

# Contents

CHAPTER 1: PURPOSE AND NEED FOR ACTION.....	1
Introduction .....	1
Purpose and Need for Action.....	1
Objectives.....	2
Visitor Experience and Safety .....	2
Law Enforcement / Compliance with Dog Rules, and Park Operations.....	2
Park Operations.....	2
Natural Resources .....	2
Cultural Resources .....	2
Education .....	2
Background of Dog Management at Golden Gate National Recreation Area.....	3
Golden Gate Nation Recreation Area Lands Included in the Plan / Environmental Impact Statement .....	3
Land Use Prior to Park Acquisition .....	4
Golden Gate National Recreation Area Citizens’ Advisory Commission and the 1979 Pet Policy .....	4
Increase in Use of the Park for Dog Walking and Other Recreational Uses .....	5
Advance Notice of Proposed Rulemaking .....	8
Current Dog Management Issues and Impact Topics.....	12
Expectations and Views of Dog Walkers and Other Visitors .....	13
Impacts of Dogs on Natural and Cultural Resources in the Park.....	13
Visitor Use and Experience .....	18
Employee, Visitor, and Dog Health and Safety .....	19
Needs of Urban Area Residents .....	20
Public Confusion over National Park Service-Wide Dog Regulation, Golden Gate National Recreation Area-Specific Rules, National Park Service Mission and Policies .....	21
Issues and Impact Topics Dismissed from Analysis .....	21
Energy Requirements and Conservation Potential.....	21
Natural or Depletable Resource Requirements and Conservation Potential.....	22
Urban Quality and Design of the Built Environment .....	22
Floodplains.....	22
Prime and Unique Agricultural Lands .....	22
Wild and Scenic Rivers.....	23
Indian Trust Resources and Sacred Sites .....	23
Socioeconomics .....	23
Summary of Background Conditions and Review of Literature .....	25
Dog Management Policies from Other Agencies .....	25
Other National Park Units.....	25
Other San Francisco Bay Area Agencies.....	25
Other Municipalities .....	27

Dogs and Wildlife .....	28
Health and Safety .....	29
Dogs and Visitor Experience .....	30
Environmental Justice .....	31
Scoping Process and Public Participation .....	32
Public Involvement with the National Environmental Policy Act Process.....	32
Goals of the Public Involvement Process .....	32
Public Involvement in the Environmental Impact Statement Process .....	33
Related Laws, Regulations, and Policies.....	34
National Park Service Organic Act and Management Policies.....	34
Golden Gate National Recreation Area Laws, Policies, and Plans.....	36
Other Federal Regulations, Laws, and Policies .....	38
National Environmental Policy Act, 1969, as Amended .....	38
National Parks Omnibus Management Act of 1998 .....	38
Endangered Species Act of 1973, as Amended .....	39
Migratory Bird Treaty Act and Executive Order 13186.....	39
The National Historic Preservation Act of 1966, as Amended.....	39
Coastal Zone Management Act.....	39
Code of Federal Regulations, Title 36, Volume 1 .....	39
National Park Service Director’s Orders .....	41
State and Local Laws, Regulations, and Policies .....	41
<b>CHAPTER 2: ALTERNATIVES .....</b>	<b>43</b>
Introduction .....	43
Study Area Definition .....	43
Alternatives Development Process .....	45
Range of Alternatives .....	45
Alternative A: No Action (Continuation of Existing Management) .....	58
Current Regulations and Policies .....	58
Current Costs for Dog Management.....	58
Status of Current Dog Walking Activities Under Alternative A .....	58
Elements Common to Action Alternatives .....	61
Areas Open to Dog Walking .....	62
Permits for more than Three Dogs – Commercial and Individual Dog Walkers .....	63
Outreach and Education .....	63
Partnerships .....	63
Compliance-Based Management Strategy .....	63
Unforeseeable Changes to Plan / Environmental Impact Statement Implementation .....	67
Alternative B: NPS Leash Regulation (36 CFR 2.15 and Golden Gate National Recreation Area Compendium) .....	68
New Lands .....	69
Cost of Implementation .....	69

Dog Walking Activities Proposed Under Alternative B .....	69
Alternative C: Emphasis on Multiple Use – Balanced by County .....	74
New Lands .....	74
Cost of Implementation .....	75
Dog Walking Activities Proposed Under Alternative C .....	75
Alternative D: Most Protective of Resources and Visitor Safety .....	79
New Lands .....	79
Cost of Implementation .....	80
Dog Walking Activities Proposed Under Alternative D .....	80
Alternative E: Most Dog Walking Access / Most Management Intensive .....	85
New Lands .....	85
Cost of Implementation .....	85
Dog Walking Activities Proposed Under Alternative E .....	85
How the Alternatives Meet the Objectives .....	91
Alternative Elements Eliminated from Further Consideration .....	92
Summary—Consistency with Sections 101(B) and 102(1) of NEPA .....	94
Environmentally Preferable Alternative .....	99
National Park Service Preferred Alternative .....	103
<b>CHAPTER 3: AFFECTED ENVIRONMENT</b> .....	<b>221</b>
Introduction .....	221
General Project Setting.....	221
Soils and Geology .....	222
Geologic Setting .....	222
Overview of Soils .....	222
Rare Soils at Golden Gate National Recreation Area.....	225
Alteration of Park Soils.....	225
Water Quality .....	226
Overview of Water Quality in Golden Gate National Recreation Area.....	226
Marine Resources .....	228
Dogs at Golden Gate National Recreation Area .....	228
Vegetation and Wildlife .....	228
Coastal Communities.....	230
Coastal Scrub and Chaparral.....	235
Grasslands.....	237
Wetlands and Open Water .....	239
Native Hardwood Forest.....	240
Riparian Forests and Streams.....	241
Douglas-fir and Coast Redwood.....	242
Monterey Cypress.....	243
Invasive Plant Species.....	243
Special-status Species.....	244

Federally and State-listed Threatened and Endangered Species and Candidate Species.....	246
Endangered, Threatened, and Candidate Species: Wildlife.....	247
Threatened, Endangered, and Candidate Species: Plants.....	256
Cultural Resources .....	258
Area of Potential Effects.....	258
Cultural Resource Context.....	259
Cultural Resource Types.....	260
Climate Change .....	265
Visitor Use and Experience .....	266
Park Visitation Information .....	266
Visitor Experience .....	279
Aesthetics.....	281
Soundscapes.....	281
Environmental Justice.....	281
Park Operations .....	282
Budget and Employees .....	282
Community Relations and Public Education .....	282
Law Enforcement.....	282
Administration and Planning .....	284
Natural Resource Management.....	284
Cultural Resource Management.....	284
Maintenance.....	285
Human Health and Safety.....	285
Exposure to Pathogens from Dogs.....	286
Visitors.....	286
Staff.....	286
<b>CHAPTER 4: ENVIRONMENTAL CONSEQUENCES .....</b>	<b>289</b>
Introduction .....	289
General Methodology for Analyzing Impacts .....	289
Compliance-Based Management Strategy .....	290
Cumulative Impact Scenario .....	290
Soils and Geology .....	291
Guiding Policies and Regulations .....	291
Study Area .....	291
Duration of impact .....	291
Assessment Methodology .....	291
Impact Thresholds.....	292
Potential Soil Impacts Common to All Alternatives .....	292
Cumulative Impacts to Soils that are Common to All Alternatives .....	293
Compliance-Based Management Strategy .....	295
Marin County Sites .....	296

San Francisco County Sites .....	353
San Mateo County Sites .....	425
Water Quality .....	459
Guiding Policies and Regulations .....	459
Study Area .....	459
Duration of Impact .....	460
Assessment Methodology .....	460
Impact Thresholds .....	460
Water Quality Impacts Common to All Alternatives .....	461
Compliance-Based Management Strategy .....	464
Marin County Sites .....	464
San Francisco County Sites .....	496
San Mateo County Sites .....	523
Vegetation .....	537
Guiding Policies and Regulations .....	537
Study Area .....	538
Duration of Impact .....	538
Assessment Methodology .....	539
Impact Thresholds .....	539
Common to All Alternatives .....	540
Cumulative Impacts Common to All Alternatives .....	541
Compliance-Based Management Strategy .....	543
Coastal Communities .....	543
Marin County Sites .....	544
San Francisco County Sites .....	567
Coastal Scrub, Chaparral, and Grassland Communities .....	619
Marin County Sites .....	619
San Francisco County Sites .....	651
San Mateo County Sites .....	665
Wetlands and Aquatic Habitats .....	698
Marin County Sites .....	699
San Francisco County Sites .....	719
San Mateo County Sites .....	726
Native Hardwood Forests and Douglas-fir/Coast Redwoods .....	740
Riparian Forest and Stream Corridors .....	767
Marin County Sites .....	767
Wildlife .....	791
Guiding Policies and Regulations .....	791
Study Area .....	793
Duration of Impact .....	794
Assessment Methodology .....	794

Impact Thresholds .....	794
Impacts Common to All Alternatives .....	795
Cumulative Impacts on Wildlife that are Common to All Alternatives .....	801
Compliance-Based Management Strategy .....	802
Wildlife in Coastal Communities .....	803
Marin County Sites .....	803
San Francisco County Sites .....	831
San Mateo Sites .....	881
Wildlife in Coastal Scrub, Chaparral, and Grassland Communities .....	895
Marin County Sites .....	896
San Francisco County Sites .....	937
San Mateo County Sites .....	955
Wildlife in Wetlands and Aquatic Communities .....	994
Marin County Sites .....	995
San Francisco County Sites .....	1016
San Mateo County Sites .....	1023
Wildlife in the Native Hardwood Forest and Douglas-fir/Coast Redwood Community .....	1037
Marin County Sites .....	1037
Wildlife in Riparian Forest and Stream Corridors .....	1068
Marin County Sites .....	1069
Wildlife in Other Coniferous Communities .....	1094
Special-Status Species .....	1109
Guiding Policies and Regulations .....	1109
Study Area .....	1112
Duration of Impact .....	1112
Assessment Methodology .....	1112
Impact Thresholds .....	1113
Impacts Common to All Alternatives .....	1115
Compliance-Based Management Strategy .....	1116
Federally and State-Listed Wildlife Species .....	1117
San Bruno Elfin Butterfly (Federally Endangered) .....	1117
Mission Blue Butterfly (Federally Endangered) .....	1123
Tidewater Goby (Federally Endangered) .....	1165
Coho Salmon (Federally and State Endangered) .....	1172
Steelhead Trout (Federally Threatened) .....	1179
California Red-legged Frog (Federally Threatened) .....	1191
San Francisco Garter Snake (Federally and State Endangered) .....	1219
Western Snowy Plover (Federally Threatened) .....	1240
Bank Swallow (State Threatened) .....	1263
Northern Spotted Owl (Federally Threatened) .....	1270
Guadalupe Fur Seal (Federally and State Threatened) .....	1282

Steller Sea Lion (Federally Threatened) ..... 1282

Federally and State-listed Plant Species ..... 1291

    San Francisco Lessingia (Federally and State Endangered) ..... 1291

    Presidio (Raven’s) Manzanita (Federally and State Endangered) ..... 1312

    Marin Dwarf-flax (Federally and State Threatened) ..... 1320

    California Seablite (Federally Endangered) ..... 1328

    Hickman’s Potentilla (Federally Endangered and State Endangered) ..... 1333

Cultural Resources ..... 1355

    Guiding Regulations and Policies ..... 1355

    Study Area ..... 1355

    Assessment Methodology ..... 1356

    Thresholds ..... 1356

    Compliance-Based Management Strategy ..... 1359

    Impacts Analysis ..... 1359

        Alternative A: No Action ..... 1359

        Elements Common to All Action Alternatives (B through E) ..... 1366

        Alternative B: NPS Leash Regulation ..... 1368

        Alternative C: Emphasis on Multiple Use ..... 1371

        Alternative D: Most Protective of Resources and Visitor Safety ..... 1374

        Alternative E: Most Dog Walking Access/Most Management Intensive ..... 1377

        Preferred Alternative ..... 1381

Visitor Use and Experience ..... 1401

    Guiding Policies and Regulations ..... 1401

    Study Area ..... 1401

    Duration of Impact ..... 1401

    Assessment Methodology ..... 1402

    Impact Thresholds ..... 1402

    Impacts Common to All Alternatives ..... 1404

    Compliance-Based Management Strategy ..... 1408

    Impact Analysis for All Alternatives ..... 1409

        Marin County Sites ..... 1409

        San Francisco County Sites ..... 1463

        San Mateo County Sites ..... 1531

Park Operations ..... 1563

    Guiding Policies and Regulations ..... 1563

    Study Area ..... 1563

    Duration of Impact ..... 1563

    Assessment Methodology ..... 1563

    Impact Thresholds ..... 1565

    Compliance-Based Management Strategy ..... 1566

    Alternative A: No-action Alternative ..... 1566

Common to All Action Alternatives (B, C, D, and E) .....	1568
Human Health and Safety .....	1591
Guiding Policies and Regulations .....	1591
Study Area .....	1591
Duration of Impact .....	1592
Assessment Methodology .....	1592
Impact Thresholds .....	1592
Common to All Alternatives .....	1593
Compliance-Based Management Strategy .....	1597
Marin County Sites .....	1598
San Francisco County Sites .....	1641
San Mateo County Sites .....	1698
Sustainability and Long Term Management .....	1725
Compliance-Based Management Strategy .....	1725
Short-Term Uses versus Long-Term Enhancement of Resources .....	1725
Adverse Impacts that Could Not Be Avoided .....	1728
Irreversible/Irretrievable Commitments of Resources .....	1730
CHAPTER 5: CONSULTATION AND COORDINATION .....	1731
The Scoping Process .....	1731
Public Scoping .....	1731
Internal Scoping .....	1733
Agency and Stakeholder Consultation .....	1733
Cooperating Agency .....	1733
Endangered Species Act Section 7 Consultation .....	1734
Section 106 of the National Historic Preservation Act Consultation .....	1736
List of Primary Preparers .....	1738
List of Recipients and Reviewers .....	1740
Elected Officials and committees .....	1740
Federal Agencies .....	1740
California State Agencies .....	1741
Regional and Local Agencies .....	1741
Cities .....	1741
Organizations .....	1742
REFERENCES .....	1743
GLOSSARY .....	1771
INDEX .....	1801



## Maps

Map 1	Vicinity
Map 2-A	Stinson Beach – Alternative A
Map 2-B	Stinson Beach – Alternative B
Map 2-C	Stinson Beach – Alternative C
Map 2-D	Stinson Beach – Alternative D
Map 2-E	Stinson Beach – Alternative E
Map 2-P	Preferred Alternative: Stinson Beach
Map 3-A	Homestead Valley – Alternative A
Map 3-B	Homestead Valley – Alternative B
Map 3-C	Homestead Valley – Alternative C
Map 3-D	Homestead Valley – Alternative D
Map 3-E	Homestead Valley – Alternative E
Map 3-P	Preferred Alternative: Homestead Valley
Map 4-A	Oakwood Valley / Alta Trail – Alternative A
Map 4-B	Oakwood Valley / Alta Trail – Alternative B
Map 4-C	Oakwood Valley / Alta Trail – Alternative C
Map 4-D	Oakwood Valley / Alta Trail – Alternative D
Map 4-E	Oakwood Valley / Alta Trail – Alternative E
Map 4-P	Preferred Alternative: Oakwood Valley / Alta Trail
Map 5-A	Muir Beach – Alternative A
Map 5-B	Muir Beach – Alternative B
Map 5-C	Muir Beach – Alternative C
Map 5-D	Muir Beach – Alternative D
Map 5-E	Muir Beach – Alternative E
Map 5-P	Preferred Alternative: Muir Beach
Map 6-A	Rodeo Beach – Alternative A
Map 6-B	Rodeo Beach – Alternative B
Map 6-C	Rodeo Beach – Alternative C
Map 6-D	Rodeo Beach – Alternative D
Map 6-E	Rodeo Beach – Alternative E
Map 6-P	Preferred Alternative: Rodeo Beach
Map 7-A	Marin Headlands Trails – Alternative A
Map 7-B	Marin Headlands Trails – Alternative B

## Contents

Map 7-C	Marin Headlands Trails – Alternative C
Map 7-D	Marin Headlands Trails – Alternative D
Map 7-E	Marin Headlands Trails – Alternative E
Map 7-P	Preferred Alternative: Marin Headlands Trails
Map 8-A	Fort Baker – Alternative A
Map 8-B	Fort Baker – Alternative B
Map 8-C	Fort Baker – Alternative C
Map 8-D	Fort Baker – Alternative D
Map 8-E	Fort Baker – Alternative E
Map 8-P	Preferred Alternative: Fort Baker
Map 9-A	Upper Fort Mason – Alternative A
Map 9-B	Upper Fort Mason – Alternative B
Map 9-C	Upper Fort Mason – Alternative C
Map 9-D	Upper Fort Mason – Alternative D
Map 9-E	Upper Fort Mason – Alternative E
Map 9-P	Preferred Alternative: Upper Fort Mason
Map 10-A	Crissy Field – Alternative A
Map 10-B	Crissy Field – Alternative B
Map 10-C	Crissy Field – Alternative C
Map 10-D	Crissy Field – Alternative D
Map 10-E	Crissy Field – Alternative E
Map 10-P	Preferred Alternative: Crissy Field
Map 11-A	Fort Point – Alternative A
Map 11-B	Fort Point – Alternative B
Map 11-C	Fort Point – Alternative C
Map 11-D	Fort Point – Alternative D
Map 11-E	Fort Point – Alternative E
Map 11-P	Preferred Alternative: Fort Point
Map 12-A	Baker Beach – Alternative A
Map 12-B	Baker Beach – Alternative B
Map 12-C	Baker Beach – Alternative C
Map 12-D	Baker Beach – Alternative D
Map 12-E	Baker Beach – Alternative E
Map 12-P	Preferred Alternative: Baker Beach
Map 13-A	Lands End / Fort Miley – Alternative A

Map 13-B	Lands End / Fort Miley – Alternative B
Map 13-C	Lands End / Fort Miley – Alternative C
Map 13-D	Lands End / Fort Miley – Alternative D
Map 13-E	Lands End / Fort Miley – Alternative E
Map 13-P	Preferred Alternative: Lands End / Fort Miley
Map 14-A	Sutro Heights Park – Alternative A
Map 14-B	Sutro Heights Park – Alternative B
Map 14-C	Sutro Heights Park – Alternative C
Map 14-D	Sutro Heights Park – Alternative D
Map 14-E	Sutro Heights Park – Alternative E
Map 14-P	Preferred Alternative: Sutro Heights Park
Map 15-A	Ocean Beach – Alternative A
Map 15-B	Ocean Beach – Alternative B
Map 15-C	Ocean Beach – Alternative C
Map 15-D	Ocean Beach – Alternative D
Map 15-E	Ocean Beach – Alternative E
Map 15-P	Preferred Alternative: Ocean Beach
Map 16-A	Fort Funston – Alternative A
Map 16-B	Fort Funston – Alternative B
Map 16-C	Fort Funston – Alternative C
Map 16-D	Fort Funston – Alternative D
Map 16-E	Fort Funston – Alternative E
Map 16-P	Preferred Alternative: Fort Funston
Map 17-A	Mori Point – Alternative A
Map 17-B	Mori Point – Alternative B
Map 17-C	Mori Point – Alternative C
Map 17-D	Mori Point – Alternative D
Map 17-E	Mori Point – Alternative E
Map 17-P	Preferred Alternative: Mori Point
Map 18-A	Milagra Ridge – Alternative A
Map 18-B	Milagra Ridge – Alternative B
Map 18-C	Milagra Ridge – Alternative C
Map 18-D	Milagra Ridge – Alternative D
Map 18-E	Milagra Ridge – Alternative E
Map 18-P	Preferred Alternative: Milagra Ridge

## Contents

Map 19-A	Cattle Hill / Sweeney Ridge – Alternative A
Map 19-B	Cattle Hill / Sweeney Ridge – Alternative B
Map 19-C	Cattle Hill / Sweeney Ridge – Alternative C
Map 19-D	Cattle Hill / Sweeney Ridge – Alternative D
Map 19-E	Cattle Hill / Sweeney Ridge – Alternative E
Map 19-P	Preferred Alternative: Cattle Hill
Map 20-A	Pedro Point – Alternative A
Map 20-B	Pedro Point – Alternative B
Map 20-C	Pedro Point – Alternative C
Map 20-D	Pedro Point – Alternative D
Map 20-E	Pedro Point – Alternative E
Map 20-P	Preferred Alternative: Pedro Point
Map 21	Vegetation Communities in Marin County within Golden Gate National Recreation Area
Map 22	Vegetation Communities in San Francisco County within Golden Gate National Recreation Area
Map 23	Vegetation Communities in San Mateo County within Golden Gate National Recreation Area
Map 24	Marin County Sites: Golden Gate National Recreation Area
Map 25	San Francisco County Sites: Golden Gate National Recreation Area
Map 26	City, County, and State Parks with Dog Use Areas: Marin County, CA
Map 27	City, County, and State Parks with Dog Use Areas: San Francisco and San Mateo Counties, CA

## Figures

Figure 1. Commonly Observed Shorebird Species at GGNRA Beaches, 1993–2009.....	233
Figure 2. Average Shorebird Density by Month and Beach at GGNRA, 1993–2009 .....	233
Figure 3. Battery East, with Erosion of Earthworks Evident.....	261
Figure 4. Example of Temporary Field Fortification Which Supported Nearby Fortified Batteries .....	263
Figure 5. Recorded Annual Visitation to Golden Gate National Recreation Area, 1973 to 2009 .....	267
Figure 6. Forecasted Annual Visitation to Golden Gate National Recreation Area .....	269
Figure 7. Example of Fencing Design to be Installed at Batteries Davis and East.....	1367

## Tables

Table 1. Current Dog Management Conditions .....	6
Table 2. Golden Gate National Recreation Area Park Sites Considered for Dog Management in the Alternatives .....	44
Table 3. Summary of Alternative Elements by County, North to South .....	48
Table 4. Federal Regulations Applicable to Dog Management .....	65
Table 5. Environmental Impact Summary by Alternative .....	109
Table 6. Recorded Incidents Involving Dogs in 2007 and 2008.....	230
Table 7. Marine Mammal Center Total Number of Individual Live Animal Reports for Stranding in GGNRA, 2000 through 2005 and 2007 through 2009.....	235
Table 8. Federally and State-listed Species Considered in This Plan/EIS .....	246
Table 9. Summary of Visitor Use and Pet-related Citations, Warnings, and Reports Taken at GGNRA .....	271
Table 10. Total Maintenance and Labor Hours and Costs Associated with Trash Removal from October 2006 to April 2008 .....	285
Table 11. Current (Alternative A) Estimated Personnel Costs .....	1567
Table 12. Estimated Personnel Costs (Alternatives B, C, D, and E) .....	1569
Table 13. Estimated Personnel Costs for the New Lands Preferred Alternative .....	1589
Table 14. Federally and State-listed Species Considered in Detail in the Dog Management Plan/EIS .....	1735

## **Appendices**

Appendix A: 1979 GGNRA Advisory Commission Pet Policy

Appendix B: GGNRA Compendium

Appendix C: GGNRA Dog Management Plan/EIS Determination of Non-Impairment

Appendix D: Sections of Titles 36 and 50 of the Code of Federal Regulations

Appendix E: Guidelines for ROLAs

Appendix F: Special Use Permit

Appendix G: Law Enforcement Data

Appendix H: Special Status Species

Appendix I: Cultural Resources

Appendix J: Adjacent Dog Use Areas

Appendix K: Past, Present, and Future Projects and Actions Considered for the Cumulative Impacts Analysis

Appendix L: Agency Consultation