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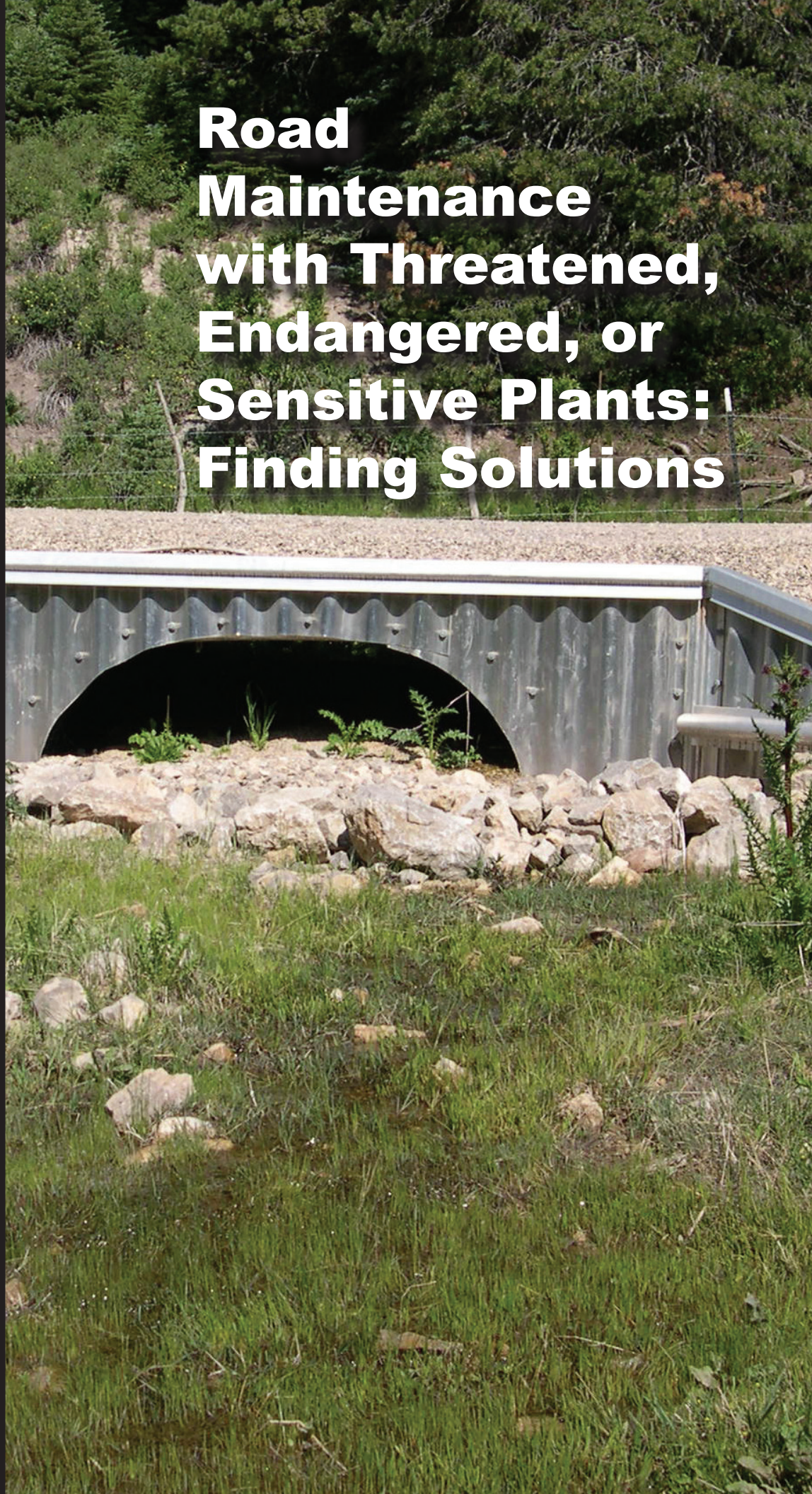
Road Maintenance with Threatened, Endangered, or Sensitive Plants: Finding Solutions



Road Maintenance with Threatened, Endangered, or Sensitive Plants: Finding Solutions

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INTRODUCTION

There are several misconceptions regarding road maintenance and threatened or endangered (federally listed) plants. Two of the most important are:

- The often-perceived requirement for a decision under the National Environmental Policy Act (NEPA) and Endangered Species Act (ESA) each time there is a need for routine or recurring maintenance on a road.
- The often-perceived conflict—or catch 22—between the laws and policy governing road maintenance.

This publication provides an overview of the process the U.S. Department of Agriculture (USDA) Forest Service—as a Federal agency—must follow to comply with all the laws and policies for road maintenance when threatened, endangered, or sensitive (TES) plants exist or are discovered. It begins with a brief overview of the process, and then explains the directives, laws, misconceptions, and apparent conflicts that often arise when implementing road maintenance activities that may impact listed plant species. As a Federal agency, we are required to follow Forest Service Manual (FSM) and Forest Service Handbook (FSH) direction on all roads and comply with the Highway Safety Act (HSA) when performing road maintenance activities on level 3 and higher roads. Likewise, compliance with environmental laws is not only required, it is the right thing to do.

Mitigations, or minimization measures, to road maintenance activities—best management practices (BMPs)—are often required to comply with environmental laws such as the Clean Water Act (CWA) and the ESA. This publication will be useful to land management practitioners responsible for road maintenance activities in areas with TES plants. It also will help guide you through the process when TES plants occur, and share successful solutions that can help avoid unnecessary delays because of perceived—and not necessarily real—conflicts. The appendixes provide excerpts from manuals and laws, definitions, contacts, and other sources of information.

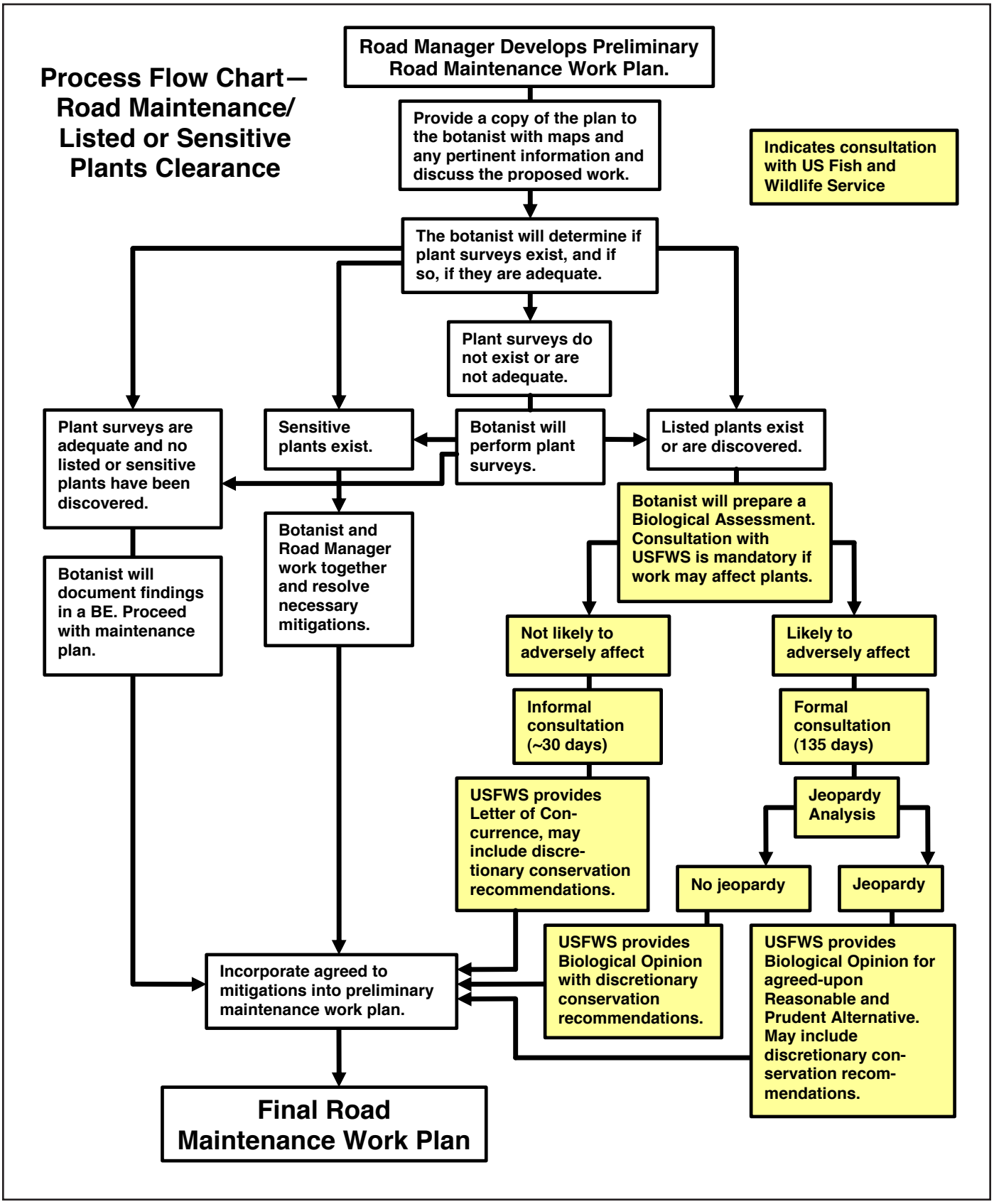

Figure 1—Process flowchart for road maintenance with federally listed or sensitive plants.

BRIEF INTRODUCTION TO THE LAWS AND POLICIES

This section provides an overview of the interrelationships of the laws and policies involved when performing road maintenance when TES plants exist or are discovered. The process requires cooperation between staffs and is not as complicated as one may think. However, it is greatly time dependent; planning ahead is essential for a successful maintenance work plan. Figure 1 provides a flowchart for development of a road maintenance work plan when listed or sensitive plants are present.

Preliminary Road Maintenance Plan
The following laws and policy direct the process for development of a preliminary road maintenance work plan.

National Environmental Policy Act
The line officer, as the responsible official, performs scoping on the proposed work. If the road maintenance work plan incorporates new actions, or if TES plant species are now present and staff has not analyzed how the road maintenance effects these plants, a change analysis, a supplement to the existing NEPA document, or new NEPA documentation may be necessary. Appendix A contains additional information on NEPA.

> Note: NEPA is an entirely different law and process than ESA and consultation with the Department of the Interior (DOI) U.S. Fish and Wildlife Service. Whether additional NEPA documentation is required for any work is the responsible official's (line officer) decision. This publication only provides a brief overview of NEPA as it affects road maintenance when TES plants are present, not an indepth discussion.

Highway Safety Act (HSA)
Incorporate road maintenance standards appropriate for the operational road maintenance level.

Clean Water Act (CWA)
Incorporate road maintenance BMPs into the work.

Other Laws and Policy
Consider the following when preparing the preliminary road maintenance work plan:

- Noxious weeds and invasive species. Include equipment-washing requirements.
- Heritage resources. Include any necessary mitigation for heritage-resource compliance.
- Herbicide use. Develop a herbicide-use NEPA document that includes BMPs for herbicide use.

Once the preliminary road maintenance work plan is complete, provide the plan—and any other pertinent information—to the botanist/biologist and initiate discussions regarding the road maintenance work required. The botanist/biologist will provide input to the plan regarding ESA and sensitive plants.

Endangered Species Act (ESA)
See figure 1. Follow the process in FSM 2672 and 2673. Survey the road for listed plants if necessary. (A botanist/biologist will determine if surveys exist and if they are adequate.)

- If ESA-listed plants do not exist, the botanist/biologist will document that fact in a biological evaluation (BE). Then, you can proceed with the work according to road maintenance requirements in the NEPA document for the original construction.
- If ESA-listed plants do exist, the botanist/biologist will prepare a biological assessment (BA). Consultation with the U.S. Fish and Wildlife Service is mandatory if plants may be affected.
  - If the work *may affect, but is not likely to adversely affect* listed plants, an informal consultation (which takes approximately 30 days) is required. The U.S. Fish and Wildlife Service will provide a letter of concurrence that may include discretionary (by the USDA Forest Service or action agency) conservation recommendations to conclude the informal consultation. Incorporate agreed-to conservation recommendations into the work plan.
  - If the work *may affect,or is likely to adversely affect* listed plants, a formal consultation (which takes approximately 135 days, or longer) is required. The U.S. Fish and Wildlife Service will prepare a draft biological opinion (BO), which determines if jeopardy will occur because of the work. If jeopardy occurs, the BO will include a mandatory, reasonable, and prudent alternative to remove jeopardy. Incorporate this—and any agreed-to discretionary conservation recommendations—into the road maintenance work plan. If jeopardy does not occur, the BO will contain only discretionary conservation recommendations. Incorporate any agreed-to conservation recommendations into the road maintenance work plan.

Note: While we provide some detail regarding jeopardy analysis and formal consultation later in the document, formal consultation is rare and jeopardy is even rarer. If proposed work requires a formal consultation or creates a jeopardy situation for a species, the USDA Forest Service and U.S. Fish and Wildlife Service will be working closely together to develop a reasonable and prudent alternative.

Sensitive plants

If sensitive plants exist, the botanist/biologist will develop a BE according to FSM 2672.4. The road manager and botanist/biologist should work together to find appropriate solutions to protect the plants without violating the HSA and the CWA.

BACKGROUND—ROAD MAINTENANCE WHEN FEDERALLY LISTED OR SENSITIVE PLANTS ARE PRESENT

Note: Appendixes B and C contain excerpts and quotes from the FSM, FSH, and various laws that govern road maintenance and road maintenance policy where ESA-listed and sensitive plants occur. These references are critical to the context of this publication. You should understand thoroughly the FSM and FSH references and excerpts from the laws for a complete understanding of road maintenance in situations where TES plants are present.

See FSH 1909.15 for direction regarding NEPA.

Road Design, Road Maintenance, and NEPA

Maintenance is implicit and may be discussed in the original NEPA decision to construct the road. Routine road maintenance does not require repeating decisions again each time the road is maintained unless, during scoping, an extraordinary circumstance is discovered. The selection and approval

of all the elements for the project (including maintenance) is made through the decision process established by NEPA and is usually documented in a decision memo (documented categorical exclusion [CE]), a finding of no significant impact (FONSI) for an environmental assessment (EA), or a record of decision for an environmental impact statement (EIS). An excerpt from FSH 7709.56, sec. 4.1, Road Preconstruction Handbook, is provided in appendix B.

In addition, if the NEPA documents for the decision to construct a road discuss concerns regarding the potential for unacceptable watershed impacts unless the road is properly maintained, doing the necessary maintenance should be viewed as a mitigating measure for the decision to construct. If the maintenance or mitigation measures are changed and have unanalyzed effects, if a new listed plant occurs, or an already listed plant establishes itself, a new NEPA analysis, and appropriate documentation may be necessary.

One can view routine road maintenance activities anticipated during the design process as expected implementing actions for the NEPA decision to construct the road the same way as one views the actual construction activity as implementation of that decision. Although routine maintenance may not be subject to additional NEPA documentation, routine maintenance is subject to additional ESA review if the maintenance activities *may affect* a listed plant in a way not considered in the initial decision.

Roads Constructed Prior to NEPA

Congress specifically exempts actions implemented prior to passage of the ESA from provisions of the act. However, roads constructed prior to NEPA may be subject to NEPA documentation if scoping reveals extraordinary circumstances. In those cases, the responsible official may decide if further NEPA analysis and documentation is warranted. Again, if the maintenance activities may affect a listed plant, routine maintenance—in these cases—***is*** subject to ESA requirements.

Road Maintenance Definitions

The normally accepted definition for interpreting USDA Forest Service policy pertaining to the act of maintaining the road is: “The upkeep of the entire forest development transportation facility including surface and shoulders, parking and side areas, structures, and such traffic-control devices as are necessary for its safe and efficient utilization.” See appendix D—Road Maintenance Definitions.

Unanticipated Maintenance and Categorical Exclusion

The process of designing a road requires maintenance considerations needed over the life of a road. However, road maintenance crews often perform maintenance activities not anticipated during the design. Unanticipated maintenance (emergency repairs) often results from catastrophic events, such as landslides or floods. The maintenance also may result from changes in management objectives such as the need to put passenger-car traffic on a road designed for high-clearance-vehicle traffic. The maintenance change may also result from changes in technology, such as invention of new methods for vegetation management along the roadside.

Unanticipated maintenance—that does not change the footprint of the road or the status quo of the road—may be categorically excluded from further NEPA documentation (EA/EIS) unless one discovers extraordinary circumstances

during scoping, such as finding a listed or sensitive plant that may be adversely affected by the work. See appendix B, FSH 1909.15, for when to use a CE. (See categorical exclusion 31.12, No. 4.)

Monitoring and Surveys
Regulations do not explicitly require monitoring for plants. Usually, forest-wide surveys and monitoring are done for species *and* their habitat. When we cannot credibly make a management decision for proposed work with the existing information such as the original survey for TES plants, site-specific surveys may be needed. Monitoring is part of the NEPA process and includes performing condition surveys to develop the annual road maintenance plan. Inevitably, staff may find plants in the course of monitoring and routine road maintenance, operation, and use. Anytime TES plants are found, the USDA Forest Service is required to act according to the law.

Road Management Objectives (RMOs)
Clearly, environmental laws are part of the RMOs. Staff must analyze potential impacts to listed or sensitive plants caused by the RMOs in a BE or BA. See appendix B, FSM 7730.2, No. 3, which states: "Operate and maintain the National Forest System transportation system in a manner that meets the road management objectives to provide for: ...Protection of the environment, adjacent resources, and public investment."

FSM, CWA, and ESA

Appendix B includes excerpts from the FSM, and appendix C contains excerpts from the HSA, ESA, and CWA as they apply to road maintenance. These laws and policies govern road maintenance activities to provide a safe road system for the user and protect the public's investment in the road system at the same time they protect plants and the Nation's waters.

DISCUSSION

The Apparent Conflict of Laws and Directives
When providing direction for road maintenance, the FSM brings all of the potentially conflicting laws together. There may appear to be a catch 22 when implementing all of the laws at the same time on the same site. The HSA requires road maintenance for both safety and protection of the public investment, yet maintenance disturbs the ground, which can invoke permitting under the CWA or can invoke consultation under section 7 of the ESA. For example, consultation would occur when the proposed maintenance activity *may affect* listed plants that are within the maintained right of way. FSM 7730.2 provides direction to comply with all of the laws and directives: "Operate and maintain the National Forest System transportation system in a manner … to provide for: Safe and efficient travel …" (HSA) and "Protection of the environment, adjacent resources and public investment" (CWA and ESA.) Simply stated, we must find a solution to the apparent catch 22 that satisfies all the laws and directives. You cannot violate the CWA or HSA to comply with the ESA and conversely, you cannot violate the ESA to comply with the HSA and CWA.

Required Compliance with the Laws
Road maintenance is necessary to comply with both the HSA and CWA. Comply with the HSA by keeping the forest transportation system safe for users and protect the public investment by preventing deterioration of the transportation system. Comply with the CWA by reducing nonpoint source pollution through implementing road maintenance BMPs. The real issue then becomes how one accomplishes the required road maintenance work without violating the ESA.

In most cases, compliance with the ESA is not as difficult as it seems even when road maintenance activities may adversely affect listed plants or their habitat. Comply with ESA by consulting with the U.S. Fish and Wildlife Service. Early coordination with the U.S. Fish and Wildlife Service may help find solutions that will avoid or minimize effects of the proposed work. Advance planning is important because consultation with the U.S. Fish and Wildlife Service may last from 30 days (informal consultation) to 135 days, or longer (formal consultation). The ESA requires U.S. Fish and Wildlife Service consultation when the USDA Forest Service determines that the proposed project may affect listed plants. Often, technical assistance from the U.S. Fish and Wildlife Service may result in a slight modification to the proposed road maintenance action that would conclude an informal consultation.

Know the Laws and Directives

Knowledge of the laws and directives is essential. In addition to understanding the requirements of FSH 1900, FSM 7700, and FSM 2600, understanding the basics of the ESA, as it applies to listed plants, is important to the success of the road maintenance activity. ESA and its implementing regulations are very complex. Remember, the ESA deals with plants very differently from how it deals with animals. The ESA has no direct prohibition against 'take' for plants and the part of a U.S. Fish and Wildlife Service BO that deals with 'take' for animals is completely absent in plant BOs. The BO provides conservation recommendations to help reduce adverse effects. We discuss excerpts from the FSM, FSH, and U.S. Code in the background section. For additional information, appendix E includes useful Web sites and publications. The publications are from the U.S. Fish and Wildlife Service Web site: http://www.fws.gov/endangered/pubs/. The regulations that implement the consultations process between the action agency (USDA Forest Service in this case) and U.S. Fish and Wildlife Service are contained in the Section 7 Consultations Handbook: http://www.fws.gov/endangered/consultations/s7hndbk/s7hndbk.htm.

Overview of the Process

During the planning and design for the construction of the road, staff must complete an environmental effects analysis and prepare environmental documents according to NEPA. Continuing recurring maintenance—identified as part of the original NEPA decision to construct the road—is exempt from further NEPA analysis and disclosure (EA/EIS) unless there are significant changed circumstances since the original NEPA decision (revealed during the NEPA scoping process).

Road maintenance identified in the original decision to construct simply continues implementation of the original decision to take an action. However, situations not anticipated in the original action may arise. These situations include:

- New information reveals effects of the agency action that may impact listed species or critical habitat in a manner—or to an extent—not considered in the original consultation (such as new information about the distribution or abundance of an endangered plant in a road right-of-way).
- The agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the original consultation (such as changing hazardous vegetation treatment from mechanical removal to herbicide application).

- A new species is listed or critical habitat designated that may be affected by the action.

These situations are referred to as extraordinary circumstances, even when the maintenance is routine or recurring, and require reexamination of the original consultation and NEPA decision. A botanist/biologist should determine whether the routine maintenance with the extraordinary circumstance may affect a listed plant or its critical habitat (if the U.S. Fish and Wildlife Service designated any critical habitat in the listing process). The effects of the maintenance activity may be either direct—because of the work in the road right-of-way—or indirect—because of offsite impacts to habitat—such as could occur with a change in drainage patterns. Also consider cumulative effects and interrelated and interdependent effects.

The person responsible for the road maintenance program of work should provide the botanist/biologist with the plans for the proposed maintenance activity. The botanist/biologist can then identify whether past surveys in the proposed maintenance area for listed plants were done and are sufficient, or whether new surveys are needed. Timing is critical because the botanist/biologist must conduct surveys when the plant species in question is visible for identification. For annual species, this may be only during the growing season and possibly only when the plants are blooming.

If the botanist/biologist identifies that the proposed maintenance action *may affect, is not likely to adversely affect* any listed plants present, he/she will analyze the effects in a BE or BA document according to FSM 2672.4 and submit the BA to initiate informal consultation with the U.S. Fish and Wildlife Service. The U.S. Fish and Wildlife Service will review the BA. If they concur with the USDA Forest Service's *may affect, is not likely adversely affect* determination, the U.S. Fish and Wildlife Service will respond in writing with a letter of concurrence within approximately 35 days to conclude the informal consultation.

If, through the analysis in the BA, the USDA Forest Service determines that the proposed road maintenance activity *may affect, is likely to adversely affect* a listed plant or designated critical habitat, the USDA Forest Service is required to reinitiate formal consultation with the U.S. Fish and Wildlife Service. The formal consultation will determine whether the proposed action is likely to jeopardize the continued existence of a listed species (jeopardy), destroy, or adversely modify designated critical habitat (adverse modification). The legally mandated timeframe for the U.S. Fish and Wildlife Service to complete a formal consultation is 135 days, provided they receive all of the information they need in the BA along with any maps or plans associated with the maintenance activity.

The formal consultation ends with the development of a BO in which the U.S. Fish and Wildlife Service reviews the USDA Forest Service BE/BA to determine the significance of the identified adverse effects. The U.S. Fish and Wildlife Service then performs a jeopardy analysis that compares the adverse effects of the proposed work against the environmental baseline for the species. If the conclusion is no jeopardy—which is the usual result—the BO may include discretionary conservation recommendations. Conservation recommendations are discretionary agency activities that the U.S. Fish and Wildlife Service will recommend that the USDA Forest Service take to minimize or avoid adverse effects of a proposed action on a listed species or critical habitat, help implement recovery plans, or help develop information

on the species or habitat in question. If the U.S. Fish and Wildlife Service concludes there is jeopardy—which rarely occurs—the BO will contain both the discretionary conservation recommendations and a mandatory reasonable and prudent alternative (defined in the U.S. Fish and Wildlife Service Section 7 Consultations handbook) that is intended to reduce the impacts to a level below jeopardy. Thus, a project can be completed without violating the ESA's prohibition against Federal agencies carrying out actions that jeopardize the continued existence of threatened and endangered species.

Notes on Reasonable and Prudent Alternatives

The U.S. Fish and Wildlife Service can only issue reasonable and prudent alternatives that are:

- Consistent with the intended purpose of the action.
- Within the scope of the action agency's legal authority and jurisdiction.
- Economically and technically feasible.

The U.S. Fish and Wildlife Service biologists are often not fully aware of an agency's authority and capabilities when they write reasonable and prudent alternatives or conservation recommendations. As part of the consultation process, the USDA Forest Service can and should request the opportunity to review and respond to a draft BO before it is issued in final form. The botanist/biologist, engineer, and decisionmaker (line officer) should review the conservation recommendations and reasonable and prudent alternatives to ensure that they meet the three requirements previously stated. The U.S. Fish and Wildlife Service and the action agency (USDA Forest Service) need to work closely together at the draft BO stage of a formal consultation to ensure that the maintenance activity provides the needed mitigations for the plants/habitat as well as compliance with the road management objectives. Once the final BO is prepared and returned to the USDA Forest Service and the USDA Forest Service incorporates the recommendations that it accepts, the formal consultation is completed and the ESA requirements have been met.

The issuance of a final BO concludes formal consultation. The BO is either summarized or attached to the EA or EIS as an appendix.

Reinitiation Notice

For ongoing actions such as road maintenance that required formal consultation, the BO will contain a reinitiation notice. This notice gives four conditions under which formal consultation *must* be reinitiated:

- The amount or extent of incidental take is exceeded (applicable only to animals).
- New information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered (such as new information about the distribution or abundance of an endangered plant in a road right-of-way).
- The action is modified in a manner causing effects to listed species or critical habitat not previously addressed (such as changing hazardous vegetation treatment from mechanical removal to herbicide application).
- A new species is listed or critical habitat designated that may be affected by the action.

Sensitive Plants

Consultation with the U.S. Fish and Wildlife Service is not required when the action agency (USDA Forest Service) considers effects to designated sensitive plant species that are not listed by the U.S. Fish and Wildlife Service as threatened or endangered. However, FSM 2672.4 requires a BE effects analysis, which may include recommendations for the maintenance work to protect these plants. Botanists/biologists and road managers should work together to find appropriate solutions to protect the plants when necessary. The regional forester has designated these plants because of a concern for their viability and a concern that management activities could cause further decline in their populations or habitat and may cause them to be listed as threatened or endangered under ESA.

Noxious Weeds

Noxious weeds are one of the greatest threats to many listed plants. To prevent inadvertently spreading noxious weeds that could threaten listed plant species, ensure that all maintenance work includes requirements to carefully pressure wash all road maintenance equipment to remove any weeds or seeds when moving equipment from one area to another. Pressure washing maintenance equipment to remove weeds and seeds is particularly important when bringing contract or rental equipment to the forest from other areas.

Herbicides

If herbicide use is part of the road maintenance activity, analyze its use in an appropriate noxious weed control NEPA document. The proposed action identified in the NEPA document should also include USDA Forest Service BMPs for herbicide use. If the USDA Forest Service determines that the herbicide *may affect* a listed plant, ESA consultation will be necessary.

Planning and Open Communications

Generally where there are potentially conflicting issues, planning far enough in advance, approaching the work with an open mind, and establishing honest communications are the most important keys to resolving problems. Advance planning provides the opportunity for all parties with an interest in the project to voice their concerns. Contact the botanist and find out when he/she needs the maintenance work plan so that there will be time to perform any surveys, if necessary. Many plants are visible for survey for very brief periods of the year. If the window when the plants are visible is missed, a survey may have to wait until the following year—planning ahead for plant surveys can be critical to the work timeline. Keep in mind, the objective of road maintenance is preservation of the entire roadway in ways that comply with all laws and regulations to protect the environment and the road. Therefore, listed species may continue to exist in harmony with road users.

SOLUTIONS

A myriad of possibilities exist to protect listed plants in the right-of-way and perform road maintenance. Which solutions apply to a particular project depends on the nature of the issues. For instance—on one end of the spectrum—if a healthy population of listed or sensitive plants exists outside the road maintenance right-of-way, minimal protective measures may be an appropriate action although consultation will be required if there are any adverse effects. On the other end of the spectrum, there will be a mandatory consultation and a prudent alternative implemented if a U.S. Fish and Wildlife Service BO concludes that the proposed activities in the right-of-way will jeopardize the existence of a species (unlikely).

Possible solutions for road maintenance that provide protection for the viability of a listed species could include any one or a combination of the following:

- Signing areas with listed plants as to type of maintenance and time of year maintenance is allowed.
- Restricting the type of maintenance allowed (provided that does not violate HSA or CWA).
- Hand brushing to avoid listed plants.
- Brushing or mowing after annual plants have gone to seed.
- Removing the portion of the plant population within the maintained right-of-way. (This would be an adverse impact and require formal consultation. See U.S. Fish and Wildlife Service Sec. 7 Consultation Handbook, Chapter 4).
- Moving the plants physically (transplanting the affected population) to a location outside of the maintained right-of-way. (This will most likely be identified by the USDA Forest Service and the U.S. Fish and Wildlife Service to have some adverse effects to some individuals of the species and will require consultation).
- Collecting seed to propagate affected plants. (This requires a permit from the U.S. Fish and Wildlife Service if the plants are listed as threatened or endangered).
- Rerouting or shifting a portion of the road to eliminate the impact on affected plants. Depending on circumstances, this could conceivably require new NEPA analysis.
- Constructing habitats outside the roadway in areas where plant seed may be present and monitoring to see if populations of the plants establish themselves may be early successional species requiring disturbed habitat.

In more extreme cases, the following may be appropriate:

- Restricting use and maintenance of the road to a lower level.
- Closing the road.

In any case, when deferring road maintenance work that is necessary for the safety of road users, the road *must* be closed to public travel until the necessary maintenance is performed.

The measures listed above are in no particular order and are simply possible options. Some are simple and inexpensive and some are significant and may not be feasible economically. Some may consider these solutions—that damage or remove listed plants—an adverse effect requiring formal consultation. Each situation is unique and requires its own analysis. In any case, look for innovative and creative solutions that satisfy all of the laws and your forest's needs. Approach the maintenance activity with an open mind and be willing to compromise. Above all, remember that compliance with *all* the laws is not just required, it is the right thing to do.

Complete Staff Work

Good, thorough, complete staff work is critical. There may be cases where the exact effects of road maintenance activities on the listed plants are not known. There are cases where plants will thrive in disturbed areas following road maintenance activities and other cases where the converse is true. To assess impacts—both positive and negative—for future decisions, document

conditions of the road and the plants in the areas where listed plants occur before and after the maintenance activity, as well as monitor the affected areas in the future. Be sure to:

- Completely document the work.
  - Include photos—particularly areas with listed plants, before, during, and after the project (high-resolution digital photos are preferred).
  - Catalog the photos for future reference.

- Thoroughly document any requirements (FSH, FSM, and Section 7 consultation) or agreements (such as conservation measures that are part of the proposed action). For example:
  - Areas with plants that may not be disturbed.
  - Areas with plants that may be disturbed.
  - Areas where road maintenance requirements were changed to accommodate ESA.
  - Road shifts or realignments.
  - Road template changes.
  - Road maintenance BMPs.
  - Herbicide BMPs.
  - Operational road maintenance levels used.
  - Constructed habitats outside roadway.

- Follow up on requirements and agreements as necessary during the project.

SOURCES FOR SOLUTIONS

Other Forests

These laws have been in effect for decades; other forests may have already implemented solutions appropriate for your work. Use your networks of botanists/biologists and road managers. Read the following three case studies that showcase unique solutions for accommodating road maintenance and the ESA.

State Departments of Transportation

Many States have aggressively addressed listed plants and road maintenance. Oregon Department of Transportation (ODOT) has had an effective system in place since 1992 where known populations of listed plants are signed for maintenance. Figure 2 shows the special management area (SMA) sign and figure 3 shown the instruction card that road maintenance personnel carry to decipher the code. This example is not appropriate for all situations, but it does illustrate an innovative solution that might be used.

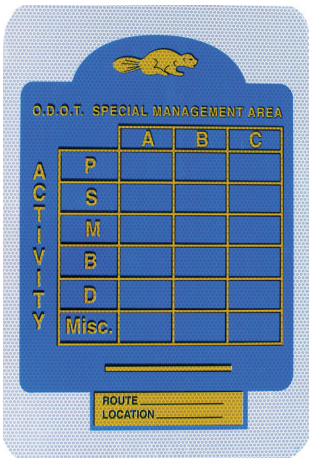

Figure 2—ODOT SMA sign.

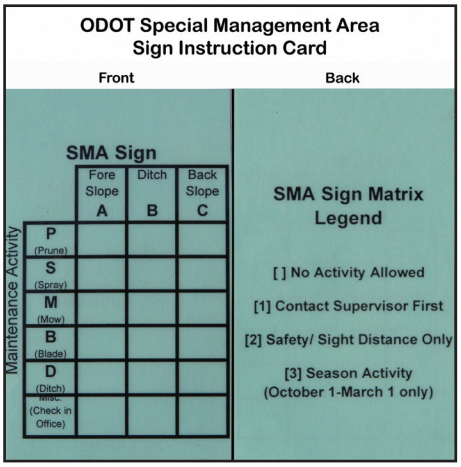

Figure 3—ODOT instruction card.

Signs are posted at the beginning and end (including a buffer) of each SMA where listed plants exist. The sign on the left is marked with a code opposite each type of maintenance activity. Maintenance crews carry the card on the right to decipher the codes marked on the signs.

SUMMARY

Reminders for a successful road maintenance program where listed or sensitive plants exist:

- Refer to figure 1 for a process flowchart.
- Plan ahead. Prior year planning is the best solution. Plan next year's work now. In any case, be sure to allow time for everyone to do his or her job. Consult with and provide timely information to the botanist/ biologist so he/she can assess the need for plant surveys. Remember, if surveys are necessary, you can only survey some plants within very narrow timeframes.
- Comply with all the laws. You *cannot* violate one law to comply with another.
- Be familiar with the laws and policies so that you can discuss alternative solutions intelligently.
- Provide complete staff work. Thoroughly document all your work such as, road standards used, road maintenance BMPs, and ESA requirements such as maintenance design features, discretionary conservation recommendations or, when necessary, reasonable and prudent alternatives resulting from U.S. Fish and Wildlife Service consultation.
- Take photos and catalog them.
- Monitor the maintained area after the maintenance is complete. Did the ground disturbance help or harm the plants in the long term? Document measures that succeeded or failed for future reference.
  - How did plants respond to protective measures?
  - How did plants respond to ground disturbance?

Lincoln National Forest—Rio Peñasco Road
Submitted by Tom Torres with photos by Nancy Taylor

Project: Rio Peñasco Roads Watershed Project FY 2000

Forest: Lincoln National Forest, New Mexico, Southwest Region (R3)

Introduction
This project is an example of where road maintenance was suspended for some sections of a road to avoid damage to a threatened plant and its habitat until appropriate solutions were found for maintenance that would comply with ESA as well as all other laws.

Project History
Several short sections of Forest Roads 164 and 5009 on the Sacramento Ranger District were constructed directly through travertine slope-side springs that support a federally listed threatened plant. The road was constructed prior to the plant's listing (Sacramento Mountain thistle - *Cirsium vinaceum*). The roads disturbed the natural springs and concentrated water flow into roadside ditches and down the roadways. The plants—and their habitat—were located on the slopes above and below the roads as well as in the roadside ditches and in some areas directly adjacent to the road shoulder. To minimize disturbance to the listed plants, we did not perform road maintenance in these areas for several years causing several conflicts with HSA and CWA. We did not maintain the existing culverts resulting in water running down the ditch and spilling onto the roadway, rather than wetting the natural slopes that are now beneath the roads. The unmaintained culverts caused muddy conditions in the spring and summer and icy conditions in the fall and winter.

With the acquisition of U.S. Environmental Protection Agency 319 grant funding and USDA Forest Service 10-percent funds, we developed a larger watershed improvement project. The resolution of the road maintenance, slope-side springs, and listed plants became a component of the larger project.

The NEPA process identified several objectives for the portion of the project associated with the spring areas:

- Create a maintainable road surface with better drainage.
- Restore the historical spring flow patterns above and below the road, thereby increasing habitat for the listed plant and improving watershed health.
- Minimize effects to the listed plant and its habitat during construction and future maintenance operations.

The NEPA process then analyzed the objectives, alternatives, and impacts which resulted in an EA that underwent consultation with the U.S. Fish and Wildlife Service prior to making a decision and subsequent preparation of the decision notice and FONSI.

The selected alternative proposed to implement road drainage improvements in the spring areas. The solution consisted of raising the roadway with permeable rock fill road sections along with 9-foot wide-span aluminum box culverts spaced to allow springwater to flow through in a more natural manner. We selected wide-span culverts to minimize the likelihood of the

maintenance caused by the culverts plugging. We raised the roadway to eliminate cutslopes and the associated ground disturbance and to keep the spring flow off the road.

Figures 4 through 7 show the project in progress and some of the completed project areas.

Figure 4—Aluminum pipe arch inlet during construction. Note that springwater is still diverted down the ditch to minimize flow through disturbed area. We did not allow the contractor to divert water with equipment. USDA Forest Service personnel diverted the water by hand by to minimize disturbance to the habitat.
Photo: Tom Torres, Lake Tahoe Basin Management Unit, R5.

Figure 5—Culvert entrance as of June 2005. Note that the Sacramento Mountain thistle (*Cirsium vinaceum)* is beginning to grow in the entrance. We replaced and maintained fencing to keep cattle and other animals out of the thistle population.
Photo: Nancy Taylor, Lincoln NF, R3.

Figure 6—Aluminum pipe arch outlet. Photo taken June 2005. Note large arch opening requires only infrequent maintenance despite relatively large springflows. We constructed the road prism of 2- to 3-foot-deep permeable rock fill. The listed plant, Sacramento Mountain thistle (*Cirsium vinaceum*) is in the outlet of the structure.
Photo: Nancy Taylor, Lincoln NF, R3.

Figure 7—Project area, May 2002. Absence of Sacramento Mountain thistle in this photo is because the photo was taken before normal growing season for the plants and after a dry winter. Construction limits were very constrained on the project to minimize damage to the listed plant's habitat.
Photo: Nancy Taylor, Lincoln NF, R3.

Superior National Forest—Tomahawk Road Closure
Submitted by Roger Pekuri, forest engineer

Forest: Superior National Forest, Minnesota, Eastern Region (R9)

Introduction
This project is an example of relocating a portion of a road that benefited road management objectives and restored plant habitat.

Project History
Forest Road 377 (Tomahawk Road) as it left Minnesota State Highway 1, headed east from its beginning point through a deep peat bog area for about 0.4 miles. The original construction was for a railroad grade; in the 1940s it was converted to a road. For decades, the road slowly subsided due to the weight of the embankment materials and live traffic loads. The very soft subgrade required an annual application of granular fill material and surfacing. Subsidence of the road also interfered with the subsurface water movement and plant viability—pale grape fern (*Botrychium pallidum)* and yellow lady's slipper (*Cypripedium calceolus)* as the subgrade compressed and compacted material was placed on top.

To remedy the situation, the forest relocated the road intersection about 0.5 miles to the north on upland ground, constructed about 0.9 miles of new road, decommissioned about 0.8 miles of old road, and rehabilitated the wetland crossing. Rehabilitation consisted of removing the road embankment to about 4-inches below the wetland surface, placement of about 4 inches of organic materials salvaged from the road relocation activities, and "planting" backhoe scoops of native wetland vegetation excavated at random intervals from outside the old roadway and placing at roughly 8-foot by 8-foot spacing. This allowed the old roadway to fill in with native vegetation much more quickly. The rehabilitation work on the wetland crossing cost about $3,500. The planted vegetation grew well and the old roadway disappeared. Wetland drainage was reestablished and the plants continue to be viable.

Figure 8—This photo shows the location of the closed road after completing the project. Photo: Roger Pekuri, Superior NF, R9.

Tahoe National Forest—Road Maintenance with Sensitive Plants
Submitted by Kathy Van Zuuk, botanist

Forest: Tahoe National Forest, California, Pacific Southwest Region (R5)

Introduction
This project is an example of where a small change in road maintenance procedure protected plants while accommodating all other laws in effect.

Project History
A sensitive plant, clustered lady slipper orchid (*Cypripedium fasciculatum*) slumped down a road cut to the road shoulder. These plants are not ESA listed, but are listed as sensitive by the USDA Forest Service and considered significant to the viability of the species since they are the southernmost known occurrence of the plants in this area. The plants are surviving well at the road shoulder, but need protection from potential damage by road maintenance work. To avoid possible damage caused by road maintenance activity, the forest placed signs that state “No ground disturbance within the next 300 feet.” By informing the road maintenance crews of the sensitive plants and coordinating maintenance activities with the botanists, we minimized impacts to the plants. The brushing equipment is raised in this area to protect the plants and still provide the necessary vehicle clearance and sight distance.

Figure 9—Clustered lady slipper orchid (*Cypripedium fasciculatum*,) a sensitive plant on the Tahoe National Forest. Photo: Kathy Van Zuuk, Tahoe NF (R5).

Figure 10—Clustered lady slipper orchid growing at the edge of the road. Photo: Kathy Van Zuuk, Tahoe NF (R5).

Figure 11—Brushing equipment is raised to prevent damage to the plants underneath while still maintaining clearing for clearance and sight distance. Photo: Kathy Van Zuuk, Tahoe NF (R5).

APPENDIX A
ROAD MAINTENANCE AND THE NEPA PROCESS

by
Kenneth Vaughn, Deputy Director Engineering and Aviation Management, Region 10

Nearly all activities by Federal agencies, especially those activities considered discretionary such as road maintenance, are subject to NEPA considerations. The amount of effort and detail will vary depending on the scale and scope of the work involved as well as the results of scoping. FSH 1909.15 (NEPA Handbook) provides guidance for implementing the NEPA processes. The process is one of risk assessment where the responsible official (line officer) weighs the time and effort for documentation against the likelihood that there will be objections to the actions being undertaken. In the 9th Circuit Court of Appeals a recent case demonstrates that a case file with documentation of why an action may be insignificant is not only important, but necessary.

Road maintenance is one of the routine administrative, maintenance, or other actions that may be covered by a CE from documentation. Many of the routine road maintenance actions normally do not individually or cumulatively have a significant effect on the quality of the human environment and may be categorically excluded from documentation in an EIS or an EA unless scoping indicates extraordinary circumstances exist. The amount and extent of scoping is determined by the responsible official, and may or may not include forms of public scoping. Scoping will guide the responsible official to determine if a project or case file should be prepared and if a decision memo may be prepared. Scoping may result in the identification of extraordinary circumstances that could warrant additional NEPA analysis.

The NEPA Handbook identifies seven resource conditions that you should consider when determining if more extensive environmental analysis efforts are needed:

1. Federally listed threatened or endangered species or designated critical habitat, species proposed for Federal listing or proposed critical habitat, or USDA Forest Service sensitive species.
2. Flood plains, wetlands, or municipal watersheds.
3. Congressionally designated areas, such as wilderness, wilderness study areas, or national recreation areas.
4. Inventoried roadless areas.
5. Research natural areas.
6. American Indians and Alaska Native religious or cultural sites.
7. Archeological sites, or historic properties or areas.

Note that the mere presence of one or more of these resource conditions does not preclude use of a CE. It is the degree of the potential effect of a proposed action on these resource conditions that determines whether extraordinary circumstances exist. The presence of one or more of these resource conditions could be an indicator suggesting that a case file be prepared to provide documentation in case of a challenge.

The responsible official needs to use the scoping results in combination with the extent of the work proposed to determine if the work is more properly maintenance work or would be better described as construction/reconstruction for items such as resurfacing, restoration, and rehabilitation. (*Construction* is defined at 23 USC 101 as including reconstruction. Resurfacing, restoration, and rehabilitation (3R) are defined activities included in the definition of *construction*.)

In general, the lack of a record for review does not support decisions in the Government's favor. Should an interested party want to object to an action, they may seek judicial review. Judicial review is based on the administrative record accumulated during the preparation of the project. Should the responsible official choose not to have a case or project file, there will be little or no documentation for judicial review.

A court in the 9th Circuit will uphold the agency's action only when it is assured that the agency actually considered the environmental effects of its action before the decision to implement the action was made. In the 9th Circuit Court of Appeals (Alaska, Washington, Oregon, California, Idaho, Montana) there is recent case law that demonstrates that a case file with documentation of why an action may be insignificant is important and necessary. [Alaska Ctr. for the Env't v. U.S. Forest Service, 189 F.3d 851, 858 (9th Cir. 1999); California v. Norton, 311 F.3d 1162, 1176 (9th Cir. 2002)] The 9th Circuit standard is that the Court expects the government to provide a convincing statement of why potential effects of an action are insignificant. Such a statement allows a reviewing court to determine whether the USDA Forest Service based their decision on consideration of relevant factors or whether there was clear error of judgment. Case law in other Circuit Courts of Appeal may vary.

Informal review shows checklists of typical contents for case files are available in most USDA Forest Service regions. These checklists guide case-file preparation when the responsible official requests it. The documentation of the extent of scoping and documentation such as that identified in 9th Circuit case law appear to set an effective minimum level.

APPENDIX B
FOREST SERVICE MANUAL AND FOREST SERVICE HANDBOOK GUIDANCE

FOREST SERVICE MANUAL (FSM)
The FSM requires that all of our operations follow existing laws and includes the following that apply to road maintenance and that reference other laws.

2670 - Threatened, Endangered, and Sensitive Plants and Animals

FSM 2670.11 - Endangered Species Act

The Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq., hereinafter referred to as the Act).

1. Section 2 declares that ". . . all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this Act." ….
2. Not cited.
3. Section 7 of the Act directs Federal departments and agencies to ensure that actions authorized, funded, or carried out by them are not likely to jeopardize the continued existence of any threatened or endangered species or result in the destruction or adverse modification of their critical habitats.
4. Joint Secretary of the Interior-Secretary of Commerce regulations on interagency cooperation (50 CFR part 402) pursuant to section 7 of the Act direct Federal agencies to consult with the Secretary of the Interior … whenever an action authorized by such agency is likely to affect a species listed as threatened or endangered or to affect its critical habitat.

FSM 2670.12 - U.S. Department of Agriculture Directives

Departmental Regulation 9500-4. This regulation directs the USDA Forest Service to:

1. Manage "habitats for all existing native and desired nonnative plants, fish, and wildlife species in order to maintain at least viable populations of such species." ….
2. Not cited.
3. Avoid actions "which may cause a species to become threatened or endangered."

FSM 2670.3 - Policy
FSM 2670.31 - Threatened and Endangered Species

1. Place top priority on conservation and recovery of endangered, threatened, and proposed species and their habitats ….
2. Not cited.
3. Review, through the biological evaluation process, actions and programs authorized, funded, or carried out by the USDA Forest Service to determine their potential for effect on threatened and endangered species and species proposed for listing.
4. Avoid all adverse impacts on threatened and endangered species and their habitats, except when it is possible to compensate adverse effects totally through alternatives identified in a biological opinion rendered by the Department of the Interior, Fish and Wildlife Service (FWS); ...
5. Initiate consultation or conference with the U.S. Fish and Wildlife Service … when the USDA Forest Service determines that proposed activities may have an effect on threatened or endangered species; are likely to jeopardize the continued existence of a proposed species; or result in the destruction or adverse modification of critical or proposed critical habitat.

FSM 2670.5 – Definitions
Adverse Effect. An action that has an apparent direct or indirect adverse effect on the conservation and recovery of a species listed as threatened or endangered. Such actions include, but are not limited to:

a. Any action that directly alters, modifies, or destroys critical or essential habitats or renders occupied habitat unsuitable for use by a listed species, or that otherwise affects its productivity, survival, or mortality….

Biological Evaluation. A documented USDA Forest Service review of USDA Forest Service programs or activities in sufficient detail to determine how an action or proposed action may affect any threatened, endangered, proposed, or sensitive species.

Biological Opinion. An official report by the Department of the Interior, Fish and Wildlife Service (FWS)… issued in response to a formal USDA Forest Service request for consultation or conference. It states whether an action is likely to result in jeopardy to a species or adverse modification of its critical habitat.

Endangered Species. Any species in danger of extinction throughout all or a significant portion of its range.

Listed Species. Any species of fish, wildlife, or plant officially designated as endangered or threatened by the Secretary of the Interior or Commerce. Listed species are documented in 50 CFR 17.11 and 17.12.

Plant. Any member of the plant kingdom, including seeds, roots, and other parts thereof.

Sensitive Species. Those plant and animal species identified by a regional forester for which population viability is a concern, as evidenced by:

a. Significant current or predicted downward trends in population numbers or density.
b. Significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution.

Threatened Species. Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range ….

Viable Populations. A population that has the estimated numbers and distribution of reproductive individuals to ensure the continued existence of the species throughout its existing range (or range required to meet recovery for listed species) within the planning area.

FSM 2671.44 - Determination of Effects on Listed or Proposed Species

1. Use the biological evaluation process to conduct and document the program and activities review necessary to ensure that any action authorized, funded, or carried out by the Forest Service is not likely to jeopardize the continued existence of any listed or proposed species or to result in the destruction or adverse modification of critical or proposed critical habitat.

2. Use the biological evaluation process, to make full use of internal biological expertise and informal consultation with the U.S. Fish and Wildlife Service … to reach supportable determinations of effect.

4. Ensure compliance with standards for biological evaluations under FSM 2672.42.

5. Conduct biological evaluations as a part of the environmental analysis process. Informal consultation with U.S. Fish and Wildlife Service … in the early project planning stages provides the best opportunity for the formulation of project or program alternatives that will not have an adverse effect on listed or proposed species or their habitat.

6. Consider effects on suitable unoccupied habitat essential to recovery of the species when doing the biological evaluation....

FSM 2671.45c - Formal Consultation

1. Formal Consultation Process. Formal consultation is mandatory for all agency programs or activities that may affect a listed species or critical habitat, unless the Department of the Interior Fish and Wildlife Service (FWS) … concurs with the USDA Forest Service determination that the proposed action is not likely to adversely affect listed species….

e. Once there is a determination of effect for a listed species, the proposing or lead unit, through the regional forester, shall request formal consultation in writing. Requests must include the following:

(1) A description of the proposed action.

(2) A description of the specific area that the action may affect.

(3) A description of any listed species or critical habitat that may be affected adversely by the action.

(4) A description of the manner in which the action may affect any listed species or critical habitat, including a description of any cumulative effects.

(5) Reports, including any environmental impact statement, environmental assessment, biological assessment, or biological evaluation prepared for the proposed action.

(6) A list of other Federal agencies that have jurisdiction in the action area and how the action may affect them.

(7) Any other relevant available information on the action, the affected listed species, or critical habitat.

f. Until formal consultation is concluded, make no irreversible or irretrievable commitment of resources that has the effect of jeopardizing the continued existence of any listed or proposed species or adversely modifying its critical habitat…..

FSM 2672.1 - Sensitive Species Management.
Sensitive species of native plant and animal species must receive special management emphasis to ensure their viability and to preclude trends toward endangerment that would result in the need for Federal listing.

There must be no impacts to sensitive species without an analysis of the significance of adverse effects on the populations, its habitat, and on the viability of the species as a whole. It is essential to establish population-viability objectives when making decisions that would significantly reduce sensitive species numbers.

Review all USDA Forest Service planned, funded, executed, or permitted programs and activities for possible effects on endangered, threatened, proposed, or sensitive species. The biological evaluation is the means of conducting the review and of documenting the findings. Document the findings of the biological evaluation in the decision notice. Where decision notices are not prepared, document the findings in USDA Forest Service files. The biological evaluation may be used or modified to satisfy consultation requirements for a biological assessment of construction projects requiring an environmental impact statement.

FSM 2672.42 - Standards for Biological Evaluations

In order to meet professional standards, biological evaluations must be conducted or reviewed by journey or higher level biologists or botanists (FSM 2634). Biological evaluations shall include the following:

1. An identification of all listed, proposed, and sensitive species known or expected to be in the project area or that the project potentially affects…..

2. An identification and description of all occupied and unoccupied habitat recognized as essential for listed or proposed species recovery, or to meet USDA Forest Service objectives for sensitive species.

3. An analysis of the effects of the proposed action on species or their occupied habitat or on any unoccupied habitat required for recovery.

4. A discussion of cumulative effects resulting from the planned project in relationship to existing conditions and other related projects.

5. A determination of no effect, beneficial effect, or “may” effect on the species and the process and rationale for the determination, documented in the environmental assessment or the environmental impact statement.

6. Recommendations for removing, avoiding, or compensating for any adverse effects.

7. A reference of any informal consultation with the Fish and Wildlife Service as well as a list of contacts, contributors, sources of data, and literature references used in developing the biological evaluation.

FSM 7700 - Transportation System
7701.3 - Transportation System Management

2. Highway Safety Act of 1966 (23 U.S.C. 402, Pub. L. 89-564). Highway Safety Act authorizes State and local governments and participating Federal agencies to identify and survey accident locations; to design, construct, and maintain roads in accordance with safety standards; to apply sound traffic control principles and standards; and to promote pedestrian safety.

7720 - Development
7721.12 – Environmental Considerations

“Evaluate transportation facilities in the context of the ecosystem(s) in which they are located. Identify the environmental protection requirements associated with road construction on both National Forest and private lands. Consider the protection and enhancement of watersheds, fish-producing streams, wildlife habitat, and scenic resources and the control and reduction of soil erosion at all stages of location and design.

7721.13 – Economics and Design Life

“Design transportation facilities to meet the projected traffic requirements at the lowest cost for transportation (lowest total for construction plus maintenance plus user costs), consistent with all of the other approved design criteria.”

7730 - Operation and Maintenance
7730.2 - Objective

Operate and maintain the National Forest System transportation system in a manner that meets the road management objectives to provide for:
1. Safe and efficient travel.
2. Access for the administration, utilization, and protection of National Forest System lands.
3. Protection of the environment, adjacent resources, and public investment.

7730.3 – Policy

1. Establish operation and maintenance criteria for transportation facilities.
2. Document these criteria in accordance with FSM 7712.5. These criteria must describe how to operate and maintain facilities to meet management needs as determined through land and resource management planning. As a minimum, the criteria must:
   a. Identify vehicles and type of use for which the facility is intended.
   b. Identify seasonal or yearlong use restrictions necessary for meeting road management objectives.
   c. Identify measures needed to protect the investment in the facility.
   d. Document operational status as to whether the road is subject to or excluded from the Highway Safety Act (FSM 7705).
3. Make annual plans for the operation and maintenance of National Forest System roads to meet road management objectives.
4. Coordinate road operation and maintenance plans with cooperators in cooperative construction and use agreement areas (FSM 5467).
5. Operate and maintain transportation facilities consistent within constraints and limitations inherent in the original design.

30.3 – Policy

1. A proposed action may be categorically excluded from further analysis and documentation in an environmental impact statement (EIS) or environmental assessment (EA) only if there are no extraordinary circumstances related to the proposed action and if:
   a. The proposed action is within one of the categories in the Department of Agriculture (USDA) NEPA policies and procedures in Title 7, Code of Federal Regulations, part 1b (7 CFR part 1b), or

   b. The proposed action is within a category listed in section 31.12 or 31.2 of this Handbook.

2. Resource conditions that should be considered in determining whether extraordinary circumstances related to the proposed action warrant further analysis and documentation in an EA or an EIS are:

   a. Federally listed threatened or endangered species or designated critical habitat, species proposed for Federal listing or proposed critical habitat, or USDA Forest Service sensitive species.

   b. Flood plains, wetlands, or municipal watersheds.

   c. Congressionally designated areas, such as wilderness, wilderness study areas, or national recreation areas.

   d. Inventoried roadless areas.

   e. Research natural areas.

   f. American Indians and Alaska Native religious or cultural sites.

   g. Archeological sites, or historic properties or areas.

The mere presence of one or more of these resource conditions does not preclude use of a CE. It is the degree of the potential effect of a proposed action on these resource conditions that determines whether extraordinary circumstances exist.

3. Scoping is required on all proposed actions, including those that would appear to be categorically excluded. If the responsible official determines, based on scoping, that it is uncertain whether the proposed action may have a significant effect on the environment, prepare an EA (ch. 40). If the responsible official determines, based on scoping, that the proposed action may have a significant environmental effect, prepare an EIS (ch. 20).

Chapter 31 - CATEGORIES OF ACTIONS EXCLUDED FROM DOCUMENTATION
31.12 - Categories Established by the Chief

The following categories of routine administrative, maintenance, and other actions normally do not individually or cumulatively have a significant effect on the quality of the human environment (sec. 05) and, therefore, may be categorically excluded from documentation in an EIS or an EA unless scoping indicates extraordinary circumstances (sec. 30.3) exist: (1,2, and 3 not cited)

4. Repair and maintenance of roads, trails, and landline boundaries. Examples include but are not limited to:
   a. Authorizing a user to grade, resurface, and clean the culverts of an established National Forest System road.

   b. Grading a road and clearing the roadside of brush without the use of herbicides.

c. Resurfacing a road to its original condition.

d. Pruning vegetation and cleaning culverts along a trail and grooming the surface of the trail.

e. Surveying, painting, and posting landline boundaries.

FSH 7709.56 - Road Preconstruction Handbook

FSH 7709.56, sec. 4.1, last paragraph:

"Design forest development roads to serve the projected traffic requirements at the lowest cost for transportation (lowest total for construction plus maintenance and user costs) consistent with environmental protection and safety considerations. For timber sales, document the analysis used to determine the standard of road needed for the harvest and removal of the timber and other products covered by the particular sale (PL 88-657), and for existing roads, to accommodate traffic generated by the particular sale and previous existing traffic."

APPENDIX C
FEDERAL LAWS

HIGHWAY SAFETY ACT (HSA)

§ Section 402. Highway safety programs

Each State shall have a highway safety program approved by the Secretary, designed to reduce traffic accidents and deaths, injuries, and property damage resulting there from. Such programs shall be in accordance with uniform guidelines promulgated by the Secretary. … such uniform guidelines shall include, but not be limited to, provisions for an effective record system of accidents (including injuries and deaths resulting there from), accident investigations to determine the probable causes of accidents, injuries, and deaths, vehicle registration, operation, and inspection, highway design, and maintenance. … Such guidelines as are applicable to State highway safety programs shall, to the extent determined appropriate by the Secretary, be applicable to federally administered areas where a Federal department or agency controls the highways or supervises traffic operations.

ENDANGERED SPECIES ACT (ESA)

(c) POLICY.—(1) It is further declared to be the policy of Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this Act.

(b) PURPOSES.—The purposes of this Act are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species.

CLEAN WATER ACT (CWA)

DECLARATION OF GOALS AND POLICY

SEC. 101. (a) The objective of this Act is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. In order to achieve this objective it is hereby declared that, consistent with the provisions of this Act—

- (2) it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983;
- (3) it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited;
- (7) it is the national policy that programs for the control of nonpoint sources of pollution be developed and implemented in an expeditious manner so as to enable the goals of this Act to be met through the control of both point and nonpoint sources of pollution.

US CODE (USC)

23 USC 101:

- (8) Forest development roads and trails.—The term "forest development roads and trails" means forest roads and trails under the jurisdiction of the USDA Forest Service.

- (10) Forest road or trail.—The term ``forest road or trail'' means a road or trail wholly or partly within, or adjacent to, and serving the National Forest System that is necessary for the protection, administration, and utilization of the National Forest System and the use and development of its resources.

- (14) Maintenance.—The term ``maintenance'' means the preservation of the entire highway, including surface, shoulders, roadsides, structures, and such traffic-control devices as are necessary for safe and efficient utilization of the highway.

23 USC 205: (a) Funds available for forest development roads and trails shall be used by the Secretary of Agriculture to pay for the costs of construction and maintenance thereof, including roads and trails on experimental and other areas under Forest Service administration. In connection therewith, the Secretary of Agriculture may enter into contracts with a State or civil subdivision thereof, and issue such regulations as he deems advisable.

APPENDIX D
ROAD MAINTENANCE DEFINITIONS

ROAD MAINTENANCE DEFINITIONS

There are three different official definitions of maintenance that apply to the maintenance of National Forest System roads.

1. The definition that is normally used for interpreting U.S. Department of Agriculture (USDA) Forest Service policy pertaining to the act of maintaining the road system is published in 36 Code of Federal Regulations 212.2 as follows:

"The upkeep of the entire forest development transportation facility including surface and shoulders, parking and side areas, structures, and such traffic-control devices as are necessary for its safe and efficient utilization."

2. Decisions regarding expenditure of appropriations for road maintenance under authority of 23 U.S. Code (USC) 205a (USDA Forest Service fund code CMRD) must be advised by the definition of maintenance in 23 USC 101 as follows:

"The preservation of the entire highway, including surface, shoulders, roadsides, structures, and such traffic-control devices as are necessary for its safe and efficient utilization."

3. Recordkeeping regarding road deferred maintenance needs reported in the agency financial statement is governed by the definition prepared by the Federal Accounting Standards Advisory Board as follows:

"The act of keeping fixed assets in acceptable condition. It includes preventive maintenance normal repairs; replacement of parts and structural components, and other activities needed to preserve a fixed asset so that it continues to provide acceptable service and achieves its expected life. Maintenance excludes activities aimed at expanding the capacity of an asset or otherwise upgrading it to serve needs different from, or significantly greater than those originally intended. Maintenance includes work needed to meet laws, regulations, codes, and other legal direction as long as the original intent or purpose of the fixed asset is not changed."

WEB REFERENCES

Forest Service Handbook
http://www.fs.fed.us/im/directives/dughtml/fsh.html

Forest Service Manual
http://www.fs.fed.us/im/directives/dughtml/fsm.html

NEPA
http://www.fs.fed.us/emc/nepa/index.htm

Road Maintenance Activities
http://www.fs.fed.us/im/directives/dughtml/fsm7000.html
(see 7732)

Endangered Species Act (ESA)
http://www.fws.gov/Endangered/esa.html

Full text of the ESA
http://www.fws.gov/Endangered/esaall.pdf

The basics
http://www.fws.gov/endangered/pubs/ESA%20BASICS_050806.pdf

Consultations - Brief overview
http://www.fws.gov/endangered/consultations/consultations.pdf

Consultations Handbook
http://www.fws.gov/endangered/consultations/s7hndbk/s7hndbk.htm
CONTACTS
Endangered Species Act
http://www.fws.gov/endangered/es_contacts.pdf

Highway Safety Act
http://www.nhtsa.dot.gov/nhtsa/whatsup/tea21/GrantMan/HTML/07_Sect402Leg23USC_Chap4.html

Clean Water Act
http://www.epa.gov/region5/water/cwa.htm

GLOSSARY

See Appendix B: FSM 2670.5 - Definitions

Noxious weeds. Those plant species designated as noxious weeds by the Secretary of Agriculture or by the responsible State official. Noxious weeds generally possess one or more of the following characteristics: aggressive and difficult to manage, poisonous, toxic, parasitic, a carrier or host of serious insects or disease, and being native or new to or not common to the United States or parts thereof.

rare plants. Generic term that refers to sensitive, threatened, or endangered plants.

Rare plants. Those plants that are either:

- Narrowly distributed and infrequent where found.
- Narrowly distributed but abundant where found.
- Broadly distributed but never abundant where found.

There are no universally agreed upon quantitative measures for determining which plants are rare, but the natural heritage program network that ranks and tracks rare plants considers those with less than 100 populations—or less than 10,000 individuals—to be rare. This corresponds to heritage program global ranks of G1-G3 and State ranks of S1-S3. Many rare plants have stable populations and occur in places where there are no management concerns. Other rare plants occur where management activities could reduce their distribution or numbers. These rare plants are often given designations like endangered, threatened, or sensitive and receive special management consideration.

Scoping. Scoping (as it applies to NEPA) is the process of determining which environmental laws apply to the proposed work and the extent of the damage the proposed work may cause.

CREDITS

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Case studies
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