to Species Co-occurring With Cowcod	113
6.3.3	Impacts to Species Co-occurring With Widow Rockfish	113
6.3.4	Impacts to Species Co-occurring With Yelloweye Rockfish	113
6.4	Discussion of Cumulative Impacts	114
6.4.1	Potential Unintended Consequences	114
6.5	Summary of Impacts	114
6.5.1	No Action Alternative	114
6.5.2	Action Alternative 1	114
6.5.3	Action Alternative 2	115
6.5.4	Action Alternative 3	115
6.5.5	Action Alternative 4	115
6.5.6	Action Alternative 5 (Council-Preferred)	115
7.0	THE PUBLIC SECTOR AND FISHERIES MANAGEMENT REGIME	117
7.1	Affected Environment	117
7.1.1	Managing with Risk and Uncertainty	117
7.1.2	License Limitation, Capacity Reduction, and Fleet Rationalization	117
7.1.3	Management Data Systems	117
7.1.3.1	Catch Monitoring and Accounting	117
7.1.3.2	Observer Programs	120
7.1.3.3	Research Fisheries	125
7.1.3.4	The Stock Assessment Process	126
7.1.4	Enforcement	126
7.2	Criteria Used to Evaluate Impacts	126
7.3	Discussion of Direct and Indirect Impacts	127
7.3.1	Catch Monitoring and Accounting	127
7.3.2	Constraining OYs and Bycatch Accounting	127
7.3.3	Enforcement	129
7.3.3.1	Geographic Extent of Closed Areas	129
7.4	Discussion of Cumulative Impacts	130
7.4.1	VMS Expansion	130
7.4.2	Fishery Monitoring and Biennial Management	131
7.4.3	Fleet Reduction and Fishery Rationalization	131
7.4.4	Potential Unintended Consequences	131
7.5	Summary of Impacts	132
7.5.1	No Action Alternative	132
7.5.1.1	Bocaccio	132
7.5.1.2	Cowcod	132

7.5.1.3	Widow .....	133
7.5.1.4	Yelloweye .....	133
7.5.2	Action Alternative 1 .....	133
7.5.3	Action Alternative 2 .....	133
7.5.4	Action Alternative 3 .....	134
7.5.5	Action Alternative 4 .....	134
7.5.6	Action Alternative 5 (Council-Preferred) .....	134
7.5.6.1	Bocaccio .....	134
7.5.6.2	Cowcod .....	135
7.5.6.3	Widow .....	135
7.5.6.4	Yelloweye .....	135
8.0	SOCIOECONOMIC ENVIRONMENT .....	137
8.1	Affected Environment .....	137
8.1.1	Valuing Consumptive Use, Nonconsumptive Use, and Nonuse .....	137
8.1.1.1	Nonuse Values .....	138
8.1.2	Primary Seafood Producers (Commercial Vessels) .....	138
8.1.2.1	Commercial Groundfish Vessel Regulatory Groupings .....	139
8.1.2.2	Vessel Involvement and Dependence .....	140
8.1.2.3	Trip Categorization and Catch Composition .....	142
8.1.2.4	Species Complex Values and Allocation Among Sectors Over Time .....	142
8.1.3	Seafood Distribution Chain .....	143
8.1.3.1	Buyers and Processors .....	143
8.1.3.2	Seafood Markets .....	144
8.1.4	Recreational Fishery .....	144
8.1.4.1	Recreational Catch of Overfished Species .....	145
8.1.4.2	Recreational Catch by Region .....	145
8.1.4.3	Seasonality and Participation in Recreational Fishing .....	145
8.1.4.4	Recreational Charter Industry .....	146
8.1.4.5	Private Fishers and Markets for Recreational Fishing Experience .....	146
8.1.5	Tribal Fishery .....	146
8.1.6	Communities .....	147
8.1.6.1	County-Level Indicators .....	147
8.1.6.2	Port Area Descriptions .....	148
8.1.6.3	Dependence on and Engagement in Fishing-Related Activities .....	149
8.2	Criteria Used to Evaluate Impacts .....	150
8.3	Discussion of Direct and Indirect Impacts .....	152
8.3.1	Commercial Vessels .....	152
8.3.1.1	Short-Term Effects .....	153
8.3.1.2	Long-Term Effects .....	154
8.3.1.3	Vessels Most Affected .....	155
8.3.2	Seafood Markets .....	155
8.3.2.1	Effects on Net Profits .....	155
8.3.2.2	Processors Most Affected .....	156
8.3.2.3	Seafood Markets .....	156
8.3.3	Recreational Experience Markets .....	156
8.3.4	Tribal Fisheries .....	157
8.3.5	Communities .....	157
8.3.6	Nonconsumers and Nonusers .....	158
8.4	Discussion of Cumulative Impacts .....	158
8.4.1	Rebuilding Overfished Species as a Constraint Over Time .....	158

8.4.2	Potential Unintended Consequences .....	159
8.5	Summary of Impacts .....	159
8.5.1	Impacts on Commercial Vessels .....	160
8.5.1.2	Action Alternative 1 .....	160
8.5.1.3	Action Alternative 2 .....	161
8.5.1.4	Action Alternative 3 .....	161
8.5.1.5	Action Alternative 4 .....	161
8.5.1.6	Action Alternative 5 (Council-Preferred) .....	161
8.5.2	Summary of Impacts on Buyers and Processors .....	161
8.5.2.1	No Action Alternative .....	162
8.5.2.2	Action Alternative 1 .....	162
8.5.2.3	Action Alternative 2 .....	162
8.5.2.4	Action Alternative 3 .....	162
8.5.2.5	Action Alternative 4 .....	162
8.5.2.6	Action Alternative 5 (Council-Preferred) .....	162
8.5.3	Impacts on Recreational Fishery .....	162
8.5.3.1	No Action Alternative .....	163
8.5.3.2	Action Alternative 1 .....	163
8.5.3.3	Action Alternative 2 .....	163
8.5.3.4	Action Alternative 3 .....	163
8.5.3.5	Action Alternative 4 .....	163
8.5.3.6	Action Alternative 5 (Council-Preferred) .....	163
8.5.4	Impacts on Tribal Fisheries .....	164
8.5.4.1	No Action Alternative .....	164
8.5.4.2	Action Alternative 1 .....	164
8.5.4.3	Action Alternative 2 .....	164
8.5.4.4	Action Alternative 3 .....	164
8.5.4.5	Action Alternative 4 .....	164
8.5.4.6	Action Alternative 5 (Council-Preferred) .....	164
8.5.5	Impacts on Communities .....	165
8.5.5.1	No Action Alternative .....	165
8.5.5.2	Action Alternative 1 .....	165
8.5.5.3	Action Alternative 2 .....	165
8.5.5.4	Action Alternative 3 .....	165
8.5.5.5	Action Alternative 4 .....	165
8.5.5.6	Action Alternative 5 (Council-Preferred) .....	166
8.5.6	Impacts on Nonconsumers and Nonusers .....	166
8.5.6.1	No Action Alternative .....	166
8.5.6.2	Action Alternative 1 .....	166
8.5.6.3	Action Alternative 2 .....	166
8.5.6.4	Action Alternative 3 .....	166
8.5.6.5	Action Alternative 4 .....	166
8.5.6.6	Action Alternative 5 (Council-Preferred) .....	166
8.5.7	Environmental Justice Considerations .....	167
8.5.7.1	Identifying Communities of Concern .....	167
8.5.7.2	Effect of the Proposed Action on Communities of Concern .....	168
8.6	Social Cost-Benefit Analysis .....	169
8.6.1	Overall Approach .....	169
8.6.1.1	Social Versus Private Costs and Benefits .....	169
8.6.1.2	Note on Quality of Results .....	170
8.6.2	Key Trade-Offs for Analysis .....	170

8.6.2.1	Risk Versus Uncertainty .....	170
8.6.2.2	Present Versus Future Costs and Benefits .....	171
8.6.3	Factors Considered in Assessing Net Social Benefits .....	171
8.6.3.1	Producer Surplus .....	172
8.6.3.2	Consumer Surplus .....	172
8.6.4	Comparison of the Alternatives .....	173
8.6.4.1	Introduction .....	174
8.6.4.2	Producer Surplus .....	174
8.6.4.3	Consumer Surplus .....	175
8.6.4.4	Public Expenditures Affecting Either Consumer or Producer Surplus .....	175
9.0	SUMMARY OF OTHER ENVIRONMENTAL MANAGEMENT ISSUES .....	199
9.1	Short-Term Uses Versus Long-Term Productivity .....	199
9.2	Irreversible Resource Commitments .....	200
9.3	Irretrievable Resource Commitments .....	200
9.4	Energy Requirements and Conservation Potential of the Alternatives .....	200
9.5	Urban Quality, Historic Resources, and the Design of the Built Environment .....	201
9.6	Possible Conflicts Between the Proposed Action and Other Plans and Policies For the Affected Area .....	201
9.7	Significant and Unavoidable Adverse Impacts .....	202
9.8	Mitigation .....	203
9.9	Environmentally Preferred Alternative and Rationale for Preferred Alternative .....	204
10.0	CONSISTENCY WITH THE GROUND FISH FMP AND MAGNUSON-STEVENSON ACT NATIONAL STANDARDS .....	209
10.1	FMP Goals and Objectives .....	209
10.2	National Standards .....	212
10.3	Other Applicable Magnuson-Stevens Act Provisions .....	214
11.0	CROSS-CUTTING MANDATES .....	215
11.1	Other Federal Laws .....	215
11.1.1	Coastal Zone Management Act .....	215
11.1.2	Endangered Species Act .....	215
11.1.3	Marine Mammal Protection Act .....	215
11.1.4	Migratory Bird Treaty Act .....	216
11.1.5	Paperwork Reduction Act .....	216
11.1.6	Regulatory Flexibility Act .....	216
11.2	Executive Orders .....	217
11.2.1	EO 12866 (Regulatory Impact Review) .....	217
11.2.2	EO 12898 (Environmental Justice) .....	217
11.2.3	EO 13132 (Federalism) .....	218
11.2.4	EO 13175 (Consultation and Coordination With Indian Tribal Government) .....	219
11.2.5	EO 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds) .....	219
11.3	Regulatory Impact Review and Regulatory Flexibility Analysis .....	219
11.3.1	EO 12866 (Regulatory Impact Review) .....	219
11.3.2	Impacts on Small Entities/Initial Regulatory Flexibility Analysis .....	221
12.0	RESPONSE TO COMMENTS .....	225
12.1	EPA Comments .....	225
12.2	Public Comments .....	228
12.2.1	Natural Resources Defense Council (NRDC) Comments .....	228

12.2.2	Other Public Comments .....	235
13.0	LIST OF PREPARERS .....	245
14.0	AGENCIES, ORGANIZATIONS, AND PERSONS TO WHOM COPIES OF THIS STATEMENT WERE SENT .....	247
15.0	ACRONYMS AND GLOSSARY .....	249
16.0	LITERATURE CITED .....	257
	INDEX .....	265
	APPENDIX A: Affected Environment .....	A-1
	APPENDIX B: Additional Tables .....	B-1
	APPENDIX C: Council Fisheries Income Impact Modeling .....	C-1
	APPENDIX D: Proposed Groundfish Fishery Management Plan Amendment 16-3 Language .....	D-1
	APPENDIX E: Bocaccio Draft Rebuilding Plan .....	E-1
	APPENDIX F: Cowcod Draft Rebuilding Plan .....	F-1
	APPENDIX G: Widow Rockfish Draft Rebuilding Plan .....	G-1
	APPENDIX H: Yelloweye Rockfish Draft Rebuilding Plan .....	H-1

## LIST OF TABLES

	<u>Page</u>
TABLE 1-1. Summary of scoping comments received on Amendments 16-3 .....	19
TABLE 2-1. Harvest specifications (2004-2006 total catch OYs) and strategic rebuilding parameters associated with alternative rebuilding models for bocaccio under each analyzed rebuilding alternative .....	33
TABLE 2-2. Harvest specifications (2004-2006 total catch OYs) and strategic rebuilding parameters associated with cowcod rebuilding alternatives .....	34
TABLE 2-3. Harvest specifications (2004-2006 total catch OYs) and strategic rebuilding parameters associated with alternative rebuilding models for widow rockfish under each analyzed rebuilding alternative .....	35
TABLE 2-4. Harvest specifications (2004-2006 total catch OYs) and strategic rebuilding parameters associated with yelloweye rockfish rebuilding alternatives .....	36
TABLE 4-1. Interactions between marine mammals and the Pacific Coast groundfish fisheries documented by West Coast Groundfish Observers <sup>al</sup> between September 2001 and October 2002 .....	59
TABLE 4-2. Interactions between seabirds and the Pacific Coast groundfish fisheries documented by West Coast Groundfish Observers <sup>al</sup> between September 2001 and October 2002 ..	59
TABLE 5-1. Bocaccio commercial cumulative limits (pounds) south of Cape Mendocino (40°10' N Latitude), 1995-2004 .....	75
TABLE 5-2. History of recreational rockfish bag limits, 1995-2004 .....	76
TABLE 5-3. Decision table treating three alternative bocaccio assessment models as true states of nature .....	77
TABLE 5-4. Estimated 2002 total catch mortality of selected groundfish species from West Coast commercial, tribal and recreational fisheries .....	78
TABLE 5-5. Estimated 2003 total catch mortality of selected groundfish species from West Coast commercial, tribal and recreational fisheries .....	79
TABLE 5-6a. Projected total catch optimum yields for bocaccio (Model STATc) under different rebuilding scenarios, the default 40-10 policy, and ABC rule .....	80
TABLE 5-6b. Projected total catch optimum yields for bocaccio (Model STARb2) under different rebuilding scenarios, the default 40-10 policy, and ABC rule .....	81
TABLE 5-6c. Projected total catch optimum yields for bocaccio (Model STARb1) under different rebuilding scenarios, the default 40-10 policy and ABC rule .....	82
TABLE 5-7. Commercial regulatory history of widow rockfish, 1982-2004 .....	83
TABLE 5-8a. Projected total catch optimum yields for widow rockfish (Model 8) under different rebuilding scenarios, the default 40-10 policy, and ABC rule .....	85
TABLE 5-8b. Projected total catch optimum yields for widow rockfish (Model 7) under different rebuilding scenarios, the default 40-10 policy, and ABC rule .....	86
TABLE 5-8c. Projected total catch optimum yields for widow rockfish (Model 9) under different rebuilding scenarios, the default 40-10 policy, and ABC rule .....	87
TABLE 5-9. Yelloweye rockfish distribution by depth from the IPhC Survey .....	88
TABLE 5-10. Estimated catch of yelloweye rockfish in 2003 Washington recreational fisheries by port and month through July 31 .....	89
TABLE 5-11. Projected total catch optimum yields for yelloweye rockfish under different rebuilding scenarios, the default 40-10 policy, and ABC rule .....	90
TABLE 5-12. Estimated mortality (mt) of overfished West Coast groundfish species by fishery in 2004 .....	92

TABLE 8-1.	Estimated recreational fishery harvest by region for charter and private boats for 2002 .....	177
TABLE 8-2.	Bycatch of groundfish species (pounds) in Makah trawl and troll fisheries in 2000, 2001, and 2002 .....	178
TABLE 8-3.	Bycatch of groundfish species in tribal longline fisheries in 2000, 2001 and 2002 ..	179
TABLE 8-4.	1998 total catch OYs, estimated 2002 and 2003 total catch mortality, and preseason estimated 2004 total catch mortality by fishery sector for overfished species .....	180
TABLE 8-5.	Presence of any of the eight overfished species <sup>av</sup> in West Coast fisheries .....	181
TABLE 8-6.	Rebuilding species constraining West Coast fisheries in 2005 under each alternative .....	182
TABLE 8-7.	Catch and/or landed catch of <b>bocaccio</b> and exvessel revenue by trip target type (1998 and 2002) .....	183
TABLE 8-8.	Catch and/or landed catch of <b>cowcod</b> and exvessel revenue by trip target type (1998 and 2002) .....	186
TABLE 8-9.	Catch and/or landed catch of <b>widow rockfish</b> and exvessel revenue by trip target type (1998 and 2002) .....	187
TABLE 8-10.	Catch and/or landed catch of <b>yelloweye</b> rockfish and exvessel revenue by trip target type (1998 and 2002) .....	191
TABLE 8-11.	2005 Total catch OYs for each rebuilding species under each alternative compared with adopted 2004 total catch OYs and estimated long-term MSY .....	193
TABLE 8-12.	Median rebuilding year ( $T_{TARGET}$ ) for each rebuilding species under each alternative .....	193
TABLE 8-13.	Summary of net social benefit analysis for impacts of the <b>bocaccio</b> rebuilding alternatives .....	194
TABLE 8-14.	Summary of net social benefit analysis for impacts of the <b>cowcod</b> rebuilding alternatives .....	195
TABLE 8-15.	Summary of net social benefit analysis for impacts of the <b>widow rockfish</b> rebuilding alternatives .....	196
TABLE 8-16.	Summary of net social benefit analysis for impacts of the <b>yelloweye rockfish</b> rebuilding alternatives .....	197
TABLE 9-1.	Relative present value of OYs under rebuilding alternatives for Amendment 16-3 species. ....	207
TABLE 12-1.	Draft estimated 2002 total catch mortality of selected groundfish species from West Coast commercial, tribal and recreational fisheries .....	241
TABLE 12-2.	Draft estimated 2003 total catch mortality of selected groundfish species from West Coast commercial, tribal and recreational fisheries .....	243

## LIST OF FIGURES

	<u>Page</u>
FIGURE 2-1. Relationship of the acceptable biological catch (ABC) of groundfish and the biomass-based reduction of the optimum yield (OY) for groundfish species managed under the Pacific Coast Groundfish Fishery Management Plan default policy .....	37
FIGURE 5-1. Projected total catch optimum yields for bocaccio (Model STATc) under the different rebuilding alternatives and No Action alternative. ....	94
FIGURE 5-2. Cowcod Conservation Areas .....	95
FIGURE 5-3. Projected total catch optimum yields for widow rockfish (Model 8) under the different rebuilding alternatives and No Action alternative .....	96
FIGURE 5-4. Yelloweye Rockfish Conservation Area .....	97
FIGURE 5-5. Projected total catch optimum yields for yelloweye rockfish under the different rebuilding alternatives and No Action alternative .....	98
FIGURE 5-6. Widow rockfish bycatch rates in the whiting fishery by year (1998-2003) on the U.S. West Coast .....	99
FIGURE 5-7. Projected total catch optimum yields for bocaccio (STATc), widow rockfish (Model 8) and yelloweye under the No Action (40-10 policy) alternative .....	100
FIGURE 5-8. Projected spawner biomass-to-target ratios for bocaccio (STATc), widow rockfish (Model 8) and yelloweye under the No Action (40-10 policy) alternative ..	101
FIGURE 5-9. Projected total catch optimum yields for bocaccio (STATc), widow rockfish (Model 8) and yelloweye under rebuilding Alternative 1 .....	102
FIGURE 5-10. Projected spawner biomass-to-target ratios for bocaccio (STATc), widow rockfish (Model 8) and yelloweye under rebuilding Alternative 1 .....	103
FIGURE 5-11. Projected total catch optimum yields for bocaccio (STATc), widow rockfish (Model 8) and yelloweye under rebuilding Alternative 2 .....	104
FIGURE 5-12. Projected spawner biomass-to-target ratios for bocaccio (STATc), widow rockfish (Model 8) and yelloweye under rebuilding Alternative 2 .....	105
FIGURE 5-13. Projected total catch optimum yields for bocaccio (STATc), widow rockfish (Model 8) and yelloweye under rebuilding Alternative 3 .....	106
FIGURE 5-14. Projected spawner biomass-to-target ratios for bocaccio (STATc), widow rockfish (Model 8) and yelloweye under rebuilding Alternative 3 .....	107
FIGURE 5-15. Projected total catch optimum yields for bocaccio (STATc), widow rockfish (Model 8) and yelloweye under rebuilding Alternative 4 .....	108
FIGURE 5-16. Projected spawner biomass-to-target ratios for bocaccio (STATc), widow rockfish (Model 8) and yelloweye under rebuilding Alternative 4 .....	109

