

**APPENDIX E**

---

**PROTOCOL FOR IDENTIFYING,  
EVALUATING, AND USING NEW  
HERBICIDES**



## TABLE OF CONTENTS

	<b>Page</b>
Identification and Approval of New Chemical Products and Technologies .....	E-1
Networking .....	E-1
Research and Demonstration .....	E-1
Technical Research and Publications .....	E-2
Vendor Marketing.....	E-2
Determining the Need for New Herbicides.....	E-2
Assessment of Hazards and Risks.....	E-3
NEPA Documentation .....	E-5
Review Existing NEPA Documents .....	E-5
Prepare a New NEPA Document.....	E-6
Special Status Species .....	E-6
References.....	E-8

### List of Figures

E-1	New Herbicide Evaluation and Approval Process.....	E-3
-----	--	-----



## APPENDIX E

# PROTOCOL FOR IDENTIFYING, EVALUATING, AND USING NEW HERBICIDES

The U.S. Department of the Interior Bureau of Land Management (USDI BLM) may become aware of new herbicide products and technologies that are developed and marketed in the future, and may consider application of these products or technologies in vegetation treatment projects. The BLM may also want to use herbicides that were approved for use by earlier EIS Records of Decision, but are not approved for use under the Record of Decision for the Final Programmatic Environmental Impact Statement (PEIS). This appendix discusses the procedures that the BLM would follow if an alternative is identified in the Record of Decision that allows the BLM to use herbicides approved for use in the past, and if new herbicides are approved for use in the future.

- National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS);
- U.S. Department of Agriculture (USDA) Agricultural Research Service;
- Natural Resources Conservation Service;
- Weed Science Society of America;
- Western Society of Weed Science;
- Society for Range Management;
- State pest control associations;
- State departments of agriculture;
- Universities and colleges;
- University extension services;
- County conservation districts; and
- County weed districts.

## Identification and Approval of New Chemical Products and Technologies

Means by which the BLM could learn of new products and their applications include, but are not limited to, through professional networking, technical research and publications, and vendor marketing.

### Networking

Participation in professional networks is an important method for staying current on new herbicides, yielding information on the technical, regulatory, efficacy, and environmental aspects of herbicide products in the development phase and those currently on the market. The primary professional associations that BLM land managers participate in and network with include, but are not limited to:

- U.S. Environmental Protection Agency (USEPA) Office of Pesticide Programs;
- U.S. Fish and Wildlife Service (USFWS);

For the most part, networking occurs at the local level, with BLM professional staff and managers working with local representatives of the organizations mentioned above. Bureau of Land Management state weed coordinators and vegetation management professionals often represent the agency at annual meetings and workshops. Bureau of Land Management Washington Office managers and staff network at national and international level annual meetings, sponsor and attend regional and local meetings and workshops, and participate in field trips to treatment demonstration areas on public or private lands.

### Research and Demonstration

Demonstration areas for current and emerging technologies play an important role in facilitating research and evaluating efficacy of treatment applications. Current BLM practice allows for limited and controlled use of new herbicides on demonstration plots up to 5 acres in size, with a maximum of 15 acres per field office. Approval to adopt a new herbicide for research and demonstration use is provided by the Washington Office after an initial evaluation of

USEPA Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) registration materials and risk assessments. If research and demonstration results appear favorable, BLM then considers the herbicide for general approval after further human health and ecological risk assessments are undertaken, and the results are evaluated through the National Environmental Policy Act (NEPA) process.

### Technical Research and Publications

In addition to the professional journals associated with vegetation management societies and associations, the BLM obtains information on vegetation management and herbicide treatments from the following sources: USDA Agricultural Research Service research publications, university research summaries, cooperative extension service publications, USEPA registration data, toxicological and risk assessment studies, literature summaries, and technical databases. Databases and technical sources consulted by the BLM include: AGRICOLA, ASFA (Aquatic Sciences and Fisheries Abstracts), Biological Sciences, BIOSIS/Biological Abstracts, Chemical Abstracts/Scifinder Scholar, Environmental Science and Pollution Management, MedLine, Safety Science and Risk, Toxline, Water Resources Abstracts, Web of Science/Science Citation Index, and Zoological Records. The general public and non-governmental organizations also provide the BLM with information through the NEPA process, and other participatory processes.

### Vendor Marketing

Vendors of invasive plant control technologies, including agrochemical company representatives, contact the BLM to introduce new active ingredients and new formulations, and to provide updates on existing products. These contacts may come in the form of mailed brochures or advertisements, telephone contacts, or personal visits. Companies may sponsor seminars in local cities and towns to promote and educate local, county, state, and federal professionals in the area on the safe use of products and technologies.

Occasionally, members of the public who are interested in various approaches to vegetation treatment send relevant information to the BLM. As with vegetation treatment methods identified through other avenues, if the BLM determines that the approach may have some utility for meeting its needs,

a product demonstration or additional information may be requested.

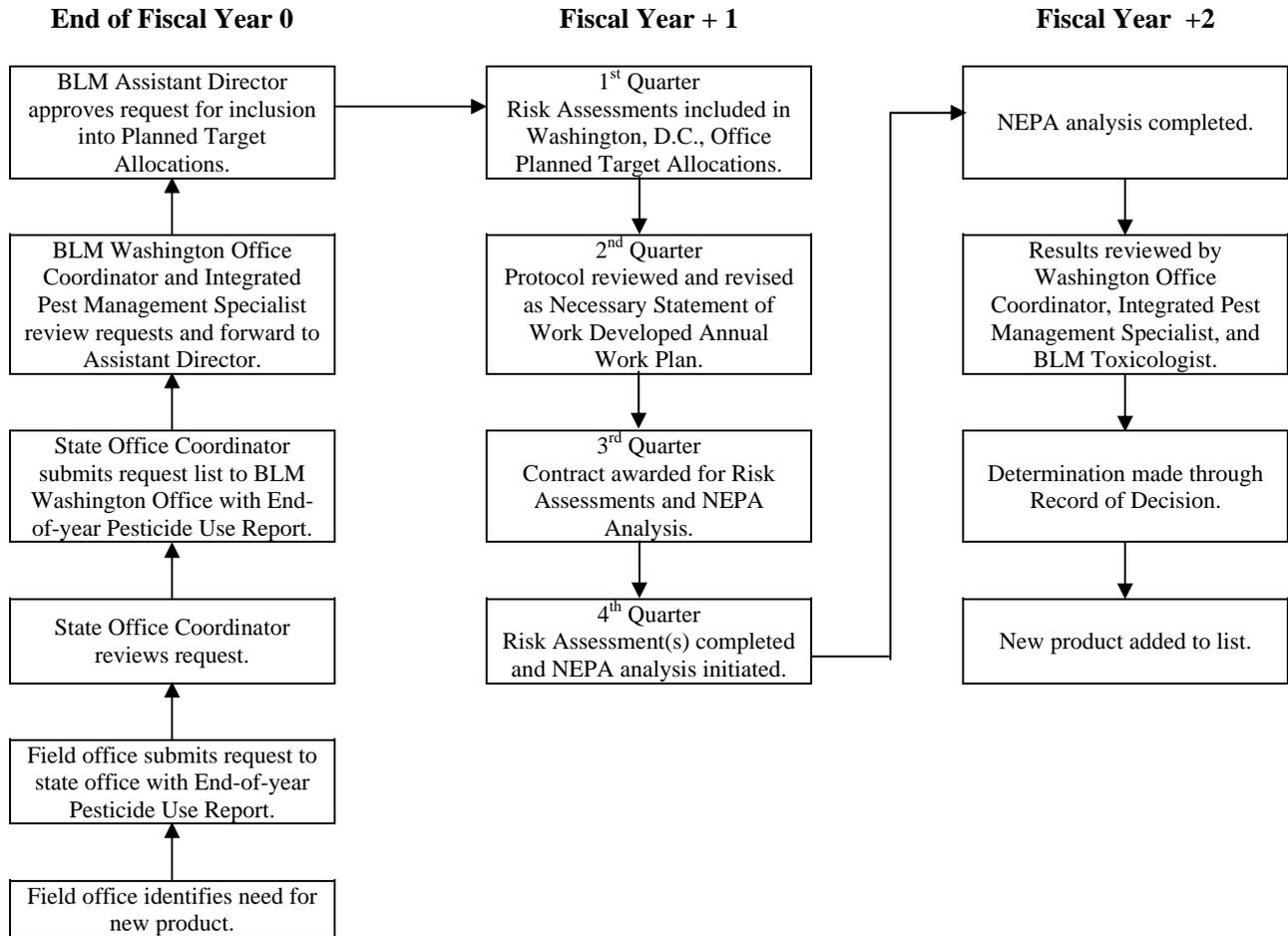
## Determining the Need for New Herbicides

In order for the BLM to consider and approve a new active ingredient or formulation, the BLM must first consider whether there is a need for an available product. Factors that would be considered when assessing the need for adopting an available product include, but are not limited to: spectrum of application, efficacy, factors that could limit efficacy, extent or scope of use, cost, availability, availability of substitute or alternative products or technologies, expected effectiveness compared to any currently used methods, previous use reports at other sites and their outcomes, results from research and demonstration use, training and personnel requirements, and any other relevant factors including hazards and risks. Once a need is determined, the BLM would then integrate the approval process with its annual budget cycle. In general, the approval/budget process should take approximately 2 fiscal years to complete once a need for an available product is identified (see [Figure E-1](#)).

The determination for the need is a primarily a “bottom up” process that would typically start with the BLM field office collecting information regarding the need to: 1) add a new active ingredient to the BLM list of approved active ingredients; 2) modify existing labels (e.g., add aerial applications to a label); or 3) identify new active ingredients through contacts within the local research community. Once the BLM field office determines a need, it would provide a summary and request as an attachment to its end-of-year (EOY) pesticide use report.

Once the request is made, it would then go to the state weed or pesticide coordinator, who would review the request and any other requests received. The state weed or pesticide coordinator would then screen the suggestions and requests, clarify any information required, submit additional requests and suggestions identified throughout the year by other sources, and provide a single summary request to the BLM Washington, D.C., office with its annual state-wide pesticide use report.

Before an herbicide active ingredient is proposed for consideration by the BLM field or state office, it will



**Figure E-1. New Herbicide Evaluation and Approval Process.**

have a completed USEPA FIFRA registration in place, and be labeled for use on the site proposed (e.g. rangeland, pasture, non-cropland, aquatic habitat). The BLM would not consider any active ingredients in its review and approval process, including research and demonstration, for products proposed to be registered, or in the registration process, before the FIFRA registration process is complete. The BLM would comply with changes in label directions that may occur in the future, and would comply with state registration requirements. Thus, if current state requirements do not allow the application of an herbicide being considered for use by the BLM, the BLM would not apply that herbicide in the state where it is not approved for use.

Proposals and suggestions would be received and reviewed by the BLM office in Washington, D.C.. Specialists involved in this review would include the senior weed specialist, integrated pest management specialist, rangeland specialist, and others who may

have an interest in the determination to be made. This group would determine whether the new active ingredient being proposed would benefit the BLM, or if the benefit would be so limited in scope that the cost to proceed would not be justified. This group would also determine whether a proposed label modification would benefit the entire BLM. Once the proposals and suggestions have been reviewed, final recommendations would be forwarded by the Rangeland Division Chief to the Assistant Director for Renewable Resources and Planning for inclusion into the following fiscal year’s budget process to conduct risk assessments.

## Assessment of Hazards and Risks

Any new herbicide considered for use by the BLM must be registered under FIFRA, which requires product performance data relating to its effectiveness.

This requirement was designed “to ensure that pesticide products will control the pests listed on the label and that unnecessary pesticide exposure to the environment will not occur as a result of the use of ineffective products” (40 Code of Federal Regulations [CFR] 158.202[i]). Therefore, any new pesticide registered under FIFRA is expected to be generally effective for the labeled uses. To further assess the potential for site-specific effectiveness prior to an actual application in the field, the BLM field office manager would investigate its use through professional networks, technical publications, and research reports, such as those described in the previous section.

As stated above, the BLM only uses herbicide products that are registered by the USEPA under FIFRA. For an herbicide to be considered for use on public lands, a body of USEPA-reviewed toxicological, environmental fate, and ecotoxicity data submitted by the pesticide manufacturer to support its registration application would be available for review, especially for new active ingredients. Active ingredients for products undergoing re-registration could have fewer data available if the original registration package did not include extensive ecological toxicology data. These data could then be used to conduct an assessment of the potential human health and ecological risks from the herbicide’s use, including, but not limited to, the following components:

- Identification of potential use patterns, including target plants, formulation, application methods, locations to be treated, application rate, and anticipated frequency.
- Review of chemical hazards relevant to the human health risk assessment, including systemic and reproductive effects, skin and eye irritation, allergic hypersensitivity, carcinogenicity, dermal absorption, neurotoxicity, immunotoxicity, and endocrine disruption.
- Estimation of exposure to workers applying the chemical or re-entering a treated area.
- Environmental fate and transport, including drift, leaching to groundwater, and runoff to surface streams and ponds.
- Estimation of exposure to members of the public.

- Review of available ecotoxicity data, including hazards to mammals, birds, reptiles, amphibians, fish, and aquatic invertebrates.
- Estimation of exposure to terrestrial and aquatic wildlife species.
- Characterization of risk to human health and wildlife.

If the available toxicity or ecotoxicity data were inconclusive, or if substantial disagreement should occur among the results of technical studies that could affect the potential risk conclusions for the chemical, the BLM would conduct a formal peer review of the available scientific information to develop a consensus as to the endpoint(s) in question. The peer review process would include the following steps, based largely on USEPA’s peer review process (USEPA 2000):

- The BLM would conduct a literature search of studies submitted to the USEPA, studies published in professional journals, and research projects conducted by other government agencies or universities. The identified literature would be indexed and abstracted.
- A peer review committee would be formed, consisting of reviewers with recognized relevant technical expertise, who represent a balanced range of scientific points of view, and who do not have any real or perceived bias or conflict of interest. The peer reviewers would be supplied with their charge, the results of the literature review, and a description of the issue at hand.
- The input of each reviewer would be sent to BLM. If the results of the peer review were not consistent at this point, a working session would be convened, in which the peer reviewers would come together to discuss the technical aspects of the questions and attempt to reach a consensus.

The details of the peer review process would be determined by the question to be answered and the nature of the controversy. To the extent they are relevant, the guidelines and processes in USEPA’s *Peer Review Handbook* (USEPA 2000) would be followed.

After making a decision to budget for the risk assessment(s), the next step would be to review the human health and ecological risk assessment protocols. The initial protocols to be reviewed are the protocols used in this PEIS effort for the HHRA and ERA (see [appendices B and C](#); ENSR 2004, 2005). The BLM assumes there would be further research conducted on a continuing and ongoing basis, and environmental standards and end-points would change over time, as the science was refined. There would be regulatory changes, as well, to keep pace with new information. Therefore, it is required that the risk assessment protocols be reviewed by the BLM to ensure they reflect the best science available and to ensure current standards for environmental review are utilized while the risk assessments are conducted. If there were new information, or changes to environmental standards were identified, the protocols would be revised as required to meet the new standards prior to conducting additional risk assessments, whether for new active ingredients or new risk assessments for previously-approved active ingredients. Standards for literature review in the protocols would also be reviewed and updated as necessary to ensure that all ecotoxicological literature available was identified prior to conducting a risk assessment.

## NEPA Documentation

The potential use of new herbicides would require a review to ensure compliance with NEPA. The review would follow the process outlined in the BLM *National Environmental Policy Act Handbook* (H-1790-1; USDI BLM 1988). The review process would consist of the steps outlined in the following text.

### Review Existing NEPA Documents

The following text describes the types of NEPA documents that would be reviewed to determine whether any have fully covered the use of the proposed new herbicide.

#### BLM NEPA Documents

The BLM would review this PEIS or other agency Programmatic EISs for relevant information about the proposed herbicide. The BLM would also review NEPA documents prepared by other federal agencies with the BLM as a cooperating agency for relevant information.

#### Other Agency NEPA Documents

NEPA documents for which the BLM was not listed as a cooperating agency, but for which the scope is relevant to evaluation of the proposed herbicide, would also be reviewed by the BLM. Possible source agencies could include the USDA Forest Service, National Park Service, USDA Animal and Plant Health Inspection Service, and the military services.

Depending on the outcome of the review, it might be appropriate to tier, supplement, or incorporate by reference parts or all of existing document(s) as part of the document preparation process:

- *Tiering* (40 CFR 1508.28) could be used to prepare new, more specific, or more narrow environmental documents without duplicating relevant parts of previously prepared general documents, such as this PEIS. Tiering is mostly used to avoid unnecessary paperwork; documents can be tiered only if decisions made in the new document would not change or modify the decision(s) of the more general document.
- *Supplementing* (40 CFR 1502.9c) is most often used to address alternatives not previously analyzed, and may lead to a new decision. In this instance, a supplemental EIS (SEIS) to this PEIS could be prepared. Supplemental documents are generally prepared when there is a substantial change in the proposed action that is relevant to environmental concerns; that is, if there are significant new circumstances or facts relevant to environmental concerns and bearing on proposed action or impacts that were not addressed in the previous analysis. If the existing PEIS is supplemented, the same standard procedural and documentation requirements for EISs are followed (see Chapter 5 of the *National Environmental Policy Act Handbook*; USDI BLM 1988), except that additional scoping is optional. In addition, the SEIS must identify the EIS being supplemented and explain the relationship to the prior analysis early in the text. Further, the SEIS should identify changes in the proposed project and/or significant new information or changed circumstances that necessitate preparation of the supplement.

- *Incorporating by reference* (40 CFR 1502.21) is a technique used to avoid redundancies in analysis and to reduce the bulk of a NEPA document. An EIS must identify the documents that are incorporated by reference and indicate where they are available for public review. Relevant portions of the incorporated analysis must be referenced by page number, and summarized in the EIS to the extent necessary to provide the decisionmaker and public with an understanding of significance of the referenced material to the current analysis. The new NEPA document must be able to stand alone.

If existing NEPA documentation was found to be adequate, but the BLM was not formally a cooperating agency on the document, then the BLM would adopt the document to comply with NEPA; adoption would be in accordance with the requirements set forth in 40 CFR 1506.3.

If existing NEPA documentation was determined to be inadequate, a new NEPA document would be prepared.

### **Prepare a New NEPA Document**

The process for complying with NEPA for proposals to approve the use of new active ingredients on BLM public lands differs from the standard NEPA screening process for other federal actions. For example, neither the USDI, nor the BLM have categorical exclusions (“a category of [federal] actions that does not individually or cumulatively have a significant effect on the human environment...for which, therefore, neither an EA nor an EIS is required;” 40 CFR 1508.4) that address the use of herbicides; therefore, this step does not apply. The BLM, through this and previous EISs, has already determined that approval of herbicides for future use on public lands is a controversial federal action significantly affecting the human environment. It is therefore inappropriate to use an EA and Finding of No Significant Impact (FONSI) for such approval. This is not to say a particular project involving the use of herbicides could not be assessed with an EA level analysis, properly tiered to a land use plan EIS or other NEPA document, such as this Programmatic EIS. This determination of significance only applies to the approval of a new active ingredient for use by BLM overall. Site-specific impacts for any project using herbicides would be

assessed at a level appropriate for the project, using the standards for “Significantly” found under 40 CFR 1508.27.

Initially, the BLM would use this PEIS as its basis for conducting future risk assessments and approvals. Following the guidance under 40 CFR 1502.9 (4) *Environmental Impact Statement, Draft, Final and Supplemental Statements*, the BLM would conduct risk assessments on new active ingredients and build on the analysis contained in this PEIS through the issuance of a Supplemental EIS (SEIS). A final decision on whether an active ingredient was approved would be recorded in a Record of Decision. Supplemental EISs would be utilized for approvals of new active ingredients until such time as the need for a new programmatic EIS was warranted and such a document was prepared. For cost efficiency, it is recommended that BLM assess several active ingredients together in one Supplemental EIS.

### **Special Status Species**

Federal policies and procedures for protecting federally-listed threatened and endangered plant and animal species, and species proposed for listing, were established by the Endangered Species Act (ESA) of 1973 and regulations issued pursuant to the Act. The purposes of the Act are to provide mechanisms for the conservation of threatened and endangered species and their habitats. Under the ESA, the Secretary of the Interior is required to determine which species are threatened or endangered and to issue recovery plans for those species.

Section 7 of the ESA specifically requires all federal agencies to use their authorities in furtherance of the ESA to carry out programs for the conservation of listed species, and to ensure that no agency action is likely to jeopardize the continued existence of a listed species or adversely modify critical habitat. Policy and guidance (BLM Manual 6840) also stipulates that species proposed for listing are managed at the same level of protection as listed species.

The BLM state directors may designate sensitive species in cooperation with their respective state. These sensitive species (special status) must receive, at a minimum, the same level of protection as federal candidate species. The BLM will also carry out management for the conservation of state-listed species, and state laws protecting these species shall apply to all BLM programs and actions to the extent

that they are consistent with the FLPMA and other federal laws.

The BLM would consult with the USFWS and NMFS. Should the BLM decide to use new herbicides or herbicide-application technologies in the future, as required under Section 7 of the ESA. As part of this process, the BLM would prepare a consultation package that could include a description of the program; species listed as threatened or endangered, species proposed for listing, and critical habitats that could be affected by the program; and a BA that evaluated the likely impacts to listed species, species proposed for listing, and critical habitats from the proposed vegetation treatment program. The BLM would also provide guidance on actions that would be taken by the BLM to avoid adversely impacting species or result destroying critical habitat.

Before any vegetation treatment or ground disturbance occurs, BLM policy requires a survey of the project site for species listed or proposed for listing, or special status species. This is done by a qualified biologist consulting state and local databases, and visiting the site at the appropriate season. If a proposed project may affect a proposed or listed species or its critical habitat, the BLM consults with the USFWS and/or NMFS. A project with a “may affect, likely to adversely affect” determination requires formal consultation and receives a Biological Opinion from the USFWS and/or NMFS. A project with a “may affect, not likely to adversely affect” determination requires informal consultation and receives a concurrence letter from USFWS and/or NMFS.

## References

**ENSR. 2004.** Vegetation Treatments Programmatic EIS Ecological Risk Assessment Protocol. Report Prepared for the Bureau of Land Management, Reno, Nevada. Westford, Massachusetts.

**ENSR. 2005.** Human Health Risk Assessment Final Report. Report Prepared for the Bureau of Land Management, Reno, Nevada. Westford, Massachusetts.

**US Department of the Interior Bureau of Land Management (USDI BLM). 1988.** National Environmental Policy Act Handbook. Bureau of Land Management Handbook H-1790-1 Washington, D.C.

**U.S Environmental Protection Agency (USEPA). 2000.** Peer Review Handbook 2<sup>nd</sup> Edition. Washington, D.C. Available at: <http://www.epa.gov/osp/spc/prhandbk.pdf>