

Table of Contents

<u>Section</u>	<u>Page</u>
List of Figures.....	xv
List of Tables	xix
Definitions.....	xxix
Acronym List.....	xxxix
EXECUTIVE SUMMARY	ES-1
E.S.1 Background, Purpose, Scope, Process, and Regulatory Context.....	ES-1
E.S.2 Plan Area Profile.....	ES-2
E.S.3 Plan Development.....	ES-3
E.S.4 Establishment of the MSHCP Reserve System.....	ES-8
E.S.5 Costs of and Funding for Plan Implementation	ES-13
E.S.6 Plan Implementation	ES-15
E.S.7 Take Authorization for Covered Activities and Term of Permit	ES-24
E.S.8 MSHCP Reserve Lands Management and Monitoring.....	ES-30
E.S.9 Species Accounts and Conservation Measures.....	ES-39
E.S.10 Natural Community Accounts and Conservation Measures	ES-41
1.0. BACKGROUND, PURPOSE, SCOPE, PROCESS, AND REGULATORY CONTEXT	1-1
1.1 Background.....	1-1
1.2 Purpose	1-2
1.3 Scope	1-3
1.4 Planning Process and Public Participation.....	1-3
1.5 Regulatory Context.....	1-4
1.5.1 FESA (Federal Endangered Species Act).....	1-4
1.5.2 NEPA (National Environmental Policy Act).....	1-5
1.5.3 NCCP Act (California Natural Community Conservation Planning Act)	1-5
1.5.4 CEQA (California Environmental Quality Act)	1-5
1.6 Relationship to Other Plans and Programs	1-5
2.0 PLAN AREA PROFILE.....	2-1
2.1 Plan Area Boundaries and Regional Setting.....	2-1
2.2 Population Trends.....	2-1
2.3 Land Use	2-3
2.4 Public and Private Conservation Lands	2-6
2.5 Non-Conservation Lands	2-8
2.6 Description of General Biological Resources in the Plan Area	2-9
3.0 PLAN DEVELOPMENT	3-1
3.1 Overview of Conservation Planning Process.....	3-1
3.1.1 Role of the Scientific Advisory Committee (SAC)	3-1
3.1.2 Role of the Independent Science Advisors	3-2
3.1.3 Best Available Science Standard	3-2
3.1.4 Planning Process	3-3

Table of Contents (Cont.)

<u>Section</u>	<u>Page</u>
3.2	Species and Natural Communities Considered..... 3-6
3.2.1	Review of Species Identified in the Planning Agreement 3-6
3.2.2	Review of Natural Communities Identified in the Planning Agreement 3-8
3.3	Sources of Biological Data 3-10
3.4	Evaluation of Initial Conservation Alternatives..... 3-11
3.5	Conservation Alternatives Considered 3-12
3.5.1	Preferred Alternative..... 3-12
3.5.2	Alternative 1, Public Lands Alternative..... 3-13
3.5.3	Alternative 2, Core Habitat with Ecological Processes 3-13
3.5.4	Alternative 3, Enhanced Conservation Alternative 3-14
3.5.5	Alternative 4, Full Protection Alternative..... 3-14
3.5.6	No Action/No Project Alternative 3-14
3.6	Plan Benefits for Covered Species and Conserved Natural Communities 3-15
4.0	ESTABLISHMENT OF THE MSHCP RESERVE SYSTEM 4-1
4.1	Existing Conservation Lands within Conservation Areas 4-3
4.1.1	Federal and State Existing Conservation Lands 4-4
4.1.2	Local Permittee Existing Conservation Lands, Including CVFTL HCP Lands 4-8
4.1.3	Non-Profit Organization Conservation Lands 4-9
4.2	MSHCP Reserve System Assembly 4-10
4.2.1	Complementary Conservation 4-10
4.2.1.1	Tribal Land outside the Reservation 4-12
4.2.2	Additional Conservation Lands 4-12
4.2.2.1	The Role of Federal and State Governments in Assembly of the Reserve System 4-12
4.2.2.2	Permittees’ Obligation in Assembly of the MSHCP Reserve System 4-13
4.2.2.3	Public and Quasi-Public Land in the Conservation Areas 4-16
4.3	Conservation Areas..... 4-16
4.3.1	Cabazon Conservation Area 4-18
4.3.2	Stubbe and Cottonwood Canyons Conservation Area 4-24
4.3.3	Snow Creek/Windy Point Conservation Area 4-29
4.3.4	Whitewater Canyon Conservation Area 4-38
4.3.5	Highway 111/I-10 Conservation Area 4-44
4.3.6	Whitewater Floodplain Conservation Area 4-47
4.3.7	Upper Mission Creek/Big Morongo Canyon Conservation Area 4-57
4.3.8	Willow Hole Conservation Area..... 4-70
4.3.9	Long Canyon Conservation Area..... 4-81
4.3.10	Edom Hill Conservation Area..... 4-84
4.3.11	Thousand Palms Conservation Area..... 4-90
4.3.12	West Deception Canyon Conservation Area 4-99
4.3.13	Indio Hills/Joshua Tree National Park Linkage Conservation Area..... 4-103
4.3.14	Indio Hills Palms Conservation Area 4-107
4.3.15	East Indio Hills Conservation Area 4-112

Table of Contents (Cont.)

<u>Section</u>	<u>Page</u>
4.3.16	Joshua Tree National Park Conservation Area4-120
4.3.17	Desert Tortoise and Linkage Conservation Area.....4-124
4.3.18	Mecca Hills/Orocopia Mountains Conservation Area.....4-130
4.3.19	Dos Palmas Conservation Area4-134
4.3.20	Coachella Valley Stormwater Channel and Delta Conservation Area4-140
4.3.21	Santa Rosa and San Jacinto Mountains Conservation Area4-147
4.4	Required Avoidance, Minimization, and Mitigation Measures4-168
4.5	Land Use Adjacency Guidelines.....4-178
4.5.1	Drainage.....4-178
4.5.2	Toxics4-179
4.5.3	Lighting.....4-179
4.5.4	Noise4-179
4.5.5	Invasives4-179
4.5.6	Barriers4-183
4.5.7	Grading/Land Development4-183
4.6	Impact and Anticipated Levels of Take and Habitat Loss4-183
5.0	COSTS OF AND FUNDING FOR PLAN IMPLEMENTATION5-1
5.1	Costs of Plan Implementation.....5-1
5.1.1	Projected Permittee Acquisitions, State and Federal Contribution to the Acquisition Program, and Complementary Conservation5-1
5.1.2	Permittee Acquisition and Land Improvement Costs5-3
5.1.2.1	Acquisition Costs.....5-3
5.1.2.2	Land Improvement Costs.....5-4
5.1.2.3	Acquisition Program Administration Costs.....5-4
5.1.2.4	Interest Payments on Loans to the Acquisition Program.....5-4
5.1.3	Non-Acquisition Program Administration Costs.....5-4
5.1.4	Permittee Monitoring Program, Management Program, and Adaptive Management Costs5-5
5.1.5	Trail Related Costs.....5-6
5.1.6	Cost Summary for Permittees' Obligations.....5-6
5.1.7	CVWD Responsibilities.....5-7
5.2	Funding for Plan Implementation5-8
5.2.1	Funding Sources for the Permittees' Obligations.....5-8
5.2.1.1	Local Development Mitigation Fee5-9
5.2.1.2	Fees on the Importation of Waste into Landfills and Transfer Stations (Conservation Trust Fund)5-10
5.2.1.3	Regional Road Projects Mitigation.....5-10
5.2.1.4	Regional Infrastructure Project Mitigation5-10
5.2.1.5	Eagle Mountain Landfill Environmental Mitigation Trust Fund.....5-11
5.2.1.6	Other Funding Sources5-11
5.2.2	Adequacy of Funding.....5-12
5.2.2.1	Funding Needs Resulting from Increased Land Acquisition Costs.....5-12

Table of Contents (Cont.)

<u>Section</u>	<u>Page</u>
5.2.2.2 Increased Funding Needs Resulting from Monitoring Program, Management Program, and Adaptive Management Costs	5-12
5.2.2.3 Revenue Collections and Land Acquisitions in Relationship to Land Development (Rough Proportionality)	5-13
5.2.2.4 Potential Additional Funding Sources	5-14
5.2.3 Contributions to the Endowment for the Monitoring Program, the Management Program, Adaptive Management, and Plan Administration	5-15
5.2.4 Funding Sources for the State and Federal Contributions	5-15
6.0 PLAN IMPLEMENTATION	6-1
6.1 Organizational Structure	6-1
6.1.1 Coachella Valley Conservation Commission	6-1
6.1.1.1 Composition and Voting Requirements	6-1
6.1.1.2 Duties and Responsibilities of CVCC	6-1
6.1.1.3 Duties and Responsibilities of the CVCC Executive Director	6-2
6.1.2 Acquisition and Funding Coordinating Committee	6-4
6.1.3 Reserve Management Oversight Committee	6-5
6.1.4 Reserve Management Unit Committees	6-6
6.1.5 Land Manager	6-8
6.1.6 Monitoring Program Administrator (MPA).....	6-9
6.2 MSHCP Reserve Management Unit Plan	6-10
6.3 Trails Management Subcommittee	6-11
6.4 Annual Reporting.....	6-12
6.5 Rough Step and Rough Proportionality Analyses.....	6-13
6.6 Obligations of the Participants.....	6-15
6.6.1 Obligations of the Local Permittees.....	6-15
6.6.1.1 Joint Project Review Process within Conservation Areas	6-19
6.6.1.2 Property Owner Initiated Habitat Evaluation and Acquisition Negotiation Strategy (HANS)	6-21
6.6.1.3 Relinquishment of CVFTL Incidental Take Permit	6-31
6.6.2 Obligations of the State Permittees.....	6-32
6.6.2.1 Review of State Permittee Projects within the Conservation Areas.....	6-34
6.6.3 Actions by Federal and State Governments.....	6-34
6.7 Time Frame for Implementation.....	6-34
6.8 Assurances for Unforeseen and Changed Circumstances.....	6-35
6.8.1 No Surprises Rule	6-35
6.8.2 Reconciliation of the No Surprises Rule, Unforeseen Circumstances and Adaptive Management in the MSHCP.....	6-37
6.8.3 Changed Circumstances.....	6-38
6.8.3.1 Drought.....	6-38
6.8.3.2 Fire	6-39
6.8.3.3 Invasion by New Exotic Species	6-41
6.8.3.4 Lowering of the Water Table	6-41
6.8.3.5 New Listings of Species Not Covered by the MSHCP	6-42
6.8.4 Changed Circumstances Not Provided for in the Plan.....	6-43
6.9 Application of Certain FESA Requirements.....	6-43

Table of Contents (Cont.)

<u>Section</u>		<u>Page</u>
6.10	State Assurances	6-45
6.11	Relationship to Existing Wetland Regulations	6-45
6.12	Modifications, Like Exchanges to Conservation Areas, and Amendments to the MSHCP.....	6-46
	6.12.1 Modifications	6-46
	6.12.2 Like Exchanges to Conservation Areas	6-46
	6.12.3 Minor Amendments	6-49
	6.12.4 Major Amendments	6-50
6.13	Annexations	6-51
7.0	TAKE AUTHORIZATION FOR COVERED ACTIVITIES AND TERM OF PERMIT	7-1
7.1	Covered Activities outside Conservation Areas	7-1
7.2	Transportation Projects within and outside Conservation Areas	7-2
	7.2.1 Interchange Projects and Associated Arterials	7-2
	7.2.2 Caltrans Projects	7-3
	7.2.3 Regional Road Projects.....	7-5
7.3	Activities in Conservation Areas	7-15
	7.3.1 Covered Activities	7-15
	7.3.1.1 Covered Operation, Maintenance, and Safety Activities within Existing Rights-of-Way or Easements	7-48
	7.3.2 Allowable Uses	7-50
	7.3.2.1 Non-Recreation-Related Allowable Uses	7-50
	7.3.2.2 Allowable Uses in and outside the Conservation Areas	7-51
	7.3.3 Compatible Activities	7-51
	7.3.3.1 Emergency Repairs and Reserve Management and Monitoring.....	7-51
	7.3.3.2 Public Use and Trails Management on Reserve Lands within the Santa Rosa and San Jacinto Mountains Conservation Area	7-53
	7.3.4 Conditionally Compatible Uses	7-76
	7.3.4.1 Covered Public Access Activities.....	7-76
	7.3.4.2 Guidelines for Public Access and Recreation on Reserve Lands	7-76
	7.3.4.3 Review Process for Approving Public Access and Recreation on Reserve Lands	7-79
7.4	Participating Special Entity	7-80
8.0	MSHCP RESERVE SYSTEM MANAGEMENT & MONITORING PROGRAM	8-1
8.1	Introduction and Purpose	8-1
	8.1.1 Goals and Objectives: Monitoring Program	8-2
	8.1.2 Goals and Objectives: Management Program.....	8-3
8.2	Management of the MSHCP Reserve System	8-4
	8.2.1 General Overview	8-4
	8.2.2 Organizational Structure	8-4
	8.2.3 Current Management of Existing Conservation Lands.....	8-7
	8.2.4 Proposed Management.....	8-24
	8.2.4.1 General Ongoing Management.....	8-24
	8.2.4.2 Management Contingency Fund.....	8-26

Table of Contents (Cont.)

<u>Section</u>	<u>Page</u>
8.2.4.3 Adaptive Management	8-27
8.2.5 Ecosystem Models	8-29
8.2.5.1 Habitat/Niche Models	8-32
8.3 Monitoring for the MSHCP Reserve System.....	8-33
8.3.1 Current Monitoring on Existing Conservation Lands.....	8-34
8.3.2 Scientific Principles	8-36
8.3.3 Baseline Phase of Monitoring Program	8-37
8.3.4 Monitoring at Multiple Scales	8-38
8.3.4.1 Species Level Monitoring.....	8-38
8.3.4.2 Landscape Level Monitoring	8-40
8.3.4.3 Natural Community Level Monitoring	8-41
8.4 Integration of the Management and Monitoring Programs.....	8-43
8.4.1 Aeolian Sand Communities: Sand Dunes and Sand Fields.....	8-44
8.4.1.1 Background and Models	8-45
8.4.1.2 Management: Aeolian Sand Communities	8-47
8.4.1.3 Monitoring: Aeolian Sand Communities	8-51
8.4.2 Alluvial Fan and Wash Communities	8-57
8.4.2.1 Background and Models	8-57
8.4.2.2 Management: Alluvial Fan and Wash Communities	8-59
8.4.2.3 Monitoring: Alluvial Fan and Wash Communities.....	8-60
8.4.3 Riparian and Desert Fan Palm Communities.....	8-63
8.4.3.1 Background and Models	8-63
8.4.3.2 Management: Riparian and Desert Fan Palm Communities.....	8-65
8.4.3.3 Monitoring: Riparian and Desert Fan Palm Communities	8-66
8.4.4 Saltbush Scrub and Alkali Flats Communities	8-69
8.4.4.1 Background and Models	8-69
8.4.4.2 Management: Saltbush Scrub and Alkali Flats Communities	8-69
8.4.4.3 Monitoring: Saltbush Scrub and Alkali Flats Communities	8-70
8.4.5 Marsh Communities.....	8-70
8.4.5.1 Background and Models	8-71
8.4.5.2 Management: Marsh Communities.....	8-71
8.4.5.3 Monitoring: Marsh Communities	8-74
8.4.6 Desert Scrub, Chaparral, Woodland, and Forest Communities in Mountainous Areas	8-77
8.4.6.1 Background and Models	8-77
8.4.6.2 Management: Desert Scrub, Chaparral, Woodland, and Forest Communities	8-78
8.4.6.3 Monitoring: Desert Scrub, Chaparral, Woodland, and Forest Communities	8-81
8.4.7 Focused Monitoring Questions	8-82
8.4.7.1 Monitoring the Effects of Public Access and Use	8-83
8.4.7.2 Assessing Biological Corridors and Linkages	8-84
8.4.7.3 Assessing Impacts to Covered Bird Species from Overhead Power Lines.....	8-84
8.4.7.4 Burrowing Owl Relocation Protocols.....	8-84
8.5 Research: Targeted Monitoring and Management Studies	8-85
8.5.1 Research on Effects of Recreation on Peninsular Bighorn Sheep	8-85
8.5.2 Burrowing Owl Interim Conservation Strategy	8-88

Table of Contents (Cont.)

<u>Section</u>	<u>Page</u>
8.5.3	Other Research Questions..... 8-89
8.6	Data Storage and Analysis..... 8-90
8.6.1	Data Management..... 8-90
	8.6.1.1 Database Consolidation 8-91
	8.6.1.2 Data Handling and Storage..... 8-91
	8.6.1.3 Data Availability..... 8-92
8.6.2	Data Compilation and Analysis 8-92
8.7	Program Reporting and Evaluation..... 8-93
8.8	Work Plan, Schedule, and Program Costs 8-94
8.8.1	Personnel for Management Program 8-96
8.8.2	Personnel for Monitoring Program 8-106
8.8.3	Program Cost Estimates..... 8-110
9.0	SPECIES ACCOUNTS AND CONSERVATION MEASURES 9-1
9.1	General Conservation Approach for Covered Species 9-1
9.1.1	Conservation: Acquisition and Related Protection Actions..... 9-2
9.1.2	Conservation: Monitoring and Management Actions..... 9-2
9.1.3	Summary of Core Habitat for Covered Species Protected in Conservation Areas..... 9-3
9.2	Plants 9-3
9.2.1	Mecca Aster 9-9
	9.2.1.1 Species Conservation Goals and Objectives..... 9-9
	9.2.1.2 Threats, Limiting Factors, and Adaptive Management 9-10
	9.2.1.3 Species Conservation Analysis..... 9-11
	9.2.1.4 Impacts Analysis..... 9-13
	9.2.1.5 Species Account: Background..... 9-16
9.2.2	Coachella Valley Milkvetch 9-17
	9.2.2.1 Species Conservation Goals and Objectives..... 9-17
	9.2.2.2 Threats, Limiting Factors, and Adaptive Management 9-20
	9.2.2.3 Species Conservation Analysis..... 9-20
	9.2.2.4 Impacts Analysis..... 9-24
	9.2.2.5 Species Account: Background..... 9-27
9.2.3	Triple-Ribbed Milkvetch 9-30
	9.2.3.1 Species Conservation Goals and Objectives..... 9-30
	9.2.3.2 Threats, Limiting Factors, and Adaptive Management 9-32
	9.2.3.3 Species Conservation Analysis..... 9-33
	9.2.3.4 Impacts Analysis..... 9-34
	9.2.3.5 Species Account: Background..... 9-37
9.2.4	Orocopia Sage..... 9-40
	9.2.4.1 Species Conservation Goals and Objectives..... 9-40
	9.2.4.2 Threats, Limiting Factors, and Adaptive Management 9-41
	9.2.4.3 Species Conservation Analysis..... 9-42
	9.2.4.4 Impacts Analysis..... 9-43
	9.2.4.5 Species Account: Background..... 9-45
9.2.5	Little San Bernardino Mountains Linanthus..... 9-46
	9.2.5.1 Species Conservation Goals and Objectives..... 9-46
	9.2.5.2 Threats, Limiting Factors, and Adaptive Management 9-48
	9.2.5.3 Species Conservation Analysis..... 9-49

Table of Contents (Cont.)

<u>Section</u>		<u>Page</u>
	9.2.5.4 Impacts Analysis.....	9-50
	9.2.5.5 Species Account: Background.....	9-53
9.3	Insects	9-54
9.3.1	Coachella Valley Giant Sand-Treader Cricket	9-55
	9.3.1.1 Species Conservation Goals and Objectives.....	9-55
	9.3.1.2 Threats, Limiting Factors, and Adaptive Management	9-57
	9.3.1.3 Species Conservation Analysis.....	9-57
	9.3.1.4 Take Analysis	9-61
	9.3.1.5 Species Account: Background.....	9-64
9.3.2	Coachella Valley Jerusalem Cricket	9-65
	9.3.2.1 Species Conservation Goals and Objectives.....	9-65
	9.3.2.2 Threats, Limiting Factors, and Adaptive Management	9-67
	9.3.2.3 Species Conservation Analysis.....	9-68
	9.3.2.4 Take Analysis	9-70
	9.3.2.5 Species Account: Background.....	9-74
9.4	Fish	9-76
9.4.1	Desert Pupfish.....	9-76
	9.4.1.1 Species Conservation Goals and Objectives.....	9-76
	9.4.1.2 Threats, Limiting Factors, and Adaptive Management	9-77
	9.4.1.3 Species Conservation Analysis.....	9-79
	9.4.1.4 Take Analysis	9-80
	9.4.1.5 Species Account: Background.....	9-83
9.5	Amphibians	9-84
9.5.1	Arroyo Toad.....	9-84
	9.5.1.1 Species Conservation Goals and Objectives.....	9-84
	9.5.1.2 Threats, Limiting Factors, and Adaptive Management	9-86
	9.5.1.3 Species Conservation Analysis.....	9-87
	9.5.1.4 Take Analysis	9-87
	9.5.1.5 Species Account: Background.....	9-90
9.6	Reptiles	9-90
9.6.1	Desert Tortoise.....	9-91
	9.6.1.1 Species Conservation Goals and Objectives.....	9-91
	9.6.1.2 Threats, Limiting Factors, and Adaptive Management	9-94
	9.6.1.3 Species Conservation Analysis.....	9-95
	9.6.1.4 Take Analysis	9-96
	9.6.1.5 Species Account: Background.....	9-99
9.6.2	Coachella Valley Fringe-Toed Lizard	9-101
	9.6.2.1 Species Conservation Goals and Objectives.....	9-101
	9.6.2.2 Threats, Limiting Factors, and Adaptive Management	9-103
	9.6.2.3 Species Conservation Analysis.....	9-104
	9.6.2.4 Take Analysis	9-109
	9.6.2.5 Species Account: Background.....	9-112
9.6.3	Flat-Tailed Horned Lizard	9-114
	9.6.3.1 Species Conservation Goals and Objectives.....	9-114
	9.6.3.2 Threats, Limiting Factors, and Adaptive Management	9-116
	9.6.3.3 Species Conservation Analysis.....	9-117
	9.6.3.4 Take Analysis	9-120

Table of Contents (Cont.)

<u>Section</u>	<u>Page</u>
9.6.3.5 Species Account: Background	9-123
9.7 Birds	9-125
9.7.1 Yuma Clapper Rail	9-126
9.7.1.1 Species Conservation Goals and Objectives	9-126
9.7.1.2 Threats, Limiting Factors, and Adaptive Management	9-127
9.7.1.3 Species Conservation Analysis	9-128
9.7.1.4 Analysis: Impacts of Disturbance	9-128
9.7.1.5 Species Account: Background	9-131
9.7.2 California Black Rail	9-132
9.7.2.1 Species Conservation Goals and Objectives	9-132
9.7.2.2 Threats, Limiting Factors, and Adaptive Management	9-133
9.7.2.3 Species Conservation Analysis	9-134
9.7.2.4 Disturbance Analysis	9-135
9.7.2.5 Species Account: Background	9-137
9.7.3 Burrowing Owl	9-138
9.7.3.1 Species Conservation Goals and Objectives	9-138
9.7.3.2 Threats, Limiting Factors, and Adaptive Management	9-140
9.7.3.3 Species Conservation Analysis	9-141
9.7.3.4 Take Analysis	9-141
9.7.3.5 Species Account: Background	9-144
9.7.4 Southwestern Willow Flycatcher	9-146
9.7.4.1 Species Conservation Goals and Objectives	9-146
9.7.4.2 Threats, Limiting Factors, and Adaptive Management	9-149
9.7.4.3 Species Conservation Analysis	9-150
9.7.4.4 Take Analysis	9-151
9.7.4.5 Species Account: Background	9-155
9.7.5 Crissal Thrasher	9-156
9.7.5.1 Species Conservation Goals and Objectives	9-156
9.7.5.2 Threats, Limiting Factors, and Adaptive Management	9-158
9.7.5.3 Species Conservation Analysis	9-159
9.7.5.4 Take Analysis	9-160
9.7.5.5 Species Account: Background	9-163
9.7.6 Le Conte's Thrasher	9-164
9.7.6.1 Species Conservation Goals and Objectives	9-164
9.7.6.2 Threats, Limiting Factors, and Adaptive Management	9-168
9.7.6.3 Species Conservation Analysis	9-168
9.7.6.4 Take Analysis	9-170
9.7.6.5 Species Account: Background	9-174
9.7.7 Least Bell's Vireo	9-175
9.7.7.1 Species Conservation Goals and Objectives	9-175
9.7.7.2 Threats, Limiting Factors, and Adaptive Management	9-178
9.7.7.3 Species Conservation Analysis	9-179
9.7.7.4 Take Analysis	9-180
9.7.7.5 Species Account: Background	9-183
9.7.8 Gray Vireo	9-185
9.7.8.1 Species Conservation Goals and Objectives	9-185
9.7.8.2 Threats, Limiting Factors, and Adaptive Management	9-186

Table of Contents (Cont.)

<u>Section</u>	<u>Page</u>
9.7.8.3	Species Conservation Analysis 9-187
9.7.8.4	Take Analysis 9-188
9.7.8.5	Species Account: Background 9-190
9.7.9	Yellow Warbler..... 9-191
9.7.9.1	Species Conservation Goals and Objectives 9-191
9.7.9.2	Threats, Limiting Factors, and Adaptive Management 9-194
9.7.9.3	Species Conservation Analysis 9-195
9.7.9.4	Take Analysis 9-195
9.7.9.5	Species Account: Background 9-199
9.7.10	Yellow-Breasted Chat..... 9-200
9.7.10.1	Species Conservation Goals and Objectives 9-200
9.7.10.2	Threats, Limiting Factors, and Adaptive Management 9-204
9.7.10.3	Species Conservation Analysis 9-204
9.7.10.4	Take Analysis 9-205
9.7.10.5	Species Account: Background 9-208
9.7.11	Summer Tanager..... 9-209
9.7.11.1	Species Conservation Goals and Objectives 9-209
9.7.11.2	Threats, Limiting Factors, and Adaptive Management 9-210
9.7.11.3	Species Conservation Analysis 9-213
9.7.11.4	Take Analysis 9-214
9.7.11.5	Species Account: Background 9-218
9.8	Mammals 9-218
9.8.1	Southern Yellow Bat..... 9-219
9.8.1.1	Species Conservation Goals and Objectives 9-219
9.8.1.2	Threats, Limiting Factors, and Adaptive Management 9-220
9.8.1.3	Species Conservation Analysis 9-221
9.8.1.4	Take Analysis 9-222
9.8.1.5	Species Account: Background 9-224
9.8.2	Coachella Valley Round-Tailed Ground Squirrel..... 9-225
9.8.2.1	Species Conservation Goals and Objectives 9-225
9.8.2.2	Threats, Limiting Factors, and Adaptive Management 9-228
9.8.2.3	Species Conservation Analysis 9-229
9.8.2.4	Take Analysis 9-233
9.8.2.5	Species Account: Background 9-238
9.8.3	Palm Springs Pocket Mouse 9-240
9.8.3.1	Species Conservation Goals and Objectives 9-240
9.8.3.2	Threats, Limiting Factors, and Adaptive Management 9-244
9.8.3.3	Species Conservation Analysis 9-245
9.8.3.4	Take Analysis 9-250
9.8.3.5	Species Account: Background 9-254
9.8.4	Peninsular Bighorn Sheep..... 9-256
9.8.4.1	Species Conservation Goals and Objectives 9-256
9.8.4.2	Threats, Limiting Factors, and Adaptive Management 9-258
9.8.4.3	Species Conservation Analysis 9-259
9.8.4.4	Analysis: Impacts of Disturbance 9-260
9.8.4.5	Species Account: Background 9-263

Table of Contents (Cont.)

<u>Section</u>	<u>Page</u>
10.0 NATURAL COMMUNITY ACCOUNTS AND CONSERVATION MEASURES.....	10-1
10.1 General Conservation Approach for Natural Communities.....	10-1
10.1.1 Conservation: Acquisition and Related Protection Actions.....	10-1
10.1.2 Conservation: Adaptive Management Actions	10-2
10.1.3 Summary of Natural Communities Conserved in Conservation Areas	10-2
10.2 Natural Community Conservation Strategies: Sand Dunes and Sand Fields.....	10-2
10.2.1 Active Desert Dunes	10-8
10.2.1.1 Natural Community Conservation Goals and Objectives	10-8
10.2.1.2 Threats, Limiting Factors, and Adaptive Management	10-9
10.2.1.3 Natural Community Conservation Analysis.....	10-10
10.2.1.4 Natural Community Account: Background.....	10-11
10.2.2 Stabilized and Partially Stabilized Desert Dunes.....	10-12
10.2.2.1 Natural Community Conservation Goals and Objectives	10-12
10.2.2.2 Threats, Limiting Factors, and Adaptive Management	10-13
10.2.2.3 Natural Community Conservation Analysis	10-14
10.2.2.4 Natural Community Account: Background.....	10-15
10.2.3 Active Desert Sand Fields.....	10-16
10.2.3.1 Natural Community Conservation Goals and Objectives	10-16
10.2.3.2 Threats, Limiting Factors, and Adaptive Management	10-17
10.2.3.3 Natural Community Conservation Analysis.....	10-18
10.2.3.4 Natural Community Account: Background.....	10-20
10.2.4 Ephemeral Desert Sand Fields	10-21
10.2.4.1 Natural Community Conservation Goals and Objectives	10-21
10.2.4.2 Threats, Limiting Factors, and Adaptive Management	10-22
10.2.4.3 Natural Community Conservation Analysis.....	10-23
10.2.4.4 Natural Community Account: Background.....	10-25
10.2.5 Stabilized and Partially Stabilized Desert Sand Fields	10-26
10.2.5.1 Natural Community Conservation Goals and Objectives	10-26
10.2.5.2 Threats, Limiting Factors, and Adaptive Management	10-27
10.2.5.3 Natural Community Conservation Analysis.....	10-28
10.2.5.4 Natural Community Account: Background.....	10-30
10.2.6 Stabilized Shielded Desert Sand Fields	10-31
10.2.6.1 Natural Community Conservation Goals and Objectives	10-31
10.2.6.2 Threats, Limiting Factors, and Adaptive Management	10-32
10.2.6.3 Natural Community Conservation Analysis.....	10-33
10.2.6.4 Natural Community Account: Background.....	10-35
10.2.7 Mesquite Hummocks	10-36
10.2.7.1 Natural Community Conservation Goals and Objectives	10-36
10.2.7.2 Threats, Limiting Factors, and Adaptive Management	10-38
10.2.7.3 Natural Community Conservation Analysis.....	10-39
10.2.7.4 Natural Community Account: Background.....	10-41
10.3 Natural Community Conservation Strategies: Desert Scrub Communities	10-50
10.3.1 Sonoran Creosote Bush Scrub	10-50
10.3.1.1 Natural Community Conservation Goals and Objectives	10-50
10.3.1.2 Threats, Limiting Factors, and Adaptive Management	10-51
10.3.1.3 Natural Community Conservation Analysis.....	10-52
10.3.1.4 Natural Community Account: Background.....	10-57

Table of Contents (Cont.)

<u>Section</u>	<u>Page</u>
10.3.2	Sonoran Mixed Woody and Succulent Scrub 10-58
10.3.2.1	Natural Community Conservation Goals and Objectives 10-58
10.3.2.2	Threats, Limiting Factors, and Adaptive Management 10-59
10.3.2.3	Natural Community Conservation Analysis 10-60
10.3.2.4	Natural Community Account: Background 10-64
10.3.3	Mojave Mixed Woody Scrub 10-66
10.3.3.1	Natural Community Conservation Goals and Objectives 10-66
10.3.3.2	Threats, Limiting Factors, and Adaptive Management 10-66
10.3.3.3	Natural Community Conservation Analysis 10-67
10.3.3.4	Natural Community Account: Background 10-69
10.4	Alkali Scrub Communities 10-70
10.4.1	Desert Saltbush Scrub 10-71
10.4.1.1	Natural Community Conservation Goals and Objectives 10-71
10.4.1.2	Threats, Limiting Factors, and Adaptive Management 10-72
10.4.1.3	Natural Community Conservation Analysis 10-72
10.4.1.4	Natural Community Account: Background 10-74
10.4.2	Desert Sink Scrub 10-75
10.4.2.1	Natural Community Conservation Goals and Objectives 10-75
10.4.2.2	Threats, Limiting Factors, and Adaptive Management 10-76
10.4.2.3	Natural Community Conservation Analysis 10-76
10.4.2.4	Natural Community Account: Background 10-78
10.5	Chaparral Communities 10-79
10.5.1	Chamise Chaparral 10-80
10.5.1.1	Natural Community Conservation Goals and Objectives 10-80
10.5.1.2	Threats, Limiting Factors, and Adaptive Management 10-80
10.5.1.3	Natural Community Conservation Analysis 10-81
10.5.1.4	Natural Community Account: Background 10-82
10.5.2	Redshank Chaparral 10-83
10.5.2.1	Natural Community Conservation Goals and Objectives 10-83
10.5.2.2	Threats, Limiting Factors, and Adaptive Management 10-84
10.5.2.3	Natural Community Conservation Analysis 10-85
10.5.2.4	Natural Community Account: Background 10-86
10.5.3	Interior Live Oak Chaparral 10-87
10.5.3.1	Natural Community Conservation Goals and Objectives 10-87
10.5.3.2	Threats, Limiting Factors, and Adaptive Management 10-87
10.5.3.3	Natural Community Conservation Analysis 10-88
10.5.3.4	Natural Community Account: Background 10-89
10.5.4	Semi-Desert Chaparral 10-90
10.5.4.1	Natural Community Conservation Goals and Objectives 10-90
10.5.4.2	Threats, Limiting Factors, and Adaptive Management 10-91
10.5.4.3	Natural Community Conservation Analysis 10-92
10.5.4.4	Natural Community Account: Background 10-93
10.6	Marsh Communities 10-94
10.6.1	Cismontane Alkali Marsh 10-95
10.6.1.1	Natural Community Conservation Goals and Objectives 10-95
10.6.1.2	Threats, Limiting Factors, and Adaptive Management 10-95
10.6.1.3	Natural Community Conservation Analysis 10-96
10.6.1.4	Natural Community Account: Background 10-97

Table of Contents (Cont.)

<u>Section</u>		<u>Page</u>
	10.6.2 Coastal and Valley Freshwater Marsh	10-98
	10.6.2.1 Natural Community Conservation Goals and Objectives	10-98
	10.6.2.2 Threats, Limiting Factors, and Adaptive Management	10-99
	10.6.2.3 Natural Community Conservation Analysis.....	10-99
	10.6.2.4 Natural Community Account: Background.....	10-100
10.7	Riparian and Desert Fan Palm Communities.....	10-101
	10.7.1 Southern Arroyo Willow Riparian Forest.....	10-102
	10.7.1.1 Natural Community Conservation Goals and Objectives	10-102
	10.7.1.2 Threats, Limiting Factors, and Adaptive Management	10-103
	10.7.1.3 Natural Community Conservation Analysis.....	10-104
	10.7.1.4 Natural Community Account: Background.....	10-105
	10.7.2 Sonoran Cottonwood-Willow Riparian Forest	10-106
	10.7.2.1 Natural Community Conservation Goals and Objectives	10-106
	10.7.2.2 Threats, Limiting Factors, and Adaptive Management	10-107
	10.7.2.3 Natural Community Conservation Analysis.....	10-108
	10.7.2.4 Natural Community Account: Background.....	10-110
	10.7.3 Southern Sycamore-Alder Riparian Forest	10-111
	10.7.3.1 Natural Community Conservation Goals and Objectives	10-111
	10.7.3.2 Threats, Limiting Factors, and Adaptive Management	10-112
	10.7.3.3 Natural Community Conservation Analysis.....	10-113
	10.7.3.4 Natural Community Account: Background.....	10-114
	10.7.4 Arrowweed Scrub	10-115
	10.7.4.1 Natural Community Conservation Goals and Objectives	10-115
	10.7.4.2 Threats, Limiting Factors, and Adaptive Management	10-116
	10.7.4.3 Natural Community Conservation Analysis.....	10-117
	10.7.4.4 Natural Community Account: Background.....	10-118
	10.7.5 Desert Fan Palm Oasis Woodland	10-119
	10.7.5.1 Natural Community Conservation Goals and Objectives	10-119
	10.7.5.2 Threats, Limiting Factors, and Adaptive Management	10-120
	10.7.5.3 Natural Community Conservation Analysis.....	10-121
	10.7.5.4 Natural Community Account: Background.....	10-123
10.8	Mesquite Bosque and Desert Dry Wash Woodland Communities	10-124
	10.8.1 Mesquite Bosque.....	10-125
	10.8.1.1 Natural Community Conservation Goals and Objectives	10-125
	10.8.1.2 Threats, Limiting Factors, and Adaptive Management	10-125
	10.8.1.3 Natural Community Conservation Analysis.....	10-126
	10.8.1.4 Natural Community Account: Background.....	10-127
	10.8.2 Desert Dry Wash Woodland	10-128
	10.8.2.1 Natural Community Conservation Goals and Objectives	10-128
	10.8.2.2 Threats, Limiting Factors, and Adaptive Management	10-129
	10.8.2.3 Natural Community Conservation Analysis.....	10-130
	10.8.2.4 Natural Community Account: Background.....	10-133
10.9	Pinyon and Juniper Woodland Communities	10-134
	10.9.1 Mojavean Pinyon-Juniper Woodland	10-134
	10.9.1.1 Natural Community Conservation Goals and Objectives	10-134
	10.9.1.2 Threats, Limiting Factors, and Adaptive Management	10-135
	10.9.1.3 Natural Community Conservation Analysis.....	10-135

Table of Contents (Cont.)

<u>Section</u>		<u>Page</u>
	10.9.1.4 Natural Community Account: Background.....	10-137
10.9.2	Peninsular Juniper Woodland and Scrub	10-138
	10.9.2.1 Natural Community Conservation Goals and Objectives	10-138
	10.9.2.2 Threats, Limiting Factors, and Adaptive Management	10-139
	10.9.2.3 Natural Community Conservation Analysis.....	10-139
	10.9.2.4 Natural Community Account: Background.....	10-140
11.0	LITERATURE CITED	11-1

APPENDICES

I.	Technical Appendix	(separately bound)
II.	MOU to Prepare a Multiple Species Habitat Conservation Plan/ Natural Community Conservation Plan (“Planning Agreement”)	(separately bound)
III.	Interim Management Agreement MOU	(separately bound)
IV.	Settlement Agreement for Shadowrock	(separately bound)
V.	Like Exchanges During 2006.....	(separately bound)