

Contents and Acronyms



CONTENTS

Abstract

Executive Summary	i
Acronyms and Abbreviations.....	xxiii
Chapter 1: Purpose of and Need for Action	1
Introduction	1
Purpose of and Need for Action.....	1
Purpose of the Plan/EIS	1
Need for Action.....	1
Objectives in Taking Action.....	5
Desired Conditions.....	6
Fire Island Communities.....	6
Sunken Forest	6
Fire Island Natural Areas.....	6
William Floyd Estate	7
Description of Fire Island National Seashore	9
Project Location.....	9
Purpose and Significance of Fire Island National Seashore	10
Scientific Background: Deer and Vegetation Management	11
Deer and Vegetation Management Issues and Research Overview	11
Scoping, Issues, and Impact Topics	16
Scoping.....	16
Impact Topics Retained for Further Analysis	17
Issues and Impact Topics Considered but Dismissed from Further Analysis	20
Related Laws, Policies, Plans, and Constraints	22
Guiding Laws, Regulations, and Policies	22
Other Federal Agency Laws, Regulations, Plans, Policies, and Actions	24
Related State Laws, Regulations, and Policies.....	24
Chapter 2: Alternatives.....	27
Introduction	27
Overview of Alternatives	27
Alternative A: No Action.....	27
Action Alternatives.....	27
Thresholds for Taking Action	31
Fire Island Communities.....	31
Sunken Forest	31
Other Fire Island Natural Areas.....	33
William Floyd Estate	33
Alternative A: No Action	34
Education/Interpretation	34
Vegetation Monitoring.....	34
Deer Monitoring	34
Elements Common to Action Alternatives	35
Enhanced Public Education/Interpretation Efforts.....	35

CONTENTS

Fencing of the Sunken Forest	36
Securing the Boundary Fence at the William Floyd Estate	36
Enhanced Vegetation Monitoring Within Natural Areas	36
Small-Scale Fencing of Special-status Plants.....	36
Enhanced Deer Population Monitoring.....	39
Minimum Requirements Analysis	39
Coordination with State	39
Deer Population Management Actions Consistent with Alternatives B and D.....	40
Fertility Control	40
Administration of the Reproductive Control Agent	43
Monitoring	44
Alternative B.....	44
Fencing44	
Deer Translocation	45
Alternative C.....	48
Fencing48	
Deer Population Management Actions.....	48
Alternative D.....	52
Fencing	52
Deer Population Management Actions.....	54
Adaptive Management Approaches Included in the Action Alternatives	54
Using the Adaptive Management Process	55
Adaptive Management Approach	55
Alternative Elements Considered but Dismissed.....	58
Capture and Relocation off of Fire Island.....	58
Reversing Deer Behavior to Reduce Undesirable Human-Deer Interactions	59
Surgical Sterilization.....	59
Supplemental Feeding.....	60
Predator Reintroduction	60
Repellents, Plantings, and Other Deterrents.....	60
Consistency with Sections 101(b) and 102(1) of the National Environmental Policy Act.....	61
Alternative A (No Action)	61
Alternative B	61
Alternative C	62
Alternative D	62
Environmentally Preferable Alternative.....	63
NPS Preferred Alternative.....	63
How Alternatives Meet Objectives	64
Chapter 3: Affected Environment.....	73
Introduction	73
Vegetation, Unique Vegetation Communities, and Special-Status Plant Species	73
Fire Island Communities.....	74
Natural Areas.....	74
Unique Vegetation Communities.....	85
Special-status Plant Species	88
Wetlands	89
White-tailed Deer Population	93
Other Wildlife and Wildlife Habitat	96

Mammals	96
Reptiles.....	99
Birds	99
Ticks and Other Invertebrates.....	100
Wilderness	101
Cultural Landscapes	106
William Floyd Estate	106
Visitor Use and Experience/Recreation	107
Fire Island Communities and Adjacent Landowners	109
Public Health and Safety.....	110
Seashore Operations	111
Visitor and Resource Protection.....	111
Education/Interpretation	112
Resource Management	112
Maintenance	113
Management and Administration.....	113
Chapter 4: Environmental Consequences.....	115
Introduction	115
Methodology for Assessing Impacts	115
Type of Impact.....	115
Assumptions	115
Cumulative Impact Analysis Methodology.....	116
Assessing Impacts Using CEQ Criteria.....	118
Impacts on Vegetation, Unique Vegetation Communities, and Special-status Plant Species	119
Methodology	119
Impacts of Alternative A.....	121
Impacts of Alternative B.....	125
Impacts of Alternative C	133
Impacts of Alternative D	136
Impacts on Wetlands	137
Methodology	137
Impacts of Alternative A.....	138
Impacts of Alternative B.....	138
Impacts of Alternative C	139
Impacts of Alternative D	140
Impacts on the White-Tailed Deer Population	143
Methodology	143
Impacts of Alternative A.....	144
Impacts of Alternative B.....	146
Impacts of Alternative C	150
Impacts of Alternative D	153
Impacts on Other Wildlife and WildLife Habitat	155
Methodology	155
Impacts of Alternative A.....	155
Impacts of Alternative B.....	158
Impacts of Alternative C	161
Impacts of Alternative D	162
Impacts on Wilderness.....	164
Methodology	164

CONTENTS

Impacts of Alternative A.....	165
Impacts of Alternative B.....	167
Impacts of Alternative C	168
Impacts of Alternative D	170
Impacts on Cultural Landscapes.....	172
Methodology	172
Impacts of Alternative A.....	172
Impacts of Alternative B.....	174
Impacts of Alternative C	176
Impacts of Alternative D	177
Impacts on Visitor Use and Experience/Recreation	178
Methodology	178
Impacts of Alternative A.....	179
Impacts of Alternative B.....	181
Impacts of Alternative C	183
Impacts of Alternative D	185
Impacts on Fire Island Communities and Adjacent Landowners.....	186
Methodology	186
Impacts of Alternative A.....	187
Impacts of Alternative B.....	188
Impacts of Alternative C	190
Impacts of Alternative D	192
Impacts on Public Health and Safety.....	193
Methodology	193
Impacts of Alternative A.....	193
Impacts of Alternative B.....	195
Impacts of Alternative C	196
Impacts of Alternative D	197
Impacts on Seashore Operations	199
Laws and Policies.....	199
Methodology	199
Impacts of Alternative A.....	200
Impacts of Alternative B.....	202
Impacts of Alternative C	204
Impacts of Alternative D	205
Summary of Impact Analysis	206
Sustainability and Long-Term Management	206
Irreversible or Irretrievable Commitments of Resources.....	206
Unavoidable Adverse Impacts.....	207
Chapter 5: Consultation and Coordination	205
Introduction	205
Brief History of Planning and Public Involvement	205
Internal Scoping and Planning	205
Public Scoping and Outreach.....	205
Cooperating Agencies.....	206
Agency and Tribal Consultation	206
Federal Agencies.....	206
American Indian Tribes.....	207
State and Local Agencies.....	207

List of Preparers.....	208
Science Team Members	210
Document Review and List of Recipients	210
Federal Agencies.....	210
State and Local Agencies or Governments.....	211
American Indian Tribes.....	211
Organizations/Other	211

Appendices

- Appendix A: Relevant Agency Correspondence
- Appendix B: Vegetation Monitoring Plan
- Appendix C: Deer Monitoring Plan
- Appendix D: Review of White-Tailed Deer Fertility Control

References

Glossary	Ref-1
Selected Bibliography	Ref 9
Index	Ref-27

FIGURES

1	Project Vicinity Map.....	3
2	William Floyd Estate.....	8
3	Sunken Forest Fencing – All Action Alternatives	37
4	William Floyd Estate Proposed Fencing – Alternative B.....	47
5	William Floyd Estate Proposed Fencing – Alternative D	53
6	Vegetation	75
6a	Vegetation	77
6b	Vegetation	78
6c	Vegetation	79
6d	Vegetation	80
6e	Vegetation	81
7	Existing Wetlands – Sunken Forest.....	91
8	Estimated Deer Population Size – 2012	97
9	Fire Island Wilderness.....	103
10	Wetland Impacts – Sunken Forest.....	139

TABLES

ES-1	Deer Population Estimates for Portions of Fire Island National Seashore (2012).....	iv
ES-2	Summary of Significance	xi
1	Deer Population Estimates for Portions of Fire Island National Seashore (2012).....	12
2	Summary of the Alternatives	29
3	The Density of Stems in the Sapling/Shrub Layer for the Four Important Canopy Constituents in the Sunken Forest, Shadblow (<i>Amelanchier canadensis</i>), Sassafras (<i>Sassafras albidum</i>), Blackgum (<i>Nyssa sylvatica</i>), and American holly (<i>Ilex opaca</i>)	32
4	Action Thresholds for Saplings and Shrubs.....	32
5	Chemical Reproductive Control Agents	40
6	Evaluation of Fertility Control Based on Selection Criteria for Fire Island national Seashore	41
7	Estimated Deer Removals by Year and Location (Alternative C)	51
8	How Alternatives Meet Objectives	65
9	Summary of Environmental Consequences	67
10	Vegetation Community Types	82
11	Unique Ecological Community Types	86
12	Federally and State Listed Plant Species	88
13	Percentage Rate of Deer Population Change per Year for Portions of Fire Island National Seashore between 1983 and 1991	94
14	Estimated Deer Populations at Sampling Areas on Fire Island National Seashore (2012)....	95
15	Preparers, Contributors, and Reviewers.....	208
16	Science Team Members	210

ACRONYMS AND ABBREVIATIONS

APHIS	[U.S. Department of Agriculture] Animal and Plant Health Inspection Services
CEQ	Council on Environmental Quality
CFR	code of federal regulations
CWD	chronic wasting disease
CZMA	Coastal Zone Management Act
dbh	diameter at breast height
DSC	[National Park Service] Denver Service Center
ECL	[New York State] Environmental Conservation Law
EIS	environmental impact statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act of 1973
FIA	Forest Inventory and Analysis
Fire Island Wilderness	Otis Pike Fire Island High Dune Wilderness
FTE	full-time equivalent
FY	fiscal year
IDT	interdisciplinary team
IPAC	[U.S. Fish and Wildlife Service] Information, Planning, and Conservation System
National Register	National Register of Historic Places
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act of 1966
NPS	National Park Service
NVCS	National Vegetation Classification System
NYS-DEC	New York State Department of Environmental Conservation
OCRM	[National Oceanic and Atmospheric Administration] Office of Ocean and Coastal Resource Management
PEPC	[National Park Service] Planning, Environment, and Public Comment
PL	Public Law
plan/EIS	White-tailed Deer Management Plan and Environmental Impact Statement
PZP	porcine zona pellucida
the Seashore	Fire Island National Seashore
SHPO	State Historic Preservation Officer
USC	United States Code
USFWS	U.S. Fish and Wildlife Service

ACRONYMS AND ABBREVIATIONS

This page intentionally left blank.