

## 8. HAZARDS AND HAZARDOUS MATERIALS

Other than exposure to geologic and other natural hazards addressed elsewhere in this EIR, the hazards affected by the JDSF Draft Forest Management Plan (DFMP) are exposure to wildfire and other fire hazards, and exposure to hazardous materials. The DFMP prescribes measures for reducing the likelihood of wildfires and the potential for other fire related hazards, and measures to reduce fire-related risks to key natural resources and infrastructure present in and adjacent to JDSF. The DFMP also addresses the continued use of pesticides and petroleum products in the general operations of JDSF programs and activities, including the use of herbicides to reduce the presence of exotic and competing vegetation that may be both ecologically and economically detrimental to the health and productive capacity of the Forest.

### 8.1 Regional and Project Setting for Wildfires

#### 8.1.1 Regional Setting

The North Coast region has a significant west-to-east climate and vegetation gradient that strongly affects wildfire potentials and behavior. Much of the landscape has well-developed fuel profiles ranging from annual grasslands and oak savannah/woodlands through maritime shrub types to tanoak forest and mixed evergreen Douglas-fir/redwood forests with high productivity and tremendous surface fuel accumulation. In general, much of the fire potential is mitigated by relatively wet climate and lower-than-average frequency of severe fire weather (Sawyer 2000). However, areas outside the direct coastal influence do routinely dry out, and support large fires. In 2003, two large fires occurred in the Lost Coast region – one largely in timber, and the other in hardwood/grass/maritime brush, illustrating the periodic nature of large fires in the region. Much of the region has well developed surface fuel systems, but some ecological succession – dominated by hardwood/tanoak encroachment – is offsetting increases in hazard found in other types due to woody development in maritime grasslands and increasing fuel and forest complexity that result from extended fire-free periods as found in similar forests (Keane et al. 1990, Brown et al. 1999). Isolated areas in the interior portion of the region also contain a matrix of hard chaparral cover, with its attendant very high hazard and fire potential.

As a part of its responsibilities under the California Fire Plan,<sup>1</sup> CDF maintains a GIS database of fuel rank for the state. The fuel ranking methodology assigns ranks based on expected fire behavior for unique combinations of topography and vegetative fuels under a given severe weather condition (wind speed, humidity, and temperature).<sup>2</sup> Fuel rank information for the North Coast region, Mendocino County, and JDSF is presented

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<sup>1</sup> <http://www.fire.ca.gov/FireEmergencyResponse/FirePlan/FirePlan.asp>

<sup>2</sup> For a detailed description of the data and methods, please see FRAP website Surface Fuels Maps & Data at [http://frap.cdf.ca.gov/data/fire\\_data/fuels/fuelsfr.html](http://frap.cdf.ca.gov/data/fire_data/fuels/fuelsfr.html)

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in Tables VII.8.1 and VII.8.2. At the regional scale, roughly 4.1 million acres (63% of the land area) are in the high or very high fuel rank. These lands are dominated by forest and brushlands, and are expected to exhibit high to extreme fire behavior when burned under weather and fuel moisture conditions conducive to fire spread. Roughly 2.1 million acres (32%) are in the moderate fuel rank, and are largely composed of hardwood forest/woodlands and grasslands, and areas that have recently burned and have little available fuel to a fire. Non-fuel areas are largely rock/barren areas, agricultural lands, and water, and amount to about 337,000 acres. Mendocino County shows a similar distribution of fuel ranks, with a marginally higher rate of lands falling into the high and very high group (66 vs. 63%). Section 8.1.2, below, discusses JDSF fuel ranks in more detail.

<b>Table VII.8.1. Fuel Ranks (by Acres) for North Coast Region, Counties, and JDSF.</b>				
Region/County/JDSF	Fuel Rank (acres)			
	Non-Fuel	Moderate	High	Very High
North Coast Region	336,555	2,113,977	3,002,009	1,135,544
Mendocino	68,997	698,695	1,060,779	419,637
JDSF	0	2,817	32,477	13,455
Marin	14,900	140,161	134,388	45,737
Sonoma	150,079	388,460	357,050	120,237
Humboldt	80,868	694,112	1,128,913	388,121
Del Norte	21,711	189,732	288,402	148,357

<b>Table VII.8.2. Fuel Ranks (by Percent of Area) for North Coast Region, Counties, and JDSF.</b>				
Region/County/JDSF	Fuel Rank (percent of area)			
	Non-Fuel	Moderate	High	Very High
North Coast Region	5	32	46	17
Mendocino	3	31	47	19
JDSF	0	6	67	28
Marin	4	42	40	14
Sonoma	15	38	35	12
Humboldt	4	30	49	17
Del Norte	3	29	44	23

In general, the fire regime of the region was historically dominated by moderately frequent fire, with frequency highly dependent on location/proximity to Native American

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settlements and vegetation type. Redwood/Douglas-fir forests have been well studied by ecologists, but there still exists some disagreement about the characteristic fire regime of this type. Viers (1980) and Stuart (1987) maintain that fire was likely relatively infrequent in these forests and moderately severe, ranging from 250 year stand-replacing regimes in fog shrouded coastal sites, to approximately 50-year intervals and mixed-severity in inland mixed redwood/Douglas-fir forest types. In contrast, the most recent fire history studies based on fire scar techniques indicate quite frequent low-intensity fires dominated the regime (Finney and Martin 1989, Brown and Swetnam 1994). Most of these differences can be attributed to methods of analysis and site characteristics. In general, it appears that coastal and north slope stands have longer fire intervals than more open, dry grass/forest matrix lands, and that stand-age analysis implies less frequent fire frequencies than does fire scar analysis (Brown et al. 1999).

The modern era fire environment is quite different than that characterized under the pre-settlement fire regime period. Virtually all fire history and ethnographic studies indicate significant changes to these regimes coinciding with the European settlement of the region. Loss of aboriginal ignition sources, changes in land use, and active fire suppression policies have systematically reduced fire frequencies, and lead to many ecological and fire response changes that typically come with less frequent fire, exotic species invasion, and active management of the landscape (e.g., grazing, timber harvest, land-use conversion, etc.)

CDF is responsible for wildland fire protection for much of the North Coast region and Mendocino County, including the part of the county where JDSF is located. The North Coast lies within CDF's Northern Region and is composed of parts of three CDF units: Humboldt-Del Norte, Mendocino, and Sonoma-Lake-Napa. Marin County is a "contract county," where CDF pays the county to provide wildland fire protection on State Responsibility Area. Table VII.8.3 summarizes State Responsibility Area (SRA) and Direct Protection Area (DPA) for the North Coast Region.

<b>Table VII.8.3. State Responsibility Area and Direct Protection Area for the North Coast Region.</b>		
Region or County	State Responsibility Area (Acres)	Direct Protection Area (acres)
North Coast Region	4,646,941	4,699,531
Mendocino	1,875,238	1,996,248
Marin*	199,838	0
Sonoma	793,886	817,779
Humboldt	1,583,661	1,685,034
Del Norte	194,318	200,470

\*Marin is a contract county.

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Table VII.8.4 presents the five-year average of acreage for vegetation fires in state Direct Protection Area (DPA) for the North Coast Region. Since Marin is a contract county, the statistics are slightly different from the rest of the area. On average, 1,989 acres burned annually in DPA in the North Coast Region, including 321 acres of timberland. In Mendocino County, an average of 1,028 acres of DPA burned annually, including 236 acres of timberland. Within the EIR assessment area, an average of 20 acres of timberland burned per year.

**Table VII.8.4. Average Annual Acres Damaged (CDF Direct Protection Area) by Vegetation Fire Type by County, including total only for the assessment area, 1998-2002.**

Region or County	Total	Timber	Wood-land	Brush	Grass	Ag. Products	Non-Commercial Forest	Non-Forested Watershed
North Coast Region	1,989	321	258	360	913	4	36	97
Mendocino	1,028	236	143	287	361	2	N/A	N/A
Marin*	133	N/A	N/A	N/A	N/A	N/A	36	97
Sonoma	503	4	82	60	355	2	N/A	N/A
Humboldt	276	81	28	12	155	0	N/A	N/A
Del Norte	49	1	6	1	42	0	N/A	N/A
EIR Assessment Area	20	0	0	0	0	0	N/A	N/A

\*Marin is a contract county; acres are in the State Responsibility Area portion of the county.

### 8.1.2 Existing Project Fire Protection Setting

Wildfires have the potential for significant impacts to JDSF through threat to public safety, loss of timber (and, secondarily, timber processing jobs), loss of plant and wildlife habitat, damage to infrastructure, and adverse effects on water quality and slope stability.

JDSF fire protection issues are included with all other State Responsibility Area (SRA) in the Mendocino Unit (MEU) Fire Management Plan. This prefire management process includes a systematic application of risk assessment (fuels ignition patterns, initial attack suppression success, assets at risk, fire history), fire safety, fire prevention and fire hazard reduction techniques.

Howard Forest, located near Willits, is the CDF Emergency Command Center (ECC) that is responsible for dispatching personnel to fire incidents within JDSF. Under a "High" dispatch level, which frequently occurs for the central and eastern portions of the Forest during peak fire season, the initial dispatch for a vegetation fire includes five engines, two fire crews, two dozers, one helicopter, two air tankers, and a battalion chief. There are three primary helispots located within JDSF, one at Parlin Fork Conservation Camp, another at Chamberlain Creek Conservation Camp, and a third at

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the landmark scale site at the western boundary of the Forest. Log landings and other open areas can serve as additional temporary helispots.

CDF's Mendocino Unit Chief is responsible for fire protection and law enforcement in JDSF in cooperation with the Forest Manager, the Operations Officer, and the Fire Prevention Battalion Chief. The period of high fire danger generally occurs between July and October, though it may be extended at either end of the period by abnormally dry conditions. During this period, the Unit supplements available resources when the National Weather Service Fire Weather Office predicts Red Flag conditions, and the Operations Officer coordinates with the Forest Manager to determine strategies to be employed. These strategies include increased patrols within the Forest, searching for evidence of fires, and aerial patrol flights during extreme fire danger periods or after lightning storms (DFMP, pages 81-83).<sup>3</sup> The following list is a summary of specific fire protection measures practiced by JDSF as referenced in the DFMP:

- pre-suppression
- analysis of fire history in and near JDSF
- fire defense improvements-water sources, shaded fuel breaks, helispots
- regulations (camp fires, smoking, fire danger periods, posting signs, area closures)
- education
- Enforcement patrols
- Suppression
- Detection patrols and flights, lightning detection system
- Communication
- Prescribed fire for fuel management

The Mendocino Unit's Emergency Command Center personnel routinely inspect the Automatic Lightning Detection System for possible strikes in the Forest. Additional efforts may include posting alert signs, providing more fire prevention and awareness information of current conditions to visitors of the Forest, reducing activity in the Forest by closing specific areas, and maintaining frequent communication with local fire departments. CDF will maintain an adequate radio system to make communication with local fire departments feasible. Local CDF fire control personnel will remain familiar with the pre-suppression plan for the Forest. CDF's resource tracking system will be used to dispatch the appropriate personnel and equipment to any fires on JDSF.

Tables VII.8.1 and VII.8.2, above, and the surrounding discussion, present fuel rank information for JDSF in the context of the North Coast region and Mendocino County. In contrast to the region and county, JDSF is almost entirely in the high and very high fuel ranks, with about 46,000 acres or 95% of its lands exhibiting well developed fuel profiles and attendant high fire behavior if burned under severe weather conditions.

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<sup>3</sup> Page references to the DFMP refer to the electronic version (PDF) posted at the Board's website: [http://www.bof.fire.ca.gov/pdfs/jdsf\\_mgtplan\\_master%203b.pdf](http://www.bof.fire.ca.gov/pdfs/jdsf_mgtplan_master%203b.pdf).

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This difference in distribution, relative to the region and the county, is largely due to a paucity of vegetation/fuel types on the Forest that typically make up moderate fuel rank types: grasslands, oak, savannah, and dense coastal evergreen hardwood forests. In sum, fuels and associated fire hazard on the Forest should be viewed as posing significant threats to both resources and infrastructure both within and adjacent to JDSF. However, as noted above, much of the fire potential is mitigated by relatively wet climate and lower-than-average frequency of severe fire weather, but areas outside the direct coastal influence do routinely dry out and can support large fires.

During the early years of State management, JDSF was the site of a few relatively large fires (i.e. greater than 100 acres) that resulted from escaped slash burns. For example, a 321-acre fire burned within JDSF in 1951, shortly after the Caspar Lumber Company lands were purchased by the State. In more recent years, there have been periodic fire ignitions within JDSF, but the resultant fires have been relatively small. This is partially due to the fact that there is relatively good road access to most of the state forest, and also due to the fact that there are fire stations and conservation camps in close proximity to most of the Forest. This has provided an opportunity to act quickly to suppress fires within JDSF. Most of the recent fires within the forest have resulted from burn pile escapes, campfire escapes, illegal burn escapes (e.g. small warming fires started during night hours), and other unknown causes.

A recent fire history study conducted at JDSF designed to explore the effects of marine influence and an east-west gradient on fire frequency was not able to distinguish any significant geographic influence, but did determine that the Forest's redwood lands burned frequently (mean fire-return intervals of 6-20 years based on stand aggregations) and with low severity (Brown and Baxter 2003). These results indicate that fire was an important ecological process, driving stand maintenance, regulation of stand structure, and likely exerting positive feedback on the fire regime. This study, like most all studies in western forests that were under typically frequent low severity fire regimes, shows a dramatic cessation of fire activity around 1900 (Brown and Baxter 2003).

### 8.1.3 Prescribed Fires

Fire is a naturally occurring process within the coast redwood ecosystem (Sawyer et al. 2000). Fire is important in maintaining natural ecosystem processes, such as enhancing variability in stand structure and species diversity. The Forest has potential to be used as an experimental site for conducting research on fire as a management tool. Numerous benefits would be realized through this research, such as the use of fire to reduce hazards (primarily through fuel reduction), as a silvicultural treatment (see Timber Resources, Section VI-6.3), as an ecosystem management tool, and as a vegetation management technique to protect, maintain, or improve wildlife or plant habitat. A prescribed fire program that focuses on these research goals would be implemented as resources allow (DFMP, page 83).

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### **8.1.4 Proposed Project Fire Prevention and Protection Measures**

The DFMP contains a fire protection program, specific to JDSF and consistent with MEU's Fire Management Plan, which reduces the likelihood of a wildfire starting and creates conditions favorable to controlling fires if they occur. An updated fire protection plan is proposed for implementation on JDSF. The control efforts include using hazard mitigation techniques such as silvicultural stand structure modification.

The local CDF battalion will be requested to update the current pre-suppression plan for JDSF with assistance from the Forest Manager and the Fire Prevention Battalion Chief. The coordination of these participants will produce a comprehensive plan that addresses assessments of fire probability, hazard areas, maps of existing fire defense improvements, description of prevention techniques, an evaluation of available resources, and an integrated risk analysis for specific assets. The plan also will identify potential locations for incident camps in the event of a large and extended fire. Additional improvements proposed in the Forest include water tanks, water drafting sources, shaded fuel breaks, and helispot locations. The water sources and tanks will be positioned so that water will be available during a fire emergency. In addition, appropriate road signing, fire hazard reduction, and adequate access to roads and trails will be added or maintained (DFMP, pages 81-82). If pre-suppression planning indicates that an increase in wildfires can be attributed to increased public use of JDSF, appropriate measures as described herein will be implemented to reduce these impacts to less than a significant level.

Pre-suppression is defined as fire protection activities performed before a fire occurrence. Numerous fire prevention improvements would be put in place through the implementation of the DFMP. These improvements include, but are not limited to, water tanks, water sources, and helispot locations that are to be strategically placed within the Forest for the use of fire suppression and medical evacuation operations. All pre-suppression improvements will be constructed in compliance with appropriate CEQA documentation and disclosure.

In addition, pre-suppression effectiveness requires adequate access to roads and trails, and appropriate road signing to assist personnel in finding fire locations. The major roads and trails in the Forest are being maintained and signed, in part, to provide access for fire protection purposes (DFMP, pages 81-83).

The pre-suppression plan considers a system of shaded fuel breaks for construction in the Forest to serve as preplanned fire control lines when a wildfire escapes initial attack. They will be constructed in defendable areas along main ridges, adjacent to high-use roads, and adjacent to rural residential neighborhoods (DFMP, page 81-83).

Post-suppression activities are performed by Mendocino Unit Personnel and include the evaluation of pre-suppression information, suppression actions, and rehabilitation needs. Rehabilitation entails erosion control (e.g., waterbreaks, use of straw, mulch,

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and fallen trees across the slope). Other restoration activities include planting conifers and other native species, and placing large organic debris in burned out channels to prevent accelerated erosion (Personal communication, Marc Jameson).

### 8.1.5 Forest Practice Rules

The DFMP also incorporates the Forest Practice Rules (Title 14 California Code of Regulations (14 CCR) §895, *et seq*). to reduce fire hazards. These are primarily intended to address accidental fires associated with timber harvest activities. The specific Forest Practice Rules are summarized as follows:

- Site preparation is to be conducted in a manner that minimizes fire hazards (Article 5 § 915).
- Standards for burning vegetation in regards to site preparation shall be complied with (§ 915.2).
- Submittal each year, by timber operators, of a fire suppression resource inventory either before April 1st or before the start of timber operations. The inventory must provide the following (Article 8 § 918):
  - name, address and 24-hour telephone number of an individual and an alternate who has authority to respond to Department requests for resources to suppress fires
  - number of individuals available for fire fighting duty and their skills
  - available fire fighting equipment
- Timber operators must keep roads passable during the dry season until all snag and slash disposal has been completed (§ 918.3).
- Smoking and warming fire limitations on persons engaged in timber operations and a requirement that the timber operator specify procedures to guide actions of his employees or other persons in his employment consistent with these limitations (§§ 918.4 and 918.5).
- Timber operators shall provide a diligent fire watch service at the scene of any blasting or welding operations (§ 918.7).
- Timber operators shall conduct a diligent aerial or ground inspection within the first two hours after cessation of felling, yarding, or loading operations each day during the dry period when fire is likely to spread (§ 918.8).
- During the period that burning permits are required, all blocks on a cable setting will be located in the center of an area that is either cleared to mineral soil or covered with a fire proof blanket that is at least 15 feet in diameter. A shovel and an operational full five-gallon back pump or a fire extinguisher bearing a label showing at least a 4A rating must be located within 25 feet of each such block before yarding begins (§ 918.10).



## 8.2 Regional and Project Setting for Hazardous Materials

Pesticides are widely used in California, the North Coast Region, and Mendocino County. The state Department of Pesticide Regulation tracks pesticide use at the county and state level and makes the data available on its website (<http://www.cdpr.ca.gov/docs/pur/purmain.htm>). The most recent figures available are from 2002. Table VII.8.5 summarizes information at the state and regional level. In 2002, 5.0 million pounds of pesticides were applied in the North Coast region, with 1.5 million pounds or about 31 percent of the total applied in Mendocino County. The North Coast region saw 49,930 pounds of pesticides applied in forest and timberland uses in 2002, with 18,706 pounds or 37 percent of the regional total applied in Mendocino County. On an acreage basis, 48,829 acres were treated with pesticides in the North Coast region in 2002, with 15,561 acres or 32 percent of the regional total in Mendocino County. Note that acres treated may be “double counted,” in the sense that if an acre is treated with more than one pesticide, treated with a pesticide with more than one active ingredient, or treated more than once with the same pesticide, it will be counted for each treatment or each active ingredient. The pounds of pesticides applied in forest and timberland uses includes both area treatments of land and treatments of individual trees, for example.

<b>Table VII.8.5. State and Regional Summary of Pesticide Use, 2002.</b>			
Area	Pounds of All Pesticides Applied	Pounds of Pesticides Applied in Forest and Timberland Uses	Acres of Forest or Timberland Treated
North Coast Region			
Mendocino County	1,541,119	18,706	15,561
Marin County	73,438	0	0
Sonoma County	2,975,827	952	1,582
Humboldt County	38,364	26,785	28,798
Del Norte County	373,171	3,487	2,888
Region Total	5,001,919	49,930	48,829
State Total	172,086,290	264,539	211,350
Source: California Department of Pesticide Regulation website: <a href="http://www.cdpr.ca.gov/docs/pur/purmain.htm">http://www.cdpr.ca.gov/docs/pur/purmain.htm</a>			

In addition to pesticides, other regulated potentially hazardous materials that are anticipated to be used on JDSF include:

- fuels
- diesel for equipment

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- gasoline for equipment
- helicopter fuel
- lubricants for use on logging and CDF equipment
- hydraulic fluid for use on equipment
- chemical treatments on Forest roads for dust abatement
- other pesticides, such as insecticides, fungicides, rodenticides (no use in DFMP)

JDSF maintains a chemical storage facility, which contains herbicides, located near the Mendocino Woodlands Forest Fire Station (Personal communication, Walt Decker). The facility is in full compliance with State and County regulations regarding pesticide storage and record keeping. The Forest has not identified a need for other pesticides, such as insecticides, fungicides or rodenticides, nor is such a need identified in the DFMP. (Personal communication, Marc Jameson).

### **8.2.1 Existing Pesticide Use on JDSF**

In part in response to comments from the public, CDF has scaled back the use of herbicides on JDSF. The draft Plan (page 33) states:

There have been many requests from the public, as well as a recommendation from the Citizen's Advisory Committee, that the use of herbicides on the Forest be eliminated, and that alternatives to herbicide use be evaluated. In response to these concerns, the use of herbicides has declined substantially in recent years, and future management of exotic plant species and competing vegetation will rely upon an integrated pest management program. This program will utilize a combination of control methods and will rely much less upon herbicide use as a preferred method of control.

Since 2000, the only herbicide use has been targeted treatments directed at the invasive weeds; gorse, pampas grass, Scotch broom, and French broom. Approximately 600 individual plants have received a direct foliar application of glyphosate, (Personal communication, William Baxter). During the last four years approximately 20 pounds of active ingredient (glyphosate) has been used in a very limited program. In order to control gorse plants, JDSF personnel conduct applications treating plants while they are small, before they have a chance to flower and produce seed. The herbicide is applied with a backpack pump sprayer for spot applications on targeted vegetation.

### **8.2.2 Projected and Proposed Pesticide Use**

The low level of herbicide use on the Forest in recent years is indicative of the low level of management activity in general, in addition to the request for reduced herbicide use from the public. When management activity levels on the Forest increase following the

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implementation of the DFMP, herbicide use levels may increase above those of the past several years. However, it is not anticipated that herbicide use will increase to the levels of the early to mid 1990s.

Integrated Pest Management (IPM), as proposed in the DFMP, makes full use of the best benefits of mechanical, chemical, semio-chemical (e.g. synthetic pheromones), and biological pest management alternatives (see DFMP, page 84). IPM in a forested setting includes such measures as:

- Maintain stocking levels and minimize competition such that trees grow rapidly, maintain vigor, and are capable of defending themselves against, or recover quickly from, attack by insect or disease organisms.
- Minimize injuries to residual trees during forest management activities.
- Reuse old skid trails where available to reduce soil compaction.
- Retain a diverse species composition in or adjacent to stands following forest management activities and within or nearby future regeneration units.
- Avoid non-native tree species that may become invasive (e.g., eucalyptus).
- Avoid offsite seed sources that may be predisposed to pests.
- Use CDF or other forest pest management specialists to train employees in forest pest recognition and management.
- Manage incidental introductions including those from rock, straw and other materials

JDSF's practice of encouraging the growth of native vegetation genetically suited to the area will help to avoid conditions that could lead to pest outbreaks. This is because native genetic tree stock is more resilient to disease and insect infestations, thus reducing the overall need to manage non-plant pests.

Herbicides are proposed for use by JDSF as one method for preventing the establishment or reducing the impacts of unwanted plant species, including both exotic invasive and competing plant species. Integrated Weed Management (IWM), as part of an IPM program, focuses on preventing the colonization and spread of any invasive plant species through achieving the following goals (DFMP, page 58):

- Encourage the growth of vegetation that is native to our area and genetically suited for the site
- Promptly detect and directly control potentially damaging new infestations of any exotic weeds before the seed bank can build up or spread over a larger area;
- Control existing infestations to minimize conflicts with important management objectives and to maintain natural ecosystem processes;
- Prevent dispersal of exotic weeds into new areas; and
- Prevent reestablishment of infestations in areas that were formerly infested.

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The DFMP addresses potential infestation by invasive exotic plant species and overabundance of competing native vegetation that might be both ecologically and economically detrimental to the health and productive capacity of the Forest. IWM recognizes that well-established exotic pests cannot be eradicated; merely controlled. In addition, it acknowledges that pest species should only be controlled once their populations and impacts have reached an unacceptable threshold. Treatments are not prescribed for every pest occurrence nor are they applied where the pest population is not interfering with the forest's management objectives. Treatments would not be recommended without a careful assessment of the pest's impacts.

Various measures are proposed to prevent infestations, as well as control infestations. In many cases invasive plant species may be treated mechanically or manually and may, in some cases, include the use of herbicides. Herbicides are among the several tools that can be used as part of a comprehensive IWM program which relies on a thorough understanding of the pest's biology, the affected environment, timing, identified economic thresholds, as well as cultural and chemical methodologies.

Herbicide use may occur in the following situations (Personal communication, William Baxter):

- Controlling invasive exotics in order to maintain native plant communities, promote conifer habitat, and prevent the establishment and spread of new exotics. Specific treatments will focus on the following:
  - To reduce further spread of gorse and prevent new exotics, such as cape ivy, from spreading onto JDSF.
  - To control the blue gum eucalyptus infestation in the Caspar Orchard area.
- Control roadside vegetation, primarily invasive species such as pampas grass, broom, and gorse that easily spread via roadways, but also native plant species that vigorously grow in these conditions and hamper road use and maintenance.
- For use, following broadcast burns and wildfires, to facilitate successful establishment and growth of planted conifer seedlings by reducing brush competition.
- To inhibit the regrowth of hardwoods and maintain high conifer occupancy in harvested areas.

There is little anticipated need for herbicide application following a broadcast burn or wildfire. The last broadcast burn was conducted in 1992. Over the next ten years most broadcast burning will be related to research and demonstration projects; operational burning in harvested areas will occur only if situations develop that require burning to solve an unusual or unforeseen problem. As stated above, the primary purpose for the use of herbicides after a burn is to reduce competition from brush species that are

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stimulated by fire. In lieu of burning to clear logging slash for planting access, the current and planned practice in most cases is to require planting contractors to manually clear planting spots. (Personal communication, William Baxter)

Reduction of tanoak stocking in conifer stands will continue to be accomplished primarily by non-chemical manual methods. However, it is expected that some stands may benefit from supplemental herbicide application to prevent cut tanoaks from resprouting and overtopping young conifer trees. This is most likely to occur in the eastern part of the Forest where conifer site quality is relatively low and current tanoak stocking is much higher than desired. (Personal communication, William Baxter). Application techniques for each of these objectives are designed to treat only the target plants. Direct foliar application or application to the cambium via cutting or injection may be used.

The herbicides available for invasive plant control and forestry uses are dynamic. Herbicide use depends on the nature of the infestation and may change based on availability from the manufacturer, registration status, feasible treatment alternatives and the recommendations of the Pest Control Advisor.

At this time CDF anticipates the possible use of the following herbicides for invasive weed control and reforestation purposes on JDSF under the proposed DFMP: Glyphosate, Triclopyr, Imazapyr, Clopyralid, and Sulfometuron methyl. These products are described in Appendix 13, Brief Description of Herbicides Considered for Use on Jackson Demonstration State Forest. New products, formulations and application techniques may provide better control and improved environmental toxicology profiles. These chemicals may prove to be ineffective on a specific species. For this reason, in the future, there may be additions or deletions to the list of herbicides considered for use on JDSF. As part of JDSF's research and demonstration mission, small-scale herbicide trials or vegetation control studies are appropriate. These activities may utilize products not listed above.

### **8.2.3 Regulation of Pesticides and other Hazardous Materials**

The U.S. Environmental Protection Agency regulates pesticide use nationwide and has exclusive authority over pesticide labeling. Use of a pesticide is limited to the applications and restrictions on the label, and the label restrictions are legally enforceable. The California Department of Pesticide Regulation (DPR) regulates pesticides within the State of California and has legal authority to adopt restrictions on pesticide use going beyond the regulations of the U.S. Environmental Protection Agency (7 U.S.C.A. §136v). DPR operates with extensive authority in the California Food and Agricultural Code and in the California Code of Regulations.

Under California law, pesticide products must be registered by DPR in order to be sold and used in California. Before a substance is registered as a pesticide for the first time, DPR conducts a thorough evaluation. If DPR determines that further restrictions need

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to be placed on the use of a pesticide product to mitigate potential adverse effects, including human health effects and environmental effects, DPR classifies the pesticide as a restricted pesticide, and individual applications need a permit from the county agricultural commissioner. After a pesticide is registered for use in this state, DPR has an ongoing obligation to review new information received about the pesticide that might show new problems beyond those identified in the registration process. Where the review of new information shows that a significant adverse impact has occurred, or is likely to occur, DPR is required to reevaluate the registration.

The regulatory program of DPR and the county agricultural commissioners is thorough, detailed, and involved. Therefore, CDF faces constraints in examining the environmental effects of herbicide use. DPR operates a statewide program of regulating pesticides and is the lead agency for regulating herbicide use under CEQA. DPR has the greatest authority of any state agency for analyzing and regulating herbicide use. Further, DPR acts before any other state or local agency can act because an herbicide product must be registered by DPR before it can be used at all. This lead agency role was confirmed in *City of Sacramento v. State Water Resources Control Board* (3d Dist, 1992) 2 Cal.App.4<sup>th</sup> 960, for DPR's predecessor in regulating pesticides.

DPR's program for regulating pesticides was certified by the Secretary of the Resources Agency as a functional equivalent program under Public Resources Code (PRC) § 21080.5 in the same manner as the state's program of regulating timber harvesting was certified (14 CCR. § 15251(i)). Because the program is certified, DPR does not prepare environmental impact reports (EIRs) but prepares other documents in the place of EIRs (PRC § 21080.5(d)(3)). DPR's registration process takes into consideration that most herbicides will be used statewide. Because the registration evaluation process considers use of an herbicide in a broad area and in a variety of conditions, the documents are the functional equivalent of a program EIR for each pesticide. Site-specific application and use of restricted pesticides is evaluated by the county agricultural commissioner during its review of applications for restricted materials permits. Not all pesticides are restricted, and only restricted pesticides require a permit from the county agricultural commissioner, except for a pesticide that DPR has not designated as restricted, the commissioner can require a permit for its use if the commissioner makes a finding that the pesticide will present an undue hazard when used under local conditions.

In evaluating a substance before it is registered the first time as a pesticide, DPR examines all data required for registration regarding the chemical including its health and environmental effects. The department looks to see if the pesticide can be used safely and effectively and to determine whether limitations or use restriction would be necessary to protect health and environmental resources. By the terms of its certification, the program is prevented from approving the registration as requested if there are feasible alternatives or mitigation measures available that could lessen any significant adverse effects on the environment (PRC § 21080.5(d)(2)(A)). By § 12825 of

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the Food and Agricultural Code, DPR may refuse to approve the registration of a new pesticide if its use would cause a significant adverse effect on the environment.

When posting for public comment its proposed decision to register a new pesticide product and in approving the Public Notice for registration of a pesticide, DPR makes a finding as to whether the pesticide would cause a significant effect on the environment. Because DPR is the CEQA lead agency, this determination is binding on all State agencies, including CDF (PRC § 21080.1, 14 CCR § 15050). Accordingly, if a DPR-registered herbicide will be used in accordance with the directions and restrictions on the pesticide product label and any other restrictions established by DPR, CDF is required to find that the use will not have a significant effect on the environment unless there is new information showing significant or potentially significant effects not analyzed by DPR.

Exceptions to the lead agency's determination apply where the pesticide would be used for a non-registered purpose, *Citizens for Non-Toxic Pest Control v. California Department of Food and Agriculture* (1<sup>st</sup> Dist. 1987) 187 Cal.App.3d 1575, 1586-1588, or where significant new information is presented to CDF that had not been, and could not have been, presented to DPR at the time of DPR's registration decision (PRC § 21092.1, 14 CCR § 15162). The significant new information must show that the use would cause a new significant effect on the environment that had not been analyzed previously, that a previously analyzed effect would be much more severe, or that a new feasible alternative or mitigation measure, considerably different from ones analyzed previously, would lessen the significant effect but the project proponents declined to adopt it (14 CCR § 15088.5(a)).

If CDF receives comments on proposed herbicide use, CDF will need to determine whether the information qualifies as significant new information and whether the information was presented, or could have been presented, to DPR about registration issues or, in the case of restricted herbicides, to the county agricultural commissioner about site-specific issues. CDF will consult with DPR and the county agricultural commissioner about the submitted information both to obtain the evaluation by the agencies with their expertise and to alert them about the issues. DPR could respond to the information with a decision to reevaluate the registration of the herbicide or it could advise CDF that the information is repetitive of what was evaluated during the registration decision. DPR's evaluation of the information will be helpful to CDF given the background, expertise, and experience of the DPR staff.

Where herbicide use is proposed for use under the DFMP CDF will review the herbicide's intended use and its possible environmental effects. CDF will determine whether the proposed use would be consistent with the label and the registration limitations and whether DPR's lead agency determination of significance will still apply. CDF will also check for significant new information showing changes in circumstances or available information that would require new environmental analysis. Significant new information should be referred to DPR for that department's analysis as part of its

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ongoing evaluation program. CDF will look for simple and practical ways to avoid or mitigate potential new significant effects on the environment.

Cumulative impacts are unlikely because herbicide uses related to different control projects are separated in time and distance so that their individual effects do not reinforce or interact with each other. Herbicide use under the DFMP is neither widespread nor frequent. Herbicide may be used to reduce weed competition with small seedlings, to release the young trees from competition with brush, or to eliminate exotic weeds. Forestry herbicide uses are substantially less, in both frequency and amount, than in agricultural or urban settings.

Food and Agricultural Code § 13152(c) requires DPR to maintain a statewide database of wells sampled for pesticide active ingredients. State of California agencies are required to submit results of well sampling to DPR. DPR also conducts well sampling for pesticide residues. To date, the database contains information on 272 individual wells that were sampled and found to have residues of atrazine. DPR investigations of these reports indicate that the residues appear not to be associated with silvicultural activities. DPR has not conducted, nor has it received reports of, systematic investigations of wells used for production of forest products.

The *Federal Clean Water Act*, as amended, *Title 40 CFR Parts 110 and 112*, details guidelines that are required for handling hazardous substances, and are depicted in CDF's Spill Prevention Control and Countermeasure Plan (SPCC) as well. Some of the guidelines that are contained in the Act are as follows:

- All storage containers, whether they are temporary or permanent must have a secondary storage container that holds 110% of the capacity of the primary storage unit.
- Incompatible materials will not be stored in the same container.
- Pesticide mixing, loading, and equipment cleaning sites should be confined to an area where any spillage can be contained until cleanup.
- Appropriate clean up materials must be located within close proximity to the area that is used for handling and mixing the chemicals.
- A Professional Engineer must certify the SPCC.

The DFMP incorporates Forest Practice Rule standards regarding the safe handling of hazardous materials. The specific Forest Practice Rules (FPR; *Forest Practice Rules 2004*) are summarized as follows:

- Temporary fuel storage containment areas and setbacks from streams
- Handling of fuels and proper maintenance and inspection of equipment to ensure no leaks
- Reporting of accidental spills
- Handling of pesticides/herbicides



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- Emergency response plans for accidental spills
- Prohibition against allowing petroleum products to enter a watercourse. (Article 6 § 916.3)
- Prohibitions on the servicing of equipment used in timber operations in a manner or location which would allow grease, oil, or fuel to pass into lakes or watercourses (Article 4 § 914.5)

The Mendocino County Agricultural Commissioner requires a number of pesticide application standards and procedures as stated in the *Pesticide Regulation Manual, Title 3, 2002* (Personal Communication with Steve Hajiik, Assistant Agricultural Commissioner, and Cindy Beaver, Agricultural/Standards Specialist). The following is a summary of some of the applicable standards and procedures:

- Distribution of information and education material for safe handling of pesticides.
- Evaluation and issuance of pesticide permits and operator identification.
- Compliance monitoring.
- Illness and complaint investigation.
- Maintenance of records.
- Initiation of enforcement action for pesticide violations.
- All applications, both non-restricted and restricted chemicals, must be reported to County Agricultural Commissioner. Chemicals that are applied by licensed operators must be reported within seven days of the application. Applications that are conducted by forestry personnel must be reported by the tenth of the following month.
- A permit must be obtained and a Notice of Intent (NOI) must be filed if a restricted chemical is to be applied [Restrictions are determined by both Federal and State Definitions. Most of the herbicides that may potentially be used on JDSF are in Category 3, the least restrictive category].
- The landowner (JDSF) obtains an operator ID number to apply pesticides (certified private contractors will already have an operator ID number).
- All pesticide handlers, for both restricted and non-restricted chemicals, must undergo annual training in the safe and effective use of all pesticides they use.
- Protective gear must be worn, including, but not limited to, the following for every pesticide application:
  - Protective eyewear (Applicators must have side and brow protection eyewear and carry a pint of eyewash on their person, if a chemical label specifies eyewear is required)
  - Chemical resistant gloves
  - Long sleeved shirt
  - Shoes and socks

An additional County requirement is that category 1 and 2 storage facilities must be locked and posted with a pesticide chemical warning sign, in both English and Spanish,

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at all times (Personal communication with Dave Bengston and Cindy Beaver of the Mendocino County Agricultural Commissioner).

The North Coast Regional Water Quality Control Board (NCRWQCB) current Categorical Waivers and General Waste Discharge Requirements for Discharges Related to Timber Harvest Activities on Non-Federal Lands in the North Coast Region (6/23/04) includes notification requirements. Some of the requirements include notification for ground applications 30 days before application, including information on type of pesticide, method of application and measures to assure compliance with applicable water quality requirements.

On February 17, 2004, the Environmental Protection Agency (EPA) established buffer zones around certain water bodies in California, Oregon, and Washington in response to the U.S. District Court for the Western District of Washington ruling in the case of Washington Toxics Coalition (WTC) v. EPA. The order was intended to establish buffer zones as an interim measure to reduce the likelihood of jeopardy to 26 species of salmon and steelhead; for ground pesticide applications, the court order established a 20-yard buffer zone; for aerial pesticide applications, the court order established a 100-yard buffer zone adjacent to salmon-supporting waters. This order is in effect until the Environmental Protection Agency and, when appropriate, NOAA Fisheries, have completed an evaluation of whether endangered Pacific salmon and steelhead are sensitive to exposure from 55 pesticides.

Under the Endangered Species Act, EPA must ensure that its registration of a pesticide is not likely to jeopardize the continued existence of species listed as endangered and threatened or adversely modify habitat critical to those species' survival.

As of June 30th, 2004, the EPA had reviewed over half of the 55 pesticides subject to this litigation. As that date, 13 of those reviewed have been determined to have no effect on salmon and steelhead, therefore, not subject to the Court Order. The remaining 21 pesticides are proceeding through the consultation process. As of March 2005, this process is ongoing per Arty Williams of USEPA - Endangered Species.

CDF will not use any of the specified pesticides within the specified buffer zones until the EPA has completed their analysis and will follow relevant regulations that result from that analysis.

### **8.2.4 Thresholds of Significance**

Based on policy and guidance provided by CEQA ((PRC § 21001 and the CEQA Guidelines), an impact of the proposed project would be considered significant if it causes one or more of the following:

1. A hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;

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2. A hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
3. Hazardous materials or safety hazard risks within one-quarter mile of an existing or proposed school, within two miles of a public airport (or within an airport land use planning area) or private airstrip;
4. Activities on a site that is included on a list of hazardous material sites compiled pursuant to Government Code § 65962.5 and, as a result, would create a significant hazard to the public or the environment;
5. Impairment or physical interference with an adopted emergency response plan or emergency evacuation plan;
6. Exposure of people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Under the California Environmental Quality Act, the determination of a significant effect must be based on substantial evidence in the record (PRC § 21082.2). Controversy or intensely held opinions not based on substantial evidence will not justify deciding that an effect is significant.

### 8.3 Impacts

#### **Impact 1: *Adoption of the DFMP will not impair or physically interfere with an adopted emergency response plan or emergency evacuation plan* (Beneficial).**

Alternatives B through D, including the FFMP (alternative C1), are consistent with CDF's wildfire emergency response plan and include a Spill Prevention Control and Countermeasure Plan (SPPC) and a Road Management Plan. The additional fire inspection, prevention, suppression, and post suppression measures in the DFMP (alternative C1), alternative C2, and in alternative D will further implement the goals of existing emergency plans. These three alternatives will have a beneficial impact. Alternative F is similar, with faster implementation of the Road Management Plan.

Alternative A provides no active planning to respond to emergencies and no Road Management Plan to help maintain or improve road access for emergency response. This alternative could be mitigated to less than significant with emergency response planning and a Road Management Plan.

While alternative E includes an SPCC Plan, its aggressive road decommissioning could hinder emergency fire ingress and egress. This potential significant impact could be mitigated through addressing emergency access issues as a part of the road planning.

**Mitigation:** None Required.

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**Impact 2: Adoption of the DFMP will not expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands (Beneficial).**

For alternatives B through D, including the DFMP (alternative C1), and F, increased hazards potentially resulting from increased public use and harvesting practices that might contribute to forest fuel loads will be reduced through aforementioned measures included in the DFMP and Forest Practice Rules. The resulting potential impacts are less than significant.

Alternative A would have no active fire presuppression activities and no road management plan to inventory and maintain roads for fire fighting access. Mitigation would consist of implementation of a fire prevention plan and a maintenance provision for roads determined important for fire access.

Alternative E would encourage less intensive Forest management to the detriment of fire protection measures such as maintaining roads to access fires and constructing fuel breaks. Significant potential impacts could be mitigated to less than significant through development and implementation of fire suppression strategies; however, these, might conflict with this alternative's biological resource emphasis.

**Mitigation:** None Required.

**Impact 3: Adoption of the DFMP has a less than significant potential to cause a hazard to the public or the environment through the routine transport, use or disposal of hazardous materials, or through reasonably foreseeable, upset and accident conditions involving the release of hazardous materials into the environment (Less than Significant).**

Implementation of the Plan (alternative C1), alternative B, or alternative C would result in continued use of hazardous materials, such as fuels, lubricants, and pesticides in compliance with the Forest Practice Rules and other applicable regulations. Requirements for the transport, storage, handling, and disposal of the hazardous materials that might be used at JDSF are established and enforced by the NCRWQCB, Department of Pesticide Regulation, and County Agricultural Commissioner. Any foreseeable increase in hazardous chemical use would still be within the acceptable limits established by the Mendocino County Agricultural Commissioner and the NCRWQCB. Compliance with all Federal and State laws, codes, and regulations will minimize to less than significant levels any potential impact that may result from the transport, storage, handling, and disposal of the hazardous materials.

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Furthermore, based on evaluations CDF has conducted on this issue in relation to herbicide use by other landowners, potentially significant impacts related to the actual application of herbicides on JDSF are not expected. A CDF report titled *Environmental Effects of Herbicide Related to Timber Harvesting* (Norm Hill and Wendy Wickizer March 4, 2002) states that "The effects are generally not cumulative impacts because uses related to different Timber Harvest Plans (THPs) are separated in time and distance so that their individual effects rarely reinforce or interact with each other." Additionally, the report states "the plan (THP) submitter is bound by State and Federal law to use herbicides only in accordance with their label restrictions: CDF finds that there is no significant adverse effect that will result from this plan related to herbicide use."

In the official response of THP 1-01-208 HUM, December 2001, CDF replied regarding the issue of herbicide use on this THP proposed by Pacific Lumber Company (PALCO). CDF based most of its responses on findings that were made in an EIR PALCO prepared for its Habitat Conservation Plan (HCP) as it relates to harvesting redwood timberland in Humboldt County. One of the responses states, "Applications will occur as part of the initial site preparation activities and are considered to the extent that vegetative re-invasion of the site will be delayed and because significant adverse impacts on the environment are not expected to occur from the lawful use of herbicides." Additionally the response states, "No mitigations were determined to be necessary with respect to limiting herbicide use based on an identifiable significant adverse impact (as it relates to CEQA)." Ultimately the response finds "The herbicides that could potentially be used in the plan area are not likely to have any significant impacts on the environment, humans, wildlife, or water quality."

Under the California Environmental Quality Act, the determination of a significant effect must be based on substantial evidence in the record (PRC § 21082.2). Controversy or intensely held opinions not based on substantial evidence will not justify deciding that an effect is significant. Due to the absence of substantial evidence that pesticides, when properly used, present a threat to the environment or human health, this EIR has concluded that pesticide use on JDSF is not a potentially significant effect on the environment.

Under alternative A, little active management would occur. Thus, no hazardous materials would be used and there would be no impact.

While alternatives D and E prohibit the use of herbicides, logging would still occur, resulting in the use of hazardous materials. These uses would be strictly regulated and the impact would be less than significant.

Alternative E is similar to alternatives C1 and C2, though with potentially less use of herbicides. Thus, potential hazardous material impacts are expected to be less than significant.

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**Mitigation:** None Required.

**Impact 4:** *Adoption of the DFMP will not result in hazardous materials or safety hazard risks within one-quarter mile of an existing or proposed school, or within two miles of a public airport or private airstrip. (No Impact).*

No portion of the JDSF is within one-quarter mile of a school or within two miles of a public airport or private airstrip. While there are several schools, both public and private, located within the vicinity of JDSF, the two closest are approximately two miles north of the western property boundary in Fort Bragg, and one mile west of the southwestern boundary in Mendocino. The County Airport is located approximately 2.5 miles south of the Forest's southwestern border. This finding of no impact applies to all seven alternatives.

**Mitigation:** None Required.

**Impact 5:** *Adoption of the DFMP will not cause activities on a site included on a list of hazardous materials site (compiled pursuant to Government Code Section 65962.5) thereby creating a significant hazard to the public or the environment (No Impact).*

On February 26, 2001 a tanker truck overturned on Highway 20 at mile post 21.61 spilling approximately 7,000 gallons of fuel oil. The spill soaked into the ground and entered an unnamed tributary to James Creek. The initial cleanup began on February 28, 2001 and NCRWQCB requires further abatement by the responsible party. All JDSF activities within this area must be completely avoided until the site is remediated pursuant to NCRWQCB standards. Neither the DFMP (alternative C1) nor any of the other six alternatives would have an impact on this condition.

**Mitigation:** None Required.

### 8.4 Alternatives Comparison

A comparison of impacts among the various alternatives related to hazards and hazardous materials is presented in Table VII.8.6.

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<b>Table VII.8.6. Comparison of Hazards and Hazardous Materials Related to Impacts in Relation to the Various Alternatives.</b>						
<b>Alternatives</b>					<b>Discussion</b>	
<b>Impact*</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>*Impact Levels: (1) Beneficial (2) No Impact (3) Less than Significant (4) Less than Significant after Mitigation (5) Significant–Mitigation Not Feasible</b>
<b>Impact 1. Impairment or physical interference with an adopted emergency response plan or emergency evacuation plan.</b>						
<b>Alt. A</b>						This alternative would have no active planning to respond to emergencies and no road management plan to inventory and maintain roads for emergency evacuations. Mitigation would consist of implementation of such plans and maintenance provisions for roads determined important for fire access/egress.
<b>Alt. B</b>						These management alternatives would provide the basis for implementing the Spill Prevention Control and Countermeasure (SPCC) Plan and the Road Management Plan resulting in beneficial effects.
<b>Alt. C1 May 2002 DFMP</b>						
<b>Alt. C2 Nov. 2002 Plan</b>						
<b>Alt. D</b>						
<b>Alt. E</b>						This alternative would maintain an SPCC plan but would also entail an aggressive road-decommissioning program that could significantly hinder emergency fire access/egress. Mitigation would consist of an inventory and maintenance plan for roads determined to be important for this purpose. Such a strategy may conflict with this alternative's biological resource emphasis.
<b>Alt. F</b>						Similar to Alternatives B, C1, C2, and D, with faster implementation of the Road Management Plan.

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<b>Table VII.8.6. Comparison of Hazards and Hazardous Materials Related to Impacts in Relation to the Various Alternatives.</b>						
<b>Alternatives</b>					<b>Discussion</b>	
<b>Impact*</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>*Impact Levels: (1) Beneficial (2) No Impact (3) Less than Significant (4) Less than Significant after Mitigation (5) Significant–Mitigation Not Feasible</b>
<b>Impact 2. Exposure of people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.</b>						
<b>Alt. A</b>						This alternative would have no active fire presuppression activities and no road management plan to inventory and maintain roads for fire fighting access. Mitigation would consist of implementation of a fire prevention plan and a maintenance provision for roads determined important for fire access.
<b>Alt. B</b>						These management alternatives emphasize several wildfire suppression strategies as discussed to reduce fire hazards to nearby homes, thereby resulting in beneficial effects.
<b>Alt. C1 May 2002 DFMP</b>						
<b>Alt. C2 Nov. 2002 Plan</b>						
<b>Alt. D</b>						
<b>Alt. E</b>						This alternative would encourage less intensive Forest management to the detriment of fire protection measures such as maintaining roads to access fires and constructing fuel breaks. Mitigation would consist of developing fire suppression strategies, which may conflict with this alternative's biological resource emphasis.
<b>Alt. F</b>						Similar to Alternatives B, C1, C2, and D.



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<b>Table VII.8.6. Comparison of Hazards and Hazardous Materials Related to Impacts in Relation to the Various Alternatives.</b>						
<b>Alternatives</b>					<b>Discussion</b>	
<b>Impact*</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>*Impact Levels: (1) Beneficial (2) No Impact (3) Less than Significant (4) Less than Significant after Mitigation (5) Significant–Mitigation Not Feasible</b>
<b>Impact 3. A hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.</b>						
<b>Alt. A</b>						No logging activity or vegetation control would occur under this alternation; therefore, no hazardous materials use would occur.
<b>Alt. B</b>						Alternatives B, C1, and C2 would provide for continued use of herbicides (though this is more limited under Alternatives C1 and C2) and continued use of hazardous materials associated with logging activities. Such uses are strictly regulated and under either alternative; the impact would be less than significant.
<b>Alt. C1 May 2002 DFMP</b>						
<b>Alt. C2 Nov. 2002 Plan</b>						
<b>Alt. D</b>						Alternatives D and E would prohibit the use of herbicides; however logging would still occur to varying degrees resulting in the use of hazardous materials. Again, such uses would be strictly regulated and under either alternative, the impact would be less than significant.
<b>Alt. E</b>						
<b>Alt. F</b>						Similar to C1 and C2, though likely with more uncertainty regarding use of herbicides. Herbicides to be used only if other control methods fail. Failure of initial non-herbicide treatments may result in expanding invasive plant infestations increasing the area needing herbicide treatment.

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Table VII.8.6. Comparison of Hazards and Hazardous Materials Related to Impacts in Relation to the Various Alternatives.						
Alternatives						Discussion
Impact*	1	2	3	4	5	*Impact Levels: (1) Beneficial (2) No Impact (3) Less than Significant (4) Less than Significant after Mitigation (5) Significant–Mitigation Not Feasible
Impact 4. Hazardous materials or safety hazard risks within one-quarter mile of an existing or proposed school, within two miles of a public airport (air within an airport land use planning area) or private airstrip.						
Alt. A						JDSF is not located within one-quarter mile of a school or within two miles of a public airport or private airstrip.
Alt. B						
Alt. C1 May 2002 DFMP						
Alt. C2 Nov. 2002 Plan						
Alt. D						
Alt. E						
Alt. F						
Impact 5. Activities on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.						
Alt. A						No activities are proposed or permitted within known hazardous sites, unless remediated pursuant to NCRWQCB standards.
Alt. B						
Alt. C1 May 2002 DFMP						
Alt. C2 Nov. 2002 Plan						
Alt. D						
Alt. E						
Alt. F						