

## APPENDICES

APPENDIX A.	REFERENCES AND CONTRIBUTORS .....	A-1
APPENDIX B.	SPECIES OF CONCERN.....	B-1
APPENDIX C.	PRNS FMP RECORD OF DECISION .....	C-1
APPENDIX D.	FMP MITIGATION MEASURES .....	D-1
APPENDIX E.	SUPPLEMENTAL INFORMATION	
E.1.	Daily Resource Availability and Duty Officer Call List .....	E-1
E.2.	PRNS Dispatch Protocol for Wildland Fire.....	E-3
E.3.	Weather Information Management System Walk-through.....	E-5
E.4.	NFDRS Indices and Park Visitor Fire Restrictions .....	E-7
E.5.	Fire Step-up Plan (SOP PR-37) .....	E-9
E.6.	Bay Area Network Parks Pocket Card.....	E-19
E.7.	Delegation for Park FMO from Superintendent PRNS .....	E-21
E.8.	Cooperative Agreements, MOU's, includes run-cards, radio frequencies .....	E-23
E.9.	Marin Emergency Radio Authority (MERA) Radio Talk Group Matrix .....	E-29
E.10.	MIST Guidelines.....	E-31
E.11.	Minimum Tool Flow Chart.....	E-43
E.12.	Wildland Fire Situation Analysis.....	E-47
E.13.	Example of Delegation of Authority Form.....	E-61
E.14.	Incident Complexity Analysis: Types 5, 4 and Transition to Type 3 Incident .....	E-63
E.15.	PRNS Incident Organizer .....	E-65
E.16.	Prescribed Fire Plan Example.....	E-87
E.17.	BAAQMD Application for Pile Burning.....	E-109
E.18.	FMU Maps of Past and Proposed Fire Management Projects .....	E-111
E.19.	PRNS Five Year Fuels Treatment Plan and Maps.....	E-131
E.20.	PRNS FMU Vegetation Maps .....	E-145
APPENDIX F.	WILDLAND AND PRESCRIBED FIRE MONITORING AND RESEARCH PLAN .....	F-1
APPENDIX G.	INFORMATION, EDUCATION AND PREVENTION PLAN .....	G-1



## APPENDIX A. REFERENCES AND CONTRIBUTORS

### 1. References Cited

- Anderson, R. S. 2005. Contrasting Vegetation and Fire Histories on the Point Reyes Peninsula During the Pre-Settlement and Settlement Periods: 15,000 Years of Change. Northern Arizona University, Flagstaff, AZ.
- Brown, P., M. Kaye, and D. Buckley. 1999. Fire history in Douglas-fir and coast redwood forests at Point Reyes National Seashore. *Northwest Science* **73**:205-216.
- California Invasive Plant Council (Cal-IPC). 2004. The Weed Workers Handbook. The Watershed Project, California Invasive Plant Council. May 2004. Richmond, CA.
- Forrestel, A. 2005. Unpublished data analysis. Point Reyes National Seashore, Point Reyes Station, CA.
- Marin Municipal Water District (MMWD). 1995. Mount Tamalpais Area Vegetation Management Plan, February 1995. Prepared by Charles Leonard and Associates. Prepared for the Marin Municipal Water District, Corte Madera, CA and the Marin Open Space District, San Rafael, CA.
- National Interagency Fire Center (NIFC). 2006. Interagency Standards for Fire and Fire Aviation Operations. Federal Fire and Aviation Leadership Council. Supplement to NPS Resource Manual #18. January 1, 2006.
- \_\_\_\_\_. 2001. Review and Update of the 1995 Federal Wildland Fire Management Policy, Interagency Federal Wildland Fire Management Policy Review Working Group, National Interagency Fire Center, Boise, ID.
- National Park Service (NPS). 2005a. Director's Order 18, Wildland Fire Management. Published to the Internet, 12/31/05. <http://fire.nifc.nps.gov/fire/fmpc/do18fin.htm>. Published by the Office of the Director of the National Park Service, Washington, D.C.
- \_\_\_\_\_. 2005b. NPS Reference Manual 18: Wildland and Prescribed Fire Management Policy. Reissued 7/1/2005 by Associate Director, Park Operations and Education, Washington, D.C. Published only to the internet at [http://www.nps.gov/fire/fire/fir\\_wil\\_pla\\_reference18.html](http://www.nps.gov/fire/fire/fir_wil_pla_reference18.html)
- \_\_\_\_\_. 2004. Final Fire Management Plan, Environmental Impact Statement, Point Reyes National Seashore and North District of Golden Gate National Recreation Area, National Park Service. July 2004.
4. \_\_\_\_\_. 2003a. Fire Monitoring Handbook. Fire Management Program Center, NIFC, Boise, ID.
- \_\_\_\_\_. 2003b. Lessons Learned from the October 1995 Vision Fire. National Park Service, Point Reyes National Seashore, Point Reyes Station, CA.
- \_\_\_\_\_. 2003c. Point Reyes National Seashore Strategic Plan. Point Reyes National Seashore, Point Reyes, CA.

## APPENDIX A – REFERENCES AND CONTRIBUTORS

- \_\_\_\_\_. 2000. National Park Service Management Policies 2001. NPS D1416, December 2000. Department of the Interior, Washington, D.C.
- \_\_\_\_\_. 1999. Point Reyes Resource Management Plan. Point Reyes, CA.
- \_\_\_\_\_. 1989. Point Reyes National Seashore Exotic Plant Management Plan. Point Reyes, CA.
- \_\_\_\_\_. 1980. General Management Plan, Environmental Analysis, Golden Gate National Recreation Area and Point Reyes National Seashore, California: Department of the Interior, National Park Service.
- Parravano, A., and B. Moritsch. 2001. Effects of Prescribed Fire on Biological Resources Point Reyes National Seashore and Golden Gate National Recreation Area, CA: Research Plan. NPS, Point Reyes National Seashore, Point Reyes Station, CA.
- Stephens, S. 2005. Analyses of Fire Effects Monitoring Data Collected at Point Reyes National Seashore, Golden Gate National Recreation Area and Pinnacles National Monument from 1989 through 2003: A Second Look. UC Berkeley, Berkeley, CA.
- Twedt, B. 2003. (Unpublished Report): Preliminary Analyses of Tweaked Fire Effects Monitoring Data Collected at Point Reyes National Seashore from 1990 through 2002: A Beginning. Point Reyes National Seashore, Point Reyes Station, CA.

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## APPENDIX B – SPECIES OF CONCERN

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### Species known from PRNS and the northern lands of GGNRA

Federal, State, and California Native Plant Society (CNPS) Listed Plant Species in each Fire Management Unit.

SPECIES		REGULATORY STATUS		
COMMON NAME	SCIENTIFIC NAME	FEDERAL	STATE	CNPS LIST <sup>1</sup>
<b>Tomales Point FMU</b>				
pink sand-verbena	<i>Abronia umbellata</i> ssp. <i>breviflora</i>	Species of Concern	none	1B
coast rock cress	<i>Arabis blepharophylla</i>	none	none	4
Point Reyes blennosperma	<i>Blennosperma nanum</i> var. <i>robustum</i>	Species of Concern	Rare	1B
coastal bluff morning glory	<i>Calystegia purpurata</i> ssp. <i>saxicola</i>	none	none	1B
Franciscan thistle	<i>Cirsium andrewsii</i>	none	none	1B
Point Reyes bird's beak	<i>Cordylanthus maritimus</i> ssp. <i>palustris</i>	Species of Concern	none	1B
Marin checker lily	<i>Fritillaria affinis</i> var. <i>tristulis</i>	none	none	1B
San Francisco gumplant	<i>Grindelia hirsutula</i> var. <i>maritima</i>	Species of Concern	none	1B
rosy linanthus	<i>Linanthus rosaceus</i>	none	none	1B
Marin knotweed	<i>Polygonum marinense</i>	Species of Concern	none	3
San Francisco owl's clover	<i>Triphysaria floribunda</i>	Species of Concern	none	1B
<b>Headlands FMU</b>				
Blasdale's bent grass	<i>Agrostis blasdalei</i>	Species of Concern	none	1B
coast rock cress	<i>Arabis blepharophylla</i>	none	none	4

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COMMON NAME	SCIENTIFIC NAME	FEDERAL	STATE	CNPS LIST <sup>1</sup>
Point Reyes blennosperma	<i>Blennosperma nanum var. robustum</i>	Species of Concern	Rare	1B
Franciscan thistle	<i>Cirsium andrewsii</i>	none	none	1B
Marin checker lily	<i>Fritillaria affinis var. tristulis</i>	none	none	1B
short-leaved evax	<i>Hesperevax sparsiflora var. brevifolia</i>	none	none	2
perennial goldfields	<i>Lasthenia marcrantha</i>	none	none	1B
Point Reyes meadowfoam	<i>Limnanthes douglasii var. sulphurea</i>	Species of Concern	Endangered	1B
North Coast phacelia	<i>Phacelia insularis var. continentis</i>	Species of Concern	none	1B
Point Reyes rein orchid	<i>Piperia elegans ssp. decurtata</i>	none	none	1B
beach starwort	<i>Stellaria littoralis</i>	none	none	4
San Francisco owl's clover	<i>Triphysaria floribunda</i>	Species of Concern	none	1B
<b>Estero FMU</b>				
Blasdale's bent grass	<i>Agrostis blasdalei</i>	Species of Concern	none	1B
coast rock cress	<i>Arabis blepharophylla</i>	none	none	4
coastal marsh milk-vetch	<i>Astragalus pycnostachyus var. pycnostachyus</i>	none	none	1B
Point Reyes bird's beak	<i>Cordylanthus maritimus ssp. palustris</i>	Species of Concern	none	1B
Marin checker lily	<i>Fritillaria affinis var. tristulis</i>	none	none	1B
marsh microseris	<i>Microseris paludosa</i>	none	none	1B

APPENDIX B – SPECIES OF CONCERN

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COMMON NAME	SCIENTIFIC NAME	FEDERAL	STATE	CNPS LIST <sup>1</sup>
Gairdner's yampah	<i>Perideridia gairdneri</i> var. <i>gairdneri</i>	Species of Concern	none	4
Marin knotweed	<i>Polygonum marinense</i>	Species of Concern	none	3
San Francisco owl's clover	<i>Triphysaria floribunda</i>	Species of Concern	none	1B
<b>Limantour Road FMU</b>				
Marin manzanita	<i>Arctostaphylos virgata</i>	none	none	1B
Point Reyes bird's beak	<i>Cordylanthus maritimus</i> ssp. <i>palustris</i>	Species of Concern	none	1B
California bottlebrush grass	<i>Elymus californicus</i>	none	none	4
Marin checker lily	<i>Fritillaria affinis</i> var. <i>tristulis</i>	none	none	1B
fragrant fritillary	<i>Fritillaria liliaceae</i>	Species of Concern	none	1B
Marin knotweed	<i>Polygonum marinense</i>	Species of Concern	none	3
<b>Wilderness North FMU</b>				
California bottlebrush grass	<i>Elymus californicus</i>	none	none	4
<b>Wilderness South FMU</b>				
Marin manzanita	<i>Arctostaphylos virgata</i>	none	none	1B
California bottlebrush grass	<i>Elymus californicus</i>	none	none	4
<b>Highway One FMU</b>				
Marin checker lily	<i>Fritillaria affinis</i> var. <i>tristulis</i>	none	none	1B

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SPECIES		REGULATORY STATUS		
COMMON NAME	SCIENTIFIC NAME	FEDERAL	STATE	CNPS LIST <sup>1</sup>
Lobb's aquatic buttercup	<i>Ranunculus lobbii</i>	none	none	4
<b>Bolinas Ridge FMU</b>				
Marin manzanita	<i>Arctostaphylos virgata</i>	none	none	1B
glory brush	<i>Ceanothus gloriosus var. exaltatus</i>	none	none	4
Bolinas ceanothus	<i>Ceanothus masonii</i>	Species of Concern	Rare	1B
California bottlebrush grass	<i>Elymus californicus</i>	none	none	4
<b>Inverness Ridge FMU</b>				
Marin manzanita	<i>Arctostaphylos virgata</i>	none	none	1B
swamp harebell	<i>Campanula californica</i>	none	none	1B
Mount Vision ceanothus	<i>Ceanothus gloriosus var. porrectus</i>	none	none	1B
California bottlebrush grass	<i>Elymus californicus</i>	none	none	4
<b>Palomarin FMU</b>				
Sonoma Alopecurus	<i>Alopecurus aequalis var. sonomensis</i>	Endangered	none	1B
Marin manzanita	<i>Arctostaphylos virgata</i>	None	none	1B
nodding semaphore grass	<i>Pleuropogon refractus</i>	None	none	4

## NOTES:

<sup>1</sup> CNPS List 1B: Rare or Endangered in California and Elsewhere

CNPS List 3: Need More Information

CNPS List 4: Plants of Limited Distribution

**APPENDIX C – RECORD OF NEPA/NHPA/ESA COMPLIANCE****UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE****RECORD OF DECISION****FINAL POINT REYES NATIONAL SEASHORE FIRE MANAGEMENT PLAN/  
ENVIRONMENTAL IMPACT STATEMENT****Point Reyes National Seashore  
Marin County, California**

The Department of Interior, National Park Service (NPS) has prepared this Record of Decision on the *Final Fire Management Plan/EIS* for Point Reyes National Seashore (PRNS) and North District of Golden Gate National Recreation Area (GGNRA). The North District of GGNRA is administered by Point Reyes National Seashore. This Record of Decision includes a description of the background for the project, a statement of the decision made, synopses of other alternatives considered, the basis for the decision, findings on impairment of park resources and values, a description of the environmentally preferable alternative, a listing of measures to minimize environmental harm, and an overview of public and agency involvement in the decision-making process.

**BACKGROUND OF THE PROJECT**

This revision of the Fire Management Plan (FMP) was initiated in 2000 because of changes to NPS and federal fire management policy and to bring about needed refinements to the program, as indicated by research and monitoring that has been ongoing since the earliest days of fire program implementation.

Fire management planning and programs have been ongoing since 1970, when NPS fire management policy was changed to allow natural processes to occur when possible. Refinements have been made to the PRNS fire management program, and will continue to be made as knowledge of fire ecology and fire behavior increases. The previous revision to the FMP was completed in 1993. Fire management is an integral part of the park's natural and cultural resources management program. The FMP will assist in achieving land management objectives that are defined in the 1993 Resources Management Plan.

The planning area for the FMP includes NPS lands located approximately 40 miles northwest of San Francisco in Marin County, California. These lands include the 70,046-acre Point Reyes National Seashore, comprised primarily of beaches, coastal headlands, extensive freshwater and estuarine wetlands, marine terraces, and forests, as well as 18,000 acres of the Northern District of GGNRA, primarily supporting annual grasslands, coastal scrub, and Douglas-fir and coast redwood forests.

## APPENDIX C – RECORD OF COMPLIANCE

The purpose of the FMP is to provide a framework for all fire management activities for the Seashore and the North District of GGNRA, including suppression of unplanned ignitions, prescribed fire, and mechanical fuels treatments. It is intended to guide the fire management program for approximately the next 10-15 years. The plan would include concise program objectives, details on staffing and equipment, and comprehensive information, guidelines, and protocols relating to the management of unplanned wildfire, prescribed burning, and mechanical fuels treatment.

Fire management is an essential component of NPS operations in PRNS and the Northern District lands of GGNRA. The need for a well-planned and effective fire management program is threefold. First, the project area's ecosystems have evolved through time with the periodic occurrence of fires, both natural and human-ignited, and many components of these systems require the continuation of periodic fire. As is typical of many national parks and other federal lands, however, active and effective fire suppression efforts for the past 150 years have dramatically changed native ecosystems. Ecosystem changes from the lack of fire include forest and shrub encroachment on grasslands, decadence and death of fire-adapted species, and extremely dense forests.

Second, fire suppression has also resulted in a dangerous accumulation of flammable or hazardous fuels - large quantities of dead and downed trees and branches that have accumulated in overly dense forests and shrublands. Because of these high fuel loads, residences and businesses adjacent to the PRNS and GGNRA are at risk from catastrophic wildfire or a smaller fire spreading from adjacent parklands. Also, a structural fire close to the park could spread into federal lands and develop into a wildland fire that damages park resources.

Third, the park's existing Fire Management Plan (NPS, 1993) needs to be updated. Since the current FMP was published in 1993, the national fire policies have been updated and new guidelines have been issued to park units. In addition, the NPS has conducted fire research and now has a better understanding of the role of fire in ecosystem preservation, resulting in a greater capability of the PRNS to conduct an effective fire program. Updating also allows PRNS to focus more heavily on effectively reducing fire risk along the wildland/urban interface, reducing hazardous fuels, and reestablishing fire in park ecosystems where it is safe to do so.

The following goals have been developed for the updated Fire Management Plan for PRNS and the Northern District lands of GGNRA. These goals were generated from internal staff meetings and public external scoping meetings and presentations, and from review of NPS Policies, Director's Orders, and other fire-related guidance documents listed below.

- Goal 1: Protect firefighters and the public.
- Goal 2: Protect private and public property.
- Goal 3: Maintain or improve conditions of natural resources and protect these resources from adverse impacts of wildland fire and fire management practices.
- Goal 4: Maximize efforts to protect cultural resources from adverse effects of wildland fire and fire management practices.
- Goal 5: Foster and maintain effective community and interagency fire management partnerships.

## APPENDIX C – RECORD OF COMPLIANCE

Goal 6: Foster a high degree of understanding of fire and fuels management among park employees, neighbors, and visitors.

Goal 7: Improve knowledge and understanding of fire through research and monitoring and continue to refine fire management practices.

The Final Environmental Impact Statement identifies and evaluates three alternatives for a FMP for Point Reyes National Seashore administered lands. Potential impacts and appropriate mitigation are assessed for each alternative. The Fire Management Plan and Final Environmental Impact Statement (FMP/FEIS) documents the analyses of two action alternatives, and a “no action” alternative.

**DECISION (SELECTED ACTION)**

Alternative C is the selected action in the final FMP/FEIS and remains unchanged from the draft EIS. Under Alternative C, Increased Natural Resource Enhancement and Expanded Hazardous Fuel Reduction, fire management actions will be used to markedly increase efforts to benefit natural resources and reduce hazardous fuels. This alternative includes objectives for increasing the abundance and distribution of federally listed species, reducing infestations of invasive, non-native plants and increasing native plant cover. Prescribed burning and mechanical treatments will be used to protect or benefit cultural resources, such as reducing vegetation in areas identified as important historic viewsheds.

Alternative C permits the highest number of acres treated annually for hazardous fuels reduction concentrating on high priority areas (e.g., along road corridors, around structures, and in strategic areas to create fuel breaks). Up to 3,500 acres could be treated per year using prescribed fire and mechanical treatments. Under this alternative, research efforts will be expanded to determine the effects of fire on natural resources of concern (e.g., rare and non-native species) and to determine the effectiveness of various treatments for fuel reduction. Research results will be used adaptively to guide the fire management program in maximizing benefits to natural resources, while protecting lives and property.

This alternative will reduce the threat of a catastrophic wildland fire to a more stable fire condition at Year 13 of implementation rather than Year 23 as in Alternative B or indefinite extension of the program under Alternative A, the No Action Alternative. Ten of eleven Fire Management Units (FMUs) will be treated under Alternative C; the eleventh FMU – the Minimum Management FMU – is primarily leased for agriculture and is subject to defensible space and roadside clearing under all three alternatives. As documented in the final EIS, Alternative C was also deemed to be the “Environmentally Preferred” Alternative. This alternative also provides the greatest protection to designated wilderness by ensuring long-term ecological health.

To ensure that implementation of fire management plan actions described in Alternative C conform to findings of this impact assessment, subsequent five year fuels treatment plans and individual projects when appropriate will be subject to NPS project review. Prior to approval, projects will be submitted through an NPS internal review process wherein an interdisciplinary team will evaluate if the potential effects of the proposed projects are adequately addressed

## APPENDIX C – RECORD OF COMPLIANCE

through the FMP NEPA process. Conformance to the conclusions in the FMP EIS will be documented for the NEPA record. If the team finds that the project has major new environmental effects not addressed in this EIS or effects greater than those described in this EIS, a separate environmental process will be conducted. In addition, as part of the project review process, projects carried out in designated wilderness will be required to go through a minimum requirement process. In this two step process, the park must: 1. make a determination as to whether or not a propose management action is appropriate or necessary for the administration of the park as wilderness; and 2. if the project or activity is appropriate in wilderness, make a selection of the management method/tool that causes the least impact on the physical resource and experiential qualities of wilderness.

**OTHER ALTERNATIVES CONSIDERED**

The final FMP/FEIS analyzes two other alternatives. Alternative A, Continued Fuel Reduction for Public Safety and Limited Resource Enhancement, is the No Action Alternative representing the current fire management program. The current program uses a limited range of fire management strategies - including prescribed fire, mechanical treatment, and suppression of all wildland fires, including natural ignitions. Alternative A would continue the existing program described in the 1993 Fire Management Plan including mechanical treatments of hazardous fuels of up to 500 acres per year, primarily mowing in grasslands. Up to 500 acres per year would be treated by prescribed burning, primarily for fuel reduction in grasslands and for Scotch and French broom control. Total treatments per year will not exceed 1,000 acres. Research projects already in progress on reducing Scotch broom and velvet grass through prescribed burning would continue under this alternative. In continuing current practices, treatments would occur in four of eleven FMUs sited along the primary roadways. This program does not place emphasis on wildland/urban interface communities.

Alternative B - Expanded Hazardous Fuel Reduction and Additional Natural Resource Enhancement. Alternative B calls for a substantial increase over present levels in the reduction of hazardous fuels through prescribed burning and mechanical treatments (up to a combined total of 2,000 acres treated per year). Efforts would be concentrated where unplanned ignitions will be most likely to occur (e.g., road corridors), and where defensible space could most effectively contain unplanned ignitions and protect lives and property (e.g., around structures and strategically along the park interface zone). Natural resource benefits would accrue as a secondary objective only. For example, prescribed burning to reduce fuels may have the secondary resource benefit of controlling a flammable, invasive non-native plant. Fire management actions would occur in nine of eleven FMUs with no projects occurring at the low grasslands within the Headlands FMU or in the Minimum Management FMU. Assuming full annual implementation, a stable fire condition with a lowered potential for a catastrophic fire such as the 1995 Vision Fire, could be achieved by Year 23 of plan implementation.

APPENDIX C – RECORD OF COMPLIANCE

**BASIS FOR DECISION**

After careful consideration of the alternatives presented, their environmental impacts, planning goals, and public comments received throughout the planning process, including comments on the *Draft Fire Management Plan/Environmental Impact Statement*, Alternative C has been selected for implementation. This alternative best accomplishes National Park Service and Federal fire management policy, the legislated purpose of PRNS and GGNRA, and the statutory mission of the National Park Service to provide long-term protection of park resources. The selected action also best accomplishes the stated purposes of the Fire Management Plan (as described on page 1-5, in the Purpose and Need Chapter, of the *Final Fire Management Plan/EIS*, and the criteria derived from these purposes. An analysis of the selected alternative’s relationship to these goals is presented below.

Range of FMP Alternatives Compared by Fire Management Goals

Goals	Alt. A	Alt. B	Alt. C
Protect firefighters and the public	2	2	3
Protect private and public property	1	2	3
Maintain or improve conditions of natural resources and protect these resources from adverse impacts of wildland fire and fire management practices	2	2	3
Maximize efforts to protect cultural resources from adverse effects of wildland fire and fire management practices	2	3	3
Foster and maintain effective community and interagency fire management partnerships	3	3	3
Foster a high degree of understanding of fire and fuels management among park employees, neighbors, and visitors	2	3	3
Improve knowledge and understanding of fire through research and monitoring and continue to refine fire management practices	2	2	3

- 1 - Partially Meets Goal
- 2 –Meets Basic Level of Goal
- 3 –Provides Highest Levels of Goal Achievement

**ENVIROMENTALLY PREFERRED ALTERNATIVE**

National Park Service policy regarding implementation of the National Environmental Policy Act (NEPA) requires that an environmentally preferred alternative be identified in all NEPA analysis documents. Determination of this alternative takes place after the environmental analysis is complete. The environmentally preferred alternative is the alternative that best promotes the national environmental policy expressed in Section 101 of NEPA. This includes

## APPENDIX C – RECORD OF COMPLIANCE

alternatives that would:

- fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- assure for all visitors a safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
- attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
- preserve important historic, cultural and natural aspects of our national heritage and maintain, wherever possible, an environment which supports diversity and variety of individual choice;
- achieve a balance of population and resource use which would permit high standards of living and a wide sharing of life's amenities; and
- enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

Essentially, this means the environmentally preferred alternative is the one that causes the least damage to the biological and physical environment or most naturally perpetuates biological or physical process; it also means the alternative which is best suited to protect, preserve, and enhance historic, cultural and natural resources and process. After analyzing the alternatives described in this FEIS, the NPS has determined that Alternative C is environmentally preferred. Alternative C includes fire management treatments that would provide a high level of protection of human health, life and property, while maximizing efforts toward restoring and maintaining ecological integrity, and protecting and enhancing cultural resources (e.g., preserving important historic, cultural and natural aspects of our national heritage). Although Alternative B also would provide a high level of protection of life and property, it would not provide the same benefits to natural and cultural resources. Of the three alternatives, Alternative A (No Action) would provide the lowest degree of protection of lives and property, and minimal benefits to natural and cultural resources.

## FINDINGS ON IMPAIRMENT OF PARK RESOURCES AND VALUES

The NPS has determined that implementation of Alternative C from the *Fire Management Plan/Environmental Impact Statement* will not constitute an impairment to park resources and values. This conclusion is based on a thorough analysis of the environmental impacts described in the *Final Fire Management Plan/EIS*, the public comments received, relevant scientific studies, and the professional judgment of the decision-maker guided by the direction in Management Policy. While the plan has some negative impacts, in all cases these adverse impacts are the result of actions to preserve and restore park resources and values. Overall, the plan results in major benefits to park resources and values, and it does not result in their impairment.

In determining whether impairment may occur, park managers consider the duration, severity, and magnitude of the impact; the resources and values affected; and direct, indirect, and cumulative effects of the action. According to NPS Policy, "An impact would be more likely to constitute an impairment to the extent that it affects a resource or value whose conservation is: necessary to fulfill specific purposes identified in the establishing legislation or proclamation of

## APPENDIX C – RECORD OF COMPLIANCE

the park; key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or identified as a goal in the park's general management plan or other relevant National Park Service planning documents.” (NPS Management Policies, Part 1.4.5, 2001)

The non-impairment policy does not prohibit impacts to park resources and values. The NPS has the discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, so long as the impacts do not constitute impairment. Moreover, an impact is less likely to constitute impairment if it is an unavoidable result of an action necessary to preserve or restore the integrity of park resources or values.

This decision is made based on guidance contained in the NPS Management Policies (2001). The decision to implement Alternative C will result in a greater level of accomplishment of the goals of the fire management program, with the potential for reversing the departure from natural fire return intervals. If annual accomplishment rates and funding can be maintained, Alternative C would achieve ecosystem restoration and wildland/urban interface protection, and would do so with lesser on-site impacts than under Alternative B. The potential for high-intensity catastrophic fire that would put high-value at risk would be greatly reduced under the selected alternative.

The combination of the use of mechanical thinning techniques and prescribed fire in the inner wildland urban interface, and the use of prescribed fire in the outer wildland urban interface will provide a defense in depth against unwanted wildland fires. The restoration of wildland fire where this can be safely done will also reduce the extent of unnaturally dense accumulations of wildland fuels which pose a risk to natural and cultural resources, as well as to public safety and communities.

In conclusion, the NPS has determined that the implementation of Alternative C will not result in impairment of resources and values in PRNS and GGNRA North District. This conclusion is documented in the *Final Fire Management Plan/EIS*.

## MEASURES TO MINIMIZE ENVIRONMENTAL HARM

The NPS has investigated all practical means to avoid or minimize environmental impacts that could result from implementation of the selected action. The measures have been incorporated into Alternative C, and are presented in detail in the *Final Fire Management Plan/EIS*.

A consistent set of mitigation measures would be applied to actions that result from this plan (see Appendix A). Fire monitoring by the Fire Management Staff and Resource Management programs will be implemented to detect deleterious results. These results from this program will guide and assure compliance monitoring, biological and cultural resource protection, noxious weed control, visitor safety and fire education, endangered, threatened and special status species protection, and other mitigation.

Mitigation measures will also be applied to future actions that are guided by this plan. In addition, the National Park Service will prepare appropriate compliance reviews, i.e., National Environmental Policy Act, National Historic Preservation, and other relevant legislation for

## APPENDIX C – RECORD OF COMPLIANCE

future actions not covered under this EIS, including projects in wilderness involving mechanical treatments or prescribed fire.

**PUBLIC AND INTERAGENCY INVOLVEMENT**

During a series of scoping meetings, the NPS requested input from the public, from federal, state, and local agencies, and from park resource specialists on fire management concerns, the types of issues that should be addressed in the EIS, and the range of fire management alternative strategies that should be considered.

On January 27, 2000, a “Notice of Scoping for Fire Management Plan at Point Reyes National Seashore” was published in the Federal Register. On January 29, 2000, at a public meeting of the Point Reyes National Seashore Citizen Advisory Commission, a presentation was given announcing the scoping period for the plan. Scoping comments were solicited from January 27, 2000 to March 28, 2000.

On February 14, 2000 and on February 22, 2000, internal scoping sessions were conducted to identify staff issues and concerns. These meetings were attended by an interdisciplinary group of resource and fire specialists from the PRNS and GGNRA staff.

In addition to the Federal Register Notice, the scoping period was publicized through a mass mailing to the public that included background information on the FMP and a notice of a scoping workshop held March 9, 2000. Notices posted in the communities surrounding the park and a notice in the local weekly newspaper, the Point Reyes Light, also advertised the workshop. The two-hour March 9, 2000 public scoping workshop was attended by five citizens.

On March 28, 2000, a two-hour scoping session was held for local fire agencies. In addition to representatives of the NPS Fire Management Office, members of the Marin County Fire Department, Inverness Volunteer Fire Department, California State Parks, and Marin Municipal Water District were in attendance. Also invited, but not attending, were the Marin County Open Space District, Bolinas Fire Protection District, Nicasio Volunteer Fire Department, and Stinson Beach Fire Department.

In spring of 2001, the NPS conducted a two-hour meeting to provide an overview to the Marin County Fire Department of the preliminary alternatives, and consulted on possible changes and/or modifications.

The draft EIS for the Fire Management Plan was released for public comment on February 20, 2004 when EPA filing notice occurred. The Notice of Availability (NOA) was published on February 25, 2004. The draft EIS was placed on the park website during the comment period and notices of its availability were sent to over 200 interested parties including agencies and organizations. Fifteen copies of the draft EIS were sent to the State of California Clearinghouse for state agencies on February 24, 2004 for review. Copies were also distributed to all local libraries, the central Marin County Library and the San Francisco Public Library. Approximately 12 copies of the draft EIS were sent to interested parties. A public meeting was held at Point Reyes National Seashore on March 18, 2004; approximately 15 people attended. The comment period closed April 20, 2004. Seven written comment letters were received; they are addressed below.

## APPENDIX C – RECORD OF COMPLIANCE

The Federated Indians of Graton Rancheria have been consulted for compliance with the Native American Graves Protection and Repatriation Act. A letter was sent to the tribe on February 19, 2004. Consultation will continue for each specific project when appropriate.

The Environmental Protection Agency reviewed the draft FMP/EIS and rated it LO—Lack of Objections and supported the NPS selection of Alternative C with a few minor corrections that were made in the FEIS.

Documentation of NPS compliance with federal and state laws and regulations is incorporated into the text of the FEIS. Compliance with the major federal laws and associated state regulations is summarized here.

Endangered Species Act of 1973, as amended, PL 93-205, 87 Stat. 884, 16 USC §1531 et seq. The Act protects threatened and endangered species, as listed by the U.S. Fish and Wildlife Service (USFWS), from unauthorized take, and directs federal agencies to ensure that their actions do not jeopardize the continued existence of such species. Section 7 of the Act defines federal agency responsibilities for consultation with the USFWS and the National Marine Fisheries Service (NMFS) and requires preparation of a Biological Assessment to identify any threatened or endangered species that is likely to be affected by the proposed action. The National Park Service initiated consultation on February 9, 2001 and continued with the USFWS and the NMFS.

The NMFS Biological Assessment, dated May 17, 2004, concurred with the NPS finding of not likely to adversely affect threatened steelhead and threatened coho salmon. The NMFS BA has been incorporated in the *Final Fire Management Plan/EIS*.

The USFWS Biological Opinion, dated May 28, 2004, has been incorporated into the *Final Fire Management Plan/EIS*. The USFWS concurred that the actions in Alternative C will not likely to adversely affect the following federally listed species: western snowy plover, northern spotted owl, Sonoma alopecurus, Sonoma spineflower, Tiburon paintbrush, beach layia, Tidestrom's lupine, Marin dwarf, and California freshwater shrimp. Regarding the federally-listed Myrtle silverspot butterfly and the California red-legged frog, the USFWS did not concur with the not likely to adverse affect determination, but concluded that the proposed project will result in significant long-term benefits to these two listed species and the proposed critical habitat, and any adverse effects will be minor and temporary in nature. The PRNS has agreed to additional mitigation measures proposed by USFWS and they have been incorporated in the *Final Fire Management Plan/EIS*.

Archeological Resources Protection Act of 1979, PL 96-95, 93 Stat. 712, 16 USC §470aa et seq. and 43 CFR 7, subparts A and B, 36 CFR. This Act secures the protection of archeological resources on public or Indian lands and fosters increased cooperation and exchange of information between private, government, and the professional community in order to facilitate the enforcement and education of present and future generations. It regulates excavation and collection on public and Indian lands. It requires notification of Indian tribes who may consider a site of religious or cultural importance prior to issuing a permit. The NPS will meet its obligations under this Act in all activities conducted in the Fire Management Plan.

National Historic Preservation Act of 1966, as amended, PL 89-665, 80 Stat. 915, 16 USC §470 et seq. and 36 CFR 18, 60, 61, 63, 68, 79, 800. The National Historic Preservation Act requires

## APPENDIX C – RECORD OF COMPLIANCE

agencies to take into account the effects of their actions on properties listed in or eligible for listing in the National Register of Historic Places. The Advisory Council on Historic Preservation has developed implementing regulations (36 CFR 800), which allow agencies to develop agreements for consideration of these historic properties. The NPS, in consultation with the Advisory Council, the California State Historic Preservation Officer (SHPO), American Indian tribes, and the public has developed a Programmatic Agreement for operations and maintenance activities on historic structures. This Programmatic Agreement provides a process for compliance with National Historic Preservation Act, and includes stipulations for identification, evaluation, treatment, and mitigation of adverse effects for actions affecting historic properties. The NPS sent a scoping notice and the Draft Fire Management Plan/EIS to the State Historic Preservation Officer and the Advisory Council for Historic Preservation. No response or comments were received from these offices.

American Indian Religious Freedom Act, PL 95-341, 92 Stat. 469, 42 USC §1996. This act declares policy to protect and preserve the inherent and constitutional right of the American Indian, Eskimo, Aleut, and Native Hawaiian people to believe, express, and exercise their traditional religions. It provides that religious concerns should be accommodated or addressed under NEPA or other appropriate statutes. The National Park Service, as a matter of policy, will be as nonrestrictive in permitting Native American access to and use of an identified traditional sacred resource for traditional ceremonies.

**Comments Received Following Release of the Final EIS**

The Notice of Availability for the Final EIS was published in the Federal Register on August 31, 2004; EPA's Notice of Filing was posted on September 10, 2004 formally initiated the No Action Period which concluded on October 12, 2004. The Final EIS was placed on the park website during the no-action period and notices of its availability were sent to over 200 interested parties including agencies and organizations. Copies of the Final EIS were requested by, and distributed to, the San Francisco Main Public Library, State of California Department of Fish and Game, and Bay Area Air Quality Management District. Two individual letters of comment were received regarding the *Final Fire Management Plan/EIS*. These letters expressed general concern about prescribed burning, but did not have specific comments that could be addressed.

**CHANGES MADE FOR THE *FINAL FIRE MANAGEMENT PLAN/ENVIRONMENTAL IMPACT STATEMENT***

A number of minor changes were made in the *Final Fire Management Plan/EIS*, based on public comment period for the draft EIS. During the review of the draft EIS, only seven written comments were received. Four letters were from agencies including Environmental Protection Agency, Bay Area Air Quality Management District (BAAQMD), State of California Clearinghouse and Planning Unit, and National Marine Fisheries Service. Two were from organizations expressing support for the preferred alternative. One expressed concern about various issues related to fire such as visual and smoke impacts on air quality. Based on these letters, minor changes were made in the *Final Fire Management Plan/EIS* as described on pages 420-449. No major changes were made to Alternative C, the selected course of action. Minor text changes were made in response to BAAQMD letter to ensure PRNS was in compliance with

APPENDIX C – RECORD OF COMPLIANCE

regulations and protocol. At the request of EPA, PRNS included the Biological Opinion from USFWS and NOAA Fisheries concurrence that the FMP will not likely have an adversely affect threatened fish species or adversely modify critical fish habitat.

**CONCLUSION**

Alternative C provides the most comprehensive and effective method among the alternatives considered for meeting the National Park Service’s purposes, goals, and criteria for managing fire and fire risks in Point Reyes National Seashore and the North District of GGNRA and for meeting national environmental and fire policy goals. The selection of Alternative C, as reflected by the *Final Fire Management Plan/EIS*, would not result in the impairment of park resources and would allow the National Park Service to conserve park resources and provide for their enjoyment by visitors. Alternative C would also protect the overall long-term ecological health of the park’s wilderness area.

Approved:

*signed by Jonathan B. Jarvis on October 27, 2004*

\_\_\_\_\_  
Jonathan B. Jarvis, Regional Director  
Pacific West Region, National Park Service

\_\_\_\_\_  
Date



## APPENDIX D. FMP MITIGATION MEASURES

### Mitigation Measures for the PRNS/GGNRA North Fire Management Plan

To ensure that the action alternatives protect natural and cultural resources and the quality of the visitor experience, a consistent set of mitigation measures would be applied to actions of the Fire Management Plan. The National Park Service will complete appropriate environmental review (i.e., as required by National Environmental Protection Agency, the National Historic Preservation Act, the Endangered Species Act and other relevant legislation) for future actions not covered in the *Final Fire Management Plan/EIS*. As part of the environmental review, the NPS would avoid, minimize, and mitigate adverse impacts to the greatest extent possible. In addition as part of the project review process, projects carried out in designated wilderness will be required to go through a minimum requirement process. In this two step process, the park must: 1). make a determination as to whether or not a propose management action is appropriate or necessary for the administration of the park as wilderness; and 2). if the project or activity is appropriate or ness in wilderness, make a selection of the management method/tool that causes the least impact on the physical resource and experiential qualities of wilderness.

Guidance on the use of herbicides in conjunction with implementing the FMP is found on page 38 of the FMP FEIS.

If herbicides are used, they are applied according to strict specifications using detailed Material Safety Data Sheets. Any application requires the approval of the park's Integrated Pest Manager and the Washington Office coordinator for herbicide application. No applications occur in riparian or wetland areas (FMP FEIS page 38).

The following mitigation measures would be applied regardless of the alternative selected:

#### General

G-1. To ensure that implementation of fire management plan actions conforms to findings of this impact assessment, subsequent fire year plans and individual projects will be subject to NPS project review. Prior to approval, all projects will be submitted through an NPS internal review process wherein an interdisciplinary team will evaluate if the potential effects of the proposed projects are adequately addressed through the FMP NEPA process. Conformance to the conclusions in the FMP EIS will be documented for the NEPA record. If the team finds that the project has major new environmental effects not addressed in this EIS or effects greater than those described in this EIS, a separate environmental process will be conducted.

## APPENDIX D – FMP MITIGATION MEASURES

**Soils**

## General

S-1. Individual burn plans will be written with enough detail to determine the extent of impacts to soil from erosion. Subject matter experts will determine if the erosion control plan submitted is sufficient to prevent long-term moderate or major impacts on the rate of soil erosion. In other words, the expert will determine if the proposed erosion control strategy will be sufficient to ensure no greater than minor impacts to soils from erosion. If the assessment finds that standard erosion control strategies will be insufficient to avoid long-term moderate or major effects on the rate of erosion, a separate NEPA process will be initiated for that burn plan. Strategies used to minimize impacts to soils can include avoiding steep slopes, timing burns to minimize erosion potential, or using erosion control devices during or after burns.

S-2. Watershed level planning will be used to assure that erosion rates within any one watershed will conform to the conclusions of environmental effect reached in this FEIS, (e.g., impacts will be no more than moderate in intensity). Watershed level planning will be triggered when proposed actions have potential to exceed 10% of the total area of one or more FMP watersheds in one year. This mitigation measure assures that planning considers the watershed scale, and if a potential effect is identified, that a specific assessment be conducted for the burn plan to assure the conformance of watershed level effects with this FEIS.

## For Prescribed Burns

S-3. Some coarse, woody debris, if available, will be left on the site for nutrient cycling and mycorrhizal function.

S-4. All constructed fire lines will be rehabilitated to prevent compaction if needed.

## For Mechanical Treatments

S-5. Mechanical regrading of roads will be conducted to specifications identified in the PRNS Trails Inventory and Condition Assessment and Road Memorandum of Understanding with adjacent land management agencies. Use of these specifications will minimize erosion from fire roads.

S- 6. For FMP tree removal actions in areas with highly erosive soils or slopes over 15%, tree stumps will be left in place and cut as close to ground surface as feasible.

## For Wildland Fire Control Activities

S-7. Following wildland fires, soil rehabilitation efforts will be focused on rehabilitating ground disturbance from heavy equipment.

S-8. Unless no feasible alternative is available, heavy equipment will not be used in areas where soils are wet or extensive compaction could occur. If staging of equipment or

## APPENDIX D – FMP MITIGATION MEASURES

supplies occurs on soils, a clearly marked and visible limit of disturbance line will be installed using either stakes, flagging, or fencing. Surface soils in areas subjected to compaction will be scarified at the end of the period of use to retard runoff and promote revegetation.

S-9. Erosion control measures will be implemented where project actions could leave soils exposed to runoff prior to revegetation. Erosion control measures include covering exposed soils with weed-free chipped material, native duff, erosion control blankets, or certified sterile rice straw.

S-10. Where surface soils must be disturbed and soils support native vegetation, existing vegetation and topsoil will be retained and reinstalled whenever feasible.

### **Air Quality**

A-1. If recommended by BAAQMD, prescribed burn plans submitted for review could be modified to reduce production of pollutants. Options include modifying burns to reduce the area burned, reducing fuel loading (e.g., mowing and understory thinning), or managing fuel consumption. Treatments to reduce overall air emissions from prescribed burns can include:

- Mowing grass and reducing density of vegetation in brushlands.
- Mechanical treatment of forested areas by removing standing or downed trees, understory thinning, thinning of forests, and creation of shaded firebreaks.
- More frequent, less intense burns to prevent unwanted vegetation from becoming established in clearings or in forest understory.

A-2. Increasing combustion efficiency or shifting the majority of combustion away from the smoldering phase and into the more efficient flaming phase will reduce emissions (except NO<sub>x</sub>, which is produced in greater quantities at higher temperatures). Methods to accomplish this will include pile or windrow burning, rapid mop-up, and shortened fire duration. Pile or windrow burning will generate more heat and burn more efficiently and be most effective in reducing forest fuel rather than brush type fuels.

A-3. The park will develop a Smoke Communication Strategy to guide management of smoke events during prescribed fires, managed wildland fires, suppression actions, and fires occurring outside the park. Notification of proposed burns will be disseminated through local media and postings to provide adequate advance notice to persons with sensitivities to smoke when burning is planned. Information will be provided to visitors, employees, and residents in smoke affected areas regarding health issues and concerns. The park will monitor particulate levels in the park during large smoke events to provide data for future assessments.

## APPENDIX D – FMP MITIGATION MEASURES

A-4. PM<sub>2.5</sub> monitoring data will be collected at Bear Valley in Point Reyes National Seashore. Data collected will be shared with local, regional, and national air quality agencies and databases.

A-5. To reduce smoke and pollutant generation during late summer and early fall, efforts will be made to burn fuel concentrations, piles, landings, and jackpots outside of the prescribed burning season to increase the number of units that can be burned without overloading the airshed on days with good dispersal conditions.

A-6. To avoid impacts to visibility in the Class I PRNS portion of the project areas, burning will be avoided on holidays or other periods when recreational visitation is typically high.

A-7. To avoid public health and nuisance impacts to neighboring communities, prescribed burns will be conducted under meteorological conditions that will avoid smoke drift into sensitive residential areas and that will transport smoke away from populated areas. Planning for prescribed burning also will consider the smoldering period to avoid fires where downslope winds during the night could carry smoke into residential areas at the base of ridges.

### **Water Quality and Water Resources**

W-1. Individual burn plans will be written with enough detail to determine the extent of erosion within the burn area due to a) the prescribed burn and/or, b) mechanical treatments. Subject matter experts will determine if the erosion control plan submitted is sufficient to prevent long-term moderate or major impacts to the water resources and water quality, and will assure project compliance with TDML implementation plans for Tomales Bay, Lagunitas Creek, and Walker Creek, according to availability through adoption by the EPA. Strategies to minimize erosion and sediment transport to water resources associated with prescribed burning include avoiding oversteep slopes, timing burns to minimize erosion potential, or using erosion control devices after burns. Strategies to minimize erosion and sediment transport to water resources associated with mechanical treatment include avoiding oversteep slopes, avoiding scraping or clearing to bare mineral soil (leave duff layer), or installing erosion control devices as part of mechanical treatment (if necessary).

W-2. Watershed level planning will be used to assure that prescribed burning and/or mechanical treatment within any one watershed will conform to the conclusions of the environmental effect reached in this EIS (e.g., the impacts will be no more than moderate in intensity). Watershed level planning will be triggered when proposed actions have the potential to exceed 10% of the total area of one or more FMU watersheds in one year. This mitigation measure assures that planning considers the watershed scale and, if a potential effect is identified that a specific assessment be conducted for the burn plan to assure the conformance of the watershed level effects within this EIS.

## APPENDIX D – FMP MITIGATION MEASURES

W-3. Helispots, staging areas, and spike camps will be located at least 100 feet away from streams, creeks, and other water bodies.

W-4. All fire line (both handline and dozer line) will be rehabilitated as quickly as possible, which will include application of Burned Area Emergency Response (BAER) techniques such as recontouring, soil stabilization as needed, and monitoring for erosion and treatment as necessary in the first winter following disturbance.

W-5. When developing prescribed burn boundaries, non-treatment buffer areas will be established around perennial, intermittent, and ephemeral channels associated with Lagunitas Creek, Olema Creek, Pine Gulch Creek, and other coastal drainages originating from Inverness Ridge. Some treatment within buffer areas, including hand removal of non-native species and “cool” burns of non-native grasses, may occur within these areas. Fire lines around these areas will be mowed - not graded or scraped - in order to leave a 100-foot vegetated buffer strip from burn areas.

## Vegetation

The following mitigation measures will be applied to reduce impacts from prescribed fire and mechanical treatment within all vegetation types:

### V-1. “Pre”-Treatment Measures

- Individual prescribed burns will be conducted within the framework of a multidisciplinary planning effort. Personnel from fire management and from resource management will work together to identify areas that are expected to benefit from prescribed burning. Existing data on the response of plant communities in the Seashore to fire will be consolidated and analyzed to determine optimal areas, configurations, and times for burns. Clear objectives will be developed for prescribed burns that will include measurable parameters to determine the effects of the burns on vegetation. Following burns, vegetation will be analyzed to determine the effects of the burn, which will aid in future burn planning.
- Prescribed burns will be conducted at a time of year when introduction or spread of non-native plants will be minimized, and mortality of non-native plant species will be maximized.
- Whenever possible, existing roads or trails will be used as firebreaks for prescribed burns and for wildland fire suppression.
- Vegetation managers will work with fire management staff to develop maps of areas that support plant communities of special management concern (e.g., uncommon communities, wetlands, riparian areas, dunes, areas with no non-native plants that need to be kept intact, areas with highly invasive non-native plants that should not be spread) so fire personnel can attempt to avoid such areas when making decisions about fire management tactics.

## APPENDIX D – FMP MITIGATION MEASURES

## V-2. “During” Treatment Measures

- Soil disturbance will be minimized to the greatest extent possible to reduce potential for introduction or spread of invasive non-native plant species.
- The aerial extent of disturbance associated with mechanical treatments will be kept to the minimum necessary to reduce fire risk.
- For helispots or spike camps, previously disturbed sites and open areas will be used whenever possible to minimize additional disturbance.
- Burn piles will be kept small to minimize the area disturbed and to allow for the recolonization of sterilized patches by mycorrhizal fungi and other soil organisms in adjacent areas.

## V-3. “Post”-Treatment Measures

- Areas subject to fire management treatments will be monitored periodically for the presence of invasive non-native plant species, and if such species have established or spread as a result of such activities, the non-natives will be removed.
- All fire line (both handline and dozer line) will be rehabilitated as quickly as possible, which will include application of Burned Area Emergency Response (BAER) techniques such as recontouring, soil stabilization as needed, and monitoring for and removal of invasive non-native plant species for a minimum of three years following a fire.

## V-4. In grasslands

- Follow-up non-native plant monitoring and removal will be conducted to remove new recruits that come into the site in years following prescribed burning or mechanical treatments.
- All grassland burns will be carefully monitored to ensure burn objectives (= recruitment and long-term maintenance of native species without introduction of invasive non-native plant species) are being met.
- To improve grassland plant species composition, and reduce the chance of invasion or spread of non-native species, native seeding trials will be conducted following fire management treatments in some areas.
- Small pilot burns (less than 100 acres) will be conducted in the Tomales Point FMU grassland to determine plant community response. These burns will be carefully monitored to ensure burn objectives (= recruitment and long-term maintenance of native species without introduction of invasive non-native plant species) are being

## APPENDIX D – FMP MITIGATION MEASURES

met. If pilot projects determine objectives can be met using prescribed fire, individual burn size will increase to a maximum of 150 acres.

## V-5. In Bishop pine:

- Follow-up non-native plant monitoring and removal will be conducted to remove new recruits that come into the site in years following prescribed burning or mechanical treatments.
- Prescribed burning in Bishop pine stands will occur only if the burns can be conducted under conditions that will result in germination and recruitment of new stands of Bishop pine. Relatively cool fires under moist conditions may not meet this objective.
- Initially, prescribed burns in Bishop pine forest habitat will be small and will be carefully monitored to ensure burn objectives (= recruitment and long-term maintenance of Bishop pine and associated native species without introduction of invasive non-native plant species) are being met.

## V-6. In Douglas-fir/coast redwood forests:

- If pre-burn thinning of trees is required in forested stands, the trees to be thinned will be no larger than 10" in diameter.
- Prior to conducting prescribed burning in Douglas-fir or coast redwood forests, Seashore fire and vegetation managers, and wildlife and plant ecologists will collaborate to fully develop rationale, objectives, prescriptions, and plans for conducting burns in the redwood forests within the project area.

## V-7. In hardwood forests:

- Site-specific objectives will be developed for prescribed burns in hardwood forest habitat. The intent of such burns may be to reduce density or abundance of this vegetation type to encourage coastal scrub development, or may be to improve the ecological health of the hardwood plant communities. Unique, site-specific burn prescriptions and timing will be required to meet these differing objectives.

## V-8. In coastal scrub:

- In coastal scrub small pilot burns (> 50 acres) will be conducted. These burns will be carefully monitored to ensure burn objectives (= recruitment and long-term maintenance of native species without introduction of invasive non-native plant species) are being met. If pilot projects determine objectives can be met using prescribed fire, individual burn size will increase to a maximum of 200 acres.

## APPENDIX D – FMP MITIGATION MEASURES

**Wetlands**

W-1. Burns will be allowed to back into and burn around wetlands and meadows or through them if the vegetation is dry enough to carry fire. Wetlands will be avoided to the greatest extent possible during fire confinement and containment.

W-2. Fire suppression activities will not occur in wetlands unless there are no alternatives available to control the spread of a wildland fire.

W-3. Fires near wetlands will be ignited when wetlands are too moist to sustain fire spread, thereby minimizing impacts to wetlands.

W-4. To the greatest extent possible, mechanical treatments will not occur in wetlands.

W-5. Wetlands may be used as natural boundary for prescribed fires. When a wetland area is being used as a boundary, the control line will occur in adjacent uplands, not in wetlands.

W-6. Prescribed fires will not occur more frequently than the time required for native plant species to set seed.

W-7. Foams or other fire retardants will not be used in or near wetlands.

W-8. Firebreaks or fire lines will be constructed in previously disturbed areas whenever possible.

W-9. Chipped material will not be spread in wetlands.

**Special Status Species**

SS-1. Known populations of special-status plant and animal species will be monitored to ensure long-term impacts are avoided. Known populations of special status species will be avoided when locating helispots or spike camps.

SS-2. In Spotted Owl Habitat:

- annually identify and map areas where spotted owls are nesting,
- protect occupied and previously used nest sites from unplanned ignitions,
- do not conduct prescribed burns within 400 meters of an occupied or previously used nest site,
- do not conduct mechanical treatments with mechanized equipment within 400 meters of an occupied or previously used nest site between February 1 and July 31 (breeding season),

## APPENDIX D – FMP MITIGATION MEASURES

- conduct post-treatment monitoring to ascertain any impacts.

## SS-3. In Point Reyes Mountain Beaver Habitat:

- identify and map areas known to support Point Reyes mountain beaver and areas that have habitat suitable for supporting Point Reyes mountain beaver,
- protect known and potential habitat from unplanned ignitions,
- establish buffer areas 30 feet wide around known habitat areas, and
- conduct small burns (less than 100 acres) of mountain beaver habitat each year.

SS-4. Avoid conducting burns during the nesting season, March 15 through August 15, unless biologists can ascertain that birds are not nesting in the planned burn area.

SS-5. During the tule elk calving seasons, burns will be conducted in habitat away from areas where birthing and loafing of females and calves occur.

SS-6. To protect California red-legged frogs, areas to be treated by mechanical means or prescribed fire will have a buffer area of 30 feet established around known breeding habitat.

SS-7. The annual work plan for FMP implementation will be provided to NOAA Fisheries each year to allow that agency to monitor the types of projects proposed.

**Cultural Resources**

## CR-1. Pre-Action:

- Cultural resources will be considered during all fire management planning efforts.
- Fire management personnel and other staff will receive annual training on cultural resources and fire management actions.
- All cultural resources will be evaluated with respect to hazardous fuel loads. As needed, fuel loads will be reduced using methods commensurate with avoiding or minimizing adverse effects. Maintaining light fuel loads on and in close proximity to cultural resources will be emphasized. All areas slated for ground disturbing activities will be subjected to pre-action field surveys. This includes areas likely to be disturbed during future wildfires.
- Pre-burn survey will be conducted prior to all prescribed burns as dictated by resource distribution and vulnerability, vegetation and topography, and expected fire behavior.

## APPENDIX D – FMP MITIGATION MEASURES

- Consultation with local Native American communities will continue to occur in the context of fire management actions. Spiritual sites and important plant communities will be identified and appropriately managed for preservation, maintenance, and/or rehabilitation.
- Computer and other databases containing cultural resources data will be created and maintained, and made available to fire management personnel in the event of emergencies.
- Cultural resources specialists from adjacent land management agencies will be consulted in order to coordinate mitigation efforts prior to planned and unplanned fire management actions.
- Appropriate cultural resources monitoring protocols will be established and implemented.
- Potential research opportunities to study the effects of fire management actions on cultural resources will be identified.

## CR-2. During-Action:

- A cultural resource specialist or resource advisor will be present during all fire management actions where recorded and unrecorded resources of interest are considered at risk. Additional survey will be conducted on an as-needed basis.
- Observations of fire behavior and other variables will be made with respect to recorded cultural resources and/or areas with high probability of containing unrecorded cultural resources.
- Cultural resources data will be shared with fire management personnel as needed to avoid or minimize adverse effects.
- A cultural resource specialist or resource advisor will educate fire management personnel about cultural resources and the potential impacts of fire management actions.

## CR-3. Post-Action:

- The post-action condition of all recorded cultural resources will be assessed. Resources requiring stabilization or other treatment will be mitigated.
- As appropriate, post-action survey will be conducted in previously surveyed and unsurveyed areas. Previously unrecorded cultural resources will be assessed for condition, and stabilization and other protection needs.

*APPENDIX D – FMP MITIGATION MEASURES*

- Monitoring and research data will be compiled, evaluated, and used to help refine cultural resource compliance for fire management actions.

**Human Health and Safety**

HH-1. Firefighters will be frequently rotated and allowed to rest or sleep when needed, and fire lines and safety zones will be used to minimize exposure.



## APPENDIX E – SUPPLEMENTAL INFORMATION

E.1.	Daily Resource Availability and Duty Officer Call List .....	E-1
E.2.	PRNS Dispatch Protocol for Wildland Fire.....	E-3
E.3.	Weather Information Management System Walk-through.....	E-5
E.4.	NFDRS Indices and Park Visitor Fire Restrictions .....	E-7
E.5.	Fire Step-up Plan (SOP PR-37) .....	E-9
E.6.	Bay Area Network Parks Pocket Card.....	E-19
E.7.	Delegation for Park FMO from Superintendent PRNS .....	E-21
E.8.	Cooperative Agreements, MOU's, includes run-cards, radio frequencies .....	E-23
E.9.	Marin Emergency Radio Authority (MERA) Radio Talk Group Matrix .....	E-29
E.10.	MIST Guidelines.....	E-31
E.11.	Minimum Tool Flow Chart.....	E-43
E.12.	Wildland Fire Situation Analysis.....	E-47
E.13.	Example of Delegation of Authority Form.....	E-61
E.14.	Incident Complexity Analysis: Types 5, 4 and Transition to Type 3 Incident	E-63
E.15.	PRNS Incident Organizer .....	E-65
E.16.	Prescribed Fire Plan Example .....	E-87
E.17.	BAAQMD Application for Pile Burning.....	E-109
E.18.	FMU Maps of Past and Proposed Fire Management Projects .....	E-111
E.19.	PRNS Five Year Fuels Treatment Plan and Maps.....	E-131
E.20.	PRNS FMU Vegetation Maps .....	E-145



APPENDIX E – SUPPLEMENTAL INFORMATION

APPENDIX E, PART 1

POINT REYES NATIONAL SEASHORE

DAILY RESOURCE AVAILABILITY

Date: \_\_\_\_\_

Fire Management Office .....415-464-5233

Point Reyes Law Enforcement-Public Safety Dispatch.....415-464-5170

Duty Officer (call in order listed):

Order	Name	Office Phone	Pager	Cell Phone	Home Phone
1	Roger Wong	415-464-5232	415-227-2943	xxx-xxx-xxxx	xxx-xxx-xxxx
2	Jordan Reeser	415-464-5235	xxx-xxx-xxxx	xxx-xxx-xxxx	xxx-xxx-xxxx
3	Jon Haag	415-464-5236	xxx-xxx-xxxx	xxx-xxx-xxxx	xxx-xxx-xxxx

Agency Administrator/Chief Park Ranger:

Colin Smith	415-464-5175	xxx-xxx-xxxx	xxx-xxx-xxxx	xxx-xxx-xxxx
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Today's Predicted Fire Danger (circle one):

LOW          MODERATE          HIGH          VERY HIGH          EXTREME

Today's Available Resources (Circle)

ENGINES

Patrol 6-2 Type 6          available          staffing          .....

Engine 3-1 Type 3          available          staffing          .....

HAZARDOUS FUELS REMOVAL MODULE

Crew #9 Type 2 IA          available          staffing          .....

SINGLE RESOURCES

Contact Duty Officer to confirm availability of positions and personnel listed in /ROSS.

COMMITTED RESOURCES	ACTIVE FIRES



## APPENDIX E – SUPPLEMENTAL INFORMATION

**APPENDIX E, PART 2****DISPATCH PROTOCOL FOR FIRES  
2006**

1. Gather information about the **FIRE (Initial)**:
  - Location.
  - Type (Structure, Wildland, Vehicle)
  - Name and Phone Number of the Reporting Party. **(911 call)**
2. Notify **WOODACRE**: 415-499-6717. Coordinate as to what equipment etc. is being dispatched. They will become the ordering point for both Initial Attack and Extended Attack fires.
3. Radio Notification of **FIRE AND LAW ENFORCEMENT PERSONNEL**:
  - **Three tones** followed by “**Wildland, Structure/ Vehicle Fire reported in the vicinity of \_\_\_\_\_.**” (Include any other available information). “**The following units respond.**”
    - **LEO units.**
    - **Engine(s) with staffing level.**
    - **Duty Officer.**

After two minutes, re-contact dispatched units. “**The Following Units Responding to \_\_\_\_\_, acknowledge.**” “**First unit on-scene will be the \_(name of the location)\_ I.C.**”

  - **Two tones** followed by “Following Units responding to “**Wildland, Structure/ Vehicle can cancel and return. Following units acknowledge \_(off the dispatch log).**”
  - **One tone** followed by “**All units responding to \_\_\_\_\_ additional information \_\_\_\_\_ (give details).**”
4. Contact **Roger Wong**: 415-464-5232 (work) and or **Jordan Reeser**: 415-464-5235 (work)  
xxx-xxx-xxxx (cell) xxx-xxx-xxxx (cell)

**\*\*Duty Officer Pager Number 415-227-2943**

5. Notify Park Superintendent/ Chief Ranger/ Chief of Resource Management.
6. Information needed from **QUALIFIED** fire personnel upon arrival. (First Unit On-Scene, Initial Attack I.C.) **Prompt them if this information is not relayed to you.**
  - Specific Fire Location. (address, etc.)
  - Fire Size (acres).
  - Fuel Type.
  - Fire Behavior (smoldering, creeping, running, torching, crowning)
  - Direction of Fire Spread.
  - Values at Risk. (structures, etc.)
  - Best **SAFE** Access to the Area.
  - Request for Resources. (Type and Quantity)
  - Special Hazards (i.e. Downed powerlines, aerial hazards, Haz. Mat., etc.)

**Note:** By this time a **QUALIFIED I.C.** should be on scene, have assumed command, and should have been identified. Dispatch will make it known to all incoming and on-scene personnel an I.C. has been established, and convey similar information whenever a new person assumes command. All radio traffic should be relayed through that identified person. The I.C. will use the fire name followed by “IC” . During the incident, keep records of personnel and equipment requests and locations. **It is the understanding that Woodacre will handle all fire incidents, but request a copy of the Dispatch Log of the incident for Park records. Once obtained, send a copy of it to the FMO.**

August 24, 2006



**APPENDIX E, PART 3**

**WEATHER INFORMATION MANAGEMENT SYSTEM WALK-THROUGH  
(WIMS)**

Go to [\[not public information\]](#)

Click on WIMS

User Name: [not public information]

Password: [not public information]

Go to “fast path”, type in “didx” and hit “go”

Click on Station ID, enter date (@1730 today’s date, 0800 yesterday’s date), enter

**xxxxx = Barnabe** or enter xxxx in SIG to get all the data

xxxxx = Woodacre

xxxxx = Marin Civic Center

As stated in the Step-Up plan, **xxxxx is the first choice**. If it is not available, collect information from either of the others listed (xxxxx, xxxxx)

Scroll over to the BI column to retrieve fire danger information.

forecasted BI (OT column will be F, O = observed)

fuel model MSGC7A2A2 (grass fuels not MSGC7B2A2 = forest fuels)

**Step-Up Plan**

Low	Mod	High	Very High	Extreme
0-18	19-27	28-33	34-37	38+

Call to BVVC (5919) and dispatch (5170) before 0900.

On weekends, dispatch will retrieve info the night prior and leave a message at the VC since no fire staff is on duty and dispatch gets in at 0900.



**APPENDIX E, PART 4****NFDRS INDICES AND PARK VISITOR FIRE RESTRICTIONS****Fire Danger – How Will It Affect You?**

If the FIRE DANGER RATING is....	Is this type of use allowed??			
	Self-contained gas stoves	Park provided grills (designated picnic areas & campgrounds)	Self-contained charcoal barbecues (ex., Webers)	Beach open pit fires
<b>LOW</b>	YES	YES	YES	YES
<b>MODERATE</b>	YES	YES	YES	YES
<b>HIGH</b>	YES	YES	YES	NO
<b>VERY HIGH</b>	YES	NO	NO	NO
<b>EXTREME or RED FLAG WARNING</b>	YES	NO	NO	NO

- ✘ Fires shall at all times be maintained in a safe condition that does not threaten any person, natural or structural feature.
- ✘ Firewood gathering is prohibited.
- ✘ The possession or discharge of fireworks is prohibited.
- ✘ Never leave a fire unattended.
- ✘ Report all wildfires immediately.
- ✘ Extinguish all fires prior to departure.
- ✘ Ground fires are not permitted.
- ✘ Ask a park ranger for further information.



**APPENDIX E, PART 5.****FIRE STEP UP PLAN (SOP PR-37)**

A5639

June 30, 2005

POINT REYES STANDARD OPERATING PROCEDURE: PR-37

SUBJECT: FIRE STEP UP PLAN

The Point Reyes National Seashore fire step up plan will be in operation from approximately July 1 through November 15 each fire season. During years of unusual drought or wetness, starting and ending dates of the fire step up plan may be adjusted in writing by the Fire Management Office and approved by the Superintendent. As required in NPS Reference Manual #18, this plan will be revisited on an annual basis. Minor revisions may be made to the plan in writing during fire season if a revision better meets Seashore staffing needs. This will be determined by the Fire Management Officer and approved by the Superintendent.

The Point Reyes fire step up plan is based on the Burning Index (BI), which is one of the outputs from the National Fire Danger Rating System (NFDRS). Burning Index is defined as an estimate of potential difficulty of fire containment as it relates to the flame length at the head of a fire. For this fire step up plan, staffing levels determinations will be based on the BI in cured short annual grass (NFDRS Fuel Model A) based on weather observations from the Mount Barnabe weather station (station identification number 42308).

At approximately 0800 each day, the Point Reyes Fire Program Assistant will obtain the day's forecasted BI from the predicted NFDRS outputs from the Weather Information Management System (WIMS). On days when the Fire Program Assistant is unavailable due to prescribed burns, suppression activities, or on weekends, the Point Reyes park dispatcher will obtain the BI. If the park dispatcher is unavailable, the Visitors Center will obtain the BI from Marin County Fire Department by phone (499-6717). If there is no data available from the Mount Barnabe weather station, the BI should be obtained from observations from the Woodacre weather station (station identification number 42307). Fire danger ratings are derived based on the break down of the BI values listed below. Upon receipt of the Burning Index:

1. The Fire Program Assistant will relay the daily predicted fire danger to fire personnel, the park dispatcher, and the Visitor Center.
2. At 0900, the park dispatcher will broadcast the daily fire danger to all park personnel.
3. At 1600 the park dispatcher will announce if there will be extended staffing for red carded personnel (very high and extreme fire danger days only).

August 24, 2006

APPENDIX E – SUPPLEMENTAL INFORMATION

If fire personnel are not available to staff engines on weekends, engine staffing will be the responsibility of law enforcement personnel. Cross training on the Point Reyes fire engines will be provided to these individuals at the earliest possible convenience.

Assistance on wildfire suppression, weekends or otherwise, should be requested from Marin County Fire Department.

If you have any questions or concerns concerning this step up plan please do not hesitate to contact me.

/s/

Don L. Neubacher  
Superintendent

Attachments:  
Fire Step Up Plan

Responsible:  
Superintendent

Distribution:  
All Employees

## APPENDIX E – SUPPLEMENTAL INFORMATION

FIRE DANGER RATING: LOW  
BURNING INDEX: 0-18

1. Fire personnel will work normal tour of duty hours and are required to have their fire packs and personal protective equipment immediately available. Fire personnel will monitor pertinent radio channels throughout the day.
2. Engine Crew personnel will perform apparatus inspections by 0815. Inoperative units are to be reported to the Fire Management Office.
3. The Engine Crew, Hazard Fuels Crew, and Prescribed Fire Specialist will status themselves via the Fire Program Assistant, with Marin County Fire by 0830.
4. If a high visitation period is determined to pose exceptional human caused risk of wildland fire (e.g., 4<sup>th</sup> of July weekend), the staffing class may be moved up to level 4 at the discretion of the Fire Duty Officer (per RM-18).
5. If the predicted or observed lightning activity level (LAL) is 4, 5, or 6, the staffing class may be moved up to level 4 at the discretion of the Fire Duty Officer (per RM-18).
6. If a “Red Flag Warning” has been issued by the National Weather Service, the staffing class will be moved up to level 5.
7. The following will be implemented on a “Low Fire Danger Day”:
  - The park entrance fire sign at Bear Valley will be changed to indicate “low Fire Danger” by Engine Crew personnel.
8. At 0900, the park dispatcher will broadcast the following message on a LOW FIRE DANGER RATING DAY:

“All park personnel standby for today’s fire danger information. Today is a low fire danger day. Staffing class is 1. There are no special staffing requirements or restrictions in effect.”

## APPENDIX E – SUPPLEMENTAL INFORMATION

FIRE DANGER RATING: MODERATE

## BURNING INDEX: 19-27

1. Fire personnel will work normal tour of duty hours and are required to have their fire packs and personal protective equipment immediately available. Fire personnel will monitor pertinent radio channels throughout the day.
2. Engine Crew personnel will perform apparatus inspections by 0815. Inoperative units are to be reported to the Fire Management Office.
3. The Engine Crew, Hazard Fuels Crew, and Prescribed Fire Specialist will status themselves via the Fire Program Assistant, with Marin County Fire by 0830.
4. If a high visitation period is determined to pose exceptional human caused risk of wildland fire (e.g., 4<sup>th</sup> of July weekend), the staffing class may be moved up to level 4 at the discretion of the Fire Duty Officer (per RM-18).
5. If the predicted or observed lightning activity level (LAL) is 4, 5, or 6, the staffing class may be moved up to level 4 at the discretion of the Fire Duty Officer (per RM-18).
6. If a “Red Flag Warning” has been issued by the National Weather Service, the staffing class will be moved up to level 5.
7. The following will be implemented on a “Moderate Fire Danger Day”:
  - The park entrance fire sign at Bear Valley will be changed to indicate “Moderate Fire Danger” by Engine Crew personnel.
8. At 0900, the park dispatcher will broadcast the following message on a MODERATE FIRE DANGER RATING DAY:

“All park personnel standby for today’s fire danger information. Today is a moderate fire danger day. Staffing class is 2. There are no special staffing requirements or restrictions in effect.”

## APPENDIX E – SUPPLEMENTAL INFORMATION

FIRE DANGER RATING: HIGH  
BURNING INDEX: 28-33

1. Fire personnel will work normal tour of duty hours and are required to have their fire packs and personal protective equipment immediately available. Fire personnel will monitor pertinent radio channels throughout the day.
2. Engine Crew personnel will perform apparatus inspections by 0815. Inoperative units are to be reported to the Fire Management Office.
3. The Engine Crew, Hazard Fuels Crew, and Prescribed Fire Specialist will status themselves via the Fire Program Assistant, with Marin County Fire by 0830.
4. If a high visitation period is determined to pose exceptional human caused risk of wildland fire (e.g., 4<sup>th</sup> of July weekend), the staffing class may be moved up to level 4 at the discretion of the Fire Duty Officer (per RM-18).
5. If the predicted or observed lightning activity level (LAL) is 4, 5, or 6, the staffing class may be moved up to level 4 at the discretion of the Fire Duty Officer (per RM-18).
6. If a “Red Flag Warning” has been issued by the National Weather Service, the staffing class will be moved up to level 5.
7. The following will be implemented on a “High Fire Danger Day”:
  - The park entrance fire sign at Bear Valley will be changed to indicate “High Fire Danger” by Engine Crew personnel.
  - High Fire Danger signs are to be posted by Engine Crew personnel on Bear Valley Road just west of the Highway One intersection, on Limantour Road just south of the Bear Valley intersection, and on Sir Francis Drake mid-way up Ottinger Hill.
  - Engine Crew personnel will flip down the “High Fire Danger – No Fires” signs on Highway One south of Olema, at Stewart’s Horse Camp, at the bottom of Drakes View Drive in Inverness Park, and at the Palomarin trailhead. (Point Reyes Bird Observatory can be contacted at 868-0655 to flip down the Palomarin sign.)

APPENDIX E – SUPPLEMENTAL INFORMATION

- All beach fires will be banned within the Seashore. All other previously issued beach fire permits become null and void. Only self-contained gas stoves, self-contained charcoal barbecues (such as Webers) and the park-provided cooking grills will be permitted at designated campgrounds and picnic areas. Law Enforcement personnel will post any “No Fires” signs at campgrounds, trailheads, and appropriate beaches.

8. At 0900, the park dispatcher will broadcast the following message on a HIGH FIRE DANGER RATING DAY:

“All park personnel standby for today’s fire danger information. Today is a high fire danger day. Staffing class is 3. There are no special staffing requirements in effect.

All beach fires are banned within the Seashore. Only self-contained gas stoves, self-contained charcoal barbecues (such as Webers) and the park-provided cooking grills are allowed in designated campgrounds and picnic areas.”

## APPENDIX E – SUPPLEMENTAL INFORMATION

FIRE DANGER RATING: VERY HIGH  
BURNING INDEX: 34-37

1. Fire personnel will work normal tour of duty hours and are required to have their fire packs and personal protective equipment immediately available. Fire personnel will monitor pertinent radio channels throughout the day. Extended staffing of fire and other park red carded personnel will be determined by the Fire Duty Officer and relayed to the park dispatcher by 1600. Extended staffing will generally be until the end of the burning period, but can be modified at the discretion of the Fire Duty Officer. Funding for extended staffing will be established through the appropriate emergency account.
2. Red carded personnel from non-fire divisions working extended hours may be expected to report to either the Hagmaier Work Center or the Headquarters Fire Cache (check with the Fire Duty Officer) by 1645. (On duty Law Enforcement personnel are exempt from this requirement.) Personnel will be required to wear fire boots and Nomex, and have their fire packs and personal protective equipment with them.
3. Engine Crew personnel will perform apparatus inspections by 0815. Inoperative units are to be reported to the Fire Management Office.
4. The Engine Crew, Hazard Fuels Crew, and Prescribed Fire Specialist will status themselves via the Fire Program Assistant, with Marin County Fire by 0830.
5. If a “Red Flag Warning” has been issued by the National Weather Service, the staffing class will be moved up to level 5.
6. If the lightning activity level is observed at 4, 5, or 6, Fire Management will contact Marin County Fire to determine if either the Mount Barnabe or Mount Tamalpais lookouts have observed any smokes on park land. Engine Crew personnel will patrol for smokes at least once during the day or more often if determined by the Fire Duty Officer. Additional detection patrols may be requested from Law Enforcement personnel.
7. The following will be implemented on a “Very High Fire Danger Day”:
  - The park entrance fire sign at Bear Valley will be changed to indicate “High Fire Danger” by Engine Crew personnel.
  - High Fire Danger signs are to be posted by Engine Crew personnel on Bear Valley Road just west of the Highway One intersection, on Limantour Road just south of the Bear Valley intersection, and on Sir Francis Drake mid-way up Ottinger Hill.
  - Engine Crew personnel will flip down the “High Fire Danger – No Fires” signs on Highway One south of Olema, at Stewart’s Horse Camp, at the bottom of Drakes View Drive in Inverness Park, and at the Palomarin trailhead. (Point Reyes Bird Observatory can be contacted at 868-0655 to flip down the Palomarin sign.)
  - All fires will be banned within the Seashore. All other previously issued beach fire permits become null and void. Only self-contained gas stoves will be permitted at

APPENDIX E – SUPPLEMENTAL INFORMATION

designated campgrounds and picnic areas. Law Enforcement personnel will post any “No Fires” signs at campgrounds, trailheads, and appropriate beaches.

8. At 0900, the park dispatcher will broadcast the following message on a VERY HIGH FIRE DANGER RATING DAY:

“All park personnel standby for today’s fire danger information. Today is a very high fire danger day. Staffing class is 4.

All fire personnel and red carded Law Enforcement personnel are required to have their fire packs and personal protective equipment immediately available. Other park red carded personnel who are available for extended staffing should contact the Fire Duty Officer by 1400.

All fires, including charcoal fires, are banned within the Seashore. Only self-contained gas stoves are allowed in designated campgrounds and picnic areas.”

9. At 1600, the park dispatcher will be broadcast the following message if there is to be extended staffing:

“All park personnel standby for a fire staffing announcement. There will be extended staffing for red carded employees until \_\_\_\_\_ hours. All non-fire personnel must have authorization from their supervisor prior to working extended hours. Red carded employees working extended hours will report to their assigned work place by 1645. Employees will be need to be wearing boots and Nomex and have their fire packs and personal protective equipment with them.”

## APPENDIX E – SUPPLEMENTAL INFORMATION

FIRE DANGER RATING: EXTREME  
BURNING INDEX: 38+

or a

**RED FLAG WARNING**

has been issued by the National Weather Service

1. Fire personnel will work normal tour of duty hours and are required to have their fire packs and personal protective equipment immediately available. Fire personnel will monitor pertinent radio channels throughout the day. Extended staffing of fire and other park red carded personnel will be determined by the Fire Duty Officer and relayed to the park dispatcher by 1600. Extended staffing will generally be until the end of the burning period, but can be modified at the discretion of the Fire Duty Officer. Funding for extended staffing will be established through the appropriate emergency account.
2. Red carded personnel from non-fire divisions working extended hours may be expected to report to either the Hagmaier Work Center or the Headquarters Fire Cache (check with the Fire Duty Officer) by 1645. (On-duty Law Enforcement personnel are exempt from this requirement.) Personnel will be required to wear fire boots and Nomex, and have their fire packs and personal protective equipment with them.
3. Engine Crew personnel will perform apparatus inspections by 0815. Inoperative units are to be reported to the Fire Management Office.
4. The Engine Crew, Hazard Fuels Crew, and Prescribed Fire Specialist will status themselves via the Fire Program Assistant, with Marin County Fire by 0830.
5. The Fire Duty Officer may request additional red-carded employees to staff apparatus with a minimum two of individuals.
6. Fire personnel will generally restrict their activities to station maintenance or other duties where they can meet a rapid response time. Physical fitness training will be cancelled for the day. Hazard Fuel Crew personnel will be available to staff engines as requested.
7. If the lightning activity level is observed at 4, 5, or 6, Fire Management will contact Marin County Fire to determine if either the Mount Barnabe or Mount Tamalpais lookouts have observed any smokes on park land. Engine Crew personnel will patrol for smokes at least once during the day or more often if determined by the Fire Duty Officer. Additional detection patrols may be requested from Law Enforcement personnel.
8. The following will be implemented on an “Extreme Fire Danger or Red Flag Day”:
  - The park entrance fire sign at Bear Valley will be changed to indicate “Extreme Fire Danger” by Engine Crew personnel.
  - Extreme Fire Danger signs are to be posted by Engine Crew personnel on Bear Valley Road just west of the Highway One intersection, on Limantour Road just south of the Bear Valley intersection, and on Sir Francis Drake mid-way up Ottinger Hill.

## APPENDIX E – SUPPLEMENTAL INFORMATION

- Engine Crew personnel will flip down the “High Fire Danger – No Fires” signs on Highway One south of Olema, at Stewart’s Horse Camp, at the bottom of Drakes View Drive in Inverness Park, and at the Palomarin trailhead. (Point Reyes Bird Observatory can be contacted at 868-0655 to flip down the Palomarin sign.)
- All fires will be banned within the Seashore. All other previously issued beach fire permits become null and void. Only self-contained gas stoves will be permitted at designated campgrounds and picnic areas. Law Enforcement personnel will post any “No Fires” signs at campgrounds, trailheads, and appropriate beaches.
- The Mount Vision Road will be closed to vehicle traffic. North District Rangers will implement the closure.
- Park employees will not use equipment such as chain saws, lawn mowers, weed eaters, welders, and other potential ignition sources outside of developed areas in the park. Developed areas are defined as areas where defensible space (30 foot clearance of vegetation) has been established. Exemptions to this must have mitigation measures in place pre-approved by the Fire Duty Officer and the Superintendent.
- A press release will be prepared and faxed to local media outlining the Seashore’s extreme fire danger and/or red flag warning status. On weekdays, the Interpretative Division will be responsible for the press release; on weekends the park dispatcher will be responsible.

9. At 0900, the park dispatcher will broadcast the following message on an EXTREME FIRE DANGER RATING and/or RED FLAG DAY:

“All park personnel standby for today’s fire danger information. Today is an extreme fire danger day (or red flag warning day or both, whichever it is). Staffing class is 5.

All fire personnel and red carded Law Enforcement personnel are required to have their fire packs and personal protective equipment immediately available. Other park red carded personnel who are available for extended staffing should contact the Fire Duty Officer by 1400.

All fires, including charcoal fires, are banned within the Seashore. Only self-contained gas stoves are allowed in designated campgrounds and picnic areas.

All park personnel are to refrain from activities such as welding or using chain saws or weed eaters outside of developed areas in the park.”

10. At 1600, the park dispatcher will be broadcast the following message if there is to be extended staffing:

“All park personnel standby for a fire staffing announcement. There will be extended staffing for red carded employees until \_\_\_\_\_ hours. All non-fire personnel must have authorization from their supervisor prior to working extended hours. Red-carded employees working extended hours will report to their assigned work place by 1645. Employees will be need to be wearing boots and Nomex and have their fire packs and personal protective equipment with them.”

**APPENDIX E, PART 6 -- BAY AREA NETWORK PARTS POCKETCARD**

**FIRE DANGER -- Bay Area Nat'l Parks**  
Maximum, Average, and 90th Percentile

**Fire Danger Area:**

- Bay Area National Parks
- Golden Gate & Pt. Reyes
- Bay Area Weather Stations

**Fire Danger Interpretation:**

**EXTREME** -- Use extreme caution  
**(Caution)** -- Watch for change  
**Moderate** -- Lower Potential, but always be aware

**Maximum** -- Highest Burning Index by day for 1981 - 2000  
**Average** -- shows peak fire season  
**90th Percentile** -- Only 10% of the days from 1981 - 2000 had an Burning Index above 28

**Local Thresholds - Watch out:** Combinations of any of these factors can greatly increase fire behavior:  
**20' Wind Speed** over 15 mph, **RH** less than 25%,  
**Temperature** over 80

**Years to Remember: 1982 1995**

**VISION \***  
**OLEMA WHITE GULT \***

**Remember what Fire Danger tells you:**

- ✓ Burning Index gives day-to-day fluctuations calculated from 2 pm temperature, humidity, wind, daily temperature & rh ranges, and precip duration.
- ✓ Wind is part of BI calculation.
- ✓ Watch local conditions and variations across the landscape -- Fuel, Weather, Topography.
- ✓ Listen to weather forecasts -- especially WIND.

**Past Experience:**  
 Fire Danger for the Bay Area National Parks- Golden Gate NRA and Pt. Reyes 1981-2000

Developed by NAGFDR--National Advisory Group for Fire Danger Rating



## **APPENDIX E, PART 7, DELEGATION FOR PARK FMO FROM SUPERINTENT PRNS**



### **United States Department of the Interior**

NATIONAL PARK SERVICE

Point Reyes National Seashore

Point Reyes Station, California 94956

#### **DELEGATION FOR PARK FIRE MANAGEMENT OFFICER FROM PARK SUPERINTENDENT, POINT REYES NATIONAL SEASHORE**

THE FIRE MANAGEMENT OFFICER FOR POINT REYES NATIONAL SEASHORE (INCLUDING NORTH DISTRICT LANDS – GOLDEN GATE NATIONAL RECREATION AREA) IS DELEGATED AUTHORITY TO ACT ON MY BEHALF FOR THE FOLLOWING DUTIES AND ACTIONS:

- PROVIDE DIRECTION, SUPERVISION AND LEADERSHIP TO THE PARK FIRE OPERATIONS STAFF OUTLINED IN THE ATTACHED ORGANIZATION CHART.
- COORDINATE WITH AND PROVIDE TIMELY AND ACCURATE REPORTS TO CHIEF RANGER ON ALL ACTIVITIES OF FIRE OPERATIONS PERSONNEL.
- RESPONSIBLE FOR FIRE BUDGET COORDINATION AND OVERSIGHT TO ASSURE THE FISCAL GUIDELINES ARE ADHERED TO WITHIN PARK FUNDING CRITERIA.
- ASSURE PERSONNEL PARTICIPATING IN PRESCRIBED FIRE AND WILDFIRE OPERATIONS ARE FULLY QUALIFIED.
- REQUEST AND OVERSEE DISTRIBUTION OF PREPAREDNESS, SEVERITY AND HAZARDOUS FUELS FUNDING FOR PARK FIRE OPERATIONS.
- ENSURE ALL PARK FIRE INCIDENTS ARE MANAGED IN A SAFE AND COST-EFFECTIVE MANNER.
- OVERSEE THE RECRUITMENT AND HIRING OF PARK FIRE OPERATIONS PERSONNEL.
- RESPONSIBLE FOR REPRESENTING POINT REYES NATIONAL SEASHORE IN ALL MATTERS RELATED TO THE WILDLAND AND PRESCRIBED FIRE MANAGEMENT WITH LOCAL COOPERATORS AND THE NORTHERN CALIFORNIA GEOGRAPHICAL AREA.

APPENDIX E – SUPPLEMENTAL INFORMATION

- COORDINATE PARK FIRE PREVENTION ACTIVITIES WITH THE CHIEF OF INTERPRETATION, CHIEF OF RESOURCE MANGEMENT, AND ASSIST WITH APPROPRIATE PROGRAM DIRECTION AND GUIDANCE.
- PROVIDE FOR MANAGEMENT OF PROPERTY RECORDS FOR EQUIPMENT AND SUPPLIES PURCHASED WITH PROGRAM ALLOCATIONS.
- COORDINATE, PREPOSITION, SEND AND ORDER FIRE AND AVIATION RESOURCES IN RESPONSE TO CURRENT AND ANTICIPATED PARK, REGIONAL AND NATIONAL FIRE CONDITIONS.
- HIRE EMERGENCY FIREFIGHTERS IN ACCORDANCE WITH DEPARTMENT OF INTERIOR “PAY PLAN FOR EMERGENCY WORKERS.”
- MANAGE INCIDENT QUALIFICATIONS CERTIFICATION SYSTEM AND CERTIFY INCIDENT QUALIFICATION CARDS WITHIN THE PARK.
- ENSURE STAFF MEMBERS ARE TRAINED IN PARK SAFETY PROGRAM. CREATE AWARENESS THAT PUBLIC AND FIREFIGHTER SAFETY IS THE FIRST PRIORITY IN ANY FIRE ACTIVITY.

---

DON L. NEUBACHER  
PARK SUPERINTENDENT, POINT REYES NATIONAL SEASHORE

**APPENDIX E, PART 8**

2006-2007  
PRESEASON WILDLAND FIRE SUPPRESSION PLAN  
FOR  
POINT REYES NATIONAL SEASHORE AND  
GOLDEN GATE NATIONAL RECREATION AREA

**PARTICIPANTS:**

Bolinas Fire Protection District  
Inverness Fire Department  
Marin County Fire Department  
Stinson Beach Fire Department  
Muir Beach Fire Department  
Presidio Fire Department  
Southern Marin Fire Department

**PURPOSE:**

This plan is to facilitate the joint use of resources and identify areas of concern in the suppression of wildfires for the 2006 fire season.

**AREA DESCRIPTION:**

This plan covers National Park Service lands located with Marin County including Point Reyes National Seashore and Golden Gate National Recreation Area.

**SUPPRESSION TACTICS:**

The National Park Service priorities in the suppression of wildfires are the protection of life, property, and natural/cultural resources. In carrying out these priorities, the National Park Service is dedicated to minimize the impacts of fire suppression activities on its lands. **Minimum Impact Suppression Tactics** will be used whenever possible on all park lands. (See Appendix "A") **The Park Superintendent or his/her representative must approve the use of bulldozers, and only after all other tactics have been considered.**

**SPECIAL PROTECTION AREAS:**

Special Protection Areas include: Muir Woods National Monument, Philip Burton Wilderness (PRNSS), historic buildings, and habitat of federally listed plants and animals. It is important that the wildland fire suppression tactics implemented limit the impacts on these features.

\*A National Park Service Resource Advisor will be made available to help guide decision-making on all wildland fires occurring on federal lands.

**PROTECTION ORGANIZATION:**

The Incident Command System (I.C.S.) will be used on all fires located on National Park Service lands. A "**Unified Command**" structure will be established on all fires located

## APPENDIX E – SUPPLEMENTAL INFORMATION

on or threatening National Park Service lands and on fires with multiple jurisdictions. Each agency involved will provide a person capable of assuming the I.C. (Incident Commander) or Deputy I.C. responsibility. In the event that the National Park Service does not have a qualified incident commander on the fire, the I.C. position will be assumed by Marin County Fire and the National Park Service will provide an Agency Representative. A National Park Service representative must be requested for all wildfires burning on National Park Service lands **immediately after dispatch of initial attack resources.**

If a fire on National Park Service lands goes beyond extended attack, an incident management team will be ordered. **The National Park Service preference is that a federal interagency incident management team (I.M.T.) be ordered. No I.M.T. will assume command unless a Delegation of Authority has been signed and issued by the Park Superintendent, or his/ her representative.**

Prior to the beginning of fire season, each agency shall have the opportunity to update this plan, including boundary changes, telephone lists, common communication frequencies and designated persons.

**PROCEDURES:**

It is anticipated that there will be "RED FLAG" days during the year. The Fire Management Office will normally obtain notification of "RED FLAG" days daily directly from the National Weather Service web site. To ensure "RED FLAG" days are promptly notified, Marin County Fire will also notify the National Park Service of any predicted "RED FLAG" days. This notification will be done by Marin County Fire Dispatch faxing the daily fire danger rating and weather predictions to 415-331-6942 and to 415-663-8132 and 415-663-5182. On those days the Golden Gate Fire Management Office will notify Marin County and GGNRA Dispatch 415-561-5510 of any restrictions or closures at Golden Gate. The Point Reyes Fire Management Office will report restrictions or closures to Marin County and Point Reyes N.S. Dispatch 415-464-5170.

**FIRE REPORTING:**

Any wildfire occurring on lands identified in this plan will be immediately reported to Marin County Fire Department (415) 499-6717. Marin County Fire Department will immediately notify GGNRA Dispatch (415) 561-5656, or Point Reyes National Seashore Dispatch 415-464-5170 of any fires on respective National Park Service lands. GGNRA Dispatch will notify the Fire Management Officer Alex Naar at (415) 331-6374 (work), (xxx) xxx-xxxx(cell/pager), (xxx) xxx-xxxx(residence), or during work hours by radio call number "xxxx". Point Reyes National Seashore Dispatch will notify the Point Reyes Fire Management Officer Roger Wong at (415) 464-5232 (work), (xxx) xxx-xxxx (pager), (xxx) xxx-xxxx (cell), (xxx) xxx-xxxx (residence), or during working hours by radio call number "Seashore xxx" OR Fuels Management Specialist Jordan Reeser (Seashore xxx) at (415) 464-5235 (work), (xxx) xxx-xxxx (cell), (xxx) xxx-xxxx (residence). **In the event Marin County Fire Department is unable to reach a National Park Service Dispatcher, all attempts will be made to contact the Fire Management Officer directly. This is especially critical during after work hours.**

**WILDLAND FIRE INVESTIGATIONS:**

Marin County Fire Department will be the lead agency in providing for the investigation of all Wildland fires on National Park Service lands.

**RESTRICTIONS AND CLOSURES:**

Point Reyes National Seashore: There are no blanket fire restrictions at PRNSS. Fire restrictions and closures at PRNSS are based upon daily Fire Danger ratings obtained from the Burn Index (BI) calculated from Barnabe RAWS (WIMS ID #42308). See attached Fire Danger Rating Adjectives and associated campfire restrictions.

Golden Gate National Recreation Area: Fires are not permitted within the GGNRA except at Kirby Cove camping area, Battery Alexander camping area, and at Muir Beach. Any change in this policy will be communicated to Marin County Fire Department.

**SHARING OF EQUIPMENT/RESOURCES/REIMBURSEMENT:**

**Marin County Fire Department will be the single ordering point for resources requested for initial fires burning on National Park Service lands.** Each agency will provide resources as requested, provided such sharing does not impact the sending agency's ability to meet its protection obligations. Reimbursement shall be agreed upon in MOUs. If an incident extends longer than 24 hours on National Park Service lands the ordering point will be transferred to Mendocino National Forest.

**RESOURCE AVAILABILITY**

The following resources are available for initial attack at PRNSS area:

- (1) 5 person hand crew.
- (1) 3 person Type 3 Engine.
- (1) Type III I.C. Trainee. Jordan Reeser, Fuels Specialist
- (3) Type IV ICs. Roger Wong, Fire Management Officer  
Jon Haag, Engine Captain  
Bill Yohn, Fire Management Specialist

The following resources are available for initial attack at GGNRA Area:

- (1) 4 person Type 6 Engine.
- (1) Type IV I.C. Greg Jones, Engine Captain
- (1) Type III Information Officer Trainee. Mark Grupe'

The following resources are available for initial attack from Marin County Fire Dept.

- (1) Battalion Chief IA
- (6) Type III Engines IA (High Dispatch)/(4) Type III Engines IA (Medium Dispatch)
- (1) Bulldozer IA
- (2) Water Tender IA
- (1) 12 Person Crew

The following resources are available for initial attack Local Government:

- (1) Battalion Chief
- (1) Type III Engine IA, (6) more on request.
- (2) Water Tenders

APPENDIX E – SUPPLEMENTAL INFORMATION

The following resources are available for initial attack CDF:

- (1) Agency Rep.
- (1) Air Tactical (CDF Air Attack 140 – Sonoma)
- (2) Air Tankers (CDF Airtanker 86 & 85 – Sonoma)
- (1) Helicopter (CDF Copter 104 – Boggs Mountain)
- (2) Type 1 State Hand Crews (Delta Conservation Camp)

Point Reyes Fire Management and GGNRA Fire Management will submit a daily fax to Marin County Fire Department with the availability of the above resources beginning June 26, 2006.

**COMMUNICATIONS:**

Radio Frequencies:	TX Freq.	Tone	RX Freq.	Tone
Fed Travel	xxx.xxx		xxx.xxx	
NIFC TAC 1	xxx.xxx		xxx.xxx	
NIFC TAC 2	xxx.xxx		xxx.xxx	
NIFC TAC 3	xxx.xxx		xxx.xxx	
Fed Shared Use 1	xxx.xxx		xxx.xxx	
Fed Shared Use 2	xxx.xxx		xxx.xxx	
Fed Air to Ground	xxx.xxx		xxx.xxx	
Point Reyes Direct	xxx.xxx	xxx.x	xxx.xxx	
Point Reyes Barnabe Repeat	xxx.xxx	xxx.x	xxx.xxx	xxx.x
Point Reyes Lighthouse Repeat	xxx.xxx	xxx.x	xxx.xxx	xxx.x
White Fire 1	xxx.xxx		xxx.xxx	
White Fire 2	xxx.xxx		xxx.xxx	
White Fire 3	xxx.xxx		xxx.xxx	
Blue Air	xxx.xxx		xxx.xxx	
Green Air	xxx.xxx		xxx.xxx	
Yellow Air	xxx.xxx		xxx.xxx	
Marin County Fire	xx.xx			
	xx.xx – Control 13			
	x			
	x			
	xx.xx – Control 6			
CALCORD	xxx.xxx		xxx.xxx	

APPENDIX E – SUPPLEMENTAL INFORMATION

**TELEPHONE NUMBERS: (all area codes are 415)**

Golden Gate Fire Management Office	331-6374	
Golden Gate Fire Management Officer	331-6374,	xxx-xxxx(cell), xxx-xxxx(H)
Golden Gate Fire Management Office FAX	331-6942	
Golden Gate Engine Crew	331-6374,	xxx-xxxx(cell)
Golden Gate Dispatch	561-5510	
Presidio Fire Department	561-5135	
Presidio Fire Department FAX	561-4222	
Point Reyes Dispatch	464-5170	
Point Reyes Fire Management Office	464-5233	
Point Reyes Dispatch FAX	464-5182	
Point Reyes Fuels Specialist	464-5235	
Point Reyes Fuels Crew	464-5251	
Point Reyes Engine Crew	464-5252	
Marin County Fire Department	499-6717	
Bolinas Fire Protection District	868-1566	
Inverness Fire Department	669-7151	
Mill Valley Fire Department	388-4231	
Muir Beach Fire Department	380-9627	
Stinson Beach Fire Department	868-0622	
Southern Marin Fire Department	380-1100	

APPENDIX E – SUPPLEMENTAL INFORMATION

PRESEASON WILDLAND FIRE SUPPRESSION PLAN  
2006-2007  
OPERATING PLAN

MARIN COUNTY FIRE DEPARTMENT  
POINT REYES NATIONAL SEASHORE  
GOLDEN GATE NATIONAL RECREATION AREA

This Operating Plan has been approved by the following COUNTY and FEDERAL administrators and is authorized as an attachment to the PLAN.

---

Ken Massucco, Fire Chief  
Marin County Fire Department

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Alex Naar, FMO  
Golden Gate National Recreation Area

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Roger Wong, FMO  
Point Reyes National Seashore

APPENDIX E – SUPPLEMENTAL INFORMATION

**APPENDIX E, PART 9 – MARIN EMERGENCY RADIO AUTHORITY (MERA) RADIO TALK GROUP MATRIX**

		MARIN EMERGENCY RADIO AUTHORITY (MERA) RADIO TALK GROUP MATRIX														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
<b>A</b>	FD DSP Fire Dispatch	EMS EMS Dispatch	HOSP All Hospitals	MGH 1 Consult	MGH 2 Report	KSR 1 Consult	KSR 2 Report	NCH 1 Consult	NCH 2 Report	EMS 10 EMS Tactical	LG CLL Local Gvt Call	LG TLK Local Gvt Talk	PD CLL Police Call	PD TLK Police Talk	KNOX Knox box	911 Emergency
<b>B</b>	FD DSP Fire Dispatch	FDCNV1 Fire Car-to-car	FDCNV2 Fire Car-to-car	CPW 1 Marin Co. DPW	NPW 1 Novato DPW	SRPW 1 San Rafael DPW	CMPW Crite Madera DPW	LPW Larkspur DPW	RPW Ross DPW	SAPW San Anselmo DPW	FPW Fairfax DPW	SPW Sausalito DPW	MVPW Mill Valley DPW	TPW Tiburon DPW	BPW Belvedere DPW	911 Emergency
<b>C</b>	FD DSP Fire Dispatch	IC CLL ICS Call	ICS 3 ICS Tactical	ICS 4 ICS Tactical	ICS 5 ICS Tactical	ICS 6 ICS Tactical	ICS 7 ICS Tactical	ICS 8 ICS Tactical	ICS 9 ICS Tactical	ICS 10 ICS Tactical	ICS 11 ICS Tactical	ICS 12 ICS Tactical	ICS 13 ICS Tactical	ICS 14 ICS Tactical	ICS 15 ICS Tactical	911 Emergency
<b>D</b>	FD DSP Fire Dispatch	CTL D2 Novato Control	CTL D3 Novato Control	TAC D4 Fire Tactical	CMD D5 Fire Command	TAC D6 Fire Tactical	NV CMD Novato Command	TAC D8 Fire Tactical	TAC D9 Fire Tactical	NP Novato PD Dispatch	NP2 Novato PD Dispatch	NP T1 NPD Tac	FD CLL FD CLL	FD TLK FD TLK	NF AD	911 Emergency
<b>E</b>	FD DSP Fire Dispatch	CTL E2 San Rafael Control	CTL E3 San Rafael Control	TAC E4 Fire Tactical	CMD E5 Fire Command	TAC E6 Fire Tactical	SR CMD SR Command	TAC E8 Fire Tactical	TAC E9 Fire Tactical	SRP SRPD Dispatch	JL CLL Jail Call	COURT Marin SO Courts	FD CLL FD CLL	FD TLK FD TLK	SRF AD	911 Emergency
<b>F</b>	FD DSP Fire Dispatch	CTL F2 Central Control	CTL F3 Central Control	TAC F4 Fire Tactical	CMD F5 Fire Command	TAC F6 Fire Tactical	CA CMD Central Command	TAC F8 Fire Tactical	TAC F9 Fire Tactical	TCP TCPD Dispatch	SAP SAPD Dispatch	FP FPD Dispatch	FD CLL FD CLL	FD TLK FD TLK	CAF AD	911 Emergency
<b>G</b>	FD DSP Fire Dispatch	CTL G2 Southern Control	CTL G3 Southern Control	TAC G4 Fire Tactical	CMD G5 Fire Command	TAC G6 Fire Tactical	SA CMD Southern Command	TAC G8 Fire Tactical	TAC G9 Fire Tactical	SMP SMPD Dispatch	GNRA Golden Gate NRA	CHP CHP Dispatch	FD CLL FD CLL	FD TLK FD TLK	SAF AD	911 Emergency
<b>H</b>	FD DSP Fire Dispatch	CTL H2 Woodacre Control	CTL H3 Woodacre Control	TAC H4 Fire Tactical	CMD H5 Fire Command	TAC H6 Fire Tactical	WS CMD Western Command	TAC H8 Fire Tactical	TAC H9 Fire Tactical	SO Marin SO Dispatch	MMWD Marin Water	FD INF (Weather)	FD CLL FD CLL	FD TLK FD TLK	WSF AD	911 Emergency
<b>I</b>	FD DSP Fire Dispatch	EVNT 2 Special Events	EVNT 3 Special Events	EVNT 4 Special Events	EVNT 5 Special Events	EVNT 6 Special Events	EVNT 7 Special Events	EVNT 8 Special Events	EVNT 9 Special Events	PO MAC	EOC Emerg. Ops Center	OES County OES	CPR RG County Pk Rangers	OSD Open Space Dist.	NP T2 NPD Tac	911 Emergency
<b>M</b>	FD DSP Fire Dispatch	USAR M2	USAR M3	USAR M4	USAR M5	ICS 6 ICS Tactical	ICS 7 ICS Tactical	ICS 8 ICS Tactical	ICS 9 ICS Tactical	ICS 10 ICS Tactical	SAR 1 Search & Rescue	SAR 2 Search & Rescue	SAR 3 Search & Rescue	BAY CR Bay Cor Repeater	BAY CD Bay Cor Direct	911 Emergency



**APPENDIX E, PART 10, MINIMUM IMPACT SUPPRESSION TACTICS.  
MINIMUM IMPACT SUPPRESSION TACTICS (MIST)  
GUIDELINES**

TABLE OF CONTENTS

Concept ..... E-32

Goal..... E-33

Suppression Responsibility ..... E-33

    Initial/Extended Attack..... E-33

        Incident Commander..... E-33

    Project Fire ..... E-33

        Type I/II Incident Commander..... E-33

        Responsible Line Officer ..... E-33

        Resource Advisor..... E-33

Implementation Guidelines..... E-34

    Hot-Line/Ground Fuels ..... E-34

    Hot-Line/Aerial Fuels..... E-34

    Mop-up/Ground Fuels..... E-34

    Mop-up/Aerial Fuels ..... E-35

Logistics ..... E-35

    Campsite Considerations ..... E-35

    Personal Camp Conduct ..... E-36

Aviation Management..... E-37

    Aviation Use Guidelines ..... E-37

    Retardant Use ..... E-37

Hazardous Materials ..... E-38

    Flammable/Combustible Liquids..... E-38

    Flammable Solids..... E-38

    Fire Retardant/Foaming Agents..... E-38

    Fire Rehabilitation..... E-38

    Rehabilitation Guidelines..... E-38

Demobilization..... E-40

Post-Fire Evaluation..... E-40

    Data Collect/Document/Recommend ..... E-40

    Post-Fire Evaluation Report ..... E-40

Standard Fire Order ..... E-41

Watch Out Situations..... E-41

## APPENDIX E – SUPPLEMENTAL INFORMATION

**CONCEPT**

The concept of Minimum Impact Suppression Tactics (MIST) is to use the minimum amount of forces necessary to effectively achieve the fire management protection objectives consistent with land and resource management objectives. It implies a greater sensitivity to the impacts of suppression tactics and their long-term effects when determining how to implement an appropriate suppression response. In some cases MIST may indicate cold trailing or wet line may be more appropriate than constructed hand line. In another example, the use of an excavator may be used rather than a dozer. Individual determinations will be dependent on the specific situation and circumstances of each fire.

MIST is not intended to represent a separate or distinct classification of firefighting tactics but rather a mind set of how to suppress a wildfire while minimizing the long-term effects of the suppression action. When the term MIST is used in this document it reflects the above principle.

Suppression actions on all wildfires within PRNS protected wilderness will be those having a minimum impact on the physical resources associated with each site. In so doing, the principle of fighting fire aggressively but providing for safety first will not be compromised.

The key challenge to the line officer, fire manager and firefighter is to be able to select the wildfire suppression tactics that are appropriate given the fire's probable or potential behavior. The guiding principle is always least cost plus loss while meeting land and resource management objectives. It is the second part of this statement which must be recognized more than it has in the past. Appreciation of the values associated with wilderness has been more difficult to articulate but, nevertheless, are important. As this recognition emerges, actions must be modified to accommodate a new awareness of them.

These actions, or MIST, may result in an increase in the amount of time spent watching, rather than disturbing, a dying fire to insure it does not rise again. They may also involve additional rehabilitation measures on the site that were not previously carried out.

When selecting an appropriate suppression response, firefighter safety must remain the highest concern. In addition, fire managers must be assured the planned actions will be effective and will remain effective over the expected duration of the fire.

## GOAL

The goal of MIST is to halt or delay fire spread in order to maintain the fire within predetermined parameters while producing the least possible impact on the resource being protected. These parameters are represented by the initial attack incident commander's size-up of the situation in the case of a new start or by the escaped fire situation analysis (EFSA) in case of an escaped fire.

It is important to consider probable rehabilitation need as a part of selecting the appropriate suppression response. Tactics that reduce the need for rehab are preferred whenever feasible.

## SUPPRESSION RESPONSIBILITY

As stated previously, safety is the highest priority. All action will be anchored to the standard fire orders and watch out situations. Safety will remain the responsibility of each person involved with the incident.

### Initial/Extended Attack

Incident Commander – To understand and carry out an appropriate suppression response, which will best meet the land management objectives of the area at the least cost plus loss. Insure all forces used on the fire understand the plan for suppressing the fire in conjunction with MIST.

Keep in communication with responsible fire management or line officer to insure understanding and support of tactics being used on the fire. Evaluate and provide feedback as to the tactical effectiveness during and after fire incident.

### Project Fire

Type 1/ Type 2 Incident Commander – To carry out instructions given by the responsible line officer both verbally and through the WFSA. Establish and nurture a close dialogue with the resource advisors assigned to the fire team. Review actions on site and evaluate for compliance with land line officer direction and effectiveness at meeting fire management protection objectives.

Responsible Line Officer –transmits the land management objectives of the fire area to the fire team and to define specific fire management protection objectives. Periodically review for compliance.

Resource Advisor – To insure the interpretation and implementation of WFSA and other oral or written line officer direction is adequately carried out. Provide specific direction and guidelines as needed. Participate at fire team planning sessions, review incident action plans and attend daily briefings to emphasize resource concerns and management's expectations. Provide assistance in updating WFSA when necessary. Participate in incident management team debriefing and assist in evaluation of team performance related to MIST.

## APPENDIX E – SUPPLEMENTAL INFORMATION

**IMPLEMENTATION GUIDELINES**

Following is a list of considerations for each fire situation.

**Hot-Line/Ground Fuels**

- Allow fire to burn to natural barriers.
- Use cold-trail, wet line or combination when appropriate.
- If constructed fire line is necessary, use only width and depth to check fire spread.
- Burn out and use low impact tools like swatter or 'gunny' sack.
- Minimize bucking and cutting of trees to establish fire line; build line around logs when possible.
- Use alternative mechanized equipment such as excavators, rubber tired skidders, etc. rather than tracked vehicles. Use high pressure type sprayers to clean equipment prior to assigning equipment to the incident command in order to reduce the potential to spread noxious weeds.
- Constantly re-check cold trailed fire line.

**Hot-Line/Aerial Fuels**

- Limb vegetation adjacent to fire line only as needed to prevent additional fire spread.
- During fire line construction, cut shrubs or small trees only when necessary. Make all cuts flush with the ground.
- Minimize felling of trees and snags unless they threaten the fire line or seriously endanger workers. In lieu of felling, identify hazard trees with a lookout or flagging.
- Scrape around tree bases near fire line if it is likely they will ignite.

**Mop-up/Ground Fuels**

- Do minimal spading; restrict spading to hot areas near fire line.
- Cold-trail charred logs near fire line; do minimal tool scarring.
- Minimize bucking of logs to extinguish fire or to check for hotspots; roll the logs instead if possible.
- Return logs to original position after checking and when ground is cool.

## APPENDIX E – SUPPLEMENTAL INFORMATION

- Refrain from making bone yards; burned and partially burned fuels that were moved should be returned to a natural arrangement.
- Consider allowing large logs to burn out. Use a lever rather than bucking to manage large logs that have to be extinguished.
- Use gravity socks in stream sources and/or a combination of water blivits and fold-a-tanks to minimize impacts to streams.
- Consider using infrared detection devices along perimeter to reduce risk.
- Personnel should avoid using rehabilitated fire lines as travel corridors whenever possible because of potential soil compaction and possible detrimental impacts to rehab work, i.e. water bars.

**Mop-up/Aerial Fuels**

- Remove or limb only those fuels which if ignited have potential to spread fire outside the fire line.
- Before felling consider allowing ignited tree/snag to burn itself out. Ensure adequate safety measures are communicated if this option is chosen.
- Identify hazard trees with a lookout or flagging.
- If burning trees/snag pose a serious threat of spreading fire brands, extinguish fire with water or dirt whenever possible. Consider felling by blasting when feasible. Felling by crosscut or chainsaw should be the last resort.
- Align saw cuts to minimize visual impacts from more heavily traveled corridors. Slope cut away from line of sight when possible.

**LOGISTICS****Campsite Considerations**

- Locate facilities outside of wilderness whenever possible.
- Coordinate with the Resource Advisor in choosing a site with the most reasonable qualities of resource protection and safety concerns.
- Evaluate short-term low impact camps such as coyote or spike versus use of longer-term higher impact camps.
- Use existing campsites whenever possible.
- New site locations should be on impact resistant and naturally draining areas such as rocky or sandy soils, or openings with heavy timber.

## APPENDIX E – SUPPLEMENTAL INFORMATION

- Avoid camps in meadows, along streams or on lakeshores. Camps should be located at least 200 feet from water resources or other sensitive areas.
- Consider impacts on both present and future users. An agency commitment to wilderness values will promote those values to the public.
- Lay out the camp components carefully from the start. Define cooking, sleeping, latrine, and water supply.
- Minimize the number of trails and ensure adequate marking.
- Consider fabric ground cloth for protection in high use areas such as around cooking facilities.
- Use commercial portable toilet facilities where available. If these cannot be used a latrine hole should be used.
- Select latrine sites a minimum of 200 feet from water sources with natural screening.
- Do not use nails in trees.
- Constantly evaluate the impacts which will occur, both short and long term.

**Personal Camp Conduct**

- Use “leave no trace” camping techniques.
- Minimize disturbance to land when preparing bedding site. Do not clear vegetation or trench to create bedding sites.
- Use stoves for cooking, when possible. If a campfire is used limit to one site and keep it as small as reasonable. Build either a “pit” or “mound” type fire. Avoid use of rocks to ring fires.
- Use down and dead firewood. Use small diameter wood, which burns down more cleanly.
- Don’t burn plastics or aluminum – “pack it out” with other garbage.
- Keep a clean camp and store food and garbage so it is unavailable to wildlife. Ensure items such as empty food containers are clean and odor free, never bury them.
- Select travel routes between camp and fire and define clearly.
- Carry water and bathe away from lakes and streams. Personnel must not introduce soaps, shampoos or other personal grooming chemicals into waterways.

## AVIATION MANAGEMENT

One of the goals of wilderness managers is to minimize the disturbance caused by air operations during an incident.

### Aviation Use Guidelines

- Maximize back haul flights as much as possible.
- Use long line remote hook in lieu of constructed helispots for delivery or retrieval of supplies and gear.
- Take precautions to insure noxious weeds are not inadvertently spread through the deployment of cargo nets and other external loads.
- Use natural openings for helispots and paracargo landing zones as far as practical. If construction is necessary, avoid high visitor use areas.
- Consider maintenance of existing helispots over creating new sites.
- Obtain specific instructions for appropriate helispot construction prior to the commencement of any ground work.
- Consider directional falling of trees and snags so they will be in a natural appearing arrangement.
- Buck and limb only what is necessary to achieve safe/practical operating space in and around the landing pad area.

### Retardant Use

During initial attack, fire managers must weigh the non-use of retardant with the probability of initial attack crews being able to successfully control or contain a wildfire. If it is determined that use of retardant may prevent a larger, more damaging wildfire, then the manager might consider retardant use even in sensitive areas. This decision must take into account all values at risk and the consequences of larger firefighting forces' impact on the land.

- Consider impacts of water drops versus use of foam/retardant. If foam/retardant is deemed necessary, consider use of foam before retardant use.
- Are there restrictions on certain types of retardant.

## APPENDIX E – SUPPLEMENTAL INFORMATION

**HAZARDOUS MATERIALS****Flammable/Combustible Liquids**

- Store and dispense aircraft and equipment fuels in accordance with National Fire Protection Association (NFPA) and Health and Safety Handbook requirements.
- Avoid spilling or leakage of oil or fuel, from sources such as portable pumps, into water sources or soils.
- Store any liquid petroleum gas (propane) downhill and downwind from firecamps and away from ignition sources.

**Flammable Solids**

- Pick up residual fusees debris from the fire line and dispose of properly.

**Fire Retardant/Foaming Agents**

- Do not drop retardant or other suppressants near surface waters.
- Use caution when operating pumps or engines with foaming agents to avoid contamination of water sources.

**FIRE REHABILITATION**

Rehabilitation is a critical need. This need arises primarily because of the impacts associated with fire suppression and the logistics that support it. The process of constructing control lines, transport of personnel and materials, providing food and shelter for personnel, and other suppression activities has a significant impact on sensitive resources regardless of the mitigating measures used. Therefore, rehabilitation must be undertaken in a timely, professional manner.

During implementation, the resource advisor should be available for expert advice and support of personnel doing this work as well as quality control.

**Rehabilitation Guidelines**

- Pick up and remove all flagging, garbage, litter, and equipment. Dispose of trash appropriately.
- Clean fire pit of unburned materials and fill back in.
- Discourage use of newly established trails created during the suppression effort by covering with brush, limbs, small diameter poles, and rotten logs in a naturally appearing arrangement.
- Replace dug-out soil and/or duff and obliterate any berms created during the suppression effort.

APPENDIX E – SUPPLEMENTAL INFORMATION

- If impacted trails have developed on slopes greater than six percent, construct waterbars according to the following waterbar spacing guide:

Trail Percent Grade	Maximum Spacing Ft.
6-9	400
10-15	200
15-25	100
25+	50

- Where soil has been exposed and compacted, such as in camps, on user-trails, at helispots and pump sites, scarify the top 2-4 inches and scatter with needles, twigs, rocks, and dead branches. It is unlikely that seed and fertilizer for barren areas will be appropriate, in order to maintain the genetic integrity of the area. It may be possible, depending on the time of year and/or possibility of a rainy period, to harvest and scatter nearby seed, or to transplant certain native vegetation.
- Blend campsites with natural surroundings, by filling in and covering latrine with soil, rocks, and other natural material. Naturalize campfire area by scattering ashes in nearby brush (after making sure any sparks are out) and returning site to a natural appearance.
- Where trees were cut or limbed, cut stumps flush with ground, scatter limbs and boles, out of sight in unburned area. Camouflage stumps and tree boles using rocks, dead woody material, fragments of stumps, bolewood, limbs, soil and fallen or broken green branches. Scattered sawdust and shavings will assist in decomposition and be less noticeable. Use native materials from adjacent, unimpacted areas if necessary.
- Remove newly cut tree boles that are visible from trails or meadows. Drag other highly visible woody debris created during the suppression effort into timbered areas and disburse. Tree boles that are too large to move should be slant cut so a minimal amount of the cut surface is exposed to view. Chopping up the surface with an axe or pulaski, to make it jagged and rough, will speed natural decomposition.
- Leave tops of felled trees attached. This will appear more natural than scattering the debris.

## APPENDIX E – SUPPLEMENTAL INFORMATION

- Consider -- if no other alternatives are available -- helicopter sling loading rounds and tops from a disturbed site when there has been an excessive amount of bucking, limbing and topping.
- Tear out sumps or dams, where they have been used, and return site to natural condition. Replace any displaced rocks or streambed material that has been moved. Reclaim streambed to its predisturbed state, when appropriate.
- Walk through adjacent undisturbed area and take a look at your rehab efforts to determine your success at returning the area to as natural a state as possible. Good examples should be documented and shared with others!

## DEMOBILIZATION

Because demob is often a time when people are tired or when weather conditions are less than ideal, enough time must be allowed to do a good job. When moving people and equipment, choose the most efficient and least impactful method to both the landscape and fire organization mission. An on-the-ground analysis of “How Things Went” will be important.

## POST-FIRE EVALUATION

Post-fire evaluation is important for any fire occurrence so management can find out how things went. Identify areas needing improvement, to formulate strategies and to produce quality work in the future. This activity is especially important in wilderness and like sensitive areas due to their fragility and inclination to long-term damage by human impacts.

Resource advisors and functional specialists such as wilderness rangers will be responsible for conducting the post-fire evaluation. They are the people who have the experience and knowledge to provide information required to make the evaluation meaningful and productive.

Post-fire evaluation by Burn Area Response Emergency Team will begin during the suppression effort. An emergency stabilization plan will be completed within 7 days of the date of fire containment per 620 DM 3.

## DATA COLLECTION/DOCUMENTATION/RECOMMENDATIONS

This phase will be completed by a review of the rehab plan and visit to the fire site as soon after demobilization as possible. An inventory of comps and helispots will be completed. This will also include an objective overview of other areas covered by the rehab plan.

Observations will be documented in a brief report to the line officer with a copy to the appropriate incident commander. In the report, the evaluator will include recommendations for ensuing fire suppression activities on similar lands. It is important that the evaluator recognize and commend the initial attack forces or overhead team for positive activities. Make special note of the extra efforts and sensitivity to suppression impacts.

## STANDARD FIRE ORDERS

- F** Fight fire aggressively but provide for safety first.
- I** Initiate all actions based on current and expected fire behavior.
- R** Recognize current weather conditions and obtain forecast.
- E** Ensure instructions are given and understood.
  
- O** btain current information on fire status.
- R** Remain in communication w/ crew members, your supervisor, & adjoining forces.
- D** Determine safety zones and escape routes.
- E** Establish lookouts in potentially hazardous situations.
- R** Retain control at all times.
- S** Stay alert, keep calm, think clearly, act decisively.

## WATCH OUT SITUATIONS

1. Fire not scouted and sized up.
2. In country not seen in daylight.
3. Safety zones and escape routes not identified.
4. Unfamiliar with weather and local factors influencing fire behavior.
5. Uninformed on strategy, tactics and hazards.
6. Instructions and assignments not clear.
7. No communication link with crew members/supervisor.
8. Constructing fire line without safe anchor point.
9. Building fire line downhill with fire below.
10. Attempting frontal assault on fire.
11. Unburned fuel between you and the fire.
12. Cannot see main fire, not in contact with anyone who can.
13. On a hillside where rolling material can ignite fuel below.
14. Weather is getting hotter and drier.
15. Wind increases and/or changes direction.
16. Getting frequent spot fires across line.
17. Terrain and fuels make escape to safety zone difficult.



## APPENDIX E, PART 11 – MINIMUM TOOL FLOW CHART

### Wilderness Minimum-Requirement Worksheet

#### Introduction

The Minimum Requirement Analysis is designed to assist program managers in making appropriate decisions affecting wilderness that are consistent with the Wilderness Act and National Park Service Management Policies.

The worksheet is divided into two parts; 1) the Minimum Requirement Analysis to determine whether the action is necessary and consistent with wilderness goals, and 2) the Minimum Tool Determination that selects methods and tools that minimize environmental and aesthetic impacts. These concepts flow from the Wilderness Act and NPS Management Policies:

...except as specifically provided for in this Act, and subject to existing private rights, there shall be no commercial enterprise and no permanent road within any wilderness area designated by this Act and except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act (including measures required in emergencies involving health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area.

- *Wilderness Act: Section 4(c)*

All management decisions affecting wilderness must be consistent with a minimum requirement concept ... When determining minimum requirement, the potential disruption of wilderness character and resources will be considered before, and given significantly more weight than economic efficiency and convenience. If a compromise of wilderness resource or character is unavoidable, only those actions that preserve wilderness character and/or have localized, short-term adverse impacts will be acceptable. ...the method used must clearly weigh the benefits and impacts of the proposal, document the decision-making process and be supported by an appropriate environmental compliance document.

- *NPS Management Policies: 6.3.5*

#### Purpose

The Minimum Requirement process is implemented as a two-part process:

1. A determination of whether or not a proposed action is appropriate or necessary for the administration of the area as wilderness and does not pose significant impact to the wilderness resource or character
2. If the project is appropriate and necessary in wilderness, the selection of management tools and methods that cause the least amount of impacts to the physical environment or wilderness character.

#### Procedure

Step 1 - Complete Part 1 (Minimum Requirement Analysis). If the project is consistent with the minimum wilderness requirement, proceed to step 2.

Step 2 – Complete the Minimum Tool Determination to select the methods, tools and techniques to implement the proposal with the least impact to wilderness resources and values.

## Minimum Requirement Analysis Worksheet Point Reyes National Seashore

Proposed Action:

Project Lead:

Date:

### PART A: Minimum Requirement (Should the action be done in wilderness)

**1**

IS THE ACTION AN EMERGENCY?

**YES**

Act according to  
established procedures

**NO**



Answer: Yes  No

Explain:

**2**

Does the Action conflict with legislation,  
wilderness goals or DFC?

**YES**

Do Not Undertake

**NO**



Answer: Yes  No

Explain:

**3**

Can the action be accomplished with less  
intrusive means?

**YES**

Do It

**NO**



Answer: Yes  No

**Explain**

**4**

Can the action be accomplished outside of  
wilderness?

**YES**

Do it there

**NO**



Answer: Yes  No

**Explain**

**5**

**Proceed to PART B**

**PART B: Minimum Tool (how the action should be done in wilderness)**

What is Proposed:

Location:

**When will the action occur:**

Start:

End:

Method 1

Method 2

Method 3

Method 4

Use of motorized equipment or mechanical transport

Use of non-motorized equipment or non-mechanical transport

Combination of Methods 1 & 2

Other methods

Use extra sheets if needed

**1**

Rational for Method

*(use additional sheets if needed)*

**2**

Impacts to wilderness resources and wilderness character

**3**

Impact Mitigations

*(use additional sheets if needed)*

Resources Environment

Social Experiential Character

Health Safety

=

\_\_\_\_\_  
Superintendent Concurrence

\_\_\_\_\_  
Date





## WILDLAND FIRE SITUATION ANALYSIS

**Wildland Fire Situation Analysis (WFSA) is a decision-making process in which the Agency Administrator or representative describes the situation, establishes objectives and constraints for the management of the fire, compares multiple strategic wildland fire management alternatives, evaluates the expected effects of the alternatives, selects the preferred alternative, and documents the decision. The format and level of detail required is dependent on the specific incident and it's complexity. The key is to document the decision.**

### WFSA INITIATION

**FIRE NAME**

**JURISDICTION(S)**

**DATE AND TIME INITIATED**

### WFSA COMPLETION/FINAL REVIEW

**THE SELECTED ALTERNATIVE ACHIEVED DESIRED OBJECTIVES ON (DATE/TIME):**

**THE SELECTED ALTERNATIVE DID NOT ACHIEVE THE DESIRED OBJECTIVES AND A NEW WFSA WAS PREPARED ON (DATE/TIME):**

**AGENCY ADMINISTRATOR OR REPRESENTATIVE SIGNATURE:**

## WFSA INSTRUCTIONS

### Section I. WFSA Information Page

*The Agency Administrator completes this page.*

- I.A. Jurisdiction(s): Assign the agency that have or could have fire protection responsibility, e.g., USFWS, Forest Service, BLM, etc.**
- I.B. Geographic Area: Assign the recognized "Geographic Coordination Area" in which the fire is located, e.g., Northwest, Northern Rockies, etc.**
- I.C. Unit: Designate the local administrative unit, e.g., Hart Mountain Refuge Area, Flathead Indian Reservation, etc.**
- I.D. WFSA #: Identify the number assigned to the most recent WFSA for this fire.**
- I.E. Fire Name: Self-explanatory.**
- I.F. Incident Number: Identify the agency number assigned to the fire, e.g., BOD 296, BNF 001.**
- I.G. Accounting Code: Insert the local unit's accounting code.**
- I.H. Date/Time Prepared: Self-explanatory.**
- I.I. Attachments: Check here to designate attachments used in the completion of the WFSA. "Other" could include data or models used in the development of the WFSA. Briefly describe the "other" items used.**

## I. WILDLAND FIRE SITUATION ANALYSIS

**A. JURISDICTION(S):**

**B. GEOGRAPHIC AREA:**

**C. UNIT(S):**

**D. WFSA #:**

**E. FIRE NAME:**

**F. INCIDENT #:**

**G. ACCOUNTING CODE:**

**H. DATE/TIME PREPARED:**

**I. ATTACHMENTS:**

- COMPLEXITY MATRIX/ANALYSIS<sup>1</sup>**
- RISK ASSESSMENT<sup>1</sup>**
- PROBABILITY OF SUCCESS<sup>1</sup>**
- CONSEQUENCES OF FAILURE<sup>1</sup>**
- MAPS<sup>1</sup>**
- DECISION TREE<sup>2</sup>**
- FIRE BEHAVIOR PROJECTIONS<sup>1</sup>**
- CALCULATIONS OF RESOURCE REQUIREMENTS<sup>1</sup>**
- OTHER (SPECIFY)**

<sup>1</sup> Required

<sup>2</sup> Required by the USFS

## **Section II. Objectives and Constraints**

***The Agency Administrator completes this page.***

### **II.A. Objectives: Specify criteria that should be considered in the development of alternatives.**

**Safety objectives for firefighters, aviation, and public must receive the highest priority, Suppression objectives must relate to resource management objectives in the unit resource management plan.**

**Economic objectives could include closure of all portions of an area, thus impacting the public, or impacts to transportation, communication and resource values.**

**Environmental objectives could include management objectives for airshed, water quality, wildlife, etc.**

**Social objectives could include any local attitudes toward fire or smoke that might affect decisions on the fire, safety, etc.**

**Other objectives might include legal or administrative constraints which would have to be considered in the analysis of the fire situation, such as the need to keep the fire off other agency lands, etc.**

### **II.B. Constraints: List constraints on wildland fire action. These could include constraints to designated wilderness, wilderness study areas, environmentally or culturally sensitive areas, irreparable damage to resources or smoke management/air quality concerns. Economic constraints such as public and Agency cost could be considered here.**

## II. OBJECTIVES AND CONSTRAINTS

### A. OBJECTIVES (must be specific and measurable):

1. **SAFETY:**  
**Public**

**Firefighter**

2. **ECONOMIC:**

3. **ENVIRONMENTAL:**

4. **SOCIAL:**

5. **OTHER:**

### B. CONSTRAINTS:

## Section III. Alternatives

**The FIRE MANAGER/and or INCIDENT COMMANDER complete(s) this page.**

- III.A. Wildland Fire Management Strategy:** Briefly describe the general wildland fire strategies for each alternative. Alternatives must meet resource management plan objectives.
- III.B. Narrative:** Briefly describe each alternative with geographic names, locations, etc., that would be used when implementing a wildland fire strategy. For example, "Contain within the Starvation Meadows' watershed by the first burning period".
- III.C. Resources Needed:** Resources listed must be reasonable to accomplish the tasks described in Section III.B. It is critical to also look at the reality of the availability of these needed resources.
- III.D. Estimated Final Fire Size:** Estimated final size for each alternative at time of containment.
- III.E. Estimated Contain/Control Date:** Estimates for each alternative shall be made based on predicted weather, fire behavior, resource availability and the effects of wildland fire management efforts.
- III.F. Cost:** Estimate all fire costs for each alternative. Consider mopup, rehabilitation, and other costs as necessary.
- III.G. Risk Assessment: Probability of success/Consequences of failure:** Describe probability as a % and associated consequences for success and failure. Develop this information from models, practical experience or other acceptable means. Consequences described will include fire size, days to contain, days to control, costs and other information such as park closures and effect on critical habitat. Include fire behavior and long-term fire weather forecasts to derive this information.
- III.H. Complexity:** Assign the complexity rating calculated in the Guide for Assessing Fire Complexity.
- III.I. Maps:** A map for each alternative must be prepared. The map shall be based on the "Probability of success/Consequences of Failure" and include other relative information.

<b>III. ALTERNATIVES</b>			
	<b>A</b>	<b>B</b>	<b>C</b>
<b>A. WILDLAND FIRE STRATEGY:</b>			
<b>B. NARRATIVE:</b>			
<b>C. RESOURCES NEEDED:</b> <b>HANDCREWS</b> <b>ENGINES</b> <b>DOZERS</b> <b>AIRTANKERS</b> <b>HELICOPTERS</b>			
<b>D. ESTIMATED FINAL FIRE SIZE:</b>			
<b>E. ESTIMATED CONTAIN/ CONTROL DATE</b>			
<b>F. COSTS:</b>			
<b>G. RISK ASSESSMENT:</b> <b>PROBABILITY OF SUCCESS/</b>  <b>CONSEQUENCES OF FAILURE</b>			
<b>H. COMPLEXITY:</b>			
<b>I. ATTACH MAPS FOR EACH ALTERNATIVE</b>			

## **Section IV. Evaluation of Alternatives**

**The Agency Administrator(s), FMO and/or Incident Commander(s) completes this page.**

**IV.A. Evaluation Process: Conduct an analysis for each element of each objective and each alternative. Objective shall match those identified in section II.A. Use the best estimates available and quantify whenever possible. Provide ratings for each alternative and corresponding objective element. Fire effects may be negative, cause no change or may be positive. Examples are: 1) a system which employs a "-" for negative effect, a "0" for no change, and a "+" for positive effect; 2) a system which uses a numeric factor for importance of the consideration (soils, watershed, political, etc.) and assigns values (such as -1 to +1, -100 to +100, etc.) to each consideration, then arrives at a weighted average. If you have the ability to estimate dollar amounts for natural resource and cultural values this data is preferred. Use those methods which are most useful to managers and most appropriate for the situation and agency. To be able to evaluate positive fire effects, the area must be included in the resource management plan and be consistent with prescriptions and objectives of the Fire Management Plan.**

**Sum Of Economic Values: Calculate for each element the net effect of the rating system used for each alternative. This could include the balance of: pluses (+) and minuses (-), numerical rating (-3 and +3), or natural and cultural resource values in dollar amounts. (Again resource benefits may be used as part of the analysis process when the wildland fire is within a prescription consistent with approved Fire Management Plans and in support of the unit's Resource Management Plan.)**

### IV. EVALUATION OF ALTERNATIVES

<b>A. EVALUATION PROCESS</b>	<b>A</b>	<b>B</b>	<b>C</b>
<p><b>SAFETY</b></p> <p style="padding-left: 20px;">Firefighter</p> <p style="padding-left: 20px;">Aviation</p> <p style="padding-left: 20px;">Public</p>			
<b>Sum of Environmental Values</b>			
<p><b>ECONOMIC</b></p> <p style="padding-left: 20px;">Forage</p> <p style="padding-left: 20px;">Improvements</p> <p style="padding-left: 20px;">Recreation</p> <p style="padding-left: 20px;">Timber</p> <p style="padding-left: 20px;">Water</p> <p style="padding-left: 20px;">Wilderness</p> <p style="padding-left: 20px;">Wildlife</p> <p style="padding-left: 20px;">Other (specify)</p>			
<b>Sum of Economic Values</b>			
<p><b>ENVIRONMENTAL</b></p> <p style="padding-left: 20px;">Air</p> <p style="padding-left: 20px;">Visual</p> <p style="padding-left: 20px;">Fuels</p> <p style="padding-left: 20px;">T &amp; E Species</p> <p style="padding-left: 20px;">Other (specify)</p>			
<b>Sum of Environmental Values</b>			
<p><b>SOCIAL</b></p> <p style="padding-left: 20px;">Employment</p> <p style="padding-left: 20px;">Public Concern</p> <p style="padding-left: 20px;">Cultural</p> <p style="padding-left: 20px;">Other (Specify)</p>			
<b>Sum of Social Values</b>			
<p><b>OTHER</b></p>			

## Section V. Analysis Summary

**The Agency Administrator(s), FMO and/or Incident Commander(s) complete this page.**

- V.A. Compliance with Objectives:** Prepare narratives that summarize each alternative's effectiveness in meeting each objective. Alternatives that do not comply with objectives are not acceptable. Narratives could be based on effectiveness and efficiency. For example: "most effective and least efficient", "least effective and most efficient", "or "effective and efficient". Or answers could be based on a two-tiered rating system such as "complies with objective" and "fully complies with or exceeds objective". Use a system that best fits the manager's needs.
- V.B. Pertinent Data:** Data for this section has already been presented and is duplicated here to help the Agency Administrator(s) confirm their selection of an alternative. Final Fire Size is displayed on page three, section III.D. Complexity is calculated in the attachments and displayed on page three, section III.H. Costs are displayed on page three, section III.F. Economic Values have been calculated and displayed on page four. Probability of Success/Consequences of Failure are calculated in the attachments and displayed on page three, section III.G.
- V.C. External and Internal Influences:** Assign information and data occurring at the time the WFSA is signed. Identify the Preparedness Index (1 through 5) for the National and Geographic levels. If available, indicate the Incident Priority assigned by the MAC group. Designate the Resource Availability status. This information is available at the Geographic Coordination Center and needed to select a viable alternative. Designate "yes" indicating an up-to-date weather forecast has been provided to, and used by, the Agency Administrator(s) to evaluate each alternative. Assign information to the "other" category as needed by the Agency Administrator(s).

## Section VI. Decision

**Identify the alternative selected. Must have clear and concise rationale for the decision, and a signature with date and time. Agency Administrator(s) signature is mandatory.**

**V. ANALYSIS SUMMARY**

<b>ALTERNATIVES</b>	<b>A</b>	<b>B</b>	<b>C</b>
<b>A. COMPLIANCE WITH OBJECTIVES:</b>  <b>SAFETY</b> <b>ECONOMIC</b> <b>ENVIRONMENTAL</b> <b>SOCIAL</b> <b>OTHER</b>			
<b>B. PERTINENT DATA:</b> <b>FINAL FIRE SIZE</b> <b>COMPLEXITY</b> <b>COST</b> <b>RESOURCE VALUES</b> <b>PROBABILITY of SUCCESS</b> <b>CONSEQUENCES of FAILURE</b>			
<b>C. EXTERNAL/INTERNAL INFLUENCES:</b> <b>NATIONAL AND GEOGRAPHIC PREPAREDNESS LEVEL</b> _____ <b>INCIDENT PRIORITY</b> _____ <b>RESOURCE AVAILABILITY</b> _____ <b>WEATHER FORECAST (LONG-RANGE)</b> _____ <b>FIRE BEHAVIOR PROJECTIONS</b> _____			

**VI. DECISION**

**The selected alternative is:**

**RATIONALE:**

**AGENCY ADMINISTRATOR SIGNATURE** \_\_\_\_\_

**DATE/TIME** \_\_\_\_\_

## **Section VII. Daily Review**

**The Agency Administrator(s), or designate complete(s) this page.**

**The date, time and signature of reviewing officials are reported in each column for each day of the Incident. The status of Preparedness Level, Incident Priority, Resource Availability, Weather Forecast, and WFSA Validity is completed for each day reviewed. Ratings for the Preparedness Level, Incident Priority, Resource Availability, Fire Behavior, and Weather Forecast are addressed on page five, section V.C. Assign a “yes” under “WFSA Valid” to continue use of this WFSA. A “no” indicates this WFSA is no longer valid and another WFSA must be prepared or the original revised.**



## **Section VII. Daily Review**

**The Agency Administrator(s), or designate complete(s) this page.**

**The date, time and signature of reviewing officials are reported in each column for each day of the Incident. The status of Preparedness Level, Incident Priority, Resource Availability, Weather Forecast, and WFSA Validity is completed for each day reviewed. Ratings for the Preparedness Level, Incident Priority, Resource Availability, Fire Behavior, and Weather Forecast are addressed on page five, section V.C. Assign a "yes" under "WFSA Valid" to continue use of this WFSA. A "no" indicates this WFSA is no longer valid and another WFSA must be prepared or the original revised.**

## APPENDIX E, PART 13. Delegation of Authority

*Name of Incident Commander* is assigned as Incident Commander of the *Name of Incident*, Point Reyes National Seashore for the National Park Service, effective *Time and Date*.

The Incident Commander has full authority and responsibility for managing the fire suppression activities within the framework of the law and National Park Service policy and direction as provided by this office. The Resource Advisor will provide Resource Management Plans and other appropriate documents.

*Names of Resources Advisors and contact Information* are assigned as Resource Advisors. They or the Park Superintendent (or designate) will be consulted in situations where natural resource decisions or trade offs are involved unless life safety issues require immediate attention and those actions will be documented.

Specific direction and fire suppression priorities for the *Name of Incident* are as follows, and are in priority order:

1. Provide for firefighter and public safety.
2. Use of minimal impact techniques should be employed to reduce habitat damage. Use natural barriers and roads if possible for burnout operations.
3. Use of dozers or tractors requires approval of the Park Superintendent or their designate (resource advisors) prior to implementation.

*Include other Standards or conditions as needed.*

### Turn Back Standards

1. All *Name of Incident* contracts, agreements, bills, medical problems, equipment repairs, and fire cache re-supply shall be closed out prior to team being released.
2. Road or levee damage during suppression efforts will be repaired prior to the team's departure.
3. Fire perimeter mopped-up *Specify* and all lines checked for heat and integrity.
4. Rehabilitation Plan will be completed in Coordination with the Resource Advisor.
5. Fire perimeter mapped by GPS and loaded into the Refuges GIS Database.
6. Tort claims reviewed by Park Superintendent or their designate.

The Chief Ranger, Fire Program Manager, or their designate will represent the Park Superintendent on any occasion where Park Superintendent is not immediately available.

Park Superintendent, \_\_\_\_\_ Point Reyes National Seashore,

*Date and Time.* \_\_\_\_\_



APPENDIX E – SUPPLEMENTAL INFORMATION

**APPENDIX E, PART 14. Incident Complexity Analysis**

<b>Incident Complexity Analysis (Type 4, 5)</b>			
<b>Type 5 Incident</b>		<b>Yes</b>	<b>No</b>
1. Span of Control > 6 firefighting personnel			
2. Fire Suppression Containment Time > 4 hours (disregard if managing fire as a WFRB or implementing 'Confined' strategy).			
3. Fire intensity - flame length > 2 feet			
4. Public safety concerns (roads, urban interface, populated/congested areas, sightseers, etc.) Specify: _____			
5. Aviation – Any Tactical aviation resources assigned			
If Item # 1 is checked YES, classify incident as Type 4. If any two additional items are checked (2,3,4,5), this is a Type 4 incident. If decision has been made to stay at Type 5, document your rationale and discussion. If fire is Type 4 order IC if not qualified. TAKE ACTION TO THE LEVEL OF YOUR TRAINING AND QUALIFICATIONS UNTIL RELIEVED. If transition does take place, give a thorough briefing to incoming IC and make transfers of command official with dispatch and fireline personnel.			
IC Comments:		Date:	Time:
<b>Type 4 Incident</b>		<b>Yes</b>	<b>No</b>
1. Span of control > 5 resources			
2. Containment time – beyond first operation period hours (disregard if managing fire as a WFRB or implementing 'Confined' strategy).			
3. Fire Intensity – flame length > 4 feet			
4. Public safety concerns (roads, urban interface, populated/congested areas, sightseers, etc.) Specify: _____			
5. Aviation – any tactical aviation resources assigned			
If item #1 or item #2 are checked YES, classify incident as Type 3. If any two additional items are checked (3, 4, 5) this is a Type 3 Incident. If decision has been made to stay at Type 4, document your rationale and discussion. If fire is Type 3 order IC if not qualified. TAKE ACTION TO THE LEVEL OF YOUR TRAINING AND QUALIFICATIONS UNTIL RELIEVED. If transition does take place, give a thorough briefing to incoming IC and make transfers of command official with dispatch and fireline personnel.			
IC Comments :		Date:	Time:



APPENDIX E. SUPPLEMENTAL INFORMATION

**APPENDIX E, PART 15. PRNS INCIDENT ORGANIZER**

Point Reyes National  
Seashore



**Incident Organizer**

Fire Management

Incident Name	
Incident Number	
Fire Code	
Other Code	
Unit	

IC Time & Date	
IC Time & Date	

Containment Date & Time	
Control Date & Time	
Final Size	

Directions and Intent:

MOST INCIDENTS ONLY REQUIRE FILLING OUT THE FIRST FEW PAGES - i.e., TYPE 4 AND 5 INCIDENTS. (In these situations, fill out afterwards when doing your AAR.)

- Intended to provide the IC with a format and focal point to begin processing an incident that is emerging. (Start to plan the fight – delegate – instead of fighting the fight and possibly losing your situational awareness as IC.)
- Use until an Incident is out or operating on an IAP.
- Serves as an Incident Workbook used in conjunction with the Incident Response Pocket Guide, Redbook or Fireline Handbook.
- Red-blocked items are required to be filled in for 30-mile accident prevention (Forest Service).

IC Signature: \_\_\_\_\_

IC Signature: \_\_\_\_\_

APPENDIX E. SUPPLEMENTAL INFORMATION

<b>Initial Attack Fire Size-Up</b>											
Fire Name:			Fire Number			DOI:			USDA:		
IC Name:			State:								
Descriptive Location:											
*Arrival Date:			Time:								
*Legal:			Township			Range			Section(s)		
*Coordinates:			Latitude			Longitude					
UTM:			E:			N:					
Reported by:											
*Estimated Size:			acres			Ownership:					
<b>Estimated Containment</b>			Date:			Time:					
<b>Estimated Control</b>			Date:			Time:					
Fire Investigator? <input type="checkbox"/> No <input type="checkbox"/> Yes, on order											
Resources Responding (use resource summary on next page to record this data):											
<b>Initial Fire Size-Up</b>											
*Are any structures threatened? <input type="checkbox"/> No <input type="checkbox"/> Yes - specify:											
Does the fire constitute any control problems? <input type="checkbox"/> No <input type="checkbox"/> Yes - specify:											
Are additional resources needed? <input type="checkbox"/> No <input type="checkbox"/> Yes - specify:											
*Hazard(s):											
*Spread Potential:			1. Low		2. Moderate		3. High		4. Extreme		
*Character of Fire:			1. Smoldering		3. Running		5. Torching		7. Crown/spotting		
*Slope at Head of Fire:			2. Creeping		4. Spotting		6. Crowning		8. Erratic		
			1. 0-25%		2. 26-40%		3. 41-55%		4. 56-75%		5. 76+%
Position on Slope:			1. Ridgetop		4. Middle 1/3 of slope		7. Valley bottom				
			2. Saddle		5. Lower 1/3 of slope		8. Mesa/Plateau				
			3. Upper 1/3 of slope		6. Canyon bottom		9. Flat or rolling				
*Fuel Type:			1. Grass		4. Coastal Scrub		7. Eucalyptus				
			2. Grass/brush		5. Bishop pine		8. Riparian Forest				
			3. Hardwood Forest		6. Douglas fir		9. Other (specify)				

<b>Radio Frequencies</b>	
<b>Net</b>	<b>Frequency</b>
<b>Command</b>	Rx
	Tx
<b>Support/Dispatch</b>	Rx
	Tx
<b>Air-to-Ground</b>	Rx
	Tx
<b>Air-to-Air</b>	Rx
	Tx
<b>Tac 1</b>	Rx
	Tx
<b>Tac 2</b>	Rx

APPENDIX E. SUPPLEMENTAL INFORMATION

**EXPECTATIONS:**

- **YOU ARE RESPONSIBLE FOR YOUR OWN SAFETY AND THOSE AROUND YOU.**
- You have the right to a safe workplace and assignments.
- If you don't understand an assignment, ask for clarification. **COMMUNICATE** within the chain of command. **Communicate. Coordinate** and **Cooperate.**
- You ARE paid to think. If you have a better way to do things, let's hear it. If you think what you are doing is stupid, then speak up. A supervisor has the responsibility to explain to you why what you are doing is meaningful and needed.

• **You are expected to exercise LCES everyday and in every situation.** Make it meaningful to you. **Remember your 10 Standard AND 18 Situations.**

• You are in a job where you will have to make decisions. You will be held accountable for your decisions. Be able to explain your rationale for your decision.

• You are a fire professional, you must be physically fit and mentally prepared to go to work. You can expect to complete arduous work under inclement conditions for long periods of time. Others are counting on you to carry your load, to show up to work on time and be a professional. If you have special needs for time off or a special event let your supervisor know far in advance.

• Your Mom does not work here. Don't expect anyone else to clean up after you. Keep your areas, projects and vehicles clean and organized.

• You have been hired to go to fires in and out of the Park and assist in other emergencies. We expect you to always have your gear, red card and taskbooks ready, and respond within a 3-5 minute getaway.

• We have the responsibility to ensure you have the latest trend and specific information available. There are information boards available to you. These include information on fuels, their **moistures**, and **weather forecasts** and **expected fire severity information.** **IT IS YOUR RESPONSIBILITY TO CHECK THIS INFORMATION DAILY.**

- We offer 3 hours of physical training time weekly. Due to fires or special circumstances you may not always be able to take PT time.

- **If you need help, ask for it. No one expects you to injure yourself.**

- Complete tailgate safety sessions every day and when your tasks change significantly from what you had been doing.

- **Exercise Situational Awareness**

- **USE SPOTTERS WHEN BACKING VEHICLES.**

**Size Up Information**

1. Fire Name
2. Legal Location (S, T, R)
3. Cause
4. Size (Acres or 10ths)
5. Aspect
6. Slope (%)
7. Rate of Spread/Direction
8. Flame Length
9. Winds (Spd/Dir)
10. Temp / RH
11. Hazards
12. Anticipated Fire Behavior and Spread
13. Needs

**General Information**

Weather is to be taken, recorded and called in hourly for spot weather forecasts:

- Temperature (Dry Bulb)
- Relative Humidity (Alt)
- Wind Direction/Speed
- Cloud Cover (%)
- Elevation
- Aspect

**Fire Size Classes (In Acres):**

- A = 0 - 25 ac
- B = .26- 9.9 ac
- C = 10 - 99.9
- D = 100 - 299.9
- E = 300 - 999.9
- F = 1000 - 4999.9
- G = 5000 +

- 1 Chain = 66 feet
- 1 Mile = 80 Chains
- 1 Mile = 1.6 Kilometers
- 1 Mile = 5280 feet
- 1 Acre = 10 Sq. Chains

**Fire Monitoring Info**

- Helispots near Fire (Lat/Long)
- Access to Fire
- Spike Camps near Fire
- Fuels Ahead of Fire
- Fuel Models
- Unusual Argmt/Loading
- Predicted Rate of Spread
- Smoke Production
- Smoke Dispersal
- Sensitive Features
- Critical Resource Values
- Review Trigger Points
- Review Mgmt Action Pts
- Additional Mitigation Necessary

Installation of HOBOS/Wx Stations  
Temp Gradient p/1000 ft Elev.  
Time Spot Wx Forecast Needed

**Other Information: LCES;**

- **Lookouts**
- **Communications**
- **Escape Routes**
- **Safety Zones**

**What frequencies will be used for intra crew communication and for inner crew posted Lookout be using.**

APPENDIX E. SUPPLEMENTAL INFORMATION

**OUT OF PARK/AREA FIRE ASSIGNMENTS (CHIEF OF PARTY DUTIES):**

FIRE NAME: \_\_\_\_\_ ORDER #: \_\_\_\_\_

Request #: \_\_\_\_\_ Position Ordered: \_\_\_\_\_

Request Date: \_\_\_\_\_ Request Time: \_\_\_\_\_

Report to Location: \_\_\_\_\_

**Order(s) Filled By:** \_\_\_\_\_

Directions: \_\_\_\_\_

Incident Phone: \_\_\_\_\_ Contact: \_\_\_\_\_

Est Time & Date of Departure: \_\_\_\_\_

Vehicle: \_\_\_\_\_ Beg Mi: \_\_\_\_\_ Ending Mi: \_\_\_\_\_

Release Date & Time: \_\_\_\_\_ Date/Time at Park: \_\_\_\_\_

**BEFORE LEAVING THE PARK:**

- Ensure you have a current Blanket Travel Authorization.
- If traveling in a Govt vehicle ensure it has a gas card.
- Recommend taking personal money (\$50) keep receipts.

- Ensure you have a CA and other state maps you will be traveling to.
  - Stay together and communicate what will be the standard procedure to establish contact should you get separated.
- WHILE TRAVELLING:**
- Keep track of meals en-route to and from fire assignments.
  - Separate out all travel time to and from the fire.
  - Separate out all hazard time make note of hazard type and exposure time for wage employees. Show all breaks on timesheets.
  - Check in with "Check-In" and "Timekeeping" when arriving at incident base. Turn in timesheets that you started when you left the Park. Tell timekeepers the fax number for your home unit (415) 868-8918 so that they can fax times to the FPA.
  - Keep all receipts from your travel, turn them into the FPA upon return.
  - Check in with the Park FMO or Duty Officer while in travel status, your location, any problems and your status and those assigned to you. (415-464-5243 FMO)
  - Adhere to R&R guidelines (1 in 14) and 15/8 Driving regs.

**ON RETURNING TO THE PARK:**

- Turn in timesheets to the Fire Program Assistant.
- Complete a DI-1202 Fire Report (the RNP-1202 in this book should help you). Make sure your experience and those you were responsible for are recorded for the SACS.
- CLEAN VEHICLES, clarify when due back at work (R&R).

**PORE - FIRE MANAGEMENT EXTENSION & PHONE LISTING (415) 464-5100**

Point Reyes Fire Management Staff	Radio Call	Work Extension	Cell/Pager c/p	Residence
Davis, James Assistant engine foreman	xxx	415-464-5241	xxx-xxx-xxxx	xxx-xxx-xxxx
Haag, Jon Engine Foreman	xxx	415-464-5252	xxx-xxx-xxxx	xxx-xxx-xxxx
Jensen, Jim Crew 9 seasonal	xxx +last name	415-464-5241	xxx-xxx-xxxx	
Kruger, Brian Crew 9 Supervisor	xxx	415-464-5241	xxx-xxx-xxxx	xxx-xxx-xxxx xxx-xxx-xxxx cell
<b>Neubacher, Don Superintendent</b>	<b>xxx</b>	<b>464-1000</b>	<b>xxx-xxx-xxxx</b>	<b>xxx-xxx-xxxx</b>
Poinsot, Wendy Fire Program Planner		415-218-6551	xxx-xxx-xxxx	xxx-xxx-xxxx

## APPENDIX E. SUPPLEMENTAL INFORMATION

Reeser, Jordan Prescribed fire specialist	xxx	415-464-5251	xxx-xxx-xxxx p xxx-xxx-xxxx c	xxx-xxx-xxxx
Raelander, Wende Fire effects monitor	xxx	415-464-5286		xxx-xxx-xxxx
Thomas, Loren Fire program analyst	xxx	415-464-5240		
Wong, Roger Fire management officer	xxx	415-464-5243	xxx-xxx-xxxx p xxx-xxx-xxxx c	xxx-xxx-xxxx xxx-xxx-xxxx
Chapman, Jennifer Fire Information		415-464-5133		
FMO FAX	<b>415-868-1202</b>			
Fire Management Fax	<b>415-868-8918</b>			
<b>GOGA Fire Management</b>	<b>Radio Call</b>	<b>Work Extension</b>	<b>Cell/Pager c/p</b>	<b>Residence</b>
GGNRA General Number		415-331-6374 (tel) 415-331-6942 (fax)		
Grupe, Mark GIS Specialist		415-331-6374		
Naar, Alex FMO	xxxx	415-331-6374	xxx-xxx-xxxx	
Poinsot, Wendy Fire Program Planner		415-218-6551	xxx-xxx-xxxx	xxx-xxx-xxxx
Jones, Greg Engine Foreman				
Engine Tech 1				
Engine Tech 2				
Engine Tech 3				
<b>PORE Law Enforcement</b>	<b>Radio Call</b>	<b>Work Extension</b>	<b>Cell/Pager c/p</b>	<b>Residence</b>
Buehl, Rene Boating officer	xxx	415-464-5277	xxx-xxx-xxxx Safeboat patrol boat xxx-xxx-xxxx	
Conde, Gus L.E. Ranger	xxx	415-464-5275	xxx-xxx-xxxx	
Dombrowski, Bruce L.E. Ranger	xxx	415-464-5274	xxx-xxx-xxxx	
Gregorio, Angelina L.e. Ranger	xxx	415-464-5279	xxx-xxx-xxxx	
Habig Dan LE Ranger	xxx	415-464-5128	xxx-xxx-xxx	

Schifsky, David L.E. Ranger	xxx	415-464-5178	xxx-xxx-xxxx	
Smith, Colin Chief Ranger	xxx	415-464-5175	xxx-xxx-xxxx	
<b>PORE Fire GIS/ Ecologist</b>	<b>Radio Call</b>	<b>Work Extension</b>	<b>Cell/Pager c/p</b>	<b>Residence</b>
Alison Forrestal	xxx	415-464-5200		
<b>PORE Dispatch</b>	<b>Radio Call</b>	<b>Work Extension</b>	<b>Cell/Pager c/p</b>	<b>Residence</b>
Fiske, Jeni, Griffin, Meg	799	415-464-5170		

APPENDIX E. SUPPLEMENTAL INFORMATION

MARIN County Fire Overhead	Radio Call	Work Extension	Cell/Pager c/p	Residence
Fire chief	XXXX	<b>Ken Massucco</b>	XXX-XXX-XXXX XXX-XXX-XXXX	XXX-XXX-XXXX
Deputy chief	XXXX	<b>Rich Lopez</b>	XXX-XXX-XXXX XXX-XXX-XXXX	XXX-XXX-XXXX
Battalion chief Training officer	XXXX	Brian Mueser	XXX-XXX-XXXX XXX-XXX-XXXX	XXX-XXX-XXXX
Battalion chief A shift	XXXX	Steve Del La Montanaya	XXX-XXX-XXXX XXX-XXX-XXXX	XXX-XXX-XXXX
Battalion chief C shift	XXXX	Tim Thompson	XXX-XXX-XXXX XXX-XXX-XXXX	XXX-XXX-XXXX
Battalion chief B shift	XXXX	Ed Mestre	XXX-XXX-XXXX XXX-XXX-XXXX	XXX-XXX-XXXX
Forester	XXXX	Kent Julin	XXX-XXX-XXXX XXX-XXX-XXXX	XXX-XXX-XXXX
Fire Marshall	XXXX	Scott Alber	XXX-XXX-XXXX XXX-XXX-XXXX	XXX-XXX-XXXX
Fire Captain, GIS	XXXX	Tim Walsh	XXX-XXX-XXXX XXX-XXX-XXXX	XXX-XXX-XXXX
Fire Captain, EMS	XXXX	Mike Giannini	XXX-XXX-XXXX XXX-XXX-XXXX	XXX-XXX-XXXX
<b>Marin County Stations</b>	<b>Radio Call</b>	<b>Work Extension</b>	<b>Station Captain</b>	<b>Fax Number</b>
Woodacre	XXXX XXXXXX XXXXXXXXXX	415-499-6717	Doug Cole	
Point Reyes	XXXX	415-663-1018	Ken Carter	XXX-XXX-XXXX
Tomales	XXXX	707-878-2464	Mark Brown	XXX-XXX-XXXX
Hicks Valley	XXXX XXXXXX	415-662-2503	Ken Finn	XXX-XXX-XXXX
Marin City	XXXX	415-499-7517	Bill Roberts	XXX-XXX-XXXX
Throckmorton	XXXX	415-388-5414	Frank Neer	XXX-XXX-XXXX

## APPENDIX E. SUPPLEMENTAL INFORMATION

Volunteer Fire Departments	Wildand engine	Phone Ch-chiefs	Fire Chief & Radio call	Fax Number
Inverness Volunteer Fire Dept	xxx	415-669-7151 415-669-1413ch	Jim Fox xxx	415-669-1010
Bolinas Volunteer Fire Dept	xxx	415-868-1566 415-868-2914 ch	Kevin Hicks xxx	415-868-2009
Stinson Beach Volunteer Fire Dept	xxx	415-868-0622 415-868-0859ch	K. Stevens xxx	
Other Emergency Numbers		Phone Number	FAX	
GGNRA Fire		<b>415-331-6374</b>	<b>415-331-6942</b>	
GGNRA Dispatch Info		<b>415-561-5505</b>	Alex Naar GGNR FMO xxx-xxx-xxxx cell	
GGNRA Dispatch Emergency		<b>415-551-4202</b>	GGNRA Engine foreman xxx-xxx-xxxx cell	
GGNRA Marin office		<b>415-331-1540</b>	Josh Rollins GGNRA xxx-xxx-xxxx cell	
Stinson Tower		<b>415-868-0942</b>	CA RNP E-61 xxx-xxx-xxxx C	
HAZMAT RESPONSE				
CHEMTREC		1-800-424-900	CA RNP E-62 xxx-xxx-xxxx C	
EMERGENCY ROAD NUMBERS	PHONE NUMBER	Miscellany		
Marin Sheriff	415-499-7284			
CHP	415-924-1100			
<b>AAA Towing Cheda 's</b>	415-663-1227	Gary Cheda xxx-xxx-xxxx home		
AAA towing	1-800-222-4357			
Caltrans	1-800-427-7623	xxx-xxx-xxxx		
Marin County Road Dept	415-499-7518			

## APPENDIX E. SUPPLEMENTAL INFORMATION

<b>Helicopter Services</b>	<b>Phone Number</b>
Cal Star	1-800-252-5050
CHP H30 Henry 1	707-257-0103
Life Flight (Stanford)	1-800-321-7820
Reach 1 (Santa Rosa)	707-575-6886
Reach 2 (Vacaville)	
PG&E 24Hr Assistance	1800-743-5000
<b>STATE PARKS</b>	<b>Phone Number</b>
Pantoll	415-388-2070
S.P. Taylor	415-488-9897
Tomales Bay	415-669-1140
China Camp	415-456-0766
Air Quality	1-800-435-7247
Air Quality Fax	415-928-0338
North ops	530-224-2466
Mendocino Dispatch	530-934-1155
Mendocino Fax	530-934-2326
NIFCC	
<b>Coast Guard</b>	415-399-3417 (SAR)
<b>Fish &amp; Game</b>	707-944-5500
F&G Marin area office	415-893-1580
F&G Angel Island	415-435-1915
F&G Boat operator	415-435-2055
F&G Northern Dispatch	916-358-1311

PORE - FIRE MANAGEMENT RADIO FREQUENCIES -- BANK 1

**Primary Interagency channel 10 White 2**

Channel	Label	Rx Freq	Rx CG	Tx Freq	Tx CG
1	PORE DIRECT	xxx.xxx		xxx.xxx	
2	PORE LIGHTHOUSE	1xx.xxx	xxx.x	xxx.xxx	xxx.x
3	PORE BARNABY	xxx.xxx	xxx.x	xxx.xxx	xxx.x
4	SPECIAL USE 1	xxx.xxx		xxx.xxx	
5	SPECIAL USE 2	xxx.xxx		xxx.xxx	
6	NIFC TAC 1	1xx.xxx		xxx.xxx	
7	NIFC TAC 2	1xx.xxx		xxx.xxx	
8	NIFC TAC 3	1xx.xxx		xxx.xxx	
9	WHITE 1	1xx.xxx		xxx.xxx	
10	WHITE 2	1xx.xxx	<b>Marin county</b>	xxx.xxx	<b>CDF</b>
11	WHITE 3	1xx.xxx		xxx.xxx	
12	CAL CORD	1xx.xxx		xxx.xxx	
13	USFS A2G	1xx.xxx		xxx.xxx	
14	NOAA WEATHER	1xx.xxx		xxx.xxx	

**BENDIX KING RADIO PROGRAMMING PROTOCOL**

**PROGRAMMING**

1. PRESS SWITCH AND HOLD **FCN**
2. ENTER **000000** PRESS **ENT**
3. ENTER CHANNEL NUMBER TO BE PROGRAMMED AND PRESS **ENT** THEN **FCN**
4. PRESS **CLR** TO REMOVE OLD RX FREQUENCY AND ENTER NEW RX FREQUENCY AND PRESS **ENT**
5. PRESS **CLR** TO REMOVE OLD RX CG FREQUENCY AND ENTER NEW RX CG FREQUENCY AND PRESS **ENT**
6. PRESS **CLR** TO REMOVE OLD TX FREQUENCY AND ENTER NEW TX FREQUENCY AND PRESS **ENT**
7. PRESS **CLR** TO REMOVE OLD TX CG FREQUENCY AND ENTER NEW TX CG FREQUENCY AND PRESS **ENT**
8. PRESS **FCN** REPEATEDLY TO REVIEW AND CORRECT IF NEEDED
9. REPEAT STEP 3 TO PROGRAM MORE CHANNELS OR TURN RADIO OFF AND BACK ON AGAIN TO USE

**CLONING**

1. PRESS SWITCH AND HOLD **FCN**
2. ENTER **000000** PRESS **ENT**
3. PRESS **FCN** AND \*
4. SCREEN FLASHES **PRGM**
5. PRESS **FCN**
6. IF COMPLETE, FLASHES **PRGRM**
7. IF INCOMPLETE, FLASHES **FAIL**
8. TO CLONE AGAIN, PRESS **FCN**



APPENDIX E. SUPPLEMENTAL INFORMATION

Spot Weather Observation and Forecast Request									
1. Name of Incident or Project		2. Control Agency:		3. Request Made				Date: _____ Time: _____	
4. Location: (Township, Range, Section)			5. Drainage Name:			6. Exposure / Aspect			
7. Size of Incident or Project (acres):			8. Elevation		9. Fuel Type:		10. Project On:		
			Top	Bottom			Ground	Crowning	
11. Weather Conditions at Incident or Project or from RAWS:									
Place	Elev.	Observation Date/Time	Wind		Temperature		RH		Sky Condition
			Direction/ Velocity	Eye-level	Dry bulb	Wet bulb		DP	
The weather Forecaster will furnish information for									Date/Time:
Block 13									

<b>Risk Management</b>		<b>Decision Points</b>	
<p>Maintain your situational awareness. Ensure compliance with the 10 Standard Firefighting Orders and LCES. Continually monitor the 18 Situations and apply appropriate mitigation. As the incident progresses, continually re-evaluate your situation. When hazards are identified mitigate them or change tactics and or strategy.</p> <p style="text-align: center;">Refer to the green pages in the IRPG.</p>			
<b>YES</b>	<b>NO</b>	<b>Decision Points</b>	
		Controls in place for identified hazards? If no reassess your situation	
		Are selected tactics based on expected fire behavior? If no reassess your situation	
		Are the current strategy and tactics working? If no reassess your situation	
<b>Incident Complexity Analysis (Type 3, 4, 5)</b>			
<b>Fire Behavior</b>			
		<b>Yes</b>	<b>No</b>
	Fuels extremely dry and susceptible to long-range spotting or you are currently experiencing extreme fire behavior.		
	Weather forecast indicating no significant relief or worsening conditions.		
	Current or predicted fire behavior dictates indirect control strategy with large amounts of fuel within planned perimeter.		
<b>Firefighter Safety</b>			
	Performance of firefighting resources affected by cumulative fatigue.		
	Overhead overextended mentally and/or physically.		
	Communication ineffective with tactical resources or dispatch.		
<b>Organization</b>			



APPENDIX E. SUPPLEMENTAL INFORMATION

Values to be protected	
Urban interface; structures, developments, recreational facilities, or potential for evacuation.	
Fire burning or threatening more than one jurisdiction and potential for unified command with different or conflicting management objectives.	
Unique natural resources, special-designation areas, critical municipal watershed, T&E species habitat, cultural value sites.	
Sensitive political concerns, media involvement, or controversial fire policy.	

If you have checked "Yes" on 3 to 5 of the analysis boxes, consider requesting the next level of incident management support.

**Type 5 Characteristics:** (a) C&G Staff positions are not activated. (b) Resources vary from one to five firefighters. (c) Incident is normally contained rapidly during IA. (d) A written action plan is not required.

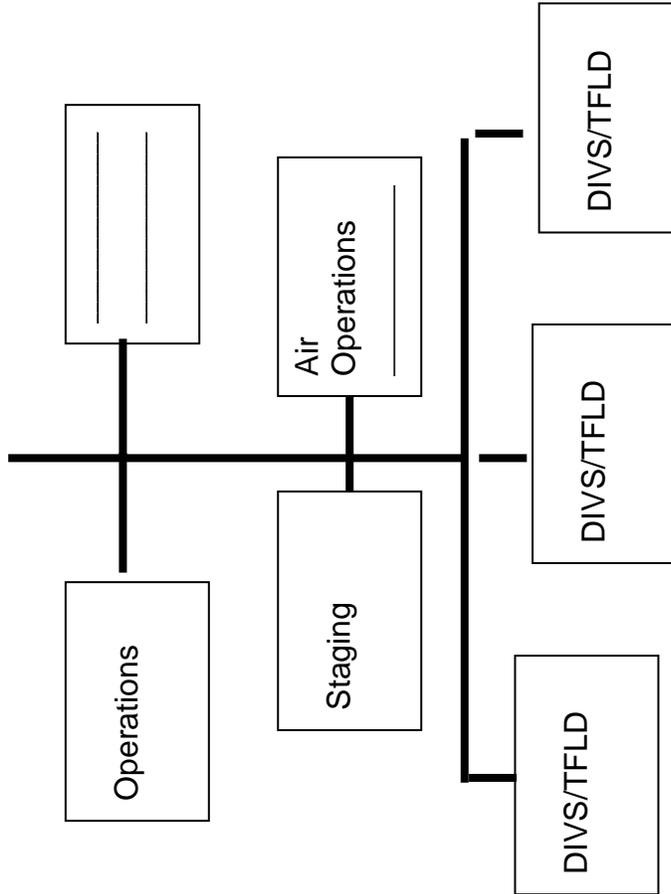
**Type 4 Characteristics:** (a) C&G Staff positions are not activated. (b) Resources vary from single Firefighter to several single resources or a single Task Force or Strike Team. (c) The incident is limited to one operational period in the control phase. Mop-up may extend into multiple periods. (d) A written plan is not required.

**Type 3 Characteristics:** (a) Some of the C&G Staff may be activated, as well as DIVS/GROP Supervisor and Unit leaders. (b) Resources vary from several single resources to several TFL's/STL's. (c) Incident may be separated into several divisions, but usually does not meet the DIVS/GROP Supervisor position for span or control. (d) May involve several burning periods prior to control, which requires a written action plan.

<b>Work Rest Ratio Documentation Worksheet</b>				
This worksheet is designed to help the IC document and calculate amount of rest required to meet the Work/Rest guidelines.				
<ul style="list-style-type: none"> <li>• For every 2 hours of work or travel provide 1 hour of sleep or rest.</li> <li>• IC must justify and document work shifts exceeding 16 hours and those that do not meet the 2:1 work/rest guidelines -- see below.</li> </ul>				
Date	Operational Period Start Time	Operational Period Stop Time	Total Hours Worked	Rest Time (document hours when employee or module rested)



<b>PWR Fire Contact Card</b>			
6/18/2004			
<b>Sue Husari</b> <b>FMO</b> w 510-817-1371 m xxx-xxx-xxx h xxx-xxx-xxx	<b>Bob Appling</b> <b>Fuels Specialist</b> w 360-696-7540 m xxx-xxx-xxxx Seattle w 206-220-4021 h xxx-xxx-xxxx	<b>Christy Neill</b> <b>Prescribed Fire Spec</b> m xxx-xxx-xxxx h xxx-xxx-xxxx	<b>Mary Beth Keifer</b> <b>Fire Monitoring</b> w 510-817-1504 m xxx-xxx-xxxx ho xxx-xxx-xxxx h xxx-xxx-xxxx
<b>John Kraushaar</b> <b>Deputy Regional FMO</b> w 510-817-1370 m xxx-xxx-xxx h xxx-xxx-xxx	<b>Paul Reeberg</b> <b>Fire Monitoring</b> w 510-817-1372 h xxx-xxx-xxxx	<b>Berkeley Yoshida</b> <b>Fire Fiscal Analyst</b> w 808-985-6100 m xxx-xxx-xxxx h xxx-xxx-xxxx	
<b>Robin Wills</b> <b>Fire Ecologist</b> w 510-817-1432 m xxx-xxx-xxxx h o xxx-xxx-xxxx h xxx-xxx-xxxx	<b>Rick Smedley</b> <b>Fire Planner</b> w 360-696-7545 m xxx-xxx-xxxx h xxx-xxx-xxxx	<b>Brenda Kauffman</b> <b>FPA</b> w 510-817-1373 m xxx-xxx-xxxx h xxx-xxx-xxxx	
<b>Corky Conover</b> <b>Fuels Specialist</b> w 559-565-3129 m xxx-xxx-xxxx h xxx-xxx-xxxx	<b>Nelson Siefkin</b> <b>Fire Archeologist</b> w 510-817-1502 m xxx-xxx-xxxx h xxx-xxx-xxxx	<b>Teresa Wright</b> <b>Incident Business Mngt</b> w 206-220-4069 m xxx-xxx-xxxx h xxx-xxx-xxxx	



<b>POINT REYES AREA RUN CARD</b>			
<b>DAILY FIRE DANGER</b>	<b>MARIN COUNTY RESPONSE ZONES</b>		
	<b>4A</b>	<b>4B</b>	<b>4C</b>
<b>LOW</b>	BC	BC	BC
	PREV	PREV	PREV
	E1564	E1564	E1564
	E1584	E1584	E1584
<b>MEDIUM</b>	E1562	E1562	BOL E265
	WT1592	WT1592	E1562
	E1566	E1566	WT1592
	E1568	E1568	E1566
	DZ1540	WT1496	E1568
	INV E380	DZ1540	DZ1540
	--	INV E380	STN WT890
<b>HI</b>	E1560	E1560	STN E861
	E1565	E1565	E1565
	--	--	E1560
<b>Additional CDF Resources (only MEDIUM and HIGH)</b>			
(1) AIR ATTACK SUPERVISOR	AA140		
(2) AIR TANKER TYPE 2	AT86 AT85		
(1) COPTER	H104		
(2) HANDCREW (INMATE) TYPE 1	DELTA CONSERVATION CAMP		



Final Draft July 15, 2005

## PRESCRIBED FIRE PLAN

**ADMINISTRATIVE UNIT(S):**

**PROJECT NAME:**

**PREPARED BY:**

Name & Qualification

**DATE:**

**TECHNICAL REVIEW BY:**

Name & Qualification

**DATE:**

**COMPLEXITY RATING:**

**APPROVED BY:**

Agency Administrator

**DATE:**

**DOI:** The approved Prescribed Fire Plan constitutes the authority to burn. No one has the authority to burn without an approved plan or in a manner not in compliance with the approved plan. Actions taken in compliance with the approved Prescribed Fire Plan will be fully supported. Personnel will be held accountable for actions taken that are not in compliance with elements of the approved plan regarding execution in a safe and cost-effective manner.

**AGENCY ADMINISTRATOR GO/NO-GO PRE-IGNITION APPROVAL CHECKLIST**

**PRESCRIBED FIRE NAME:**

Instructions: The Agency Administrator’s GO/NO-GO Pre-Ignition Approval is the intermediate planning review process (i.e. between the Prescribed Fire Complexity Rating System Guide and Go/No-Go Checklist) that should be completed before a prescribed fire can be implemented. The Agency Administrator’s Go/No-Go Pre-Ignition Approval evaluates whether compliance requirements, Prescribed Burn Plan elements, and internal and external notifications have been completed and expresses the Agency Administrator’s intent to implement the Prescribed Burn Plan. If ignition of the prescribed fire is not initiated prior to expiration date determined by the Agency Administrator, a new approval will be required.

YES	NO	KEY ELEMENT QUESTIONS
		Is the Prescribed Fire Plan up to date? <i>Hints: amendments, seasonality.</i>
		Have all compliance requirements been completed? <i>Hints: cultural, threatened and endangered species, smoke management, NEPA.</i>
		Is risk management in place and the residual risk acceptable? <i>Hints: Prescribed Fire Complexity Rating Guide completed with rational and mitigation measures identified and documented?</i>
		Will all elements of the Prescribed Fire Plan be met? <i>Hints: Preparation work, mitigation, weather, organization, prescription, contingency resources</i>
		Will all internal and external notifications and media releases be completed? <i>Hints: Preparedness level restrictions</i>
		Are key agency staff fully briefed and understand prescribed fire implementation?
		Other:

Recommended by: \_\_\_\_\_ Date: \_\_\_\_\_  
FMO/Prescribed Fire Burn Boss

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_  
Agency Administrator

Approval expires (date): \_\_\_\_\_

APPENDIX E. SUPPLEMENTAL INFORMATION

Final Draft July 15, 2005

**PRESCRIBED FIRE GO/NO-GO CHECKLIST**

**PRESCRIBED FIRE NAME:**

<p><b>A.</b> Has the burn unit experienced unusual drought conditions or contain above normal fuel loadings which were not considered in the prescription development? If <b>NO</b> proceed with checklist., if <b>YES</b> go to item B.</p>	<b>YES</b>	<b>NO</b>
<p><b>B.</b> If <b>YES</b> have appropriate changes been made to the Ignition and Holding plan and the Mop Up and Patrol Plans? If <b>YES</b> proceed with checklist below, if <b>NO</b> STOP.</p>		

YES	NO	QUESTIONS
		Are ALL fire prescription elements met?
		Are ALL smoke management specifications met?
		Has ALL required current and projected fire weather forecast been obtained and are they favorable?
		Are ALL planned operations personnel and equipment on-site, available, and operational?
		Has the availability of ALL contingency resources been checked, and are they available?
		Have ALL personnel been briefed on the project objectives, their assignment, safety hazards, escape routes, and safety zones?
		Have all the pre-burn considerations identified in the Prescribed Fire Plan been completed or addressed?
		Have ALL the required notifications been made?
		Are ALL permits and clearances obtained?
		In your opinion, can the burn be carried out according to the Prescribed Fire Plan and will it meet the planned objective?

**If all the questions were answered "YES" proceed with a test fire. Document the current conditions, location, and results**

\_\_\_\_\_

Burn Boss

\_\_\_\_\_

Date

APPENDIX E. SUPPLEMENTAL INFORMATION

Final Draft July 15, 2005

<b>COMPLEXITY ANALYSIS SUMMARY</b>			
<b>ELEMENT</b>	<b>RISK</b>	<b>POTENTIAL CONSEQUENCE</b>	<b>TECHNICAL DIFFICULTY</b>
1. Potential for escape			
2. The number and dependence of activities			
3. Off-site Values			
4. On-Site Values			
5. Fire Behavior			
6. Management organization			
7. Public and political interest			
8. Fire Treatment objectives			
9. Constraints			
10. Safety			
11. Ignition procedures/methods			
12. Interagency coordination			
13. Project logistics			
14. Smoke management			

<b>COMPLEXITY RATING SUMMARY</b>	
	<b>OVERALL RATING</b>
<b>RISK</b>	
<b>CONSEQUENCES</b>	
<b>TECHNICAL DIFFICULTY</b>	
<b>SUMMARY COMPLEXITY DETERMINATION</b>	
<b>RATIONALE:</b>	

APPENDIX E. SUPPLEMENTAL INFORMATION

Final Draft July 15, 2005

<b>DESCRIPTION OF PRESCRIBED FIRE AREA</b>	<b>PROJECT NAME:</b>	
	<b>BURN UNIT NAME:</b>	
<b>PHYSICAL DESCRIPTION</b>		
<b>PROJECT OR BURN UNIT BOUNDARY DESCRIPTION</b>		
<b>FUELS DESCRIPTION</b>		
<b>ON-SITE FUELS DATA</b>	<b>ADJACENT FUELS DATA</b>	
<b>DESCRIPTION OF UNIQUE FEATURES</b> (hazards, regulations, issues, constraints, etc. Examples may include: fences to protect, power poles, historical/cultural sites, threatened and endangered species or habitat, etc.)		

APPENDIX E. SUPPLEMENTAL INFORMATION

Final Draft July 15, 2005

<b>GOALS AND OBJECTIVES</b>	<b>PROJECT NAME:</b>	
	<b>BURN UNIT NAME:</b>	
<b>PURPOSE AND RESOURCE MANAGEMENT GOALS:</b>		
<b>RESOURCE AND PRESCRIBED FIRE OBJECTIVES</b>		
<b>RESOURCE OBJECTIVES:</b>	<b>PRESCRIBED FIRE OBJECTIVES:</b>	
<b>OBJECTIVES ARE S.M.A.R.T.</b>	Specific Measurable Attainable Reasonable Time Related	
<b>CONSTRAINTS:</b>		

APPENDIX E. SUPPLEMENTAL INFORMATION

Final Draft July 15, 2005

FUNDING	PROJECT NAME:		
	BURN UNIT NAME:		
PRESCRIBED FIRE PHASE:	COST:	FUNDING SOURCE:	
<b>TOTAL OF ALL ESTIMATED COSTS:</b>			

APPENDIX E. SUPPLEMENTAL INFORMATION

Final Draft July 15, 2005

<b>PRESCRIPTION: ENVIRONMENTAL PARAMETERS</b>	<b>PROJECT NAME:</b>			
	<b>BURN UNIT NAME:</b>			
	<b>PRESCRIPTION COVERAGE: (Rx type &amp;/or ignition method and season should be covered when multiple Rx included)</b>			
<b>ENVIRONMENTAL PARAMETERS NEEDED TO PRODUCE THE DESIRED FIRE BEHAVIOR: Fill in applicable environmental parameters (weather, topography, fuels, etc.) for this fuel model. Separate environmental prescriptions may be needed for multiple fuel model conditions, seasonal differences and/or types of ignition (black lining, underburning, broadcast aerial ignition, etc.*</b>	<b>Fuels Within the Project or Burn Unit Boundary</b>		<b>Fuels Outside of The Project or Burn Unit Boundary</b>	
	<b>Low Fire Intensity</b>	<b>High Fire Intensity</b>	<b>Adjacent</b>	<b>Max. Spot Distance</b>
	<b>Environmental parameters discussion, or description of empirical evidence utilized:</b>			

\*Separate prescriptions pages should be added for multiple prescriptions and result in multiple complexity ratings and burn organizations.

APPENDIX E. SUPPLEMENTAL INFORMATION

Final Draft July 15, 2005

<b>PRESCRIPTION: FIRE BEHAVIOR PARAMETERS OUTPUTS</b>	<b>PROJECT NAME:</b>			
	<b>BURN UNIT NAME:</b>			
	<b>PRESCRIPTION COVERAGE:</b> (Rx type &/or ignition method and season should be covered when multiple Rx included)			
<b>DESCRIPTION OF PRESCRIBED FIRE BEHAVIOR CHARACTERISTICS NEEDED TO MEET THE RESOURCE MANAGEMENT OBJECTIVES STATED IN THE OBJECTIVES SECTION: Fill-in all applicable fire behavior parameters (flame lengths, rate of spread, scorch height, ERC, etc.) for this fuel model. Separate environmental prescriptions may be needed for multiple fuel model conditions, seasonal differences and/or types of ignition (black lining, underburning, broadcast, aerial ignition, etc.)*</b>	<b>Fire Behavior For Fuels Within the Project or Burn Unit Boundary</b>		<b>Fire Behavior For Fuels Outside the Project or Burn Unit Boundary</b>	
	<b>Low Fire Intensity</b>	<b>High Fire Intensity</b>	<b>Adjacent</b>	<b>Max. Spot Distance</b>
	Fire Behavior outputs may be derived from BEHAVE models, nomograms, or historical/empirical evidence. Include modeling and/or empirical evidence documentation as an appendix or in the fire behavior narrative.			
<b>Fire Behavior Narrative or description of empirical evidence:</b>				
[Empty space for narrative]				

\*Separate prescriptions pages should be added for multiple prescriptions and result in multiple complexity ratings and burn organizations.

APPENDIX E. SUPPLEMENTAL INFORMATION

Final Draft July 15, 2005

<b>SCHEDULING</b>	<b>PROJECT NAME:</b>	
	<b>BURN UNIT NAME:</b>	
<b>IGNITION TIMEFRAMES:</b>		
<b>PROJECT DURATION:</b>		
<b>CONSTRAINTS:</b>		

<b>PRE-BURN CONSIDERATIONS</b>	<b>PROJECT NAME:</b>				
	<b>BURN UNIT NAME:</b>				
<b>ON AND OFF-SITE CONSIDERATIONS</b>					
<b>ON SITE:</b> <b>OFF SITE:</b>					
<b>METHOD AND FREQUENCY FOR OBTAINING WEATHER FORECAST(S):</b>					
<b>NOTIFICATIONS:</b>					
<b>Who</b>	<b>When*</b>	<b>Phone Number and/or e-mail</b>	<b>Responsibility</b>	<b>Date</b>	<b>Method</b>

APPENDIX E. SUPPLEMENTAL INFORMATION

Final Draft July 15, 2005

<b>PRESCRIBED FIRE BRIEFING CHECKLIST</b>	
<input type="checkbox"/>	<b>Burn Organization</b>
<input type="checkbox"/>	<b>Burn Objectives</b>
<input type="checkbox"/>	<b>Description of Burn Area</b>
<input type="checkbox"/>	<b>Expected Weather &amp; Fire Behavior</b>
<input type="checkbox"/>	<b>Communications</b>
<input type="checkbox"/>	<b>Ignition plan</b>
<input type="checkbox"/>	<b>Holding Plan</b>
<input type="checkbox"/>	<b>Contingency Plan</b>
<input type="checkbox"/>	<b>Wildfire Conversion</b>
<input type="checkbox"/>	<b>Safety</b>
<p>The Prescribed Fire Burn Boss, or designee, will ensure that any new personnel arriving to the prescribed fire receives a briefing prior to assignment.</p>	

APPENDIX E. SUPPLEMENTAL INFORMATION

Final Draft July 15, 2005

<b>ORGANIZATION AND EQUIPMENT</b>	<b>PROJECT NAME:</b>	
	<b>BURN UNIT NAME:</b>	
<p>Specify the minimum required implementation organization to meet the capabilities by position, equipment, and the supplies needed for the prescribed fire until declared out. Different organizations may be identified for different stages of implementation (i.e. holding v. mop-up and patrol, different ignition operations, different prescriptions).</p>		
<b>CHANGES TO ORGANIZATION DURING IMPLEMENTATION:</b>		
<p>Any changes to the organization during implementation must be documented. These are changes that may reflect assignments to other personnel not changes to the capabilities, equipment or supplies which would require an amendment.</p>		



APPENDIX E. SUPPLEMENTAL INFORMATION

Final Draft July 15, 2005

<b>PUBLIC, PERSONNEL SAFETY</b>	<b>PROJECT NAME:</b>	
	<b>BURN UNIT NAME:</b>	
<b>GENERAL PUBLIC AND PERSONNEL SAFETY MESSAGE:</b>		
<b>SPECIFIC SAFETY DISCUSSION INCLUDING UNIQUE HAZARDS AND CONCERNS:</b>		

Final Draft July 15, 2005

<b>EMERGENCY MEDICAL PLAN</b>	<b>PROJECT NAME:</b>	
	<b>BURN UNIT NAME:</b>	
<b>EMERGENCY FACILITIES:</b>		
<b>EMERGENCY EVACUATION:</b>		
<b>MEDICAL EMERGENCY PROCEDURES:</b>		
<b>DIRECTIONS FROM NEAREST MEDICAL FACILITY TO PROJECT VIA GROUND:</b>		

APPENDIX E. SUPPLEMENTAL INFORMATION

Final Draft July 15, 2005

<b>TEST FIRE</b>	<b>PROJECT NAME:</b>				
	<b>BURN UNIT NAME:</b>				
<b>PLANNED LOCATION &amp; SPECIFIC INSTRUCTIONS:</b>					
<b>BURN DAY DOCUMENTATION</b>					
<b>WEATHER CONDITIONS ONSITE:</b>			<b>RESULTS OF TEST FIRE:</b>		
<b>Does the test fire meet prescription parameters?</b>	<b>YES</b>		<b>NO</b>		
<b>COMMENTS:</b>					

APPENDIX E. SUPPLEMENTAL INFORMATION

Final Draft July 15, 2005

<b>IGNITION PLAN</b>	<b>PROJECT NAME:</b>	
	<b>BURN UNIT NAME:</b>	
<b>NARRATIVE FOR IGNITION PLAN:</b>		
<p>METHOD(S)*:</p> <p>TECHNIQUES:</p> <p>SEQUENCES:</p> <p>ANTICIPATED PATTERNS:</p>		
<p>If aerial ignition (or other aerial operations) is planned, also cover aviation operations, organization, and safety. If a specific administrative or agency aerial ignition plan exists, attach to the prescribed fire plan</p>		

\*Multiple prescriptions may require identifying and developing multiple ignition organizations and implementation instructions.

APPENDIX E. SUPPLEMENTAL INFORMATION

Final Draft July 15, 2005

<b>HOLDING PLAN</b>	<b>PROJECT NAME:</b>	
	<b>BURN UNIT NAME:</b>	
<b>GENERAL PROCEDURES NARRATIVE FOR PRESCRIBED FIRE HOLDING:</b>		
<b>CRITICAL HOLDING POINTS AND MITIGATION ACTIONS:</b>		
Critical holding points and safety zones will be identified on the project map		

<b>PRESCRIBED FIRE MOP-UP &amp; PATROL</b>	<b>PROJECT NAME:</b>	
	<b>BURN UNIT NAME:</b>	
<b>GENERAL PROCEDURES NARRATIVE FOR PRESCRIBED FIRE MOP-UP AND PATROL:</b>		
<b>PRESCRIBED FIRE DECLARED OUT BY:</b>		

APPENDIX E. SUPPLEMENTAL INFORMATION

Final Draft July 15, 2005

<b>CONTINGENCY PLAN</b>	<b>PROJECT NAME:</b>	
	<b>BURN UNIT NAME:</b>	
<b>TRIGGER POINTS:</b>		
Determine trigger points that indicate when additional holding resources and actions are needed to ensure the prescribed fire stays within prescription.		
<b>ACTIONS NEEDED:</b>		
Describe actions to be taken to ensure the prescribed fire stays within prescription.		
<b>MINIMUM RESOURCES AND MAXIMUM RESPONSE TIME(S):</b>		
Describe personnel needed to ensure the prescribed fire stays within prescription. Plans may identify different levels of contingency staffing needed for different stages of the burn, ignition through patrol. Verify availability of identified contingency resources on day of implementation.		

If contingency resources availability falls below plan levels for that stage of the burn, actions must be taken to secure operations until identified contingency resources are replaced.

With the ordering and/or deployment of contingency resources, the burn boss will notify the Agency Administrator through the appropriate chain of command.

APPENDIX E. SUPPLEMENTAL INFORMATION

Final Draft July 15, 2005

<b>WILDFIRE CONVERSION</b>	<b>PROJECT NAME:</b>	
	<b>BURN UNIT NAME:</b>	
<p>A prescribed fire must be declared a wildfire by those identified in the plan when that person(s) determines that the contingency actions have failed or are likely to fail and cannot be mitigated within the next burning period by on-site holding forces and any listed contingency resources. In addition, an escaped prescribed fire must be declared a wildfire when the fire has spread outside the project boundary, or is likely to do so and cannot be contained within the next burning period.</p>		
<b>WILFIRE DECLARED BY:</b>		
Who will make the decision that the fire has escaped		
<b>IC ASSIGNMENT:</b>		
Identify who will be the IC		
<b>NOTIFICATIONS:</b>		
Identify the notifications to be made and who will make them.		
<b>EXTENDED ATTACK ACTIONS AND OPPORTUNITIES TO AID IN SUPPRESSION EFFORTS:</b>		

APPENDIX E. SUPPLEMENTAL INFORMATION

Final Draft July 15, 2005

<b>SMOKE MANAGEMENT AND AIR QUALITY</b>	<b>PROJECT NAME:</b>	
	<b>BURN UNIT NAME:</b>	
<b>COMPLIANCE:</b>		
Describe how the project will comply with local community, County, State, Tribal, and Federal air quality regulations.		
<b>IMPACTED AREAS:</b>		
Identify Class I air sheds, restricted areas, non-attainment areas (designated areas), and population centers that may be impacted.		
<b>SENSITIVE FEATURES AND RECEPTORS:</b>		
<b>MITIGATION STRATEGIES AND TECHNIQUES TO REDUCE IMPACTS (If Applicable):</b>		

APPENDIX E. SUPPLEMENTAL INFORMATION

Final Draft July 15, 2005

<b>MONITORING</b>	<b>PROJECT NAME:</b>	
	<b>BURN UNIT NAME:</b>	
<b>MONITORING:</b>		
Describe the monitoring that will be required for the prescribed fire. At a minimum specify the weather, fire behavior and fuels information (forecast and observed) and smoke dispersal monitoring required during all phases of the project and the procedures for acquiring it, including who and when.		

<b>POST-BURN ACTIVITIES</b>	<b>PROJECT NAME:</b>	
	<b>BURN UNIT NAME:</b>	
<b>POST-BURN REPORT:</b>		
Prescribed fire reporting will include: burn day conditions, fire behavior, smoke dispersal, and first order fire effects.		
<b>OTHER:</b>		
Describe other post-burn activities that must be completed. This may include: safety mitigation measures, and rehabilitation needs including those as a result of pre-burn activities undertaken.		



**HAZARD REDUCTION FIRES**

Please Print Legibly

**BURNER AND BURN SITE INFORMATION**

Property Owner(s):	Date:
Location (Street Address):	Tel: ( )
City: County:	Planned burn dates:
Name of Person Setting the Fire if different:	

**SPECIFIC TYPE(S) OF MATERIAL TO BE BURNED**

Natural Vegetation Cleared From Around Buildings or Structures: (PRC Section 4291-related)	Quantity: ( ) Yd <sup>3</sup> or ( ) Tons
Natural Vegetation Cleared From Other Areas on Property: (Unrelated to PRC Section 4291)	Quantity: ( ) Yd <sup>3</sup> or ( ) Tons

**Fires must be set or allowed by the public fire official having jurisdiction. Compliance with Regulation 5 does not relieve a person of the responsibility to know and comply with any other applicable rule, regulation, or law governing the use of fire.**

**BURN AUTHORIZATION (if required by local fire agency)**

Authorizing Public Fire Official:	Tel: ( )
Title:	Date Authorized:
Authorizing Fire Agency:	

**Emergency Waivers (This section should only be completed by an authorizing public fire official to grant an emergency waiver, pursuant to Regulation 5-404.)**

5-401.6 Hazardous Material – See Regulation 5 for definition.

Authorizing Public Fire Official:	Tel: ( )
-----------------------------------	----------

*This notification form is **not** an application for a permit. The District does **not** require a permit in order to burn. You are required to notify the District prior to burning by submitting this form. You will **not** receive a response.*

**By submitting this notification, I understand and acknowledge the restrictions set forth for a Hazardous Material fire as defined in BAAQMD Regulation 5-208, "Hazardous Material."**

Name:	Date:
-------	-------

SEE BACK OF FORM FOR INSTRUCTIONS



APPENDIX E, PART 18

FMU MAPS  
OF PAST AND PROPOSED  
FIRE MANAGEMENT PROJECTS

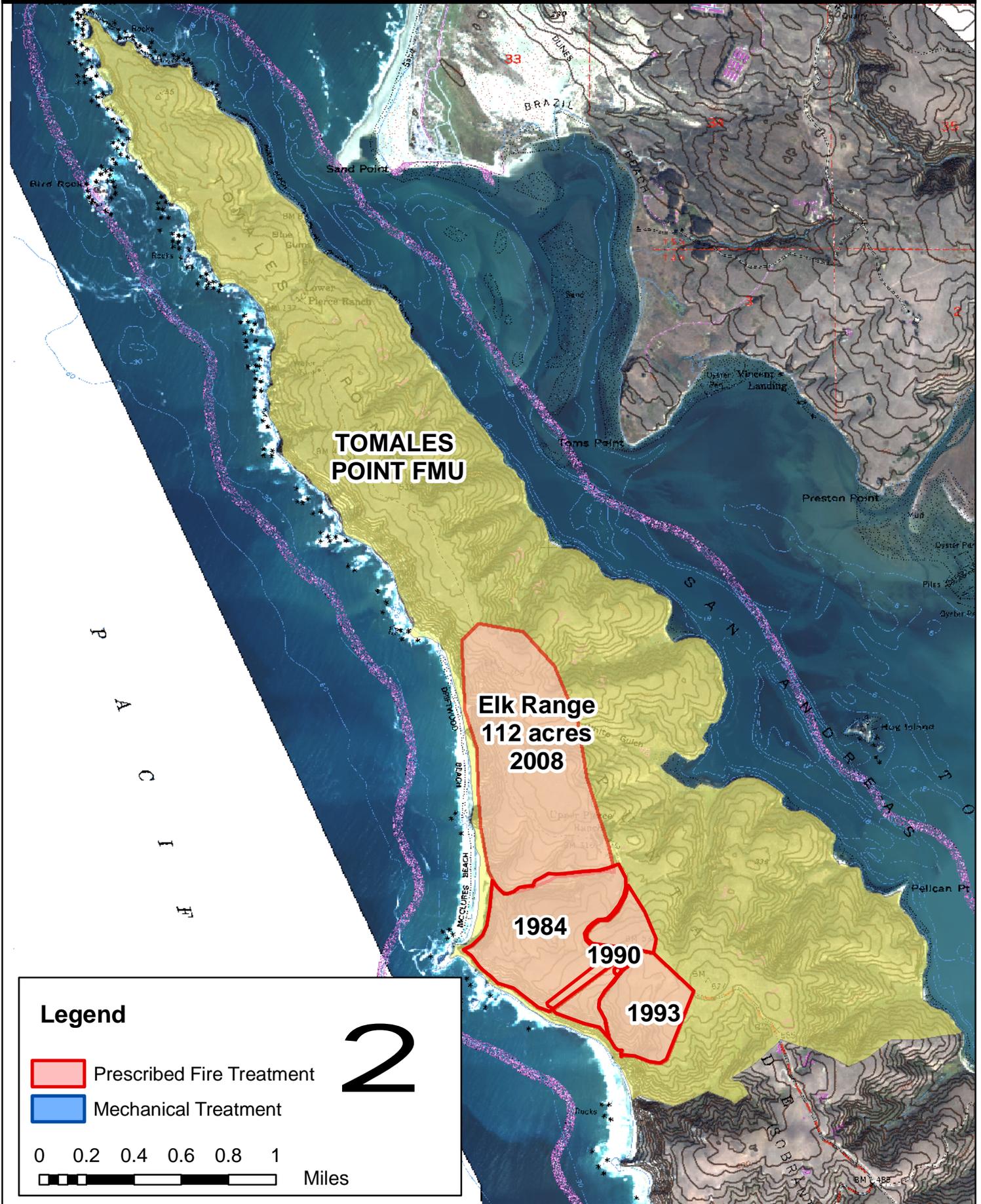
Tomales Point FMU  
Estero FMU  
Inverness FMU  
Limantour FMU  
North Wilderness FMU  
Highway One FMU  
Bolin Ridge FMU  
Palomarin FMU

IMPLEMENTATION STRATEGY  
FOR THE  
PRNS FIRE MANAGEMENT PLAN



# Tomales Point FMU

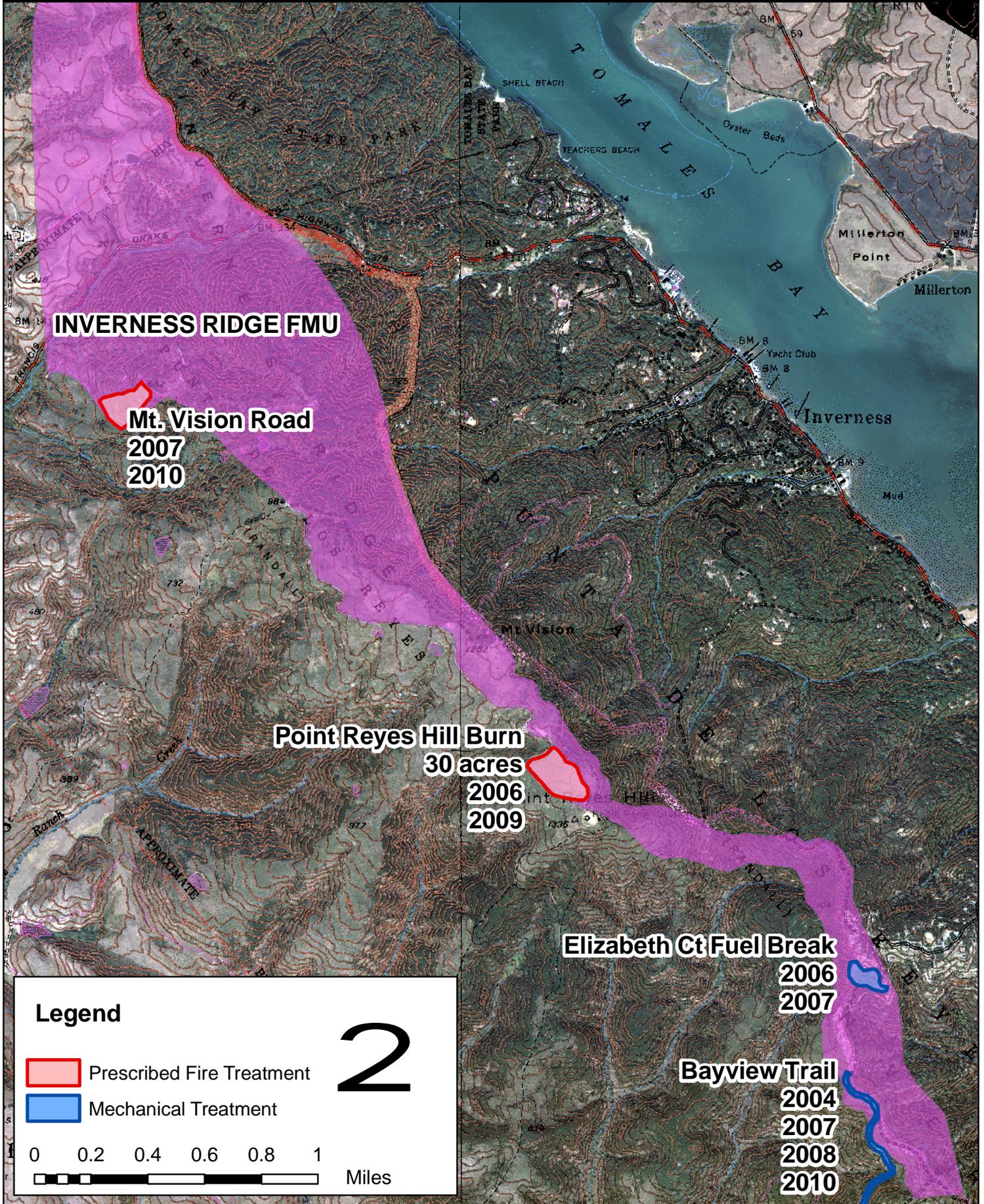
Point Reyes National Seashore  
National Park Service  
Department of the Interior





# Inverness Ridge FMU

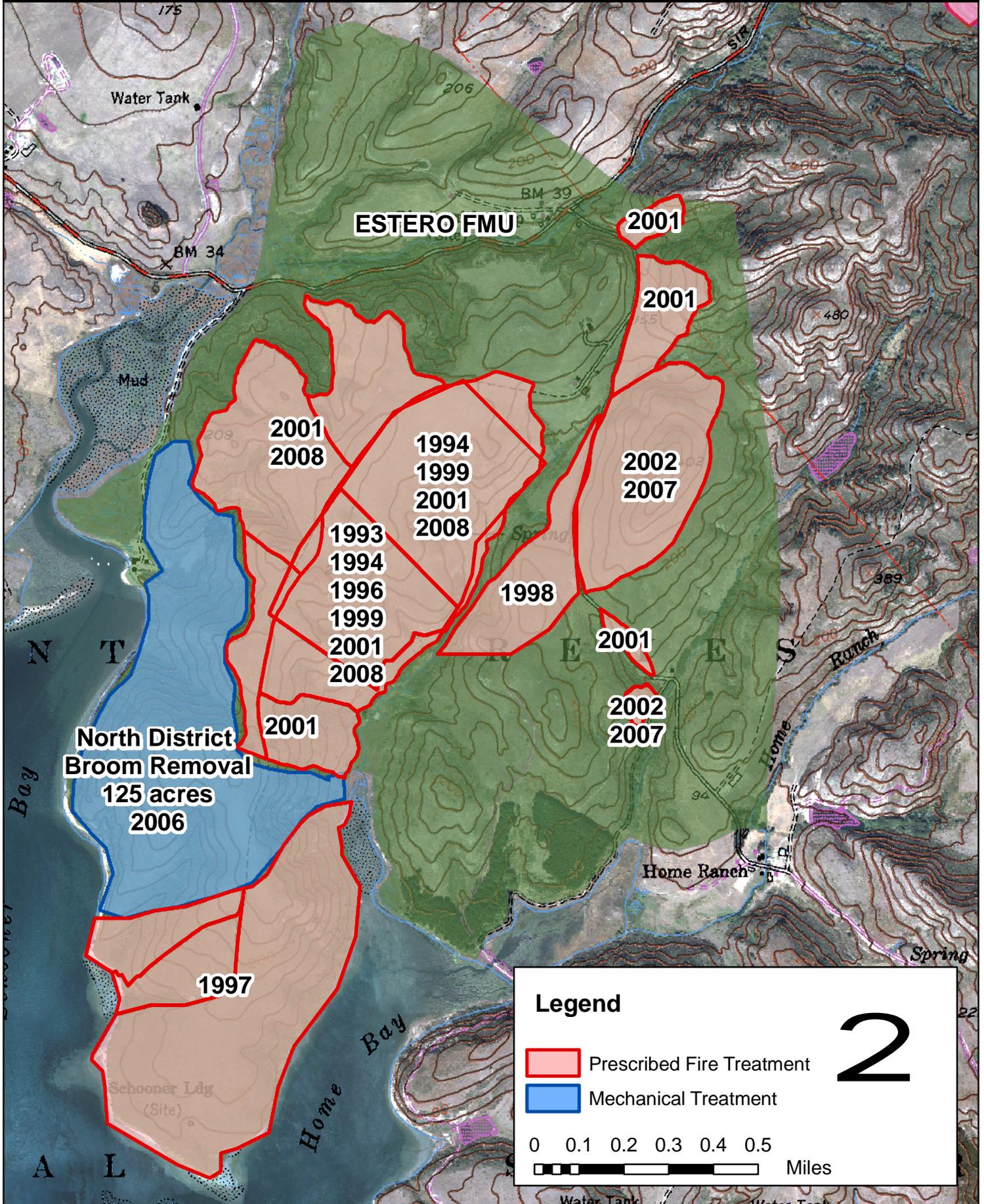
Point Reyes National Seashore  
National Park Service  
Department of the Interior





# Estero FMU

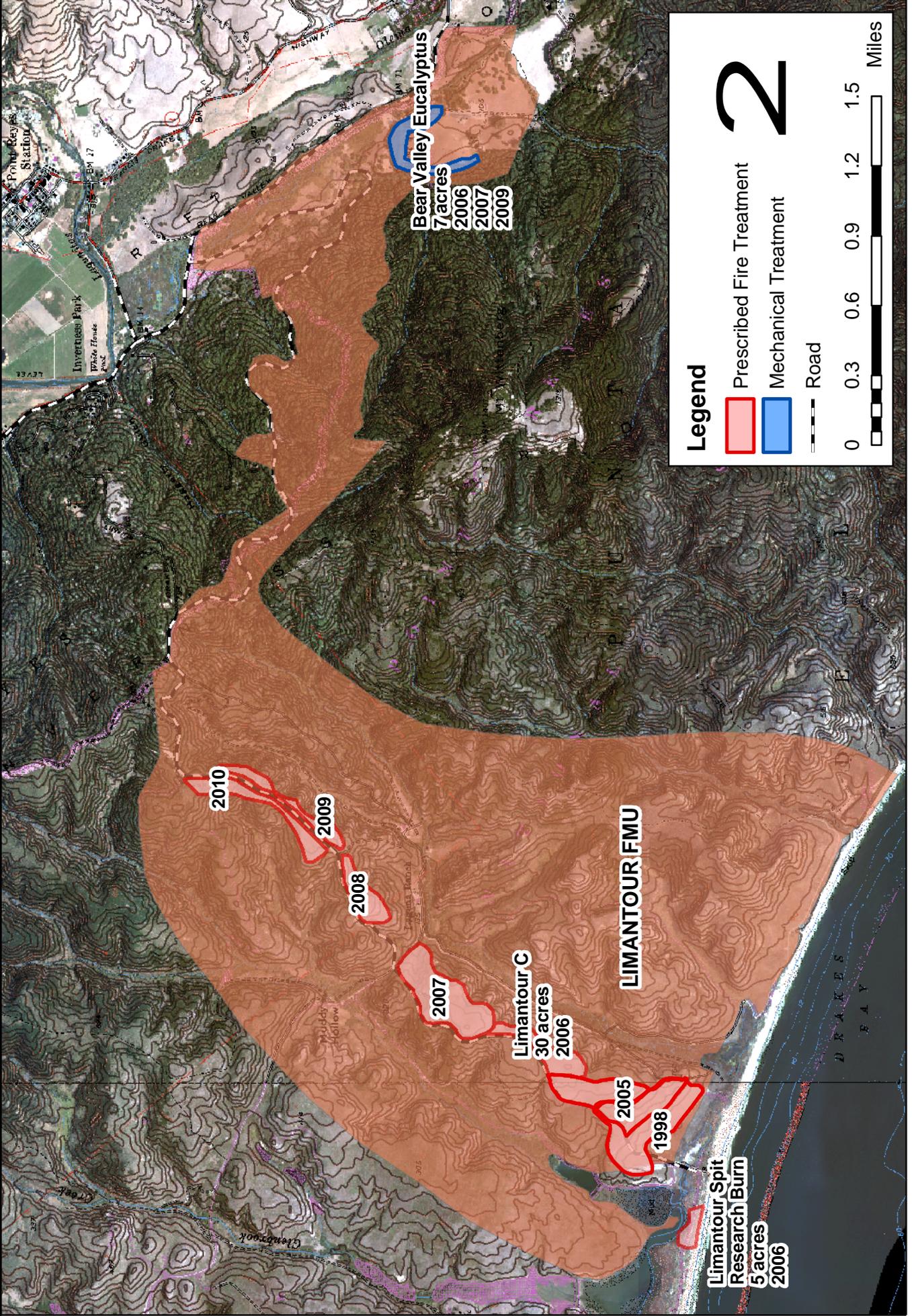
Point Reyes National Seashore  
National Park Service  
Department of the Interior







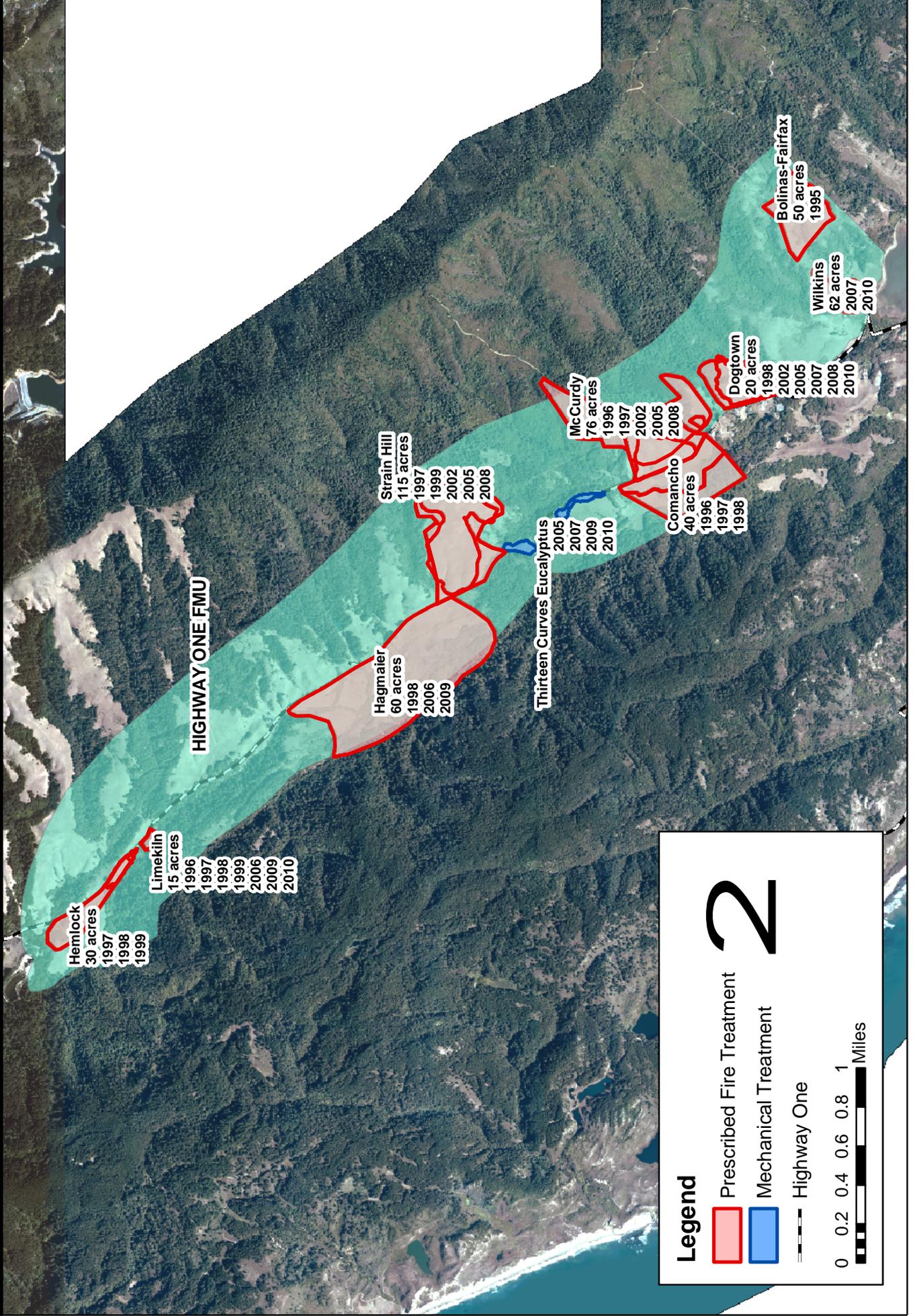
# Limantour FMU







# Highway One FMU



## Legend

Prescribed Fire Treatment

Mechanical Treatment

Highway One

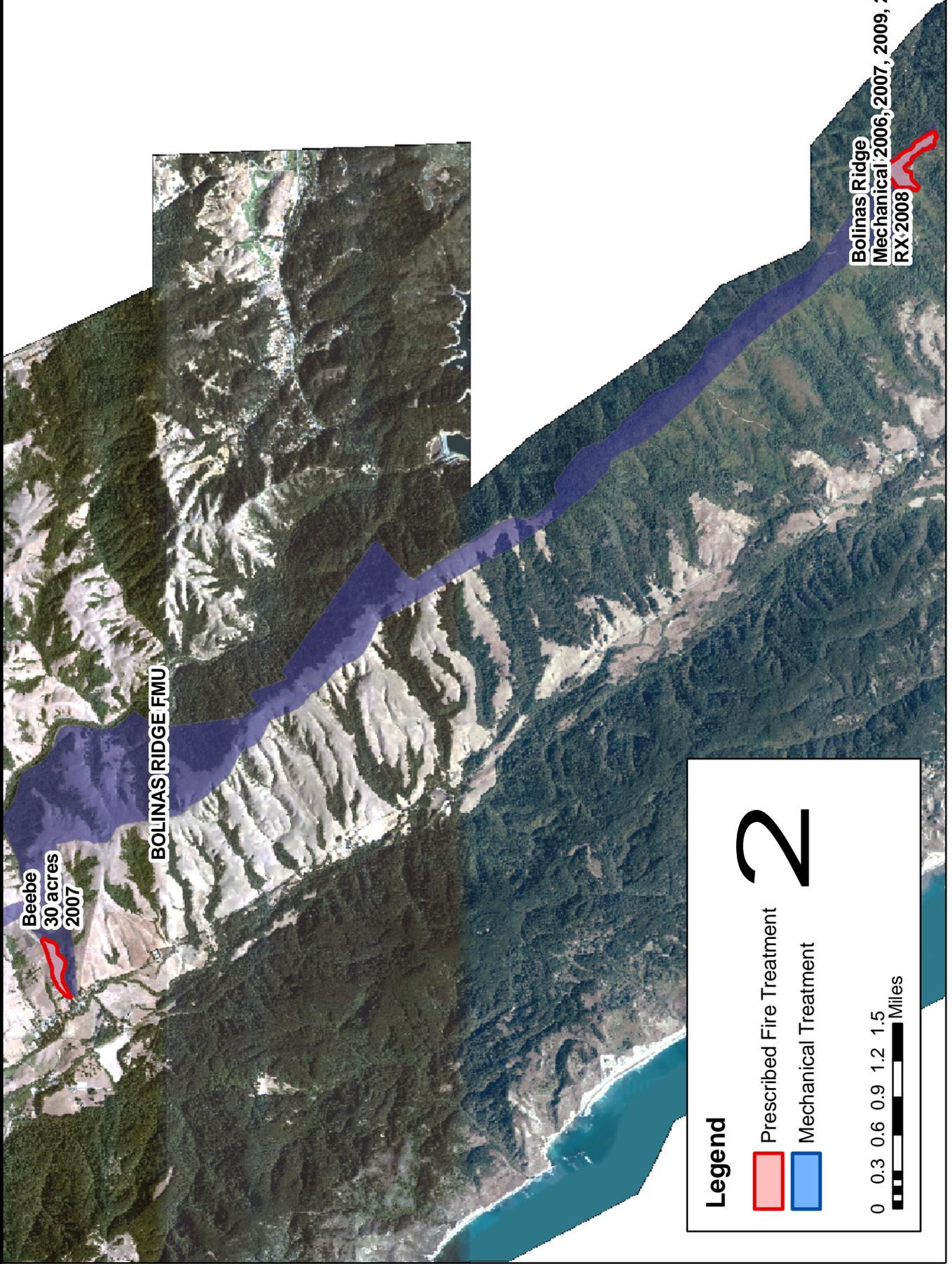


# 2



# Bolinas Ridge FMU

Point Reyes National Seashore  
National Park Service  
Department of the Interior



Beebe  
30 acres  
2007

BOLINAS RIDGE FMU

Bolinas Ridge  
Mechanical 2006, 2007, 2009, 2010  
RX 2008

### Legend

 Prescribed Fire Treatment

 Mechanical Treatment

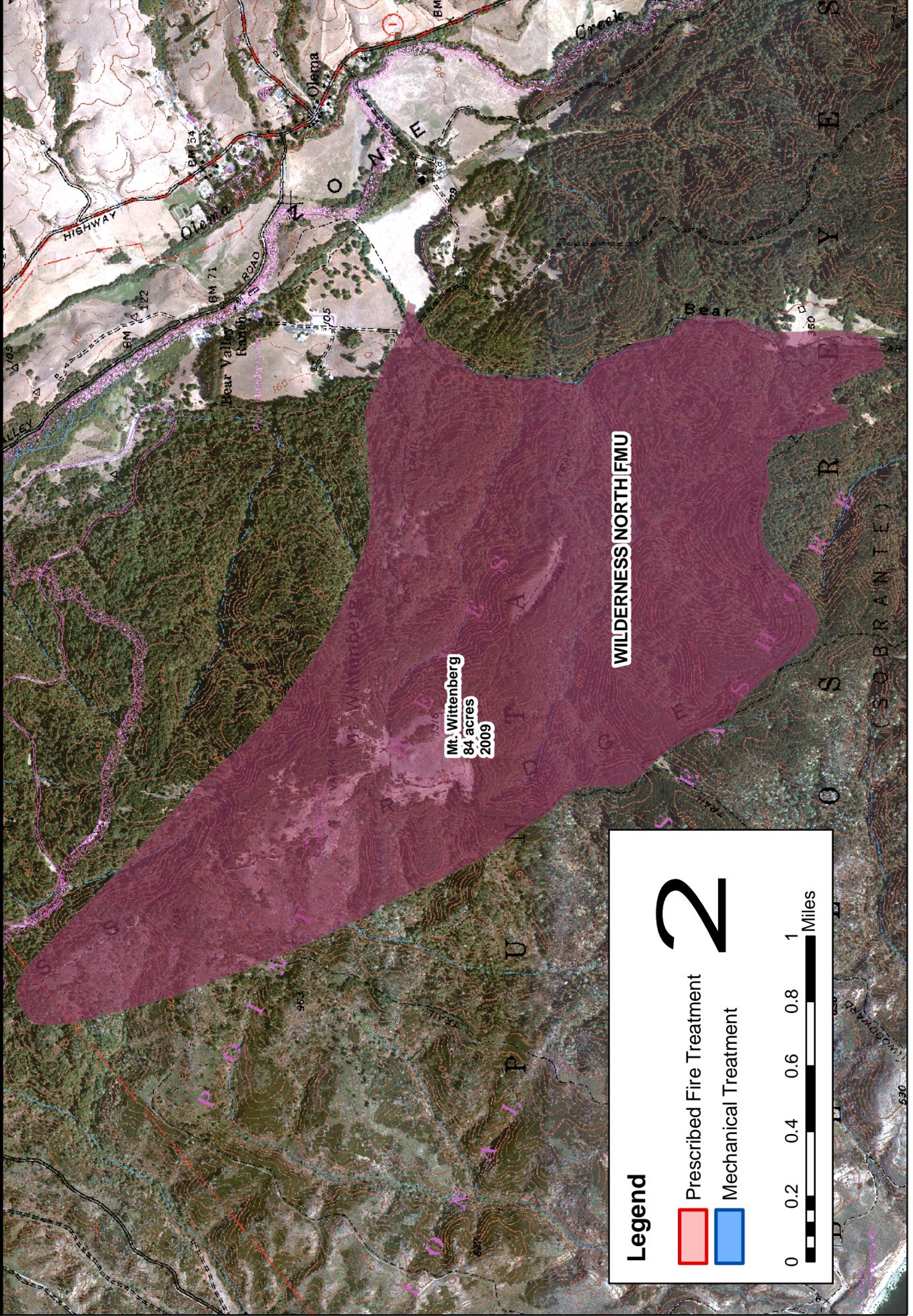
# 2

0 0.3 0.6 0.9 1.2 1.5 Miles



# Wilderness North FMU

Point Reyes National Seashore  
National Park Service  
Department of the Interior





# Palomarin FMU

Point Reyes National Seashore  
National Park Service  
Department of the Interior

PALOMARIN FMU

Palomarin Eucalyptus  
25 acres  
2006  
2008

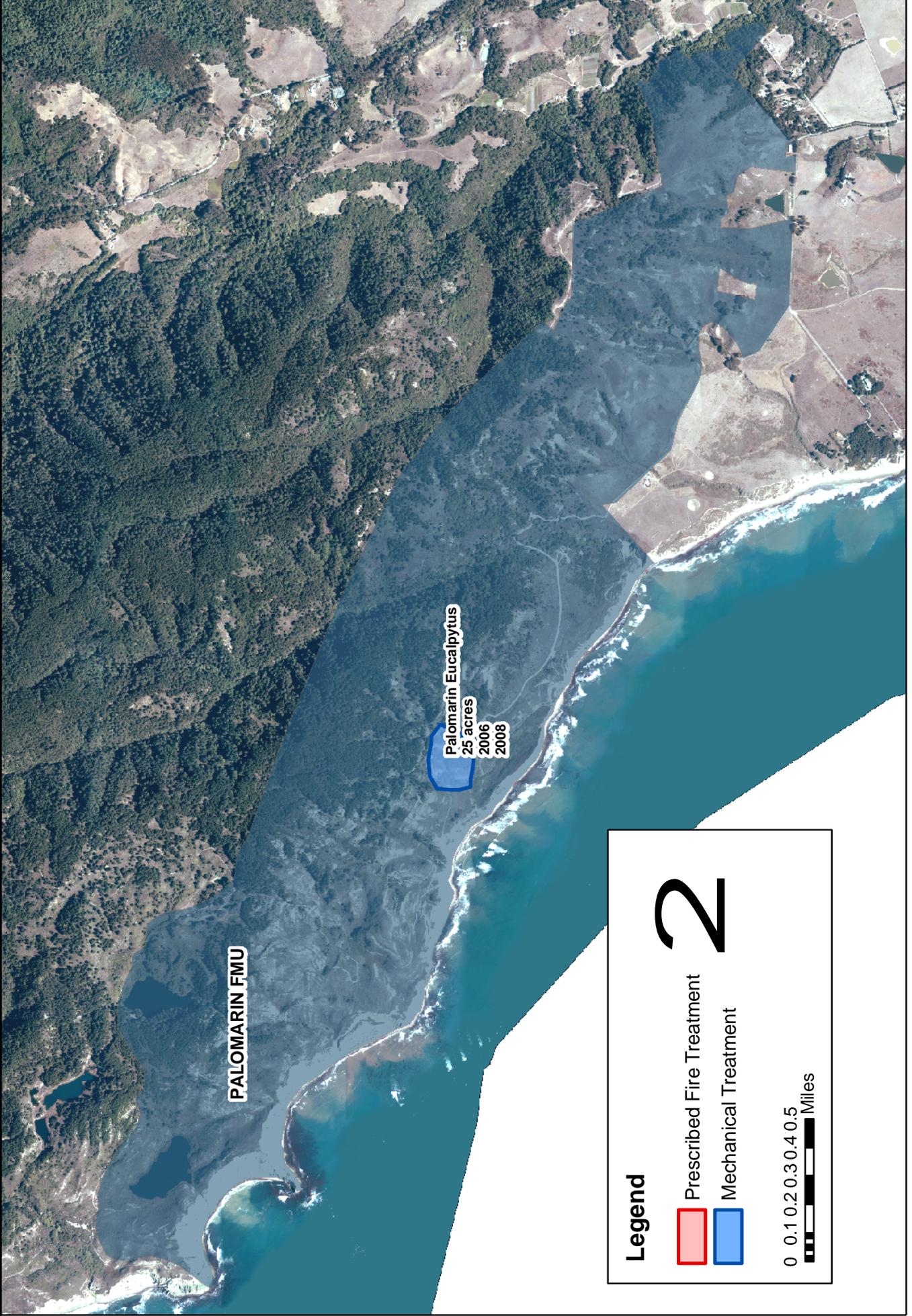
## Legend

 Prescribed Fire Treatment

 Mechanical Treatment

0 0.1 0.2 0.3 0.4 0.5 Miles

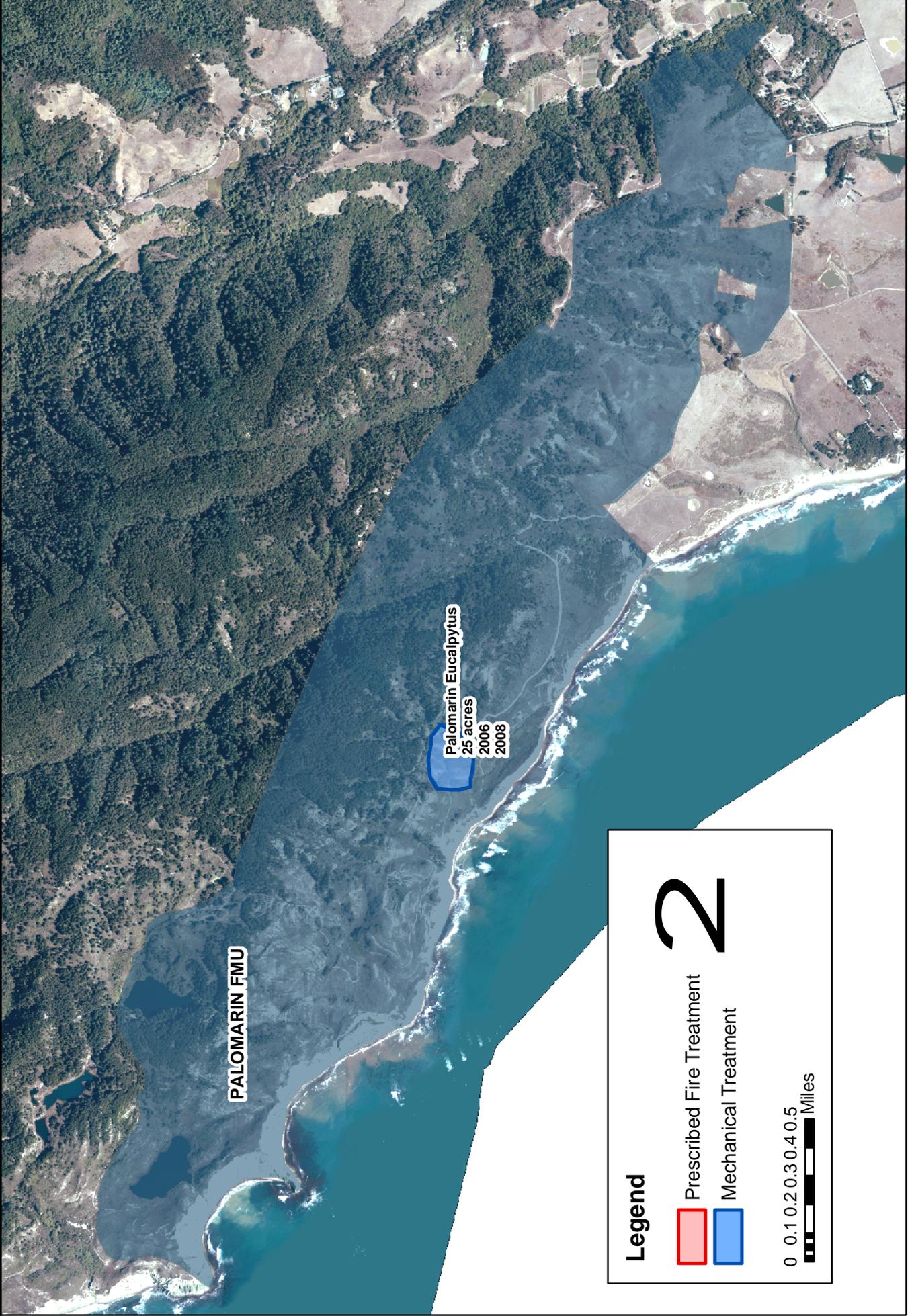
# 2





# Palomarin FMU

Point Reyes National Seashore  
National Park Service  
Department of the Interior



PALOMARIN FMU

Palomarin Eucalyptus  
25 acres  
2006  
2008

**Legend**

 Prescribed Fire Treatment

 Mechanical Treatment

**2**

0 0.1 0.2 0.3 0.4 0.5 Miles



APPENDIX F, PART 19

PRNS FIVE-YEAR TREATMENT PLAN  
AND MAPS

IMPLEMENTATION STRATEGY  
FOR THE  
PRNS FIRE MANAGEMENT PLAN

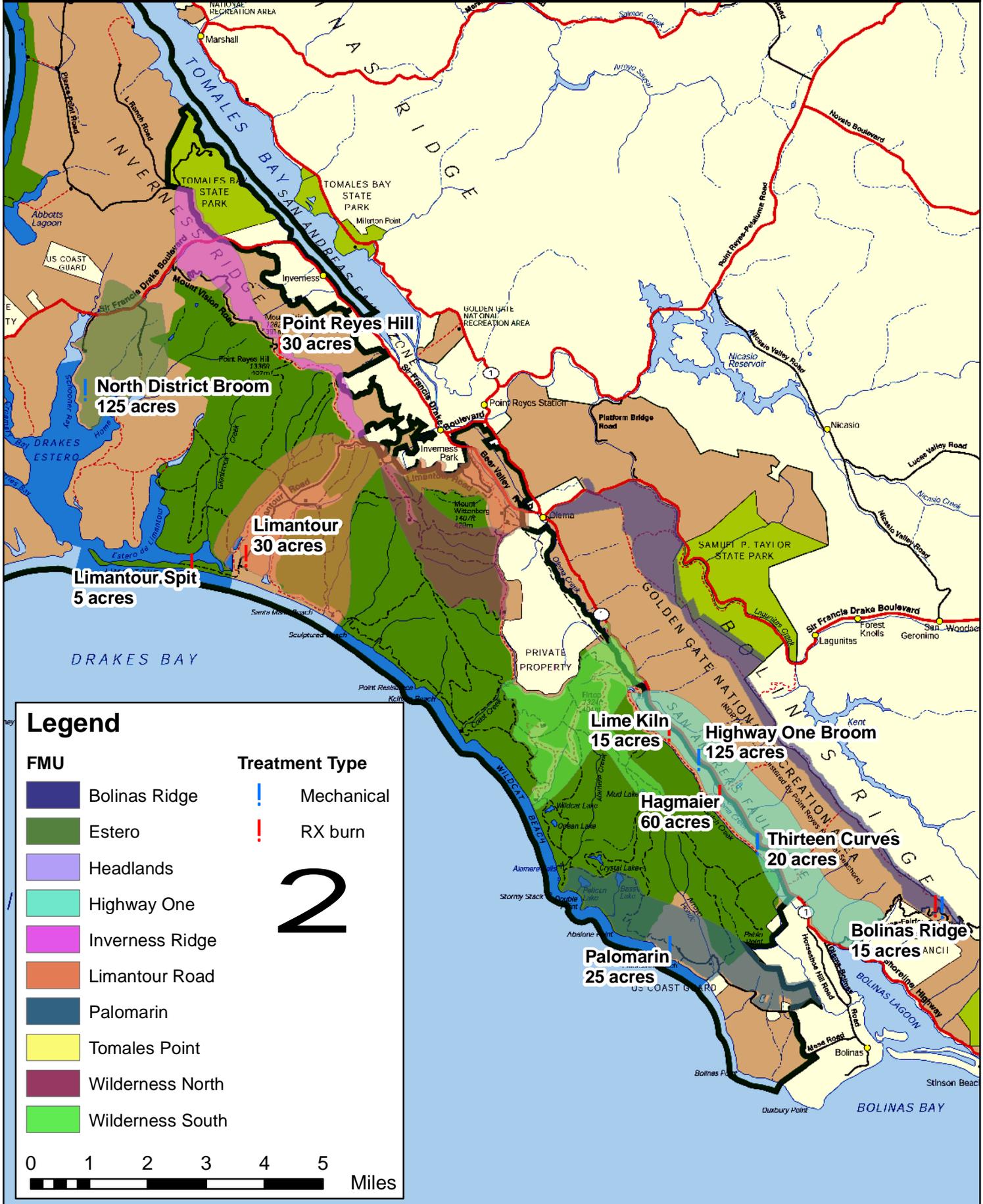


Project	FMU	Acres	Project Type	Specifics	%grass	%shrub	% forest/wdland	Timing	Funding	Last Treated	Maint. Freq.	Issue 1	Issue 2	Obj 1	Obj 2	Date Completed
<b>RX BURN PROJECTS</b>		<b>244</b>														
1 Hagneier	Hwy One	59	Rx		100%	0%	0%	july - sept		1998	8	hazard fuel reduction along Hwy 1.	French broom and velvet grass.	Maintain or decrease the % cover of non-native species.	Maintain GEMO at 10% cover. & Obj #3 Hazard reduction on Hwy One.	
2 Lime Kiln	Hwy One	15	Rx		100%	0%	0%	july - sept		1999	2	French broom	high fuel	Maintain or decrease the % cover of non-native species.	Maintain GEMO at 10% cover. & Obj #3 Hazard reduction on Hwy One.	
3 Point Reyes Hill	Inverness Ridge	30	Rx		0%	100%	0%	july - sept		1995 Fire	11			No Crushing		
4 Limantour Phase 2	Limantour	40	Rx		0%	100%	0%	july - sept	15,000.00	1995 Fire	phased	high fuel	tending towards baccharis monoculture	20% decrease in Baccharis cover by 1 year post-burn.	Increase cover of native plants & maintain height of BAPI below xx cm.	10/20/2006
5 Limantour Phase 3	Limantour	30	Rx		0%	100%	0%	july - sept		1995 Fire	phased	high fuel	tending towards baccharis monoculture			
6 D Ranch	Minimal Management	65	Rx		100%	0%	0%	winter		2005	phased	non-native grasses		Prepare site for seed drilling	Reduce residue grass/match by 75%.	11/1/2006
7 Limantour spit	Limantour	5	Rx							1st Treatment				Use a combination of fire & herbicide to control European beach grass		
<b>MECHANICAL PROJECTS</b>		<b>365</b>														
8 Marin Manzanita monitoring	All	0	compliance	mapping	0%	100%	0%	january	2,500.00	N/A	N/A	CNPS 1B fire adaptive plant	Becomes rare as overstory or taller shrubs develop	Determine extent & population dynamics of A. virgata population in PORE		
9 Bolinas Ridge Fuel Zone	Bolinas Ridge	15	mechanical	thinning, piling, chipping	0%	50%	50%	oct - march	15,000.00	2004	phased	High fire hazard	Rare plants	Hazard fuel reduction	coordinate with Janet Kleih at MMWD	
10 North District Nonnative Plant Treatment	Estero/ Minimal management	125	mechanical	mowing	0%	100%	0%	august - sept	\$48,000 (\$15,000)	1st Treatment	annual	Scotch broom		% reduction in Scotch broom in mature plants.		
11 Park Structures Defensible Space	All	50	mechanical	mow, brush	75%	25%	0%	yearound	55,000.00	2005	annual	Protection of life & property		Defensible space		
12 Hwy 1 Broom, McDonald, McCurdy, Hagneier and Wilkins	Hwy One	125	mechanical	mow	0%	100%	0%	spring	23,000.00	2005	annual	Broom		Reduction in broom		
13 Herbicide application [euc stumps]	Hwy One, Inverness Ridge, Palomarin	25	chemical	chemical	0%	0%	100%	aug-march	5,000.00	2005	continuation	Fire hazard	Invasive plants	Reduce eucalyptus density & spread		
14 Euc Removal Highway One	Hwy One	25	mechanical	thinning, piling and chipping	0%	0%	100%	aug-march	20,000.00	2005	phased	Fire hazard	Invasive plants	Reduce eucalyptus density & spread	decrease dead and downed fuels	decrease dead and downed fuels

Project	FMU	Acres	Project Type	Specifics	%grass	%shrub	% forest/wdland	Timing	Funding	Last Treated	Maint. Freq.	Issue 1	Issue 2	Obj 1	Obj 2	Date Completed
<b>ON HOLD - UNFUNDED</b>																
15 Palomarin Eucalyptus Removal	Palomarin	25	mechanical	felling	0%	0%	100%	aug-march	0 (45000)			High Fire Hazard	Wilderness			
16 Palomarin Eucalyptus Removal	Palomarin	25	chemical	felling	0%	0%	100%	aug-march	5,000.00			High Fire Hazard	Wilderness			
17 Elizabeth Ct. Fuel Break	Inverness Ridge	15	mechanical	thinning, piling, chipping	0%	0%	100%	aug-march	0 (30000)			High Fire Hazard	WUI			
18 Elizabeth Ct. Fuel Break	Inverness Ridge	15	mechanical	thinning, piling, chipping	0%	0%	100%	aug-march	0 (20000)			High Fire Hazard	WUI			
19 Bear Valley Euc Removal	Limantour	7	mechanical	thinning, piling, chipping	0%	0%	100%	aug-march	0 (12000)			High Fire Hazard	Near center of visitor activity/ties			
20 Lime Kiln Compliance	Hwy One	15	compliance	cultural resource Survey	75%	25%	0%	aug-march	0.00			Cultural Resource	Creek supporting listed salmonids			
21 Five Brooks Defensible Space	Hwy One	1	Mechanical	brush, felling	0%	20%	80%	aug-march								
<b>PORE WUI PROJECTS</b>																
22 Cascade Canyon Fuels Treatment Plan	N/A		compliance/ FWS consultation	fuel reduction zone, roadside fuel reduction	25%	25%	50%	aug-march	\$105,000	N/A	N/A	Project area is within 0.25 miles of 2 NSOW activity sites	Rare plants in serpentine area	Complete NEPA compliance	Complete FWS consultation & obtain MCOSD permit	75% complete, needs to complete consultation
23 Laurel Canyon Roadside Fuel Reduction Project	N/A	14.4	implementation and monitoring	limbing trees, brushing shrubs	0%	2000%	8000%	aug-march	\$21,000	N/A	85	NSCW activity site near project area.	Project area adjacent to creek supporting steelhead and coho	Complete NPS NEPA compliance.	Complete consultation with USFWS.	Feb-06
24 Seahaven Roadside Fuel Reduction	N/A	3.4	compliance & implementation	limbing trees, brushing shrubs	0%	1000%	9000%	aug-march	\$24,000	N/A	N/A	high fuel loading	hazardous trees	improve access and safety	reduce roadside fuels	Mar-06

# 2006 Projects

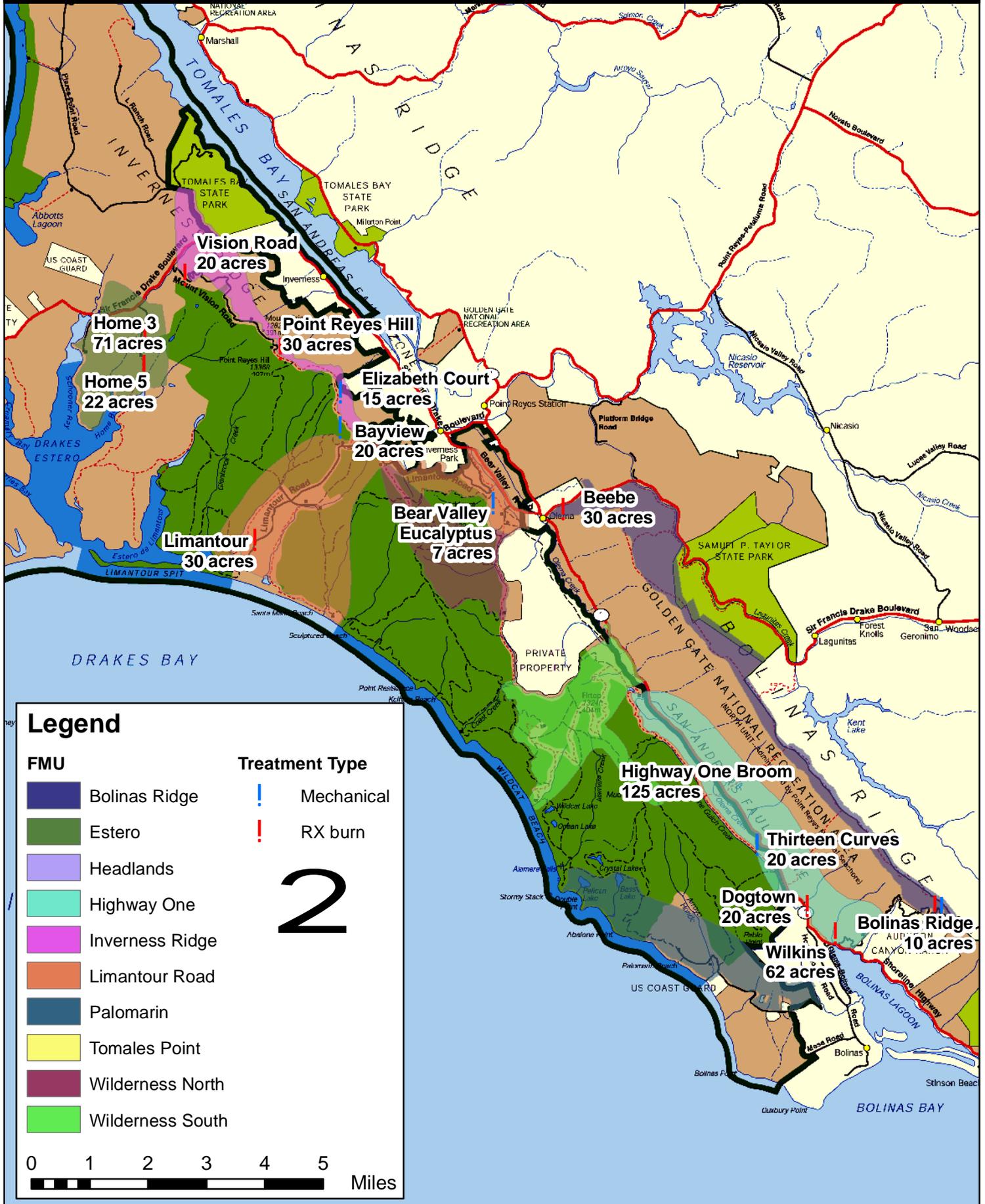
Point Reyes National Seashore  
National Park Service  
Department of the Interior



	Project	FMU	Acres	Project Type	Specifics	%grass	%shrub	% forest/wdland	Timing	Funding	Last Treated	Maint. Freq.	Issue 1	Issue 2	Obj 1	Obj 2
	<b>RX BURN PROJECTS</b>		<b>341</b>													
1	Limantour Phase 4	Limantour	40	Rx		100%	0%	0%	aug-sept		1995 Fire	phased	priority substitute for Beebe			
2	Pt. Reyes Hill	Inverness Ridge	30	Rx		25%	65%	10%	aug-nov		1st Treatment	phased				
3	Vision Rd Switchback	Inverness Ridge	20	Rx		0%	85%	15%	aug-nov		1st Treatment		Heavy Fuels		Roadside fuel reduction	
4	Strain Hill	Hwy One	115	Rx		100%	0%	0%	fall		late FY 2005	2	Broom	Fuel loading along critical ingress/egress route	Roadside fuel reduction	control of invasive exotic species
5	McCurdy Broadcast	Hwy One	76	Rx		100%	0%	0%	fall		late FY 2005	2	Broom	Fuel loading along critical ingress/egress route	Roadside fuel reduction	control of invasive exotic species
6	Dogtown	Hwy One	30	Rx		100%	0%	0%	aug-nov		late FY 2005	2	Broom	Fuel loading along critical ingress/egress route	Roadside fuel reduction	control of invasive exotic species
7	Beebe	Bolinas Ridge	30	Rx		80%	20%	0%	aug-nov	16,000	late FY 2005	4	Hazard fuels/funded	Fuel loading along critical ingress/egress route	Roadside fuel reduction	control of invasive exotic species
	<b>MECHANICAL PROJECTS</b>		<b>391</b>													
8	Park Structures Defensible Space	All	50	mechanical	mow, brush	N/A	N/A	N/A	yearound	\$45,000	2006	annual	funded			
9	Hwy 1 Broom, McDonald, McCurdy, Hagmeier, Wilkins	Hwy One	125	mechanical	mow	90%	10%	0%	spring	\$23,000	2006	annual	funded			
14	Bayview Trail Fuel Break	Limantour	10	mechanical	remove	0%	100%	0%	aug-march	17,600	1st Treatment	2	funded			
15	Bayview Trail Fuel Break	Limantour	6	mechanical	piling	0%	100%	0%	aug-march	0	1st Treatment	2	funded			
16	Bayview Trail Fuel Break	Limantour	10	mechanical	chipping	0%	100%	0%	aug-march	0	2005	2	funded			
11	Elizabeth Ct. Fuel Break (thin)	Inverness Ridge	15	mechanical	thin	0%	0%	100%	oct - march	30,000	1st Treatment		unfunded			
12	Elizabeth Ct. Fuel Break (disposal)	Inverness Ridge	15	mechanical	disposal	0%	0%	100%	oct - march	20,000	1st Treatment		unfunded			
13	Highway One Euc Removal - 13 curves (intermed. cut)	Hwy One	25	mechanical	thin	0%	0%	100%	aug-march		2006	phased	unfunded			
14	Highway One Euc Removal - 13 curves (intermed. cut)	Hwy One	25	mechanical	chip	0%	0%	100%	aug-march		2006	phased	unfunded			
15	Highway One Euc Removal - 13 curves (intermed. cut)	Hwy One	25	mechanical	herbicide	0%	100%	100%	aug-march		2006	phased				
16	Bolinas Ridge	Bolinas Ridge	10	mechanical	brush	0%	50%	50%	aug-march		2006	phased				
17	Palomarin (first thinning)	Palomarin	25	mechanical	thin	0%	0%	100%	aug-march	45,000	1 treatment	phased	funded			
18	Palomarin (first thinning)	Palomarin	25	mechanical	treat	0%	0%	100%	aug-march	0	1 treatment	phased	funded			
19	Palomarin (first thinning)	Palomarin	25	mechanical	disposal	0%	0%	100%	aug-march	0	1 treatment	phased	funded			

# 2007 Projects

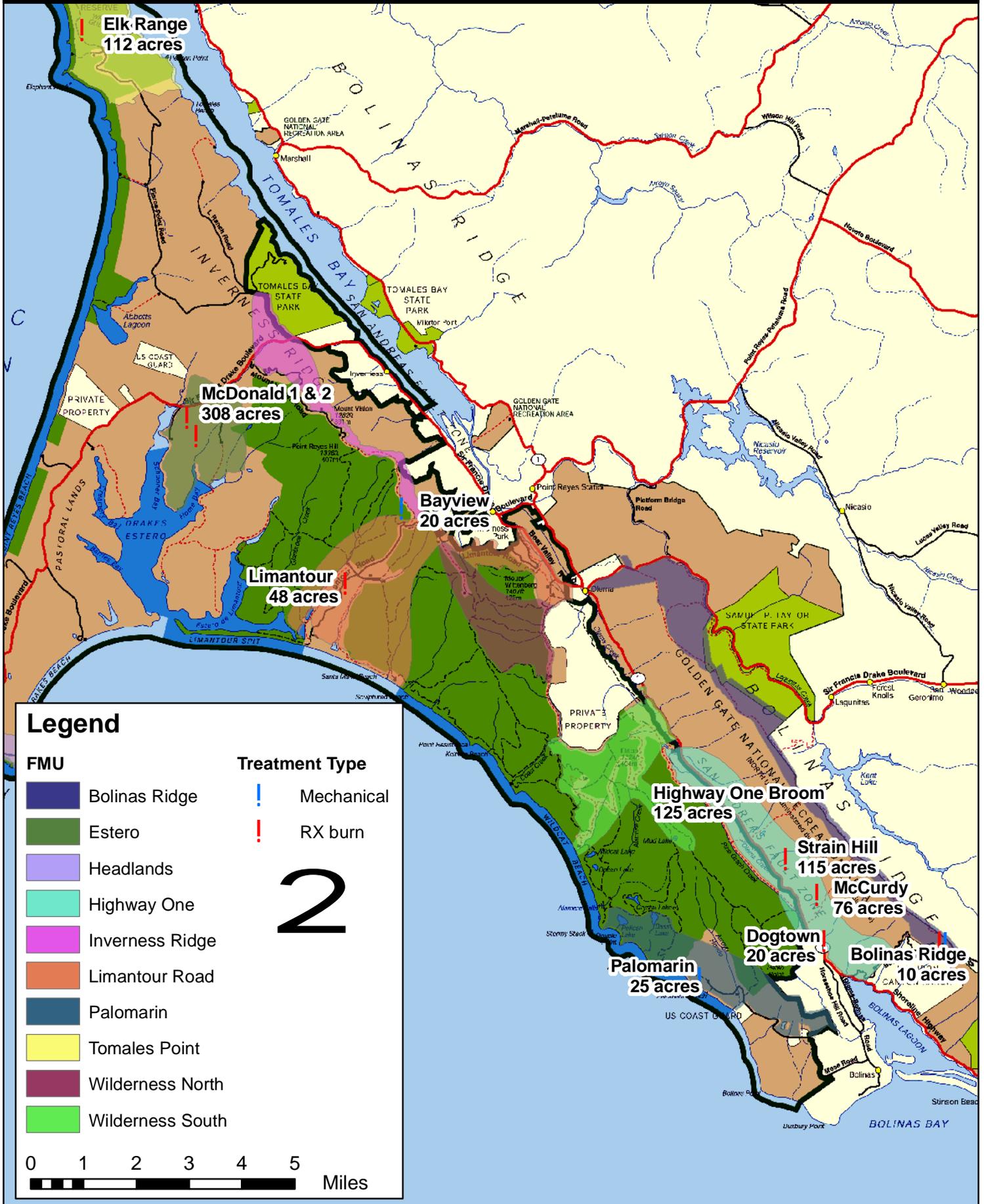
Point Reyes National Seashore  
National Park Service  
Department of the Interior



		FMU	Acreage	Project Type	Specifics	%grass	%shrub	% forest/ woodland	Proposed Season	Funding	Yr. Last Treated	Maint. Freq.	Issue 1	Issue 2	Obj 1	Obj 2
	<b>RX BURN PROJECTS</b>		<b>677</b>													
1	Limantour 5	Limantour	48	Rx		50%	50%	0%	fall		2005	3				
2	Elk Range 2	Tomales Pt.	112	Rx		55%	45%	0%	late summer/fall or late winter		1st Treatment		Need to avoid exclosures & unfenced reference sites.	must avoid calving season.		
3	Bolinas Ridge	Bolinas Ridge	39	Rx		55%	45%	0%	fall		1st Treatment					
4	Lime Kiln	Hwy One	15	Rx		100%		0%	july - sept		1999	2	French broom	high fuel	Maintain or decrease the % cover of non-native species.	Maintain GEMO at 10% cover. & Obj #3 Hazard reduction on Hwy One
5	Home 3	Estero	71	Rx		100%	0%	0%	aug-nov		2001	2				
6	Home 5	Estero	22	Rx		100%	0%	0%	aug-nov		2001	2				
7	Wilkins	Hwy One	62	Rx		100%	0%	0%	aug-nov		1st Treatment?	2	Broom	Fuel loading along critical ingress/egress route	Roadside fuel reduction	control of invasive exotic species
8	McDonald 1	Hwy One	187	Rx		55%	45%	0%	fall		2001	1 - 2 years				
9	McDonald 2	Hwy One	121	Rx		55%	45%	0%	fall		2001	1 - 2 years				
	<b>MECHANICAL PROJECTS</b>		<b>75</b>													
10	Park Structures Defensible Space	All	50	mechanical	mow, brush	N/A	N/A	N/A	yearound	\$45,000	2007	annual				
11	Hwy 1 Broom, McDonald, McCurdy, Hagmeier, Wilkins	Hwy One	125	mechanical	mow	90%	10%	0%	spring	\$23,000	2007	annual				
12	Bear Valley Euc Removal (intermed. thin)	Limantour	7	mechanical	thinning, piling	0%	0%	100%	oct - march	12,000	2004	phased				
13	Bear Valley Euc Removal (disposal)	Limantour	7	mechanical	chipping & disposal	0%	0%	100%	aug-march		2004	phased				
14	Bear Valley Euc Removal (chemical)	Limantour	7	mechanical	herbicide	0%	0%	100%	aug-march		2004	phased				
15	Palomarin (intermed. cut)	Palomarin	25	mechanical	thin	0%	0%	100%	aug-march		2007	phased				
16	Palomarin (intermed. cut)	Palomarin	25	mechanical	treat	0%	0%	100%	aug-march		2007	phased				
17	Palomarin (intermed. cut)	Palomarin	25	mechanical	disposal	0%	0%	100%	aug-march		2007	phased				

# 2008 Projects

Point Reyes National Seashore  
National Park Service  
Department of the Interior



## Legend

### FMU

- Bolinas Ridge
- Estero
- Headlands
- Highway One
- Inverness Ridge
- Limantour Road
- Palomarin
- Tomales Point
- Wilderness North
- Wilderness South

### Treatment Type

- Mechanical
- RX burn

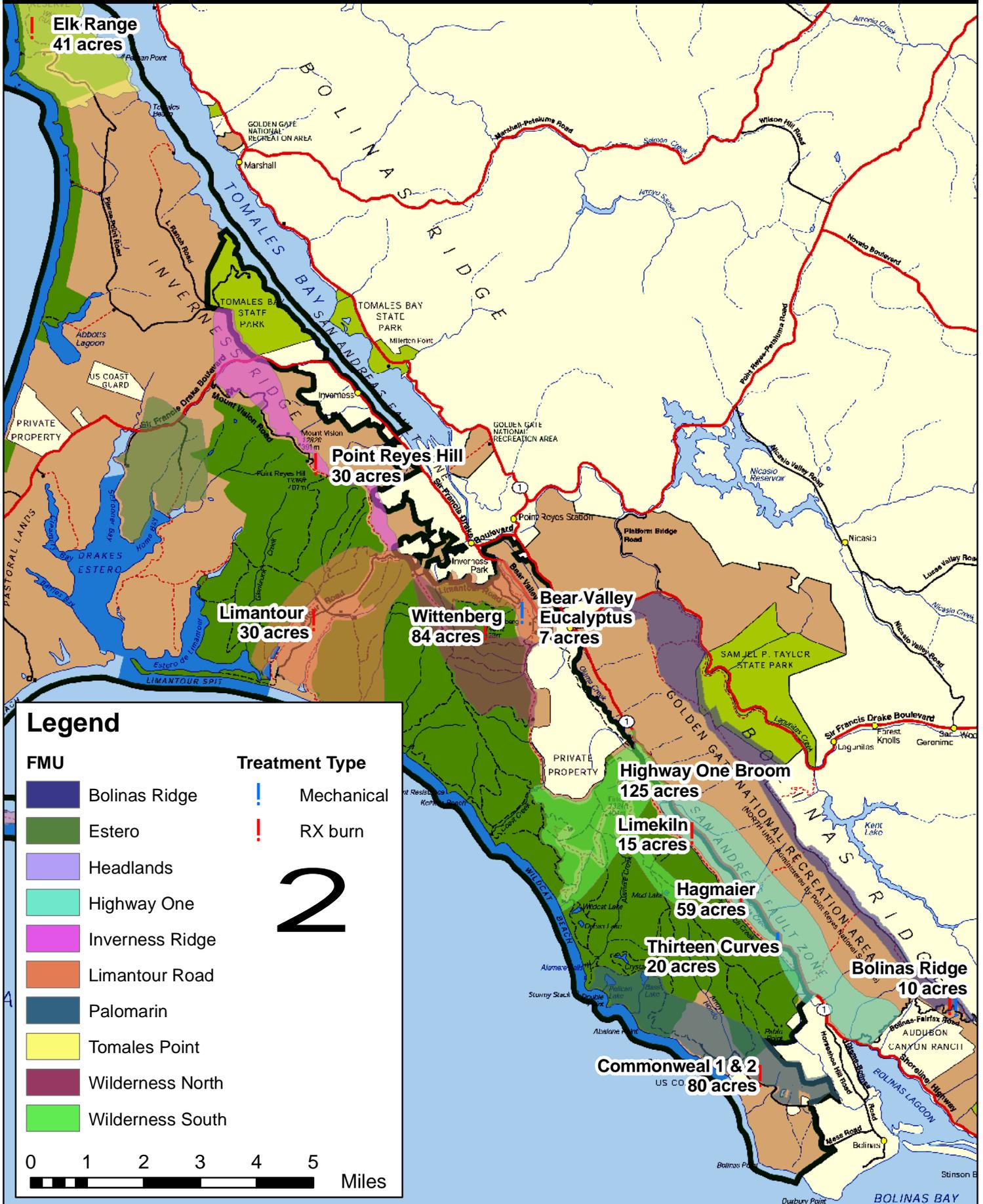
# 2



	Project	FMU	Acres	Project Type	Specifics	%grass	%shrub	% forest/wdland	Timing	Funding	Last Treated	Maint. Freq.	Issue 1	Issue 2	Obj 1	Obj 2
	<b>RX BURN PROJECTS</b>		<b>582</b>													
1	Hagmeier	Hwy One	59	Rx		100%	0%	0%	July - sept		2006	3	French broom	velvet grass		
2	Lime Kiln	Hwy One	15	Rx		100%	0%	0%	July - sept		2006	2	French broom	high fuel		
3	Point Reyes Hill	Inverness Ridge	30	Rx		50%	50%	0%	July - sept		2006					
4	Limantour 6	Limantour	30	Rx		0%	100%	0%	July - sept		2006	phased				
5	Elk Range 1	Tomales Point	41	Rx		80%	20%	0%	fall		1st Treatment					
6	Dogtown	Hwy One	30	Rx		100%	0%	0%	aug-nov		late FY 2007	2	Broom	Fuel loading along critical ingress/egress route	Roadside fuel reduction	control of invasive exotic species
7	Strain Hill	Hwy One	115	Rx		100%	0%	0%	fall		late FY 2007	2	Broom	Fuel loading along critical ingress/egress route	Roadside fuel reduction	control of invasive exotic species
8	McCurdy Broadcast	Hwy One	76	Rx		100%	0%	0%	fall		late FY 2007	2	Broom	Fuel loading along critical ingress/egress route	Roadside fuel reduction	control of invasive exotic species
9	Wilkins	Hwy One	62	Rx		100%	0%	0%	aug-nov		1st Treatment?	2	Broom	Fuel loading along critical ingress/egress route	Roadside fuel reduction	control of invasive exotic species
10	Mt. Vision B	Inverness Ridge	40	Rx		40%	60%	0%	fall		1st Treatment					
11	Wittenberg 1	Wilderness North	84	Rx		10%	0%	90%	July - sept		1st Treatment					
	<b>MECHANICAL PROJECTS</b>		<b>332</b>													
12	Park Defensible Space	All	50	mechanical	maintenance	N/A	N/A	N/A	spring		2008	annual				
13	Highway One Broom Control	Hwy One	150	mechanical	mowing	95%	5%	0%	spring		2008	annual				
16	Bayview Trail Fuel Break	Limantour	26	mechanical	maintain	0%	100%	0%	aug-march		2007	2				
17	Bear Valley Euc Removal (intermed. thin)	Limantour	7	mechanical	thinning, piling, chipping	0%	0%	100%	aug - march		2008	phased	high fuel hazard	near center of visitor activity		
18	Bear Valley Euc Removal (disposal)	Limantour	7	mechanical	disposal	0%	0%	100%	aug - march		2008	phased	high fuel hazard	near center of visitor activity		
19	Bear Valley Euc Removal (chemical)	Limantour	7	mechanical	herbicide	0%	0%	100%	aug - march		2008	phased	high fuel hazard	near center of visitor activity		
20	Highway One Euc Removal - 13 curves (overstory removal)	Hwy One	25	mechanical	thin	0%	0%	100%	aug - march		2007	phased	high fuel hazard	cultural resource and roadside visibility		
21	Highway One Euc Removal - 13 curves (overstory removal)	Hwy One	25	mechanical	chip	0%	0%	100%	aug - march		2007	phased	high fuel hazard	cultural resource and roadside visibility		
22	Highway One Euc Removal - 13 curves (overstory removal)	Hwy One	25	mechanical	herbicide	0%	0%	100%	aug		2007	phased	high fuel hazard	cultural resource and roadside visibility		
23	Bolinas Ridge	Bolinas Ridge	10	mechanical	brush	0%	50%	50%	aug - feb		2007	phased	listed plants and animals	management plan needed for rare plants		

# 2009 Projects

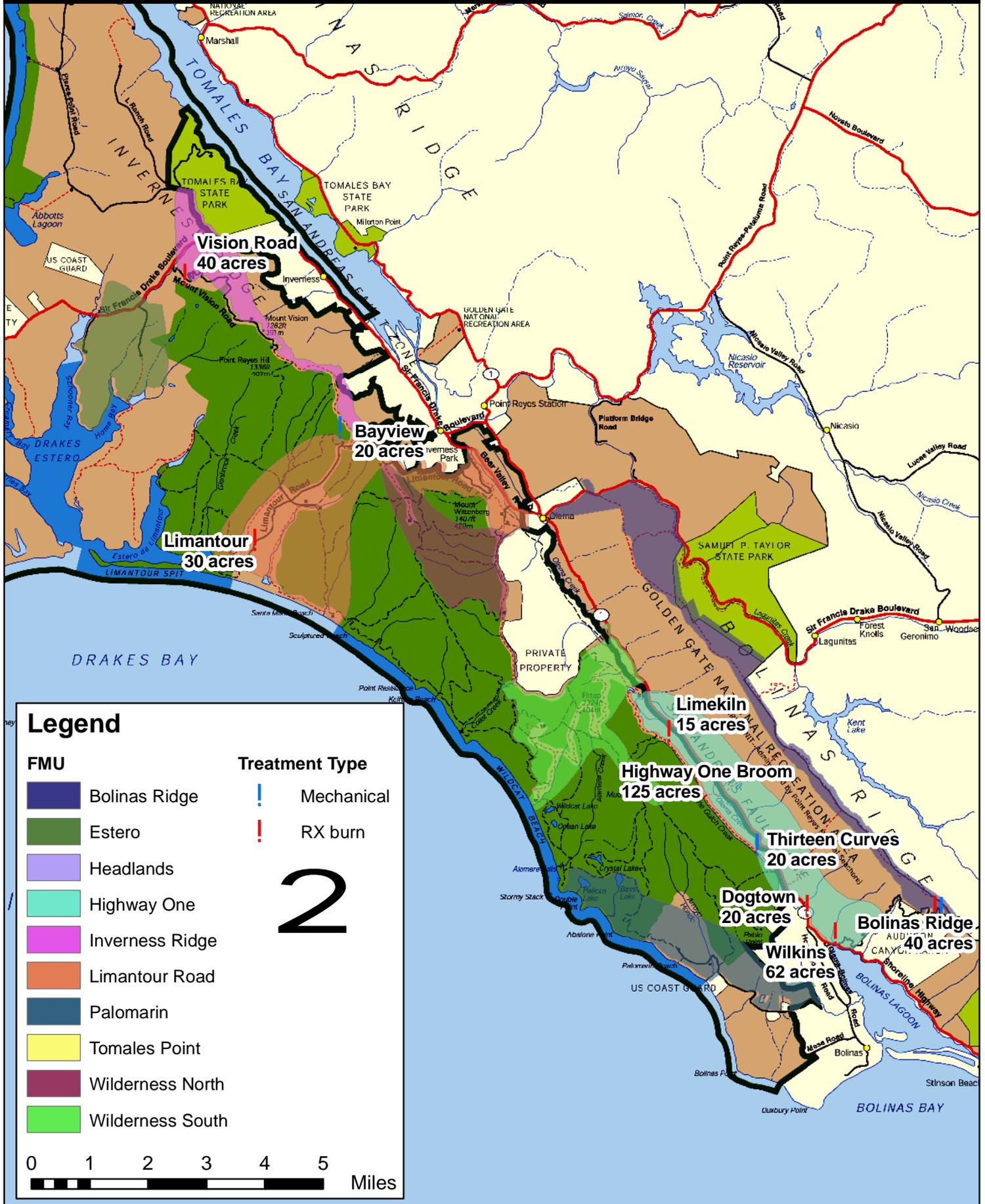
Point Reyes National Seashore  
National Park Service  
Department of the Interior



	Project	FMU	Acres	Project Type	Specifics	%grass	%shrub	% forest/wdland	Timing	Funding	Last Treated	Maint. Freq.	Issue 1	Issue 2	Obj 1	Obj 2
	<b>RX BURN PROJECTS</b>		<b>606</b>													
1	Limantour 7	Limantour	30	Rx		20%	80%	0%	july-sept		2006	4				
4	Bolinas Ridge	Bolinas Ridge	40	Rx		15%	80%	5%	fall		2008	continuation				
6	Commonweal 2	Palomarin	69	Rx		20%	80%	0%	fall		1st Treatment					
7	Commonweal 1	Palomarin	11	Rx		20%	80%	0%	july - sept		1st Treatment					
4	Home 3	Estero	71	Rx		100%	0%	0%	aug-nov		2001	2				
5	Home 5	Estero	22	Rx		100%	0%	0%	aug-nov		2001	2				
7	McDonald 1	Hwy One	187	Rx		55%	45%	0%	fall		2001	1 - 2 years				
8	McDonald 2	Hwy One	121	Rx		55%	45%	0%	fall		2001	1 - 2 years				
	Mt. Vision C	Inverness Ridge	40	Rx												
2	Lime Kih	Hwy One	15	Rx		100%		0%	july - sept		1999	2	French broom	high fuel	Maintain or decrease the % cover of non-native species.	Maintain GEMO at 10% cover. & Obj #3 Hazard reduction on Hwy One.
	<b>MECHANICAL PROJECTS</b>		<b>335</b>													
7	Bayview Trail	Limantour	35	mechanical	trimming and chipping	0%	100%	0%	aug-march		2005 & 2007	5				
8	Bolinas Ridge	Bolinas Ridge	15	mechanical	trimming and chipping	0%	50%	50%	aug-march		2006 & 2007	5				
9	Park Defensible Space	All	50	mechanical	maintenance	N/A	N/A	N/A	spring		2009	annual				
10	Highway One Broom Control	Hwy One	150	mechanical	mowing	95%	5%	0%	spring		2007	3				
	Highway One Eucalyptus Removal - 13 curves	Hwy One	20	mechanical	thinning	0%	0%	100%	aug-march		2009	continuation				
	Highway One Eucalyptus Removal - 13 curves	Hwy One	20	mechanical	chipping and disposal	0%	0%	100%	aug-march		2009	continuation				
	Highway One Eucalyptus Removal - 13 curves	Hwy One	20	mechanical	herbicide	0%	0%	100%	aug-march		2009	continuation				
14	Mt. Vision Road	Inverness Ridge	15	mechanical	thinning	0%	0%	100%	aug-march		1st Treatment					
15	Sky Camp	Wilderness North	10	mechanical	felling/pile burning	0%	20%	80%	aug-march		1st Treatment					

# 2010 Projects

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APPENDIX E, PART 20

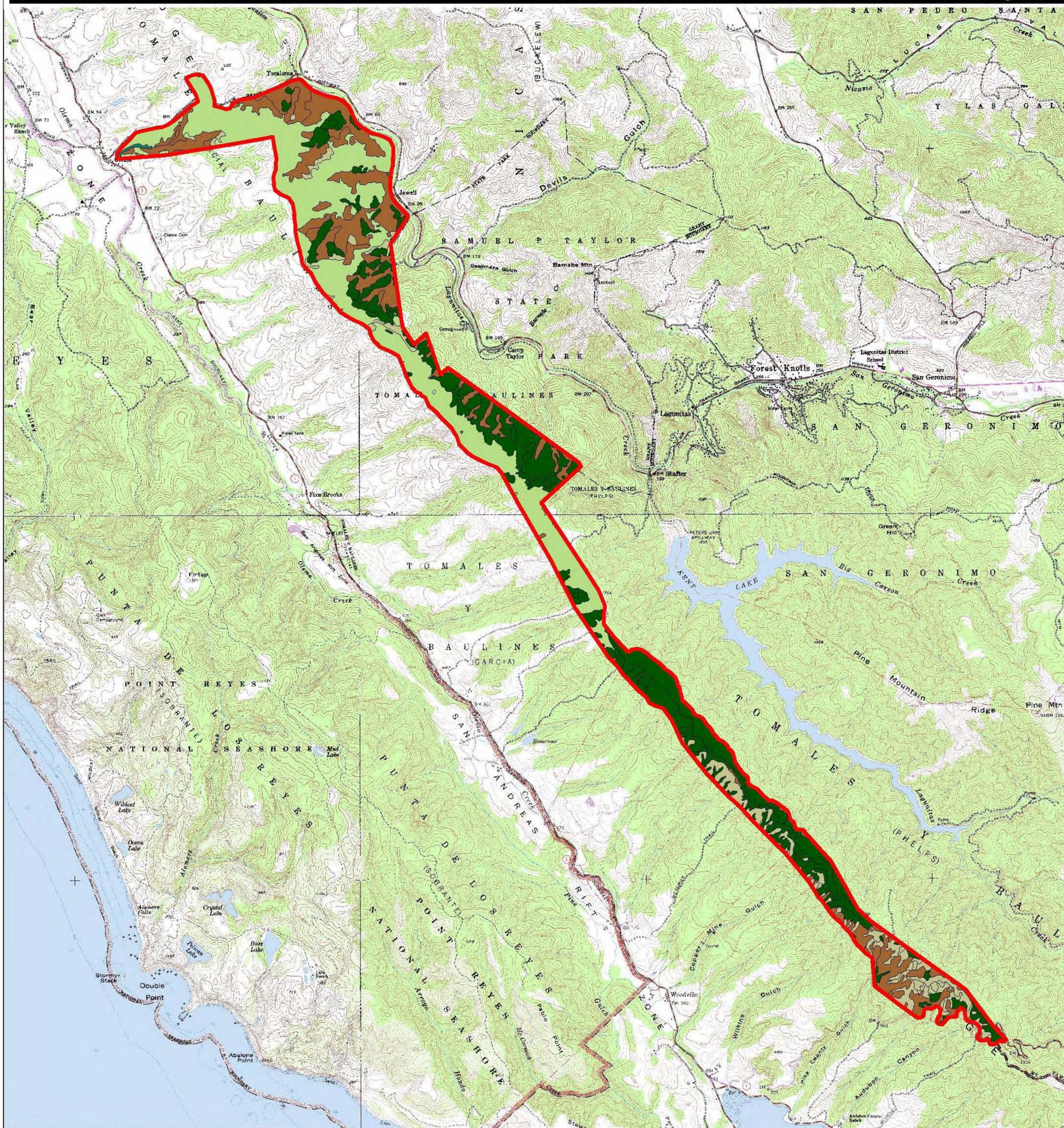
VEGETATION MAPS  
OF THE FIRE MANAGEMENT UNITS,  
POINT REYES NATIONAL SEASHORE

IMPLEMENTATION STRATEGY  
FOR THE  
PRNS FIRE MANAGEMENT PLAN



# Vegetation in Bolinas Ridge FMU

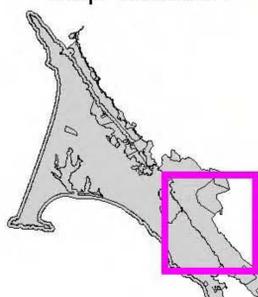
## Point Reyes National Seashore



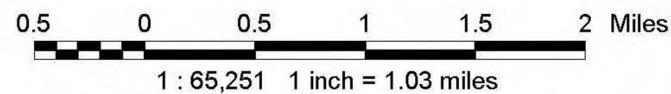
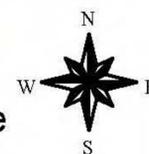
### Vegetation Classes and Acreage

	Douglas-fir / Redwood = 755.4
	Grassland = 846.7
	Hardwood Forest = 570.0
	Riparian = 5.9
	Scrub = 203.4
	Water = 0.3
	Unvegetated = 0.2
	FMU Boundary

### Map Location



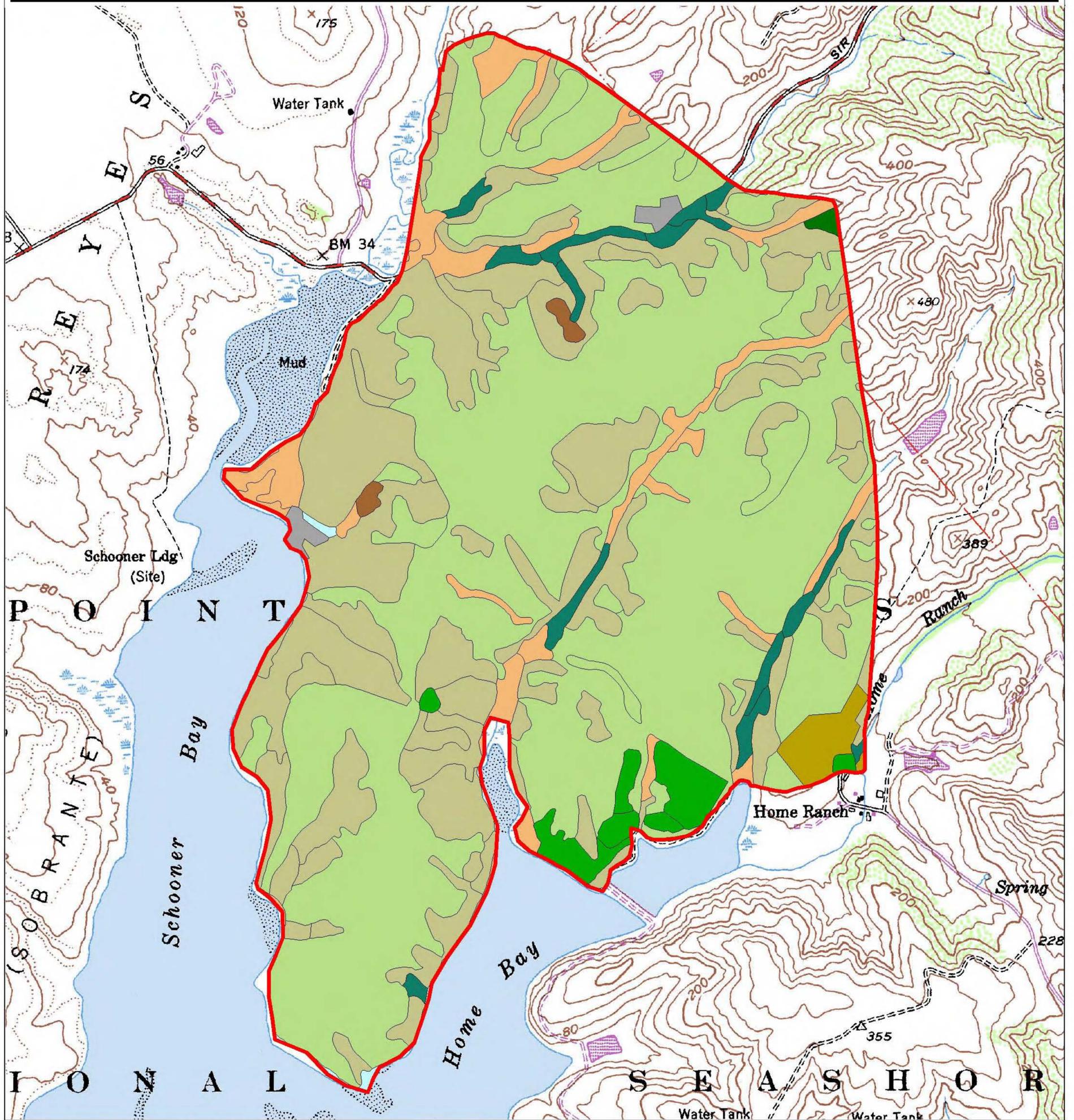
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# Vegetation in the Estero FMU

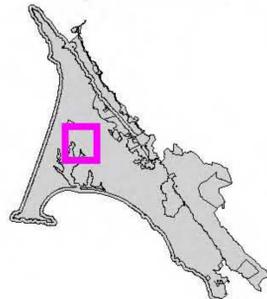
## Point Reyes National Seashore



### Vegetation Classes and Acreage

	Bishop Pine = 2.2		Riparian = 37.9
	Grassland = 913.1		Scrub = 520.2
	Hardwood Forest = 5.3		Unvegetated = 7.6
	Marsh = 94.2		Water = 4.7
	Monterey Pine/Cypress = 37.0		FMU Boundary
	Pasture = 16.9		

### Map Location



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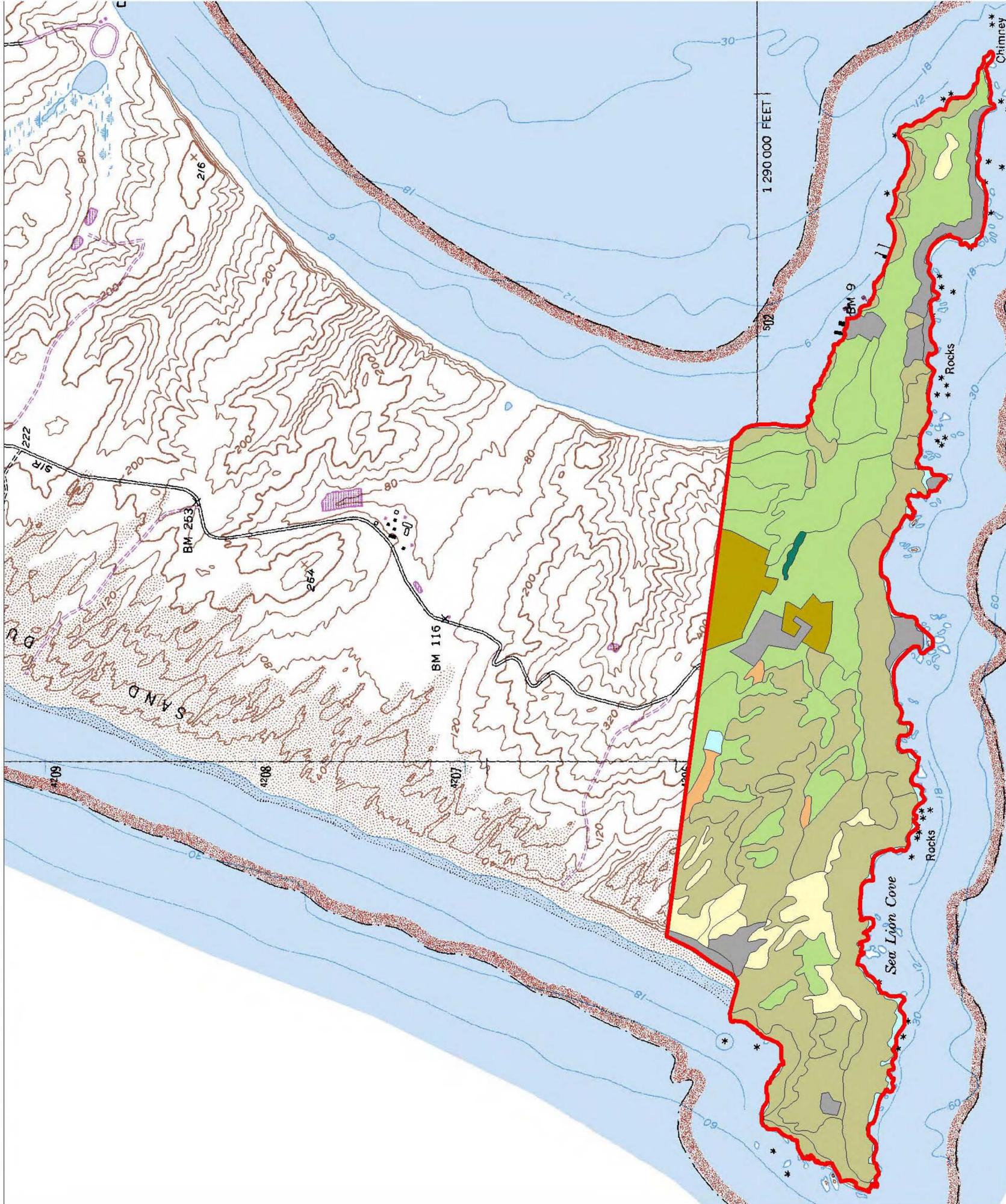
0.1 0 0.1 0.2 0.3 0.4 0.5 Miles



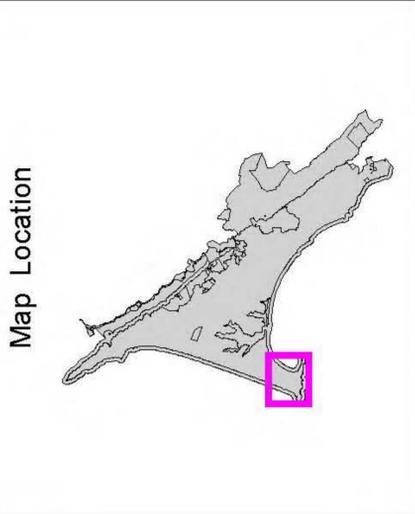
1 : 23,207 1 inch = 0.37 miles



# Vegetation in the Headlands FMU Point Reyes National Seashore



	FMU Boundary
<b>Vegetation Types and Acreage</b>	
	Dune = 51.3
	Grassland = 299.4
	Marsh = 7.7
	Pasture = 38.1
	Riparian = 1.8
	Scrub = 400.7
	Unvegetated = 56.8
	Water = 24.5



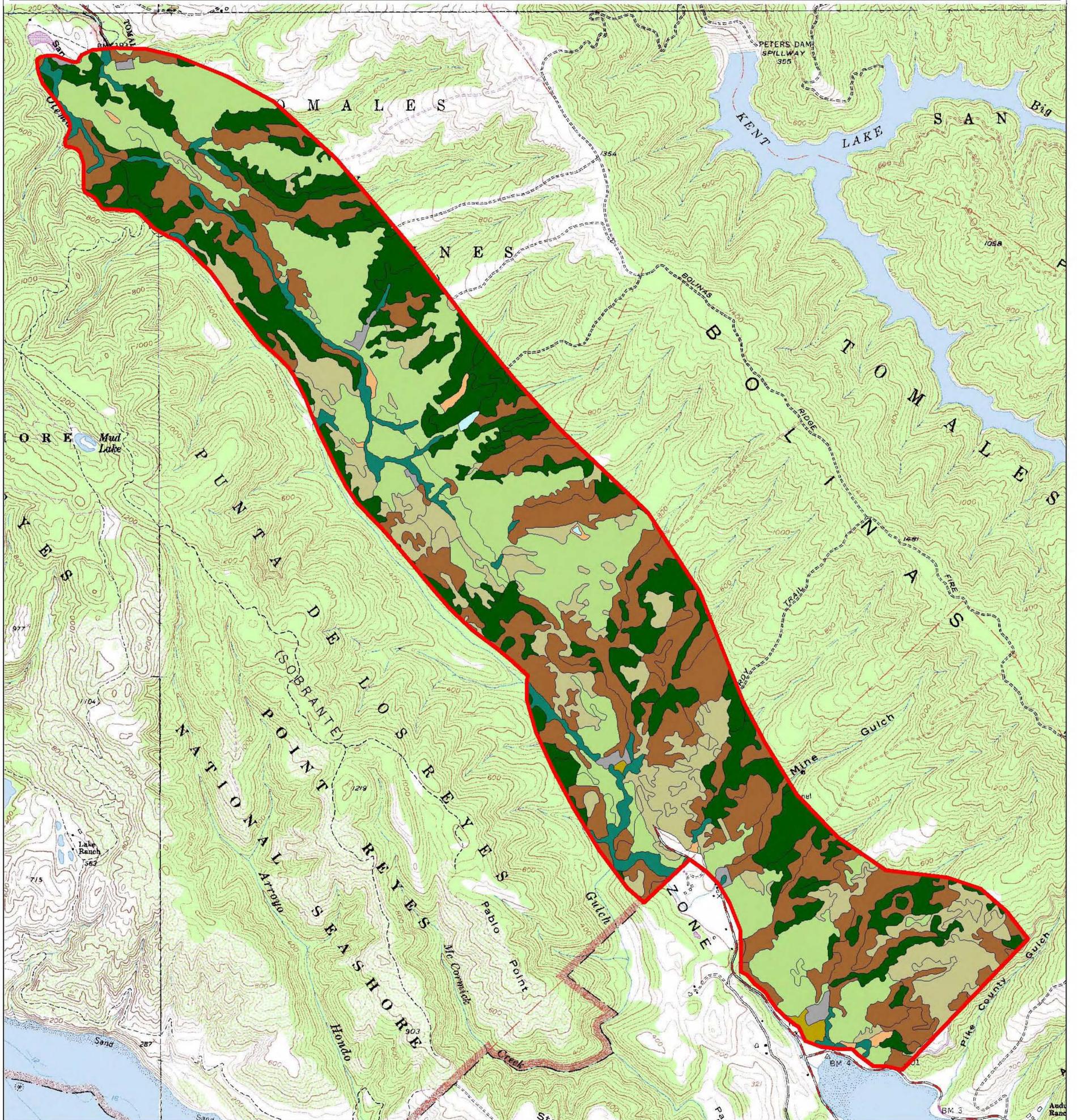
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0.1 0 0.1 0.2 0.3 0.4 0.5 Miles  
1 : 28,981 1 inch = 0.46 miles



# Vegetation in the Highway One FMU

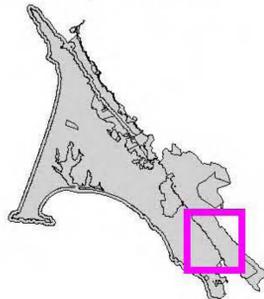
## Point Reyes National Seashore



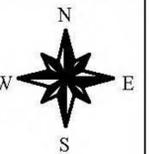
### Vegetation Classes and Acreage

	Douglas-fir / Redwood = 719.3		Scrub = 421.6
	Grassland = 797.4		Unvegetated = 21.0
	Hardwood Forest = 771.1		Water = 2.8
	Marsh = 13.4		FMU Boundary
	Pasture = 8.8		
	Riparian = 112.4		

### Map Location



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0.2 0 0.2 0.4 0.6 0.8 Miles

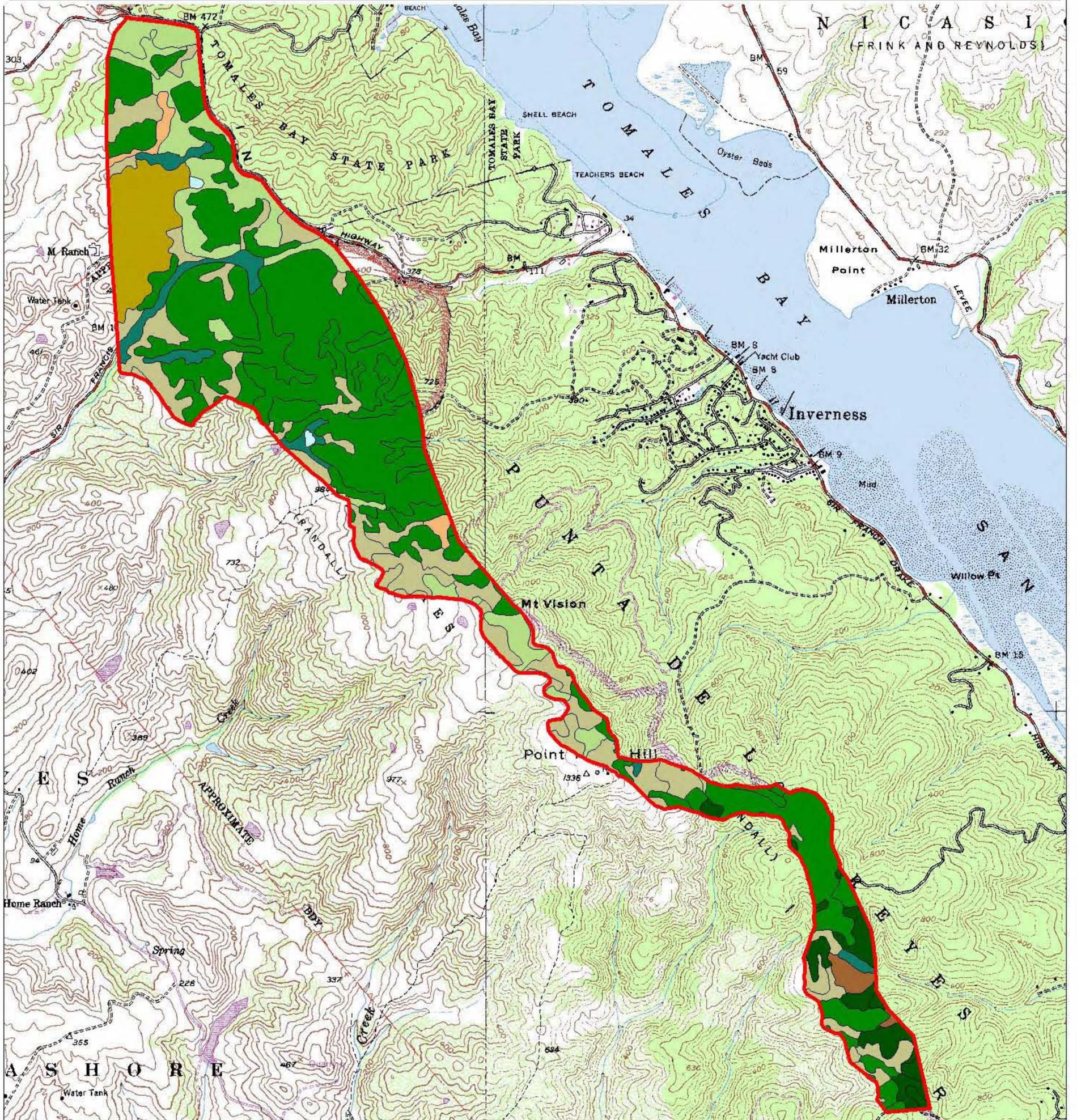


1 : 39,414 1 inch = 0.62 miles



# Vegetation in Inverness Ridge F MU

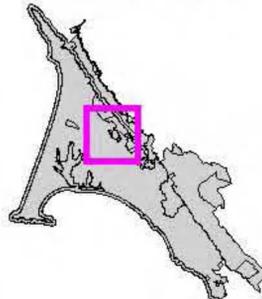
## Point Reyes National Seashore



### Vegetation Classes and Acreage

Bishop Pine = 646.3	Riparian = 46.2
Douglas-fir / Redwood = 55.7	Scrub = 245.6
Grassland = 143.8	Unvegetated = 0.0007
Hardwood Forest = 12.5	Water = 2.6
Marsh = 13.4	F MU Boundary
Pasture = 84.4	

### Map Location



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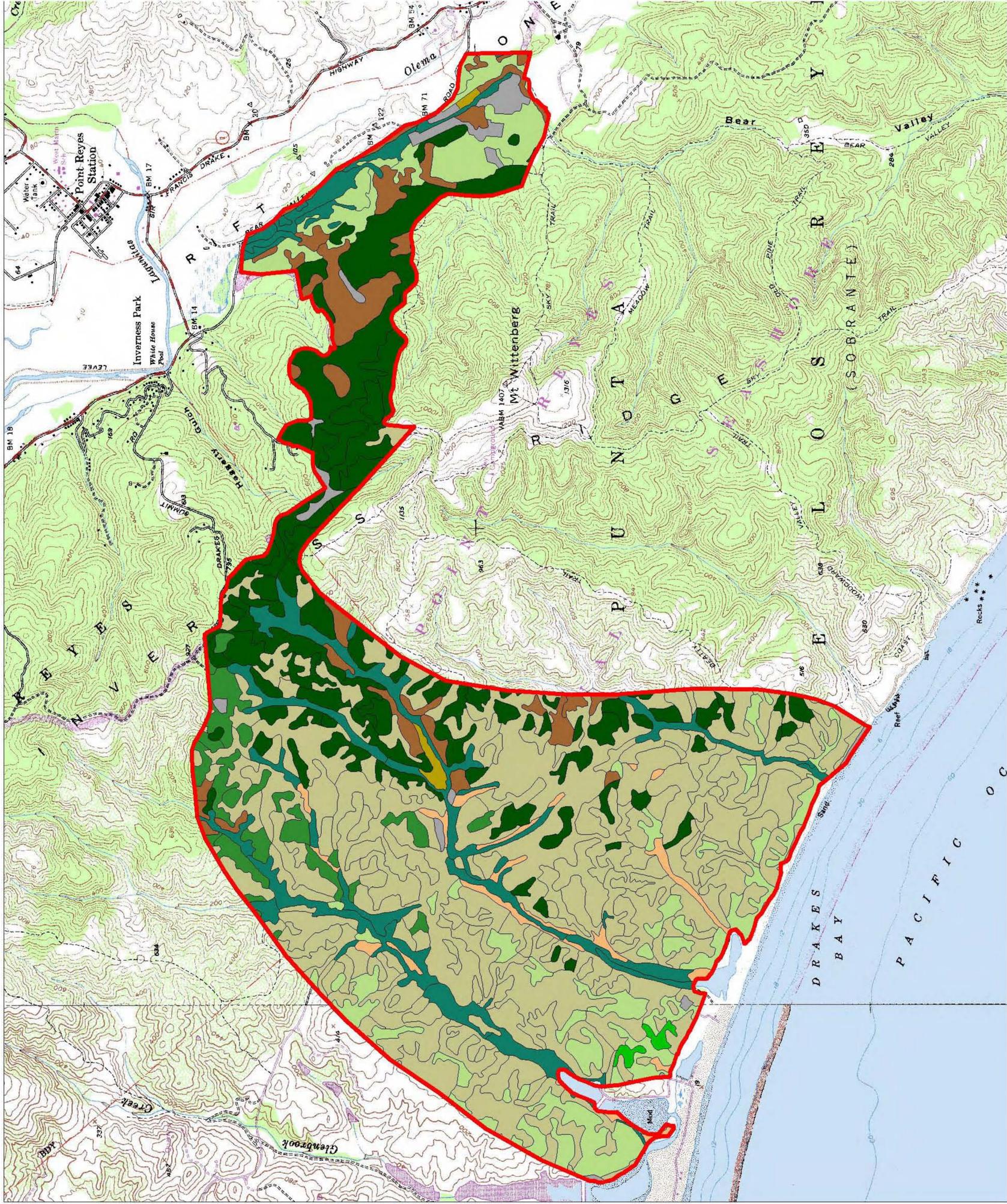


0.2 0 0.2 0.4 0.6 0.8 Miles

1 : 37,161 1 inch = 0.59 miles



# Vegetation in the Limantour Road FMU Point Reyes National Seashore

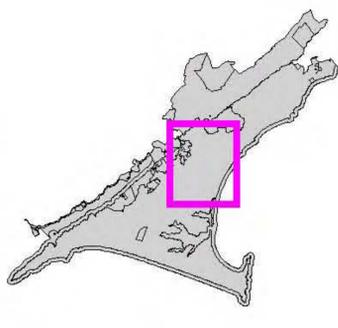


FMU Boundary	
	FMU Boundary

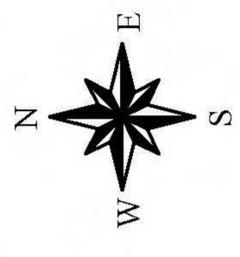
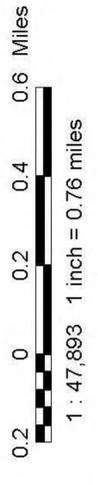
  

Vegetation Classes and Acreage	
	Bishop Pine = 140.9
	Douglas-fir / Redwood = 748.4
	Dune = 0.2
	Grassland = 462.2
	Hardwood Forest = 216.9
	Marsh = 69.7
	Monterey Pine/Cypress = 12.1
	Pasture = 13.6
	Riparian = 371.5
	Scrub = 2040.3
	Unvegetated = 65.1
	Water = 2.8

Map Location

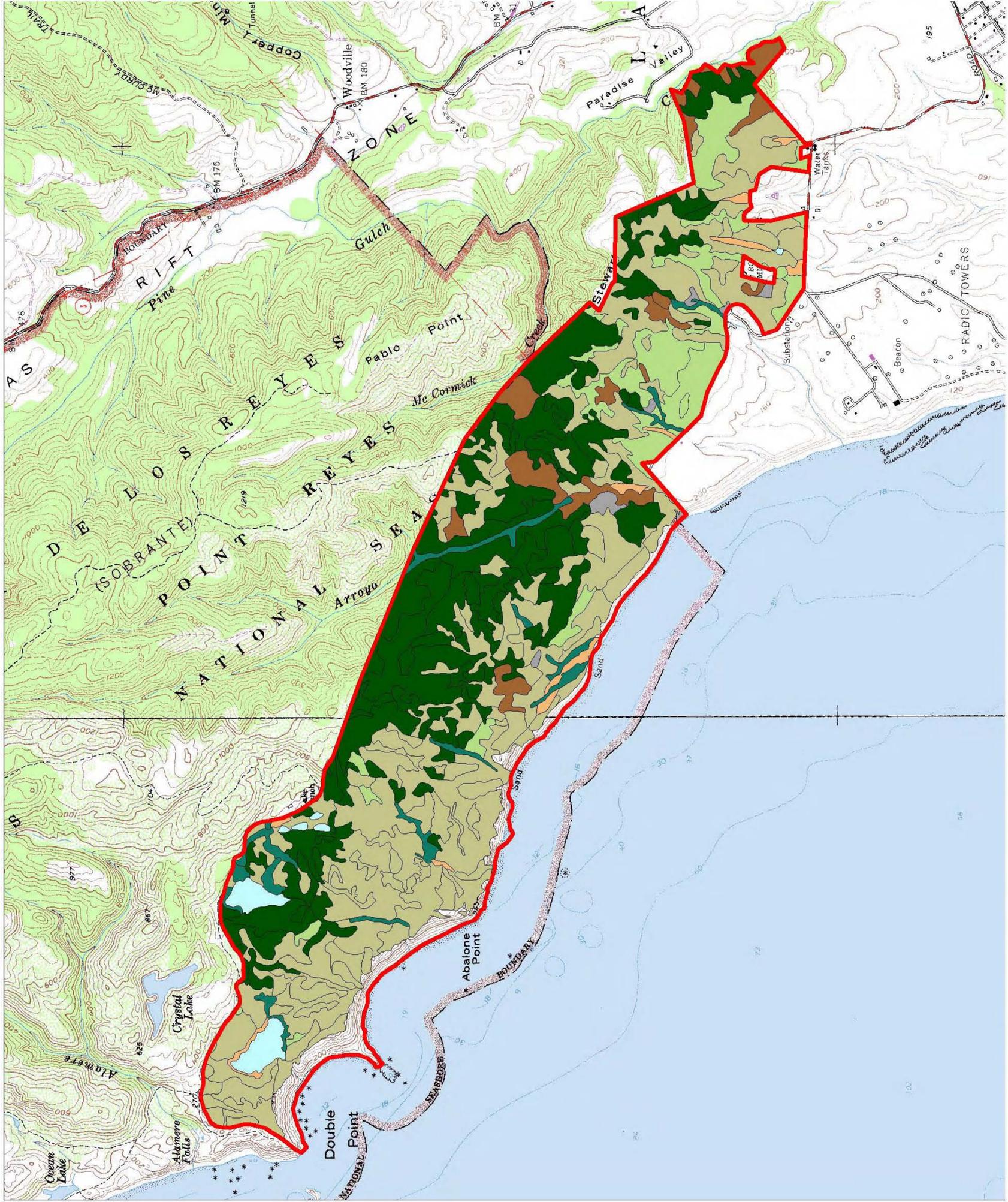


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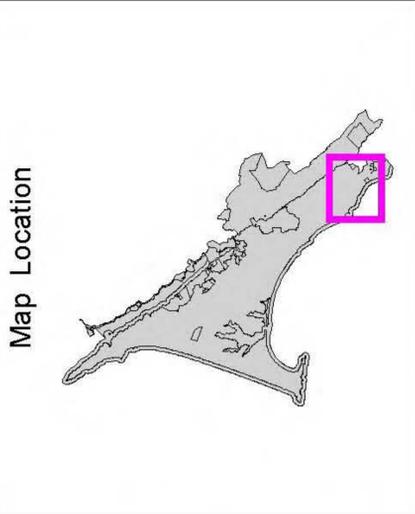




# Vegetation in the Palomarin FMU Point Reyes National Seashore



	FMU Boundary
<b>Vegetation Classes and Acreage</b>	
	Douglas-fir / Redwood = 624.3
	Grassland = 190.2
	Hardwood Forest = 92.2
	Marsh = 25.2
	Monterey Pine/Cypress = 0.08
	Pasture = 0.1
	Riparian = 58.4
	Scrub = 889.0
	Unvegetated = 12.8
	Water = 37.7

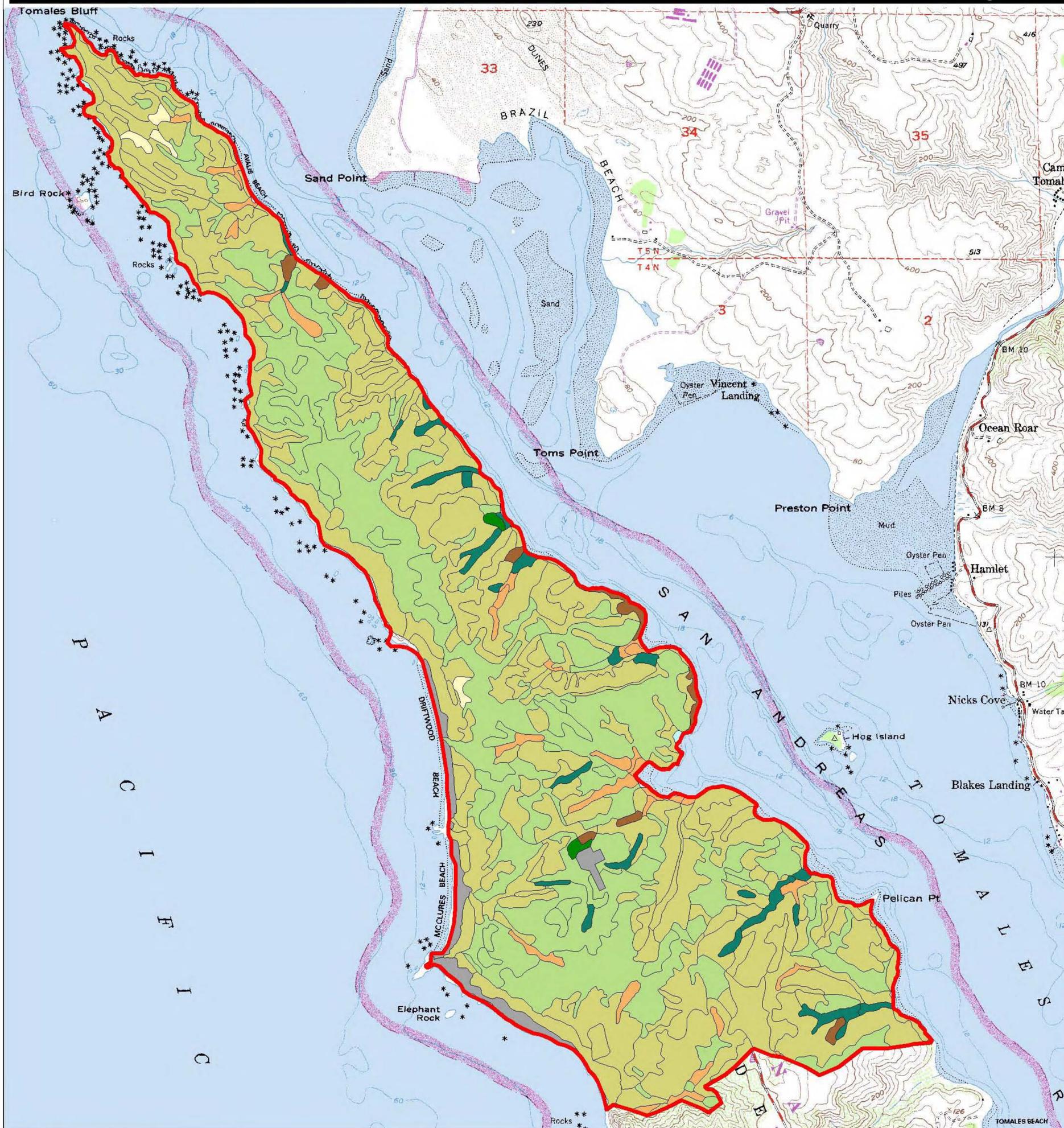


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# Vegetation in Tomales Point FMU

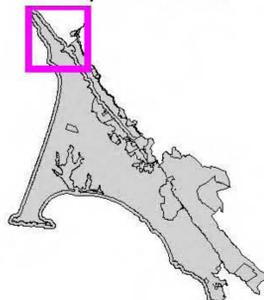
## Point Reyes National Seashore



### Vegetation Classes and Acreage

	Dune = 12.5		Scrub = 1518.9
	Grassland = 1006.7		Unvegetated = 49.5
	Hardwood Forest = 24.9		Water = 22.5
	Marsh = 74.3		FMU Boundary
	Monterey Pine / Monterey Cypress = 5.6		
	Riparian = 64.3		

### Map Location



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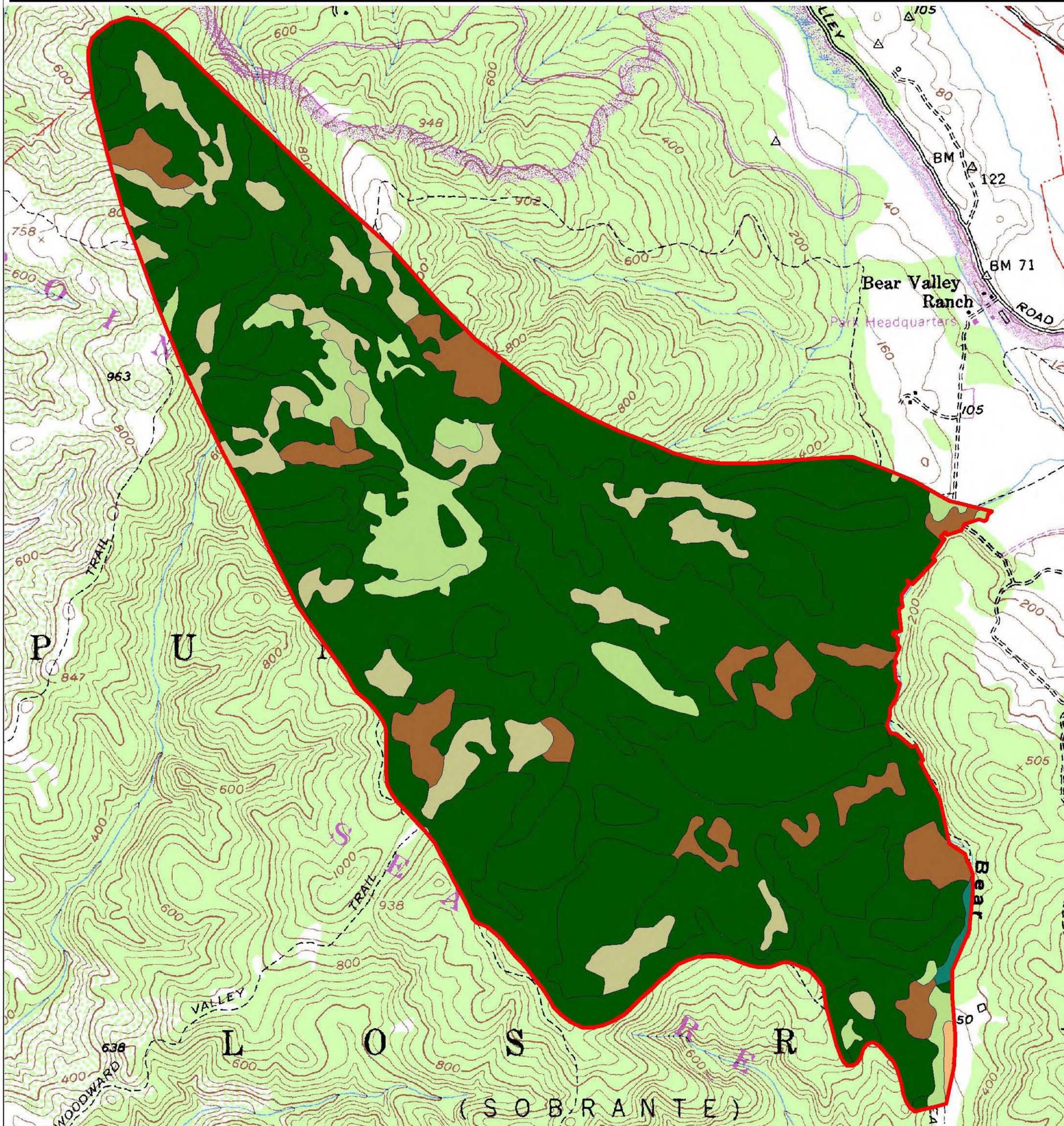
0.2 0 0.2 0.4 0.6 0.8 1 Miles

1 : 42,270 1 inch = 0.67 miles



# Vegetation in Wilderness North FMU

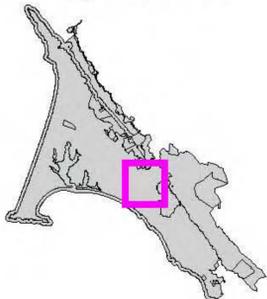
## Point Reyes National Seashore



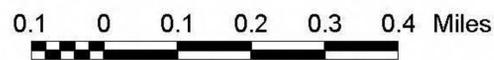
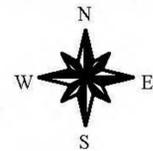
### Vegetation Classes and Acreage

	Douglas-fir / Redwood = 1,262.3
	Grassland = 88.4
	Hardwood Forest = 103.5
	Marsh = 2.6
	Riparian = 4.0
	Scrub = 130.6
	FMU Boundary

### Map Location



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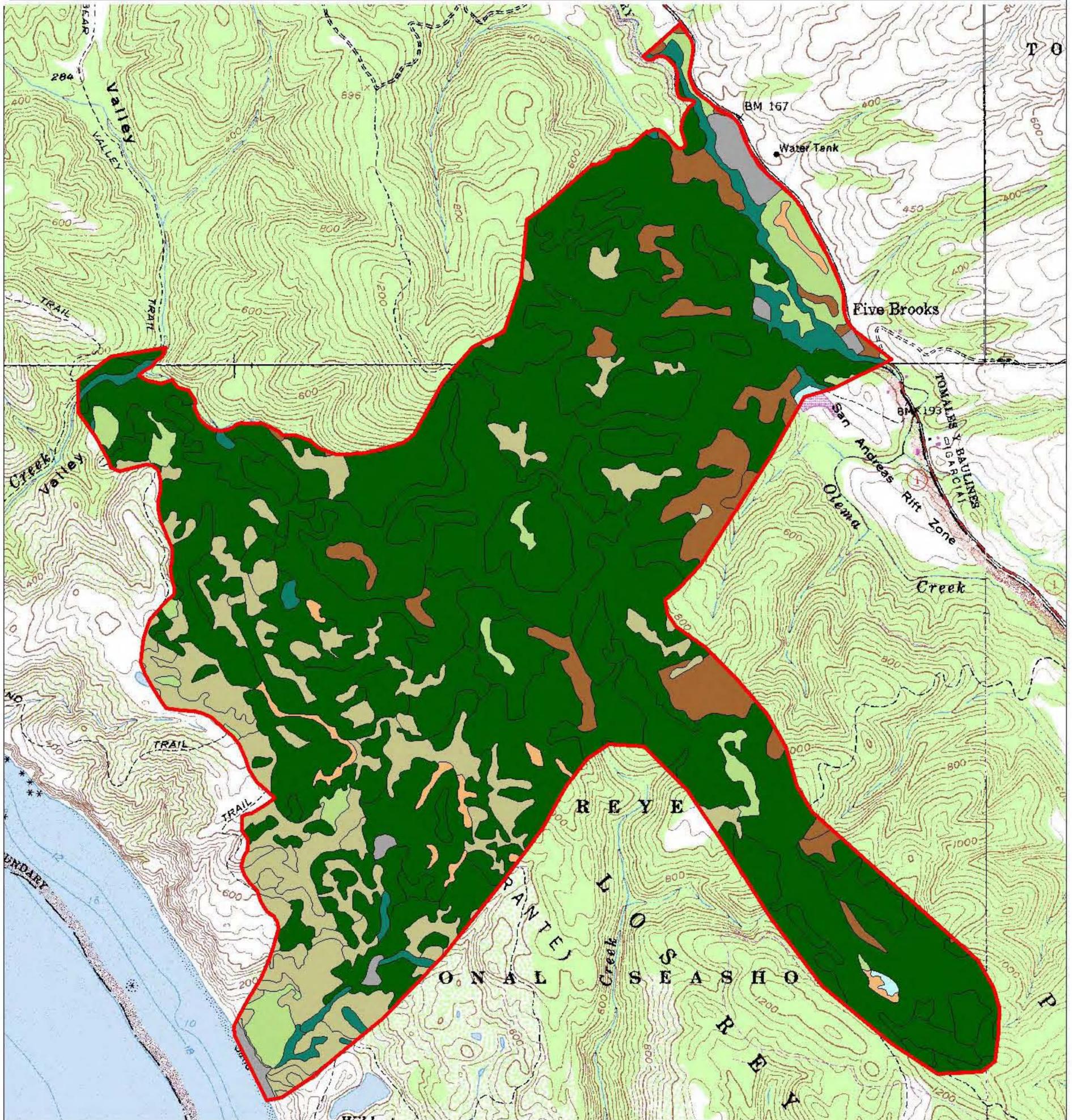


1 : 28,401 1 inch = 0.45 miles



# Vegetation in Wilderness South FMU

## Point Reyes National Seashore



### Vegetation Classes and Acreage

	Douglas-fir / Redwood = 1673.3		Unvegetated = 28.2
	Grassland = 85.5		Water = 3.0
	Hardwood Forest = 128.0		FMU Boundary
	Marsh = 22.4		
	Riparian = 54.0		
	Scrub = 303.6		

### Map Location



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0.2 0 0.2 0.4 0.6 Miles



1 : 31,879 1 inch = 0.50 miles

