



# APPENDIX D

DRY TORTUGAS NATIONAL PARK

# Appendix D: Dry Tortugas National Park

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### SUMMARY DESCRIPTION OF VEGETATION CATEGORIES REFERENCED IN APPENDIX

Vegetation Category	Vegetation Subcategories
Agriculture / Disturbed Land / Developed Area	Agriculture areas, barren lands, mixed grasslands, drought-deciduous shrublands, shrub and brush lands, and exotic plants.
Grassland / Coastal Strand	Dry prairies, coastal grasslands, coastal strands, and coastal uplands.
Beach / Dune	Beach and dune areas.

Dry Tortugas National Park Boundary

Northkey Harbor

• Texas Rock

# Dry Tortugas National Park

East Key

Middle Key

Hospital Key

Loggerhead Key

White Shoal

Bush Key Shoal

Garden Key  
Fort Jefferson

Bush Key

Long Key

SOUTHEAST CHANNEL

SOUTHWEST CHANNEL

Dry Tortugas National Park Boundary

• Texas Rock

Northkey Harbor

# Dry Tortugas National Park

#1

White Shoal

Loggerhead Key

Bush Key Shoal

Bush Key

Garden Key  
Fort Jefferson

Long Key

East Key

Middle Key

Hospital Key

SOUTHEAST CHANNEL

SOUTHWEST CHANNEL

## APPENDIX D: DRY TORTUGAS NATIONAL PARK

**TABLE D-1: ACRES WITHIN VEGETATION CATEGORIES THAT  
COULD POTENTIALLY BE RESTORED UNDER ALTERNATIVES A, B, AND C<sup>a</sup>**

Vegetation Category	Alternative A	Alternative B	Alternative C	
	Potential Acres Passively Restored	Potential Acres Passively Restored	Potential Acres Passively Restored	Potential Acres Actively Restored
<b>Dry Tortugas National Park</b>				
Agriculture / Disturbed Land / Developed Area (including roads)	1	1	1	0
Beach / Dune	0	0	0	0
Grassland / Coastal Strand	1	1	1	0
<b>Total</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>0</b>

a. Although treatments would occur under alternative A to control exotic plant species, it is assumed that within the life of the plan all acres may not be restored. Under alternatives B and C, it is assumed all acres would be restored due to re-treatment of exotic plant species under an optimal re-treatment schedule (see the "Alternatives" Chapter, Alternative B, Maintaining Treated Sites section).

### Key to Table D-2 below

- a. Gross infested acres of exotic plants within Dry Tortugas National Park were based on data provided by park staff.
- b. Initial treatment methods for each area under alternatives A, B and C were based on data provided park staff (see the "Alternatives" Chapter, Alternative A, Initial Treatment section). As all areas have been treated and are re-treated under an optimal treatment schedule the methods of initial treatment are assumed to be the same for all alternatives.
- c. Re-treatment methods under alternatives A, B, and C were based on data provided by park staff. As all areas have been treated and are re-treated under an optimal treatment schedule the methods of re-treatment are the same for all alternatives. (see the "Alternatives" Chapter, Alternative A, Initial Treatment section and Alternative B, Maintaining Treated Sites section).
- d. Herbicides applied under alternatives A, B, and C are based on prior treatment data provided by park staff.
- e. The potential herbicide use under alternatives A, B, and C was calculated based on the average use of each herbicide within the parks in the past 5 years as provided in the APCAM database. The average application rate of imazapyr was 0.20 undiluted gallons and triclopyr was 0.91 undiluted gallons. To determine the range of potential herbicide use for treatment areas under alternatives A, B, and C when no prior information existed, the average application rate was multiplied by the gross infested acres. See the "Environmental Consequences" Chapter, General Methodology, Treatment and Re-treatment of Exotic Plants section.
- f. Under alternatives A, B, and C all treatment areas would be restored passively due to the small treatment areas (see the "Environmental Consequences" Chapter, Alternative C, Proposed Restoration Program).



**TABLE D-2: DRY TORTUGAS NATIONAL PARK  
ALTERNATIVE SUMMARY TABLE OF TREATMENT AREAS WITHIN THE PARK**

Treatment Area ID	Priority for Treatment	Exotic Species	Gross Infested (acres) <sup>a</sup>	Initial Treatment Methods <sup>b</sup>	Re-treatment Method <sup>c</sup>	Herbicides <sup>d</sup>	Total Initial Herbicide Applied to (undiluted gal.) <sup>e</sup>	Vegetation Category	Sensitive Resources	Restoration <sup>f</sup>
<b>Alternatives A, B, and C</b>										
1	—	Australian pine Agave Seaside mahoe Scaevola	2	Basal bark and leave Cut stump leave or remove Foliar ground leave or remove Manual pulling	Foliar ground and leave Manual pulling	Triclopyr Imazapyr	0.4–1.8	Agriculture / Disturbed Land / Developed Area (including roads) Beach / Dune Grassland / Coastal Strand	Cultural resources Visitor use areas	Passive

**TABLE D-3: DRY TORTUGAS NATIONAL PARK  
AMOUNT OF HERBICIDE TO BE APPLIED OVER TIME UNDER ALTERNATIVES A, B, AND C**

Vegetation Category	Total Acres to be Initially Treated	Potential Minimum Application of Herbicide (gallons) <sup>a</sup>	Potential Maximum Application of Herbicide (gallons) <sup>b</sup>
Agriculture / Disturbed Land / Developed Area (including roads)	1	<1	1
Beach / Dune	—	—	—
Grassland / Coastal Strand	1	<1	1
<b>Total</b>	<b>2</b>	<b>0</b>	<b>2</b>

a. Potential minimum application of herbicide is calculated by taking the average minimum concentration of herbicide that could be applied (0.05 undiluted gallons/acre) multiplied by the acres to be treated. For a discussion on the average rate of herbicide application, see the “Environmental Consequences” Chapter, General Methodology, Treatment and Re-treatment of Exotic Plants section.

b. Potential maximum application of herbicide is calculated by taking the average maximum concentration of herbicide that could be applied (0.91 undiluted gallons/acre) multiplied by the acres to be treated.



**TABLE D-4: DRY TORTUGAS NATIONAL PARK  
AMOUNT OF HERBICIDE TO BE APPLIED OVER TIME UNDER ALTERNATIVES A, B, AND C<sup>a,b</sup>**

Vegetation Category	Initial Treatment	Number of Months												
		6	12	18	24	30	36	42	48	54	60	66	72	
Potential Minimum Application of Herbicide (gallons/acre)														
Agriculture / Disturbed Land / Developed Area (including roads)	<1	<1	0	0	0	0	0	0	0	0	0	0	0	0
Beach / Dune	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grassland / Coastal Strand	<1	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>&lt;1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Potential Maximum Application of Herbicide (gallons/acre)														
Agriculture / Disturbed Land / Developed Area (including roads)	1	<1	0	0	0	0	0	0	0	0	0	0	0	0
Beach / Dune	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grassland / Coastal Strand	1	<1	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>2</b>	<b>1</b>	<b>&lt;1</b>	<b>0</b>										

a. It was assumed that re-treatment on average every 6 months would result in 50% less the number of stems that would need to be treated and therefore only 50% of the prior herbicide use would be applied. See the "Environmental Consequences" Chapter, General Methodology, Treatment and Re-treatment of Exotic Plants section.

b. Note that Dry Tortugas National Park is currently under an optimal re-treatment schedule and therefore the amount of potential herbicide applied is same for these alternatives.



**TABLE D-5: DRY TORTUGAS NATIONAL PARK  
DISTRIBUTION OF APPROPRIATE TREATMENT METHODS BY VEGETATION CATEGORY UNDER ALTERNATIVES A, B, AND C**

Dry Tortugas National Park <sup>a</sup>	Total Acres within Park	Total Potential Acres Infested within Park	Initial Treatment Methods <sup>a</sup>		Re-treatment Methods <sup>a,b</sup>
			Basal Bark, Cut / Stump, Cut Surface Application, Foliar Ground and Leave, or Manual Pulling	Foliar Ground and Leave; Manual Pulling	
Agriculture / Disturbed Land / Developed Area (including roads)	1	1	1	1	1
Grassland / Coastal Strand	55	1	1	1	1
Beach / Dune	58	0	0	0	0
<b>Total</b>	<b>114</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>

a. All areas infested have been treated and are re-treated under an optimal treatment schedule under alternatives A, B and C, therefore, it was assumed the methods used for initial treatment and re-treatment under all alternatives would be the same.

b. The acres to be re-treated are those that would be allowed to passively restore and re not subject to active restoration (see table D-1 for acres actively and passively restored).

