

**B. The route evaluation criteria in the RMP should be strengthened to ensure that routes designated within the NCA are consistent with BLM's legal obligations and responsible management.**

While we applaud BLM's decision to list the specific criteria it will use during the route designation process (Draft RMP, pp. 3-61 – 3-62), we believe improvements should be made to strengthen these criteria and ensure that the travel management plan (TMP) meets the intent of the enabling NCA legislation.

The current arrangement of the eight criteria for route evaluation set out on pages 3-61 and 3-62 of the Draft RMP is skewed towards keeping roads open regardless of their impact on the ecosystem. The last criteria, "Is this consistent with the RMP and the intent of the NCA-enabling legislation," should be the primary criteria used for evaluating routes. **We recommend BLM use question number eight as a filter through which only those roads which are found to be consistent with the NCA enabling legislation can be further analyzed to be kept open in the TMP.**

While we commend BLM for setting targets for road density (which could help to reduce the resulting habitat fragmentation), we are dismayed that the agency's preferred alternative lists a route density target of no more than 2.0 miles per square mile when Alternative B, the access alternative lists a route density of no more than 1.7 miles per square mile. Draft RMP, pp. 3-65 – 3-66. **We recommend BLM revise Alternative D to set a route density target of no more than 1 mile per square mile as the agency preferred alternative, with lower route densities where appropriate for species of concern.** A significant collection of scientific literature exists describing route density and resulting habitat fragmentation impacts to wildlife. We have included The Wilderness Society's most recent Science and Policy Brief, "Habitat Fragmentation from Roads: Travel Planning Methods to Safeguard BLM Lands" (Appendix 1). Also included in Appendix 1 are four scientific reports prepared by TWS and discussed in the habitat fragmentation report. These include *Fragmenting Our Lands: The Ecological Footprint From Oil and Gas Development*, *Protecting Northern Arizona's National Monuments: The Challenge of Transportation Management*, *Wildlife at a Crossroads: Energy Development in Western Wyoming*, and *Ecological Effects of a Transportation Network on Wildlife*. In addition to summarizing the four reports included, "Habitat Fragmentation from Roads: Travel Planning Methods to Safeguard BLM Lands" provides a summary of available scholarly and government reports and studies on the impact of habitat fragmentation on wildlife, provides methods for calculating habitat fragmentation, and provides recommendations on how to integrate fragmentation analysis into travel management.

We also recommend BLM incorporate the travel planning criteria set out in the Record of Decision for the Dillon (MT) RMP (relevant sections **attached** and also available on-line at: <http://www.mt.blm.gov/dfo/rod/contents.htm>), as an example of criteria that incorporate key aspects of BLM's ORV regulations as well as ecological metrics. While this field office did not complete a comprehensive travel management plan as part of its RMP revision, it included road density targets and included an appendix outlining the principles it will use when completing a comprehensive travel management plan during implementation. While the criteria listed in the



NCA Draft RMP are a good start, a review and incorporation of the recommendations from existing scientific literature will serve to strengthen these criteria in order to meet the intent of the NCA enabling legislation.

**Recommendation:** BLM should use the information provided in Appendix 1 and the Dillon MT ROD to measure habitat fragmentation, then conduct a thorough fragmentation analysis and revise the route evaluation criteria that will be used when making road closure and/or other limitations on motorized use during implementation of the Snake River Birds of Prey NCA RMP.

**C. The route designation process should be revised to address significant problems with the ARS Evaluation Tree and to comply with more responsible approaches to route designation.**

When completing a comprehensive travel management plan, it is vital to complete it in a systematic and transparent manner. The criteria listed on pages 3-61 and 3-62 of the Draft RMP appear to be drawn from The Route Evaluation Tree© copyrighted by ARS, Inc (hereinafter "ARS Tree"). While this tool can be effective as a data collection device, we have serious concerns with its application as an evaluation and/or decision tool. We recommend that the BLM adopt a route designation process that is more consistent with the NCA legislation and BLM's legal obligations regarding designation of routes for motorized use.

**I. Concerns and recommendations regarding ongoing use of ARS Tree**

In July 2004, TWS and several partner organizations submitted to BLM Director Kathleen Clarke a detailed analysis of the potential law and policy ramifications of the agency's use of the Tree. This position paper has not been reproduced herein, but can be provided to you upon request.

The ARS Tree is a computer-based planning tool, the outputs of which have already been used by some BLM and as well as Forest Service planning teams in designating individual routes on public land as either "closed", "open", "limited" or "mitigate/open" for motorized travel. It is our opinion that the mechanics of ARS Tree software are inconsistent with the policy, law, use of science and common sense that apply to travel management on public lands. Because of the functional and legal problems with the ARS Tree, summarized below, use of this tool could prevent BLM from fulfilling its responsibilities as stewards of the public lands and could invalidate ongoing planning processes by its apparent violation of NEPA and other applicable laws.<sup>3</sup>

As you move forward with your planning effort, we would like to address several issues with the use of the ARS Tree. We support the concept of creating a process to collect information on the impacts of various routes in order to generate alternatives in a uniform and documented process.

<sup>3</sup> The ARS Tree is currently the subject of a lawsuit regarding the resulting failures of the BLM's travel management plan to comply with applicable laws regarding management of off-road vehicles, analysis and mitigation of environmental consequences, and protection of sensitive species. *Center for Biological Diversity, et al. v. U.S. Bureau of Land Management, et al.* (D.N.Cal. 2006).



We also commend the agency for its effort to increase transparency for the route designation process.

However, the ARS Tree in its most recent form is overly simplistic and fails to acknowledge several key issues that are critical for informed route designation decision-making. We also submit that the ARS Tree is not an evaluation tool, but is instead merely a data-gathering device that collects information into a computer database. While we fully support collecting data into a reproducible and transparent form, such as a computer database, there are many simple and cost effective ways to do this with widely-available database and/or spreadsheet programs. Applying the ARS Tree software requires a significant investment of taxpayer dollars, which seems unwise in the face of declining federal budgets and when the agency could achieve similar electronic data collection through other common database and/or spreadsheet programs. Consequently, we encourage BLM to explore other, more cost-effective approaches.

If you do choose to incorporate the ARS Tree into your planning processes, we have several recommendations for how it should be modified. We realize that the Tree is but one step in a multiple-step process, and that the agency will gather other information in earlier or later steps, such as agency legal obligations and cumulative impacts. Therefore, we recommend that other information needs be incorporated into the Tree so as to simplify the agency's job by having all relevant information summarized in one database/spreadsheet. Currently, the Tree does not incorporate the agencies' obligations under the Executive Orders, ORV regulations, NEPA, the Endangered Species Act, the Historic Sites Act, the National Historic Preservation Act, the Clean Air Act, the Clean Water Act, and National Conservation Area Legislation, among other relevant statutes. **We understand that ARS can customize the ARS Tree by adding relevant inquiries, and we recommend that you require this so as to ensure that your legal responsibilities are better articulated to the public.**

*We make the following recommendations for modifications to the ARS Tree should you decide to use it in your comprehensive travel management planning process.*

**a. ARS Tree should eliminate yes/no questions, and remove the branches that imply an order of issues to be raised:** By phrasing the data-gathering inquiries as yes or no answers and by placing them in the order shown, the ARS Tree inevitably implies decision-making and sheds its promise as a data-gathering tool.

The format of the ARS Tree implies that once a question is "answered" and the next "step" is taken, the decision or evaluation of the route in question has concluded that it can remain open despite any potential impacts or damage. In order to remedy this problem, the inquiries should be phrased to report all information on a route, including impacts (i.e., sensitive resource affected and description of effects), valid rights-of-way or permitted uses, condition, maintenance records, and use levels, all of which can then be evaluated in the appropriate context.

**b. ARS Tree should incorporate information on potential cumulative impacts:** Routes should be evaluated in the context of the overall landscape and in combination with others – an inquiry that the ARS Tree absolutely fails to make. In order to comply with NEPA, the ARS Tree must gather information regarding how—and to what degree—the designation of individual



routes as either open or limited would cumulatively affect sensitive and non-sensitive resources, using such factors as increasing road density, amount of habitat fragmentation, risk of spreading nonnative species, erosion, impacts to the experiences of non-motorized recreationists and other users, etc. In addition, the ARS Tree must inquire not only about the cumulative impacts of the routes under consideration, but also regarding how the severity of such impacts may be influenced by other past, present and reasonably foreseeable future actions of others. If other nearby areas are, or will be, affected by motor vehicle use, then the addition of more routes in a relatively primitive area is likely to have a greater impact on the environment.

For example, the agencies should collect ecological data and perform spatial analyses that address direct, indirect and cumulative impacts before any ARS Tree questions regarding impacts are answered and before any alternatives are developed. If the agencies were to conduct spatial analyses of habitat fragmentation (which has been previously recommended by The Wilderness Society and others), it would provide vital understanding of the impacts of a route and contribute to the development of a range of alternatives. As an example, one route that cuts through an otherwise intact core habitat area could have a much larger cumulative impact than one that cuts through an area that is already so fragmented by routes that the incremental impact is insignificant. After the ARS Tree process is complete, the process should include a repeat of the spatial analyses to compare each alternative route network and compare cumulative impacts. The agencies are required to comply with NEPA in order to assess the direct, indirect and cumulative impacts of that action. An assessment of cumulative impacts must address the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions and can result from individually minor but collectively significant actions taking place over a period of time. 40 C.F.R. § 1508.7.

**c. ARS Tree should include questions regarding legal requirements so as to create appropriate "sideboards" for alternatives:** The sequence of questions and limited content of the questions in the ARS Tree imply that the information gained from answering each question is of equal importance.

However, the BLM is required under certain laws to prioritize protection of certain resources over other uses, such as motorized access. By not making the relevant inquiries or clarifying the legal limitations on the standards for making determinations on routes, the ARS Tree leads to the generation of alternatives that go beyond legally-mandated sideboards and cannot be accepted, instead of a true range of acceptable alternatives.

(1) The Executive Orders (Executive Order No. 11644 (1972) (as amended by Executive Order No. 11989 (1977)) and the agencies' implementing regulations (43 C.F.R. § 8342.1; 36 C.F.R. § 212.55(b)) require that motorized routes can only be located in a manner that minimizes impacts to soils, water, wildlife, and other recreational users. The ARS Tree does not include criteria that acknowledge the importance of the overriding requirements outlined in the Executive Orders. As a result, the Tree must include inquiries that will, when presenting the information collected, also specify that any routes designated to be opened or to remain open are consistent with the clear language and intent articulated in the Executive Orders and regulations.



(2) Similarly, National Conservation Areas (NCAs) such as Snake River Birds of Prey are established through legislation that sets out priorities and purposes for their management. When the ARS Tree is used in a National Conservation area, it should include inquiries to identify impacts to the NCA priorities and include criteria to ensure that consideration of routes is conducted in the context of the overriding requirement to ensure protection of these legally established values.

(3) The BLM is also required by law to prioritize particular activities, such as protection of listed and endangered species (as the BLM is required to manage slickspot peppergrass) and archaeological and historic resources. In a similar fashion as described above, the ARS Tree must include explicit inquiries regarding the agencies' obligations under relevant Acts of Congress (such as the Endangered Species Act, the Historic Sites Act, National Historic Preservation Act, Clean Air Act, and Clean Water Act) and specify that evaluations of potential route designations must comply with these requirements.

**d. ARS Tree should include description/evaluation of mitigation measures:**

Although the ARS Tree provides for an option to choose "mitigate," there should also be a record made of what form of mitigation was selected for the route segment. If the agencies propose mitigation strategies to alleviate potential impacts, these mitigation strategies must be clearly articulated each time. This information is necessary if the agency is to accurately analyze impacts. It also makes sense from a practical point of view – there should be a record of what mitigation actions are needed that can funnel into later implementation plans. The ARS Tree should include a requirement to actually identify mitigation measures and discuss how those measures will be effective as a uniform part of gathering data and identifying options. Further, monitoring is not an appropriate form of mitigation, because monitoring for expected damage does not actually reduce or alleviate any impacts.

Unless the agency proposes a valid form of mitigation each time the mitigation option is selected on the ARS Tree, it is not an acceptable approach and does not comply with NEPA standards for mitigation. NEPA requires that an agency discuss mitigation measures in an EIS. 40 C.F.R. §§ 1502.14, 1502.16. Also, under NEPA, an agency's Finding of No Significant Impact ("FONSI") is lawful only if the agency "has made a convincing case that no significant impact will result therefrom or that any such impact will be reduced to insignificance by the adoption of appropriate mitigation measures." *Defenders of Wildlife*, 152 IBLA 1, 6 (2000) (citations omitted). In general, in order to show that mitigation will reduce environmental impacts to insignificant, the agencies must discuss the mitigation measures "in sufficient detail to ensure that environmental consequences have been fairly evaluated..." *Communities, Inc. v. Busey*, 956 F.2d 619, 626 (6th Cir. 1992). Simply identifying mitigation measures, without analyzing the effectiveness of the measures violates NEPA. Agencies must "analyze the mitigation measures in detail [and] explain how effective the measures would be . . . . A mere listing of mitigation measures is insufficient to qualify as the reasoned discussion required by NEPA." *Northwest Indian Cemetery Protective Association v. Peterson*, 764 F.2d 581, 588 (9th Cir. 1985), *rev'd on other grounds*, 485 U.S. 439 (1988). NEPA also directs that the "possibility of mitigation" should not be relied upon as a means to avoid further environmental analysis. *Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations*; *Davis v. Mineta*, 302 F.3d at 1125.



**e. ARS Tree should include data sources, identification of data gaps and the need for additional data gathering:** There are many instances where data do not exist on the presence and/or status of sensitive resources. Without an adequate inventory or understanding of the sensitive resources in the planning area, it is nearly impossible to adequately answer yes/no to the question about whether sensitive resources are affected. Without simple baseline information, it will be difficult to understand the extent to which the route in question will affect sensitive resources over the life of the plan. The ARS Tree process also does not contain any information about data sources or scientific literature that was consulted to evaluate resource impacts. Therefore, we recommend that the ARS Tree eliminate the yes/no question, and instead summarize what is known about possible impacts, and identify data gaps and the need for additional data gathering. This will help the agency meet its legal obligations to adequately evaluate impacts. It also makes sense from a practical point of view because it will create a record of critical information needs that can be addressed elsewhere in the process or in implementation.

As noted above, NEPA requires that the agencies' "hard look" at environmental consequences be based on "accurate scientific information" of "high quality." 40 C.F.R. § 1500.1(b). In this context, NEPA "ensures that the agency, in reaching its decision, will have available and will carefully consider, detailed information concerning significant environmental impacts." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). Further, where there is "incomplete or unavailable information" to thoroughly analyze potentially significant environmental impacts in an EIS, NEPA requires that the BLM make clear that the information is lacking and either commit to obtaining the information or an explanation of how a decision can be justified without it. 40 C.F.R. § 1502.22. Under the Data Quality Act, the agencies are similarly required to use information that is of high quality, objective, useful, and verifiable by others. BLM's internal guidance also recognizes the importance of both accumulating and properly analyzing data. (see, for example, BLM's Land Use Planning Handbook (H-1601-1)). Without sufficient information, the agencies cannot make reasoned decisions. While we recognize that it is not always possible to gather the best possible data, the agencies must acknowledge that there is often not enough information to definitely answer a yes/no question (another reason to eliminate this part of the ARS Tree's current structure) or to even describe the impacts under consideration. In order to address this reality, the ARS Tree should provide an option for answering "unknown" or "more data needed" and then require a description of the data gaps, so that the agency can make a determination as to how best to proceed.

**2. Alternative tools and technologies exist that are more robust and transparent, which the agencies should make use of in lieu of the ARS Tree.**

The Ecosystem Management Decision Support (EMDS) system<sup>6</sup>, developed by the U.S. Forest Service Pacific Northwest Research Station over a decade ago to support multi-scale landscape analysis and planning, recently has emerged as a promising tool to help agency planners evaluate,

<sup>6</sup> The EMDS system (<http://www.fs.forsyth.edu/emds>) is integrated as an extension to ESRI's ArcMap. It consists of three components: a knowledge base, a landscape assessment, and a decision analysis system.





designate, prioritize and monitor motorized and non-motorized roads and trails. At present, EMDS has the ability to greatly inform cumulative effects analysis and—because of its integration with ESRI's ArcMap software – is capable of estimating effects of one or multiple alternative route management scenarios at varying geographic scales (e.g., regional, basin wide, watershed, or a given site). In addition, EMDS possesses the following advantages<sup>7</sup>:

- Transparency: ability of the user to query modeled results to assess the knowledge, data and data processing that contributed to a particular model outcome.
- Criterion weighting and prioritization: ability to set and manipulate criterion weights in a decision hierarchy where the effect of changes to criterion weighting on route management priorities can be visualized in real-time.
- Tradeoff-analysis: ability to visualize route management alternatives given one or more constraints, such as environmental impact or cost of maintenance.
- Missing data assessment: estimation of the influence of missing data and/or domain knowledge. Prioritization of missing data given its degree of influence in the knowledge base.

Tahoe National Forest staff reported the development of a “novel and inexpensive way to analyze road systems” for potential environmental impact using EMDS<sup>8</sup>. The overall goal of the project was to test a custom made knowledge base in the EMDS system for its usefulness in a roads analysis process. The process involved identifying roads in the forest road system that were actually or potentially causing adverse environmental impact, while also taking into account the use of the road system for transportation and access. The potential environmental impact of road segments were then used in conjunction with the ArcView Network Analyst extension to assign relative weighting to roads and find a least-impacting network to access points of interest throughout the forest.

Tools such as EMDS could provide an unparalleled opportunity for public and stakeholder engagement in the travel management/route designation process while providing valuable insights for agency planners into what tradeoffs the public is willing to consider. For example, public workshops could be structured that allow stakeholders to participate in interactive scenario building. Using digital maps of a geographic area of interest, stakeholders could assign relative weights to criteria developed in advance (either by agency staff or via public input) that would include measures for:

- the protection of resources,
- the provision of quality recreational opportunities (motorized and nonmotorized),

<sup>7</sup> Development Proposal: Development of a case study for route management on federal lands using Ecosystem Management Decision Support (EMDS). Paul Burgess, The Redlands Institute, University of Redlands, October 2005.

<sup>8</sup> Decision Support for Road System Analysis and Modification on the Tahoe National Forest Environmental Management Vol. 32, No. 2, pp. 218–233. Evan Givretz and Fraser Shilling. Department of Environmental Science and Policy, University of California, Davis. 2003. Springer-Verlag, New York Inc.



- the minimization of social conflicts, or
- the calculation of annual costs for monitoring, maintenance and law enforcement necessary to manage the travel system.

During workshops, the results of weighting of such criteria could be displayed in real time on overhead screens to allow participants to visualize potential route networks as a result of these and other tradeoffs. Various alternatives with different weighting scenarios could be displayed and outputs of relative environmental impact could be compared in tabular form.

Mapped outputs could provide a wealth of information, including a table showing the criteria applied and their relative weighting. Stakeholders could then change the weighting and instantly see how the change affects the mapped output. In addition, EMDS allows stakeholders to create their own decision hierarchy and then compare their results with other stakeholders.

When exploring alternative scenarios for travel management, agency staff could review such mapped outputs in order to identify themes of possible convergence or divergence among stakeholder groups. The tremendous power in the use of EMDS-type systems to aid travel planning could work to dispel public apathy and distrust over how their input is processed by the agencies and would serve to provide a high level of transparency. It also could serve to cultivate broader understanding among stakeholders of the goals of travel planning and the tradeoffs associated with various scenarios. Additional advantages of agency use of EMDS-type decision support tools to support travel management decisions include:

- The ability to incorporate agency mandates and peer-reviewed and objective scientific data among its criteria;
- Interactive and instantaneous graphic outputs to enhance and make more effective collaboration among ID team members and cooperating agencies; and
- The ability to estimate the effects of one or multiple alternative route management scenarios at varying geographic scales, including the broad, landscape level assessment that is critical to proper travel management.

To date, EMDS has been adopted by the Forest Service as a "tool of choice" for watershed assessment/prioritization, fire and fuel reduction, and sensitive species management. Several university faculty and at least one research institution at present are exploring the advantages of using EMDS type methodologies to aid federal agency decision making in travel management and route designation<sup>9</sup>.

***Recommendation:*** We encourage the BLM to explore EMDS and similar decision support tools. If utilized effectively, these methodologies would represent a long overdue marriage between a critical aspect of natural resource planning (i.e., comprehensive travel management) and the use of robust GIS decision-support technologies. In doing so, the

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<sup>9</sup> These entities include Dr. Fraser Shilling of the University of California, Davis; Dr. Brian Muller of the University of Colorado, Denver; and Dr. Paul Burgess of the Redlands Institute.

