

Workbook for Community Monitoring of Federal Fuel Reduction Projects

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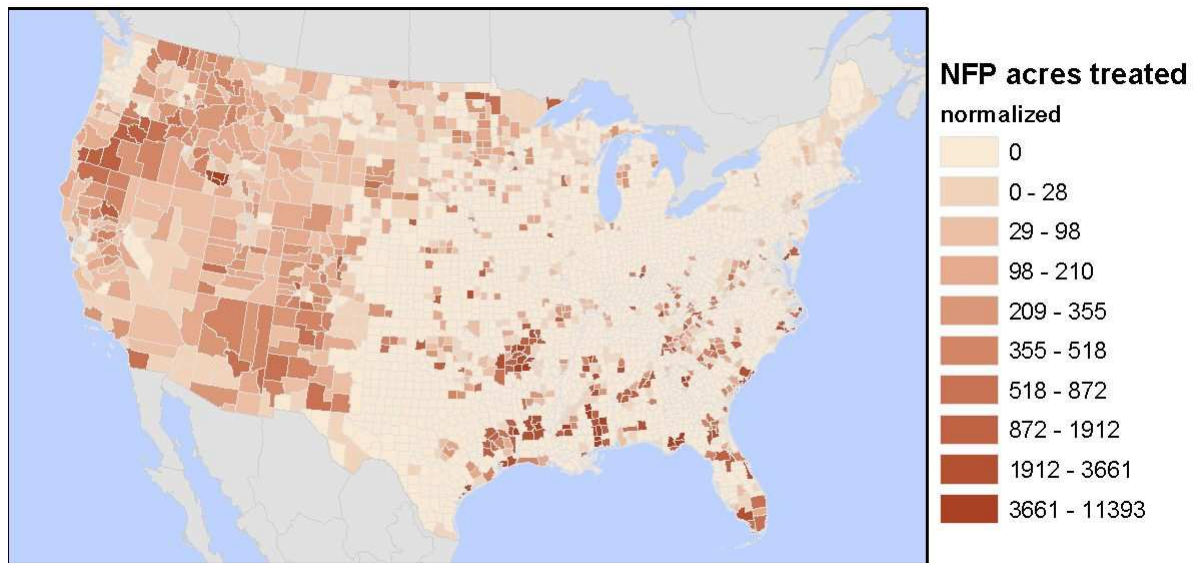
Introduction

The management of uncharacteristically dense forests and their related fire hazard is one of the most important land stewardship issues in the western United States (Noss et al. 2006). The National Fire Plan, Healthy Forest Initiative, and the Healthy Forest Restoration Act were created to reduce fuel densities and restore fire to its pre-fire suppression role in millions of acres of forested ecosystems. Programs to reduce forest fuels and fire risk have garnered federal funding and stirred public debate. However, it remains difficult to determine exactly how these projects impact the forests and adjacent communities on the ground, in part because there is no comprehensive and publicly accessible list of fuel reduction projects. Although fuel project information is not easily available, public participation is critical (Council on Environmental Quality 2000). The most successful fuel reduction projects are those that include early and substantial community participation.

The goal of this workbook is to help communities engage in the process of restoring fire prone forests by tracking federal fuel reduction projects. It is a companion to the paper entitled "An evaluation of fuel reduction projects and the Healthy Forest Initiative", which describes the policy and legal framework for federal fuel reduction projects and provides the results of an analysis of such projects in southwestern Oregon (Evans and McKinley 2007). This workbook also draws on mapping of US Forest Service (USFS) projects in the Santa Fe, Cibola, and Carson National Forests in New Mexico (Morton 2003b).



The number of acres of fuel reduction treatment in 2004, per 100,000 acres



www.nationalatlas.com/mld/foresti.html

Locating Fuel Reduction Projects

The first difficulty in evaluating fuel reduction treatments is identifying and locating the projects. Many agencies and a wide variety of funding, administrative, regulatory, and programmatic tools are involved in forest restoration and fuel reduction. Unfortunately there is no comprehensive and publicly accessible list of fuel reduction or Healthy Forests Initiative (HFI) projects. The National Fire Plan Operations and Reporting System (www.nfpors.gov) may be an option for future evaluations of fuel reduction projects, but currently it is only accessible within the government. In lieu of a centralized list, each agency has its own reporting system. The federal government is required by the National Environmental Policy Act (NEPA www.nepa.gov) to publish a schedule of all projects they are proposing for a particular national forest every three months. The USFS publishes a schedule of proposed action (SOPA) for each national forest, which provides basic information such as the project location, the number of acres that may be impacted, and a

brief description of the project. SOPAs are focused at the national forest level within the following structure: National (Washington, DC); Regional (national forests are grouped into 9 regions across the U.S.); Forest (Forest Supervisor's office); and Ranger District (each forest is subdivided into districts). SOPAs are generally available on the internet (www.fs.fed.us/sopa) along with a description of how to read a SOPA. SOPAs can also be obtained by calling or writing a letter to the Forest Planner at the National Forest Supervisor's Office. The Bureau of Land Management (BLM) publishes their project schedule in newsletter format available from each district. For example, the Medford, OR, district of the BLM publishes the "Medford Messenger" with a quarterly list of projects (www.blm.gov/or/districts/medford/plans/files/messenger_06_winter.pdf).

The geographic location of projects can be very important for monitoring such things as proximity to wilderness areas or the wildland urban interface (WUI). One central element of the geography of the national forests is the forest plan. Many of the projects under evaluation will be included in or reference elements of the forest plan for the national forest in question and can be located on a Management Area map for the forest. On the Management Area map there is a grid with "township" lines running horizontally and "range" lines running vertically. The boxes created by their intersection, called a Township, Range block, each contain 36 parcels known as sections, numbered from 1 to 36. Each section is a square mile or 640 acres in area. Township, Range blocks and Sections provide a guide to the national forest map. This grid system is also used in the SOPA description of the location of forest projects.

The forest-wide map, also called the "recreation map", is a useful base map for locating national forest features. The Forest-wide map is available from any Ranger District



office, or from the Forest Supervisor's Office. Generally, the forest-wide maps are printed at a scale of 1:126,720, or ½ inch to a mile, which means that every mile on the ground is represented by a ½ inch on the map. At this scale, mapping the exact perimeter of projects less than 50 acres may be difficult, however a point on the map can represent these projects.

Example from the Wasatch-Cache National Forest Recreation Map



<http://www.fs.fed.us/r4/wcnf/maps/krd/index.shtml>

Each office within the USFS or BLM has a slightly different system to track and record project information. For example, some offices may have data/maps for historical fire while other offices may have yet to develop such information. In general, it is appropriate to contact the USFS District Ranger or the BLM District Manager. Communicating with a decision maker about an assessment of agency projects establishes open communication and opportunities for collaboration. It is best to meet with the District Ranger in person to create a personal and professional rapport. Contacting the District Ranger or District Manager should facilitate timely and thorough information dissemination by his/her staff. Consider taking a copy of the list of projects under analysis to a meeting as the District Ranger or District Manager may be able to help you get project information.

The foundation for an analysis of federal projects is NEPA documentation. Each project should be covered by an environmental impact statement, environmental assessment,

or a decision memo. As dictated by NEPA, environmental impact statements (EISs) are written for major projects and those expected to have significant effects on the human environment. Environmental assessments (EAs) are created for projects where no significant impact is expected and provide a more concise description of environmental consequences. Decision memos are used for projects that are categorically excluded from more thorough investigation because they fit in a category of projects that are generally free of significant effects (USFS 2004). EISs or EAs are used for project planning at the landscape scale and categorical exclusions (CEs) are often used for specific treatments. Categorical exclusions under HFI are limited to 4,500 acres for prescribed fire and 1,000 acres for fuel treatments. Projects must be identified through a collaborative framework (USFS and BLM 2004). The rules for CEs are changing because of lawsuits and new administrative rules (Evans and McKinley 2007).

Many NEPA documents are now provided online. Regrettably, it is still difficult to locate all the applicable documents for federal fuel reduction projects. The BLM Medford District lists most of their projects at: www.blm.gov/or/districts/medford/plans/medford.htm, but some projects, particularly CEs are not included. The Rogue River and Siskiyou National Forests list their projects at: www.fs.fed.us/r6/rogue-siskiyou/projects/planning/index.shtml. In order to get further information on federal fuel reduction projects it is often necessary to file a Freedom of Information Act (FOIA www.usdoj.gov/foia/) request. In essence, a FOIA request is simply a letter requesting information from a federal agency. Agencies are not allowed to charge money for the first two hours of search time or for the first 100 pages of document copying for noncommercial FOIA requests and are required to respond to requests within 20 working days (www.pueblo.gsa.gov/cic_text/fed_prog/foia/foia.pdf).

The amount of information that is available for each project will depend upon its status. If the project is fairly new, it may be that only "scoping" information, a 1- or 2-page letter with a basic description of the project and a map with the proposed project's location, is available. However, if the analysis for the project has begun or is complete, a draft or final EIS, EA, or decision memo should be available. Often, several projects list the same contact person and multiple information requests can be combined.

Mapping Fuel Reduction Projects

In order to assess a federal fuel reduction project, it must be put in an ecological and social context.

Some of the geographic attributes that help frame a fuel reduction project are:

- 1) Forest type
- 2) Fire threat
- 3) Socio-economic context
- 4) Special attributes or unique habitat
- 5) Other management activities and plans

The ForestERA project is a good example of how these multiple landscape elements come together to help define appropriate areas for fuel reduction or restoration treatments (forestera.nau.edu, Sisk et al. 2006). Through the ForestERA process, stakeholders come together to discuss forest management priorities and map potential treatment locations.

The geographic information (GIS) coordinator for the national forest or BLM district may be best able to provide many of the maps mentioned below. Some federal entities provide GIS data online, although use or even viewing of such files requires familiarity with GIS.

- 1) Vegetation or Forest Types. The forest type defines what sorts of fuel reduction treatments are appropriate. Some forest types are adapted to low severity, frequent ground fires while others are adapted to infrequent stand replacing crown fires. A

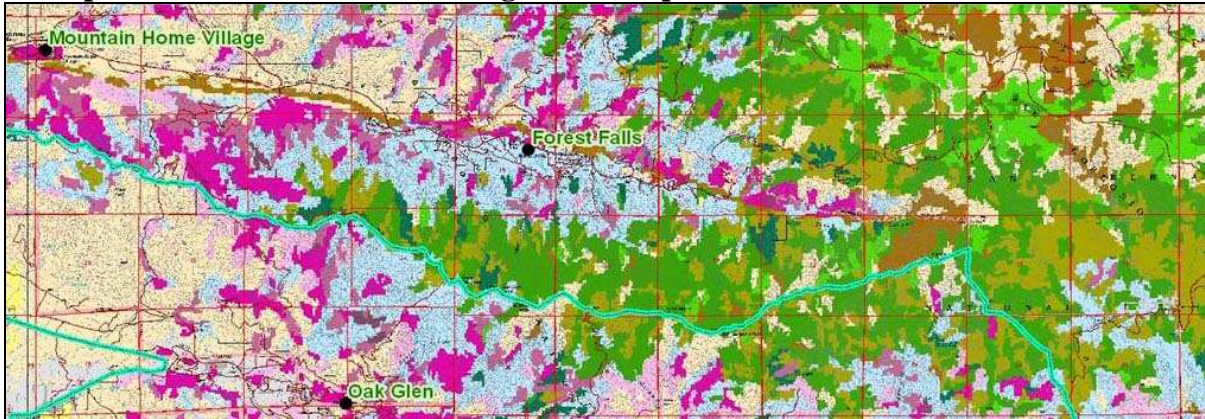


generalized map of forest type is available from the National Atlas

(www.nationalatlas.com/mld/foresti.html). Federal agencies or states may have more

specific forest or vegetation type maps for the project area.

Example from the San Bernadino vegetation map

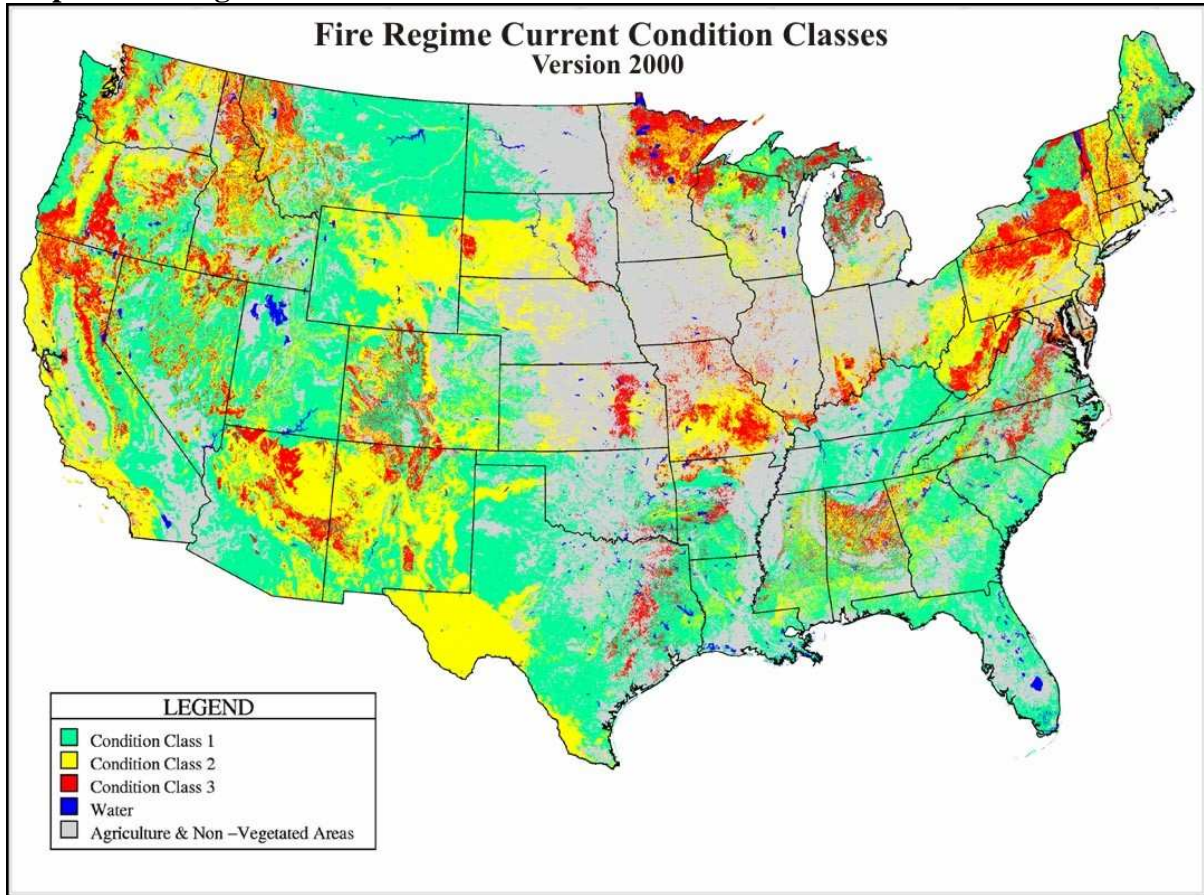


<http://www.fs.fed.us/r5/sanbernardino/projects/oakmain.shtml>

- 2) Fire Threat. Fire threat is a combination of the likelihood of fire starting and fire intensity once it has started. If a forest has heavy fuel loading, but is highly unlikely to have an ignition source, it may be less of a threat than a forest with less fuel, but greater chance of lightning strike or human ignition. Fire threat maps are difficult to create and are not available for all federal lands. Instead, it may be necessary to use maps of other attributes that create a picture of fire threat. National scale maps are coarse (low resolution) but still provide a general estimate of fire threat (www.fs.fed.us/fire/fuelman). Some federal agencies use maps of "condition class" where forests that have not been affected by fire suppression are condition class 1, areas that have missed more than one fire cycle are class 2, and forests where fire regimes have been significantly altered are class 3 (Schmidt et al. 2002, Morton 2003a, Rollins and Frame 2006). Maps of historic fires can help in the estimation of the likelihood of ignition and current stand condition. Areas that have recently burned

are probably in less need of fuel reduction. Similarly, maps of previous forest management operations will help identify areas in most need of treatment.

Map of Fire Regime Condition Class



<http://www.fs.fed.us/fire/fuelman/curcond2000/maps/cc2000.jpg>

On national forests, the Fire Management Officer may be able to provide maps of natural and prescribed fires. It may be necessary to create a map of previous thinning projects from older NEPA documents and references to historic projects in scoping letters. There are a number of maps at the national scale that may help in mapping fire threat:

- Active Fire Mapping Program maps large fires detected by satellite

activefiremaps.fs.fed.us



- The National Atlas provides a map of number of acres of fuel reduction, by county for fiscal year 2004 (nationalatlas.gov/mld/firplnp.html)
 - LandFire is a map of vegetation, wildland fuel, and fire regimes at 30m resolution (www.landfire.gov), but does not cover the whole country yet.
- 3) Socio-Economic context. The social and economic context can help determine the location and type of desirable fuel treatments. The Healthy Forest Restoration Act specifies that federal agencies should focus their energies in the wildland urban interface (WUI) (Sec. 103 US Congress 2003). Since the first concern for forest fire is protecting people, fires that occur near densely populated areas are the greatest threat. WUI is generally split into interface and intermix. Interface is "three or more structures per acre, with shared municipal services" while intermix can be as sparse as one structure per 40 acres (US Dept of Agriculture and US Dept of Interior 2001).

Maps of WUI areas are available at:

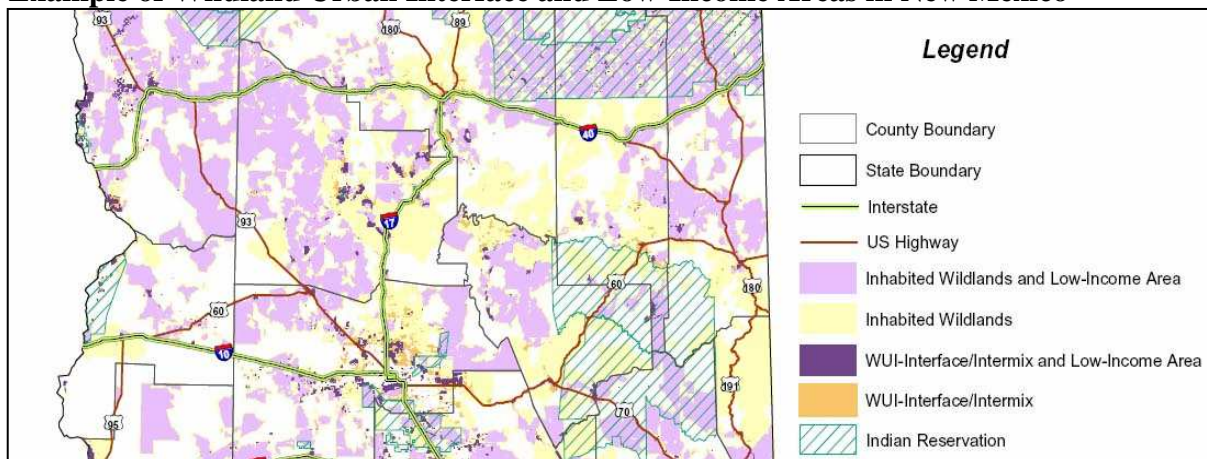
www.silvis.forest.wisc.edu/projects/WUI_Main.asp. Through the National Fire Plan in 2000, the Washington Office of the Forest Service directed each national forest to map its WUI areas, so every national forest should have this information. Many communities have created Community Wildfire Protection Plans (CWPPs) which prioritize areas for fuel treatment (Communities Committee et al. 2004). Because not all communities have the capacity to develop CWPPs, it is important to investigate the relative abilities of communities to prepare for wildfire (Morton 2003b).

Some communities may need additional federal assistance to protect them from wildfire because they have lower capacity to prepare for wildfire (Lynn 2003, Lynn and Gerlitz 2005). Community capacity in the context of wildfire is its ability to



respond to the threat through fuel reduction, creating defensible space around houses, improving fire suppression facilities, ecosystem restoration, or a variety of other projects. There are many facets to community capacity to prevent wildfire including social, human, financial, and political capital (Evans et al. 2007). Federal and state assistance for wildfire protection does not necessarily take into account social factors, so greater effort must be made to target fuel reduction projects that help these communities.

Example of Wildland Urban Interface and Low-Income Areas in New Mexico



<http://cwch.uoregon.edu/programs/CCE/poverty.html>

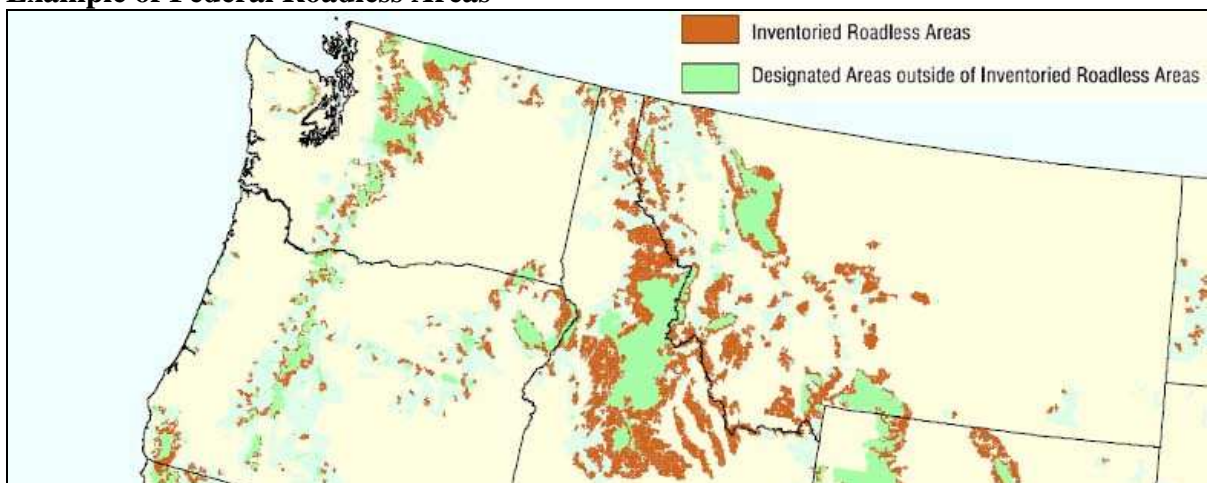
- 4) Special attributes. Some forests have unusual attributes that require special attention and protection. Areas that provide habitat for endangered or threatened species may require different kinds of fuels treatments. Old growth areas are becoming increasingly rare and deserve particular attention because of the unique biotic communities they support. Similarly, large blocks of roadless forest, usually defined as at least 5,000 acres of federal land that has no roads and is otherwise undeveloped, are rare and deserve special attention. Wilderness areas are congressionally designated areas that have been set-aside because of their value as relatively

undisturbed habitat. The "management emphasis in these areas is to preserve wilderness character and values. They will be managed to retain their 'primeval wild character and influence, without permanent improvements or habitation and ...[are to be] protected ... to preserve natural conditions.' Primitive recreation opportunities, wildlife habitat management, grazing, and fire management will occur only when consistent with these values and where historically established" (USFS 1987). Maps of wilderness areas and roadless areas are available at the national level:

- Roadless area maps (roadless.fs.fed.us/maps/usmap2.shtml)
- National Atlas map of wilderness areas (nationalatlas.gov/mld/wildrnp.html)

Maps of old growth and endangered species habitat may be available at the local level, although there is a good deal of debate about how to map these attributes.

Example of Federal Roadless Areas



<http://roadless.fs.fed.us/maps/usmap2.shtml>

- 5) In addition to the CWPPs mentioned above, other plans and activities may have bearing on fuel reduction projects. National forest and BLM district plans lay out land management frameworks that are then implemented by more specific project plans. Many communities have established fire plans, such as the Applegate fire plan

(grayback.com/applegate-valley/fireplan/), which prioritize areas for treatment.

Regional plans can also influence what types of fuel reduction projects are appropriate. For example, the Northwest Forest Plan has legal requirements for habitat protection separate from the Endangered Species Act for forests in the Pacific Northwest.

Analyzing Federal Fuel Reduction Activities

There is no exact formula for determining which fuel reduction projects are appropriate and which should be challenged. However, appropriate fuel reduction projects often share some characteristics. The fuel treatments should be specific to a forest type and if possible reference localized guidelines for restoration. A good example of fuel reduction treatments appropriate to a specific forest type are those based on the restoration principles for ponderosa pine defined by Allen and colleagues (2002). Treatments should match the forest type listed on vegetation maps, unless the treatment seeks to re-establish a forest type replaced or altered by human influences. For instance, in some areas of the southwest, fire suppression allowed fire intolerant fir trees to establish themselves under ponderosa pine trees and now restoration treatments seek to reestablish ponderosa pine stands by removing the fir.

Projects should be focused on areas of high fire threat, not just potential high fire intensity. Fire threat is related to human habitation. Projects in the WUI are more likely to protect life and property than projects deep in the forest. The importance of the WUI is highlighted in the National Fire Plan: "A top priority for reducing risk is to reduce fuels in forests and rangelands adjacent to, and within communities" (NFP, 2000, p. 17). However,

some projects target areas of high fire threat that could burn into WUI areas. Projects that fit within CWPP or other types of community fire plans are likely to be appropriate because they have already been subjected to public scrutiny. Appropriate fuel reduction projects can be located in previously treated or burned areas in order to continue the slow return of natural fire regimes. Since broadcast burning may increase the effectiveness of fuel reduction efforts (Carey and Schumann 2003, Skinner et al. 2005, Robbins 2006), fuel reduction projects should incorporate prescribed fire when safety concerns permit. Projects should also fit within landscape plans, such as national forest plans or community fire plans, unless there is clear reason for a different approach. Fuel reduction projects many include commercial products to help cover the cost of the treatment, though fire risk is most effectively reduced by cutting small, unmarketable trees (Council on Environmental Quality 2000).

Fuel treatment projects that seem to impinge on special areas of the forest deserve further inspection. Fuel reduction project are allowed in roadless and wilderness areas even though standard timber sales are not. It may be important to reduce the fuel load in a threatened habitat area in order to protect the habitat. However, projects in roadless areas, wilderness areas, or old growth should acknowledge the delicacy of the forest and implement extra precautions to protect the ecosystem. For example, a fuel reduction project in an old growth area might include a cap on the diameter of material removed as an extra insurance that no fire resistant trees are removed. If the project lies within a threatened or endangered species management area, the project should explicitly state habitat promotion goals. Projects in special areas of the forest should not include any permanent road construction because of the damage roads cause (Frost 1999). Likewise, projects in the forest matrix, those areas under normal management, should have minimal road construction. All roadwork is not

detrimental, however. Some road improvements may reduce environmental problems associated with old roads and some temporary road construction may be important for providing local forestry crews the opportunity to bid on the contract.

Follow Up

There are many avenues for presenting the results of an analysis of federal fuel reduction projects in order to influence either current projects or future planning. These avenues include presenting results to the responsible agency, organizing a community meeting, or other grassroots and coalition building activities to build support for particular outcomes identified by the analysis. If the projects are currently in a NEPA planning process, there will be opportunities for public comment and to attend public meetings. Reasoned analysis of projects based on public information and maps is a good addition to an often-polarized debate on land stewardship. Letters of support for projects that appear to protect life and property and restore ecosystem function, or at least do not harm sensitive forests, are as important as opposition to ill-advised projects.

A long-term perspective is central to land stewardship and analysis of fuel reduction projects may span several years. Projects can take a number of years to go from the initial planning stages to completion and it will not always be clear when a project has been implemented. Sometimes, the project will simply stop appearing on the SOPA or list of NEPA projects. On other occasions, agencies may send notification that the project has been completed with a map of the actual, treated area. The best way to get information about the progress of a project is to call or write the contact person. Another way to get information about completed USFS projects is to write a letter to the Contracting Officer at the

Supervisor's Office and to ask to be placed on the "bidders" list for contracts. The "bidders" list names projects that are being offered for sale to forest contractors or businesses that will actually do the cutting. Projects open for bids are in the final stages before actual work is done on the ground. The contract will provide the final acres to be treated, a project map, and a treatment prescription, in addition to other specifications.

For some projects, it may be possible to conduct fieldwork and move beyond a paper analysis of fuel reduction treatments. Independent verification that federal agencies are meeting the specifications laid out in the NEPA documentation is an important element in the implementation of public land management. In fact, the Healthy Forest Restoration Act requires agencies to "establish a multiparty monitoring, evaluation, and accountability process in order to assess the positive or negative ecological and social effects of authorized hazardous fuel reduction" (Sec. 102 US Congress 2003). Unfortunately, multiparty monitoring is poorly funded and rarely implemented (McCarthy 2004, USFS and BLM 2004). Multiparty monitoring can build trust between agencies and the public, which is often lacking in federal land management. Monitoring must be based on standard science and accepted methodologies but does not have to be complicated (e.g. Collaborative Forest Restoration Program 2003).

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