

**Comment Resolution
Athens 2006 Prescribed Burning Decision
December 15, 2006**

Comment	Resolution
Watershed and Hocking River impacts	
<p>Burning will further impair the Hocking River and Sunday Creek Watershed. Hocking River is an impaired waterway. Is there a TMDL for this River and will the burning exacerbate the impairment.</p>	<p>Both Sunday Creek and the Hocking River have a TMDL for sedimentation. TMDL's are only developed for perennial streams and all streams in the burn units are either ephemeral or intermittent. Fish data were collected in 2001 for the Sunday Creek TMDL and indicate all of Middle Bailey and the lower reaches of Big Bailey Run (river mile 0.1 to 1.7 meet Full attainment of Warmwater Habitat. Carr Bailey and Big Bailey upstream of the confluence with Middle Bailey and West Bailey are in non-attainment of Warmwater Habitat (see Project File 5-10). Based on standards and guidelines from the 2006 Forest Plan, which become part of the proposed action, the burning will not exacerbate the impairment. Forest-wide standards and guides are listed in Appendix One as related to this project.</p>
<p>What are the cumulative effects of impacts to the Hocking River Watershed and Sunday Creek Watershed?</p>	<p>There are no direct effects or indirect effects on water quality based on monitoring (see Project File 4-1,11,12 and 16, for veg and fire monitoring), so therefore there are no cumulative effects. See reviews of research on low-intensity burns and their impacts to soil and water resources by Tiedmann, Golladay and Battle, Douglass and Van Lear, Waldrop, and Boerner in the Project File 5-11.</p>
<p>Has there been oversight by the Ohio EPA to water and air impacts?</p>	<p>The OEPA, Division of Surface Water was contacted about this project per personal communication with Dan Imhoff, Surface Water Specialist. The OEPA always has oversight for prescribed burns because they have to issue a burning permit approving the implementation of the project (permit issued in December 2006). The Forest did prescribed burns in 2004, 2005, and 2006 for which permits were issued to proceed by the OEPA. Those burns were representative of the 2006 proposed action and annual monitoring of the previous burns indicated that no erosion or sediment has occurred in the burn areas.</p>
<p>Burning will violate CWA. The scoping letter indicates that</p>	<p>The Clean Water Act of 1972 utilizes regulatory and non-regulatory tools to</p>

<p>more burning, bulldozing, and cutting of trees will occur in impaired watersheds that continue to be impaired from the mining that has gone on for over a century.</p>	<p>reduce direct pollutant discharges into waterways (see Project File 5-12). Standards and guidelines in the 2006 Forest Plan prevent this project from adding pollutants to streams, and violating the CWA. The standards and guidelines are documented in Appendix One.</p>
<p>Scoping letter fails to give adequate attention to the cumulative effects of this project in light of the fact that the Bypass construction is only two miles away with adjoining water systems.</p>	<p>Because there are no direct or indirect effects to water quality attributed to this burning project, there will also be no cumulative effects associated with the US 33 By-pass project. See discussion in Project File 4-19 and 4-20 on the Route 33 project.</p>
<p>Prescribed fire was found to decrease PH levels in streams, a problem in the WNF with acid mine drainage issues, while water temperatures in streams were also found to increase. The study (Schurbon and Fauth) suggested decreasing burning cycles to 307 years.</p>	<p>As noted in a study by Battle Juliann and Golladay Stephenw, 2003, Titled: Prescribed fire’s impact on water quality of depressional wetlands in southwestern Georgia, results indicated that low intensity soil burns had an elevated pH and overall suggested that the linkage of fire and water quality is through fire’s effect on soils rather than vegetation. Additionally, my research found that your study by (Schurbon and Fauth) has been refuted by Kevin M. Robertson and Thomas E. Ostertag, 2004, and others. They question the validity of Schurbon and Fauth’s data analyses, and interpretations.</p>
<p>Heartwood is concerned that burning will be used that will have a significant effect on soils, water quality, groundwater, wildlife and plant diversity.</p>	<p>There are no direct effects or indirect effects according to on-site monitoring and to research on the effects of low-intensity burning on soils (see Boerner 2000 and 2005), so therefore there are no cumulative effects. Direct heating of the mineral soil is minor except where accumulations of woody debris smolder for lengthy periods. Most oak ecosystem fires are dormant-season fires whose intensity falls at the low end of the range of wildland fires. Impacts on fungi, bacteria, and microarthropods in the mineral soil are small. Impacts to those in the forest floor are proportional to the degree of consumption and the extent of heating due to smoldering woody fuels. Microbial activity and microarthropod populations recover quickly except after repeated annual burning (Boerner 2005 in USDA GTR NRS P-1, Fire in Eastern Oak Forests: Delivering Science to land Managers). For significant effects on wildlife and plant diversity, please refer to the wildlife BE and the botany BE (Project File 5-5 and 5-6) prepared by the Forest Wildlife biologist and botanist.</p>
<p>We ask for a list of all mitigation measures in place to protect water quality.</p>	<p>Referring to the 2005 Wayne National Forest Plan, Chapter 2, the following mitigations apply specifically to the protection of water resources <u>Watershed Health</u></p>

	<p>SFW-WSH-6, GFW-WSH-7, page 2-6 <u>Soil Resources</u> GFW-WSH-11, page 2-7 <u>Riparian Corridors</u> GFW-ARR-1, page 2-9 <u>Filterstrips</u> GFW-ARR-5, GFW-ARR-6, page 2-10</p> <p>Other mitigations are listed in Appendix One to the Decision memo.</p>
<p>Endangered Species</p>	
<p>The direct effects of the burning would seem to warrant a biological analysis by the USFWS of this specific action. Is the USFWS comment a general analysis to the entire management plan?</p>	<p>BE-(pg 4): Part of the process required for TES management requires that the Forest Service provide a project-specific Biological Evaluation (BE) for each proposed project disclosing any potential effects to federally listed species, which is reviewed by the USFWS. The BE for this project was sent to FWS on 11/14/2006. A Tier 2 Biological Opinion (BO) was received back from USFWS on 12/14/2006 indicating: (1) concurrence with the biologists’ determinations, (2) the project is consistent with all provisions in the 2006 Forest Plan and the Programmatic (Tier 1) BO (PBO), and (3) we fulfilled our requirements under Section 7(a)(2) of the ESA.</p>
<p>The Plan does not include the cumulative effects of the forest impacts to the endangered species, <i>Myotis sodalis</i>. Has there been a specific analysis (by USFWS) or is the USFWS comment a general analysis to the entire management plan?</p>	<p>The Biological Analysis (BA) for the 2006 Plan addresses Forest-wide cumulative effects (Appendix F1-67 to F1-75). See also BE-pg 16-20 project-specific <i>Myotis sodalis</i> cumulative effects analysis, and response above about specific analysis.</p>
<p>Impacts to the Monday Creek watersheds from these burning actions as well as the impacts to the Hocking River watershed from the Nelsonville Bypass will also impact the Indiana bat.</p>	<p>See BE-pg 15-20: project-specific <i>Myotis sodalis</i> effects analysis. See Forest Plan FEIS pg 3-26, 3-188: effects of fire on soils and watersheds. pg 3-31: effects on air quality. Based on monitoring of standard practices for installing fireline in previously burned areas, there has been no evidence of run-off or erosion problems (see watershed input and monitoring reports in this Project File, 4-11,12 and 16. Thus, I do not anticipate any effects to Indiana bats through watershed effects from prescribed fire. A separate environmental analysis was completed for the Nelsonville Bypass project. Review of this FEIS lists a separate air quality</p>

<p>Concerned that burning will take place within visual distance of Indiana bat hibernaculum.</p>	<p>analysis, which has been requested from ODOT. BE-pg 13: There is no known Indiana bat hibernacula on the Athens RD; mine openings located to the west of the proposed project area have not been surveyed, so it is assumed one or more of them may be fall or winter bat habitat. The nearest opening is ca. 0.5 mi from the project boundary. BE-pg 15: direct and indirect effects analysis for fall/winter bat habitat. Smoke will dissipate over a relatively short distance and quickly, if the S&G and burn plan direction are followed, and thus, will not affect any of the potential hibernation sites nearby (FEIS pg 3-31).</p>
<p>Violations of the ESA. FS has an independent duty to insure that its programs satisfy ??7 and the conservation of the species. Smoke and fire harm the Indiana bat. Setting these fires in February and March may affect hibernating bats, migrating bats and bats arriving from hibernaculum.</p>	<p>See response about Tier 2 BO above; FWS said we have fulfilled our requirements under Section 7(a)(2) of the ESA. BE-pg 15: direct and indirect effects analysis for fall/winter bat habitat. Avoidance and minimization measures are included in the proposed action to protect hibernating bats (pg 9-10). PBO (2005)-pg 27 (Appendix F2): Indiana bats migrate late March through April. Spring burns planned for the majority of the areas are most likely to occur after bats have left hibernation (March & April), which means there is less chance of harming hibernating bats. Migrating bats have access to food resources and are highly mobile. BE-pg 8: preference is for spring burns, rather than fall, but both are possible. The burn plan requires cessation of ignitions by 1800, as required in the EPA permit, and ensures all visible flame along the perimeter of the burn areas are extinguished at the end of the day (preventing additional fires overnight). However, the acting District Fire Management Officer reported to me that residual smoke from inside the burn area may persist for a day or two but is usually minimal. Since bats are active at night for mating and swarming when little smoke should be produced, they should not be affected by the proposed burning operations. Should residual smoke be present in the area, bats may temporarily abandon the area and use alternate swarming sites (abandon mines), which are prevalent across the district.</p>
<p>The effects of the unprecedented prescribed burning proposed by the revised LRMP are not adequately analyzed and neither the FS or the FWS really knows what impacts prescribed</p>	<p>USFWS 1999 draft Indiana bat Recovery Plan (pg 18) suggests that fire suppression has led to changes in maternity habitat that may have contributed to the species' decline.</p>

<p>burning on such a large scale will have on the IB.</p>	<p>James Kiser, an Indiana bat expert, believes that the long-term benefits (e.g. creation of roost trees, thinning the understory, and diversifying the herbaceous vegetation) of prescribed fire outweigh the short-term effects (pers. comm. 2004).</p> <p>The Indiana bat SVE (2003) notes that “shade intolerant forest species like red maple are increasing in abundance in the eastern oak-hickory forests. Over time such a change would likely result in the decreased abundance of several Class 1 roost tree species (e.g., shagbark hickory, shellbark hickory, bitternut hickory, red oak, post oak and white oak). Specific timber harvesting methods and fire are necessary to maintain an oak and hickory component in eastern forests.”</p> <p>Appendix F1-75: The Plan incorporates conservation approaches or measures to proactively protect and conserve Indiana bat habitat. Appendix D of the Plan: the Conservation Plan for Federally Listed Species incorporates measures to proactively manage for T&E species, including protection of individuals, habitat protection & improvement, education & awareness, and inventory, analysis & monitoring. We also provide future habitat through implementation of specific actions, depending on species. For Indiana bats, specific S&G were developed and are implemented where appropriate in all projects. S&G specifically related to fire include (TES-2 & 3) buffer zones around hibernacula and swarming sites, (TES-2 & 11) limitations on when burns may be conducted to avoid impacting bats, and (TES-4) development of burn plans specifying appropriate weather conditions to promote smoke dispersal away from hibernacula.</p> <p>BE pg 9-10: Additional S&G and avoidance & minimization measures meant to protect Indiana bats have also been incorporated into the proposed action. Our projects tier to the Forest Plan and implement all S&Gs, as appropriate. Through the Plan, we also proactively manage for Indiana bats by implementing activities that promote the creation and maintenance of suitable habitat. For instance, activities that open up the under- and midstory vegetation and that maintain the oak component improve roosting and foraging habitat conditions for the Indiana bat (see Appendix F of the Plan, pg F1-19 to 78 for a thorough examination of baseline information about Indiana bats, habitat requirements, threats, and effects of actions proposed under the Plan. Pg F1-44 to 45 also discusses why the Historic Forest MA was developed and how this MA</p>
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	<p>direction fits in with management for suitable Indiana bat habitat. Keyser and Ford (2005) believe <i>Myotis sodalis</i> should benefit from</p> <p>This issue was raised as part of the administrative appeal of the ROD for the FEIS of the 2006 Forest Plan, Appeal Issue XXIV [24]. B. vi.</p> <p>The decision in the ROD was upheld related to this issue. Attachment 1 to the official decision on the Appeal of the Wayne’s FEIS and 2006 Forest Plan states:</p> <p><i>“...USFWS concurred with the determination of "Likely to Adversely Affect" for the Indiana bat (Appendix F2, pp. 5 and 10-79), and concluded that implementation of the Revised LRMP, as proposed, is not likely to jeopardize the bat’s continued existence (Appendix F2, pp. 57 and 75). In fact, over the long-term, the USFWS states that “the goals of the proposed action . . . will benefit Indiana bats occurring within the action area” (Appendix F2, p. 75). Thus, the potential effects of implementation on the Indiana Bat were disclosed and the required consultation with the USFWS was completed, and I find no violation of the ESA.” (Page 10).</i></p> <p>The potential effects of the prescribed burning program described in the LRMP for all the alternatives considered for the 2006 Forest Plan on Indiana bat is addressed in the FEIS for the Plan on pages 3-119 through 3-128. It is also addressed in the Response to Comments Appendix to the FEIS (RTC-88 through RTC-90); the FEIS Appendix: pages F1-7 (Action Area), F1-40 – F1-42 (Factors Affecting Species Environment); F1-67 – F1-77 (Cumulative Effects of the Selected Alternative). More information is also found in the Planning Record at: 1.4a.3c.5.001_indiana_bat.doc Section 4 (Trends); Section 5 (Threats to Viability...pages 27-28)</p>
<p>There has been no analysis of the cumulative effects from the large-scale prescribed burning proposed throughout this species’ range.</p>	<p>BE pg 16-20: Cumulative effects for Indiana bats were considered for this project in the site-specific BE. For my cumulative effects area, I addressed the entire area inside the Athens Ranger District boundary because bats are mobile</p>

	<p>and do not recognize political boundaries, and a time frame of 10 years was used, because this project is projected out over a period of approximately 10 years. As a general rule, the geographic limits of a cumulative effects analysis is determined by the effects from the proposed action that overlap in time and location with any effects from any project (past, present, or future). For the Forest Plan, it was determined that smoke generated from prescribed fire activities is likely to travel off-site the farthest of all effects (Appendix F1-67). It dissipates into the air column, and at a distance of about one mile from the fire, detectable levels are minimal. Thus, using the same rationale from this information, it would be very appropriate to limit my cumulative effects analysis area to the proposed project area plus a 1-mile buffer all the way around. With that in mind, using the whole Athens R.D. is more than sufficient and appropriate as the cumulative effects analysis area for the proposed project.</p>
<p>Your assertion that Indiana bats will be able to flee fires in the early spring when the bats are the most vulnerable (weight wise) simply does not ring true. These fires appear to be precisely planned to harm Indiana bats. Your expectation that volant bats will simply fly away from the fires to their sufficient alternative roost sites has no support scientifically. These fires are too close to hibernaculum.</p>	<p>The bats' vulnerability is not really tied to their springtime weight, because bats do not leave hibernation until there are food resources available to sustain them. What could be at issue is how early in the day a fire is started during the pre- and post-hibernation periods (i.e., early spring and late fall), because the nighttime temperatures tend to be substantially cooler than the daytime temperatures (Kiser pers. comm. 2006). What this means for bats in torpor using a tree roost is that temperatures first thing in the morning may be low enough to prevent bats from rousing from torpor in time to escape direct effects of smoke or flame. The exact temperature threshold is not known, but several factors affect how early in the day burning may start and not have the potential for this effect on bats, including tree location on slope and aspect, and how much solar exposure the tree receives on any given morning. The EPA permits burning from 1000-1800 h, so an occupied roost tree on a ridgetop facing east or southeast will likely be warmer by 1000 h than one located on a lower north slope. In addition, the cooler and wetter it is, the lower and slower the fire tends to burn on the Wayne NF, so on the north-facing slope early in the day, the fire is less likely to consume much fuel, burn trees, or produce as much smoke as it would in warmer, drier locations. In cases where the temperature is high enough to permit bat activity, my experience has been that bats are fully capable of and do flee disturbance. I have heard several anecdotal descriptions of bats flying out of prescribed burn areas during ignition. Other researchers also</p>

	<p>believe bats can escape fires: Keyser and Ford 2005, Rodrigue et al. 2001). Another important factor is how hot and intense the fire burns. Fires in southern Ohio are typically low in intensity and mainly burn the unconsolidated leaf litter on the ground with minimal effects on mineral soil, trees, or snags (Boerner 2000, Artman et al. 2001). Thus, any additional potential effects to bats posed by burning in the pre- and post-hibernation periods can be minimized by adjusting the actual ignition time on any given day to correspond with warmer ambient temperatures, which would allow bats the ability to rouse from torpor in a timely fashion.</p> <p>In response to bats' ability to find alternative roost sites: it is well-documented that bats know of and use multiple roost sites at any given time (Britzke et al. 2003, Callahan et al. 1997, Kurta and Williams 1992, Miller et al. 2002, Schultes 2002, and others), in part, due to the ephemerality of the types of roosts used most often (i.e., snags with loose or exfoliating bark). Bats are adept and capable of finding alternative roosting accommodations, especially in a well-forested landscape like the Baileys area, which has a variety of different ages and species of trees available. The distance across any of the given burn units does not exceed 1 mile, and in most cases it is a ½ mile or less, and bats are known to fly up to 2 or 3 miles from roosting areas to forage. Thus, bats are fully capable of flying from inside a burn unit to an undisturbed area outside of a burn unit if necessary.</p> <p>BE-pg 9-10 & 13-15: Burn areas are at least 0.5 mi from any potential bat hibernacula, and S&G and other measures are in place in the proposed action and burn plan to protect those sites.</p>
<p>Your discounting of aggregate effects on the bat just in the Wayne, not to mention the range of the species as a whole, makes a mockery of the ESA. Instead of focusing on the recovery of the Indiana bat and the ABB, the FS continues to focus on the production of forest products.</p>	<p>Appendix F1-75: The Plan incorporates conservation approaches or measures to proactively protect and conserve federally listed species, like Indiana bats and American burying beetles. Appendix D of the Plan is called the Conservation Plan for Federally Listed Species. It incorporates measures to proactively manage for T&E species, including protection of individuals, habitat protection & improvement, education & awareness, and inventory, analysis & monitoring for species that occur in the Wayne NF, or are likely to be reintroduced to the Wayne NF in the near future. The foundation of the Conservation Plan is the allocation of Wayne lands into management areas that contain the ecological conditions needed by particular species. These MA allocations are also</p>

	<p>intended to conserve the biodiversity that will promote the recovery and maintenance of federally listed species. The prescriptions for the Historic Forest management area calls primarily for the use of uneven-aged vegetation management combined with prescribed fire to create oak and hickory dominated forest communities with more open conditions. These management areas were formulated, in part, to provide habitat conditions beneficial for the Indiana bat and American burying beetle.</p> <p>We also provide future habitat through implementation of specific actions, depending on species. For both species, specific S&G were developed and are implemented where appropriate in all projects. S&G specifically related to Indiana bats and fire include (TES-2 & 3) buffer zones around hibernacula and swarming sites, (TES-2 & 11) limitations on when burns may be conducted to avoid impacting bats, and (TES-4) development of burn plans specifying appropriate weather conditions to promote smoke dispersal away from hibernacula.</p> <p>BE pg 9-10: Additional S&G and avoidance & minimization measures meant to protect Indiana bat and potential roost trees have also been incorporated into the proposed action. I do not believe additional measures are required to protect American burying beetle. Our projects tier to the Forest Plan and implement all S&Gs, as appropriate.</p> <p>Through the Plan, we also proactively manage for Indiana bats and other T&E species by implementing activities that promote the creation and maintenance of suitable habitat. For instance, activities that open up the under- and midstory vegetation and that maintain the oak component improve roosting and foraging habitat conditions for the Indiana bat (see Appendix F of the Plan, pg F1-19 to 78 for a thorough examination of baseline information about Indiana bats, habitat requirements, threats, and effects of actions proposed under the Plan; see pg F1-93 to 110 for American burying beetles). Pg F1-44 to 45 also discusses why the Historic Forest MA was developed and how this MA direction fits in with management for suitable Indiana bat habitat, and see pg F1-106 for American burying beetle.</p>
<p>Smoke generated during prescribed burns can cause roosting Indiana bats discomfort or death. FWS, Monongahela, Forest Plan p 20. IB needs un-managed forested habitat where roost</p>	<p>My experience has been that bats are fully capable of and do flee from the disturbance of fire. I have heard several anecdotal descriptions of bats flying out of prescribed burn areas during ignition. Fires in southern Ohio are</p>

<p>trees (i.e. dead trees of appropriate species near appropriate foraging grounds) are produced on a continual and reliable basis.</p>	<p>typically low-intensity burns and mainly burn the unconsolidated leaf litter on the ground with minimal effects on mineral soil, trees, or snags (Boerner 2000, Artman et al. 2001). This allows bats ample time and warning to escape an area that is being burned.</p> <p>James Kiser, an Indiana bat expert, believes that the long-term benefits (e.g. creation of roost trees, thinning the understory, and diversifying the herbaceous vegetation) of prescribed fire outweigh the short-term effects (pers. comm. 2004). See previous discussions about effects of smoke on bats and avoidance & minimization efforts included in the proposed action to avoid effects to bats from smoke.</p> <p>Regarding managed versus unmanaged forests: USFWS 1999 draft Indiana bat Recovery Plan (pg 18) suggests that fire suppression has led to changes in maternity habitat that may have contributed to the species' decline.</p> <p>The Indiana bat SVE (Ewing 2003) notes that “shade intolerant forest species like red maple are increasing in abundance in the eastern oak-hickory forests [i.e., unmanaged forests]. Over time such a change would likely result in the decreased abundance of several Class 1 roost tree species (e.g., shagbark hickory, shellbark hickory, bitternut hickory, red oak, post oak and white oak). Specific timber harvesting methods and fire are necessary to maintain an oak and hickory component in eastern forests.”</p> <p>Appendix F of the Plan, pg F1-44 to 45: The prescription for the Historic Forest management area, in which the proposed project is sited, calls primarily for the use of uneven-aged vegetation management combined with prescribed fire to create oak and hickory dominated forest communities with more open conditions. These management areas were formulated, in part, to provide habitat conditions beneficial for the Indiana bat.</p> <p>FEIS pg 3-35: At the time of the earliest land surveys, the area that is now the WNF was covered primarily by mixed oak forests.</p> <p>FEIS pg 3-39 discusses the importance of oak-hickory forests to numerous plant and animal species, including Indiana bats, and pg 3-42 to 47 discusses factors affecting oak-hickory regeneration, including the use of fire and its effects. Oak-hickory forest is the dominant forest type in the proposed Bailey-Utah Ridge burn units. To ensure continued dominance of this forest type,</p>
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	<p>management is required. There are multiple references available citing how fire was historically integral to oak regeneration (e.g., Abrams 1992, Hutchinson and Sutherland 2000, Sutherland 1997, Van Lear et al. 2000).</p> <p>BCI (2001): Experts recognize that bats and forests have evolved together with fire as a natural disturbance, and when used appropriately, prescribed fire can be a good tool to maintain healthy forest ecosystems (pg 105). The authors discuss bats and fire management, potential effects to bats, suggestions for how to protect bats and bat habitat, and how fire can increase recruitment of future roosting habitat, or snags (pg 105-109).</p> <p>The goal in the Monongahela Forest Plan to which I believe the comment referred is TE29 (pg II-24): <i>“Manage naturally occurring tree species composition to provide a continuous supply of suitable roost trees and foraging habitat for Indiana bat. Achieve vegetative diversity that maintains or improves Indiana bat habitat. Where consistent with management prescription emphasis, use a variety of silvicultural methods to create desired age class diversity.”</i> This goal recognizes the need for forest management to achieve goals of maintaining or improving Indiana bat habitat. Oak-hickory forest is the predominant type in the Wayne NF. It is apparent mixed oak forests are important to many species of plants and animals, including Indiana bats, and that this type of forest requires fire and/or other treatments to maintain and improve its quality (Keyser and Ford 2005).</p>
<p>IBs are negatively affected by increased forest patchiness. The action area for this project should include, at a minimum, the WNF and any NF within a 300-mile radius since the Indiana bat is known to migrate up to 300 miles.</p>	<p>This project does not create any patches in the Forest.</p> <p>BE pg 16-20: Cumulative effects were considered for this project in the site-specific BE. For my cumulative effects area, I addressed the entire area inside the Athens Ranger District boundary because bats are mobile and do not recognize political boundaries, and a time frame of 10 years was used, because this project is projected for implementation over a period of approximately 10 years. As a general rule, the geographic limits of a cumulative effects analysis is determined by the effects from the proposed action that overlap in time and location with any effects from other projects (past, present, or future). For the Forest Plan, it was determined that smoke generated from prescribed fire activities is likely to travel off-site the farthest of all potential effects (Appendix F1-67). It dissipates into the air column, and at a distance of about one mile from the fire, detectable levels are minimal. Thus, using the same rationale</p>

	from this information, it would be very appropriate to limit my cumulative effects analysis area to the proposed project area plus a 1-mile buffer all the way around. With that in mind, using the whole Athens R.D. is more than sufficient and appropriate as the cumulative effects analysis area for the proposed project, and expanding it to include a 300-mile radius is unnecessary.
Heartwood is concerned that information and decisions about impacts to PETS species be based on site-specific data and information in the project area and on the District as a whole. Concerned that any BE be prepared with site-specific data and information, not just with generic modeling or consideration of broad habitat types, and that the BE be fully completed before publication of the draft EA.	See site-specific information botanical and wildlife BEs in Project File 5-5 and 5-6.
We ask for a list of all mitigation measures in place to protect PETS.	BE-pg 9-10. Botanical BE-pg 2-3. All suggested measures have been incorporated into the project's proposed action.
Air quality	
We do not support the action of the Forest Service and its addition to the already considerable particulate load in our environment. Particulate pollution is very damaging to human health and the environment. It is unreasonable to add to the pollution from coal-fired power plants. We question whether monitoring of particulate levels will be performed prior to burning, during burning and after burning to establish levels.	Smoke from prescribed burning can affect human health and effect the environment by reducing visibility. The Forest Service is committed to minimizing this impact while using fire to improve ecosystem health. Particulate matter less than 2.5 microns in diameter (PM-2.5) is the primary pollutant of concern from prescribed burning. The National Ambient Air Quality Standards (http://www.epa.gov/air/criteria.html) have been established by EPA to protect air quality from the contribution of all sources, including power plants and prescribed fire. Routine ambient air quality monitoring is conducted by air quality regulators to assess current air quality conditions compared to the standards. The Forest Service intends to consider the air quality data from monitors nearest the prescribed burn and, if necessary, to deploy additional monitors to evaluate impacts to air quality impacts due to prescribed burning.
Burning will violate Clean Air Act.	There is no statute in federal or state legislation which prohibits prescribed burning for silvicultural purposes.
Harm to human health. More burning will affect the elderly, the young, and the sickly.	Smoke from prescribed burning can affect human health, especially the health of the elderly, the young and the sickly. That is why best management practices are implemented to 1) to burn only when atmospheric and fuel conditions

	<p>minimize the amount of smoke to be generated, 2) disperse the smoke in a direction to minimize impacts, 3) and to communicate with affected individuals and communities of potential impacts. Additionally, all burning is coordinated with Ohio EPA and conducted to comply with the National Ambient Air Quality Standard for particulates; a standard designed to protect human health.</p>
<p>Ohio Administrative Code Sec 3745-17-05 Non-degradation policy. The significant and avoidable deterioration of air quality in any part of the area where presently existing air quality is equal to or better than that required by this rule shall be prohibited. Where will the smoke from this fire end up? When will the permit be requested from the state EPA?</p>	<p>The Forest Service intends to comply with this policy which relates to the particulate matter less than or equal to 10 microns in diameter (PM-10). The Forest Service analyzed its potential impacts against a more rigorous standard (PM-2.5) and considered its impacts on a shorter time scale (1-hour). Smoke from this prescribed burning may travel up to 30 miles downwind from the burn, but the greatest amount of smoke will likely be less than five miles from the burn.</p>
<p>We ask for a list of all mitigation measures in place to protect air quality.</p>	<p>Mitigation includes only burning if meteorological conditions are conducive to minimizing smoke impacts. These conditions include utilizing preferred winds and mixing heights to disperse smoke in the direction of the fewest sensitive receptors (e.g. homes, highways, schools) and burning when fuel moistures are great enough to lessen fuel consumption which lessens overall emissions. Mitigation also includes notifying residents prior to, and the day of the burn, about potential impacts.</p>
<p>There have been challenges to the burning permits on the state forests in Ohio based on health concerns. FS states that we only burn with convection patterns that push smoke away. We all know that there is no such thing as “away”. Commenter has spoken to Congressman Kucinich’s Legislative Director about requesting a Congressional Research Service study on the health effects of prescribed burns. Controlled burns are conducted when they are less likely to get out of control. This tends to be when the area is wetter than during natural fire. Burning wetter materials creates more pollution and “away” by your definition would be towards Cleveland. I would expect that the WNF burning requested for Spring 2007 season not be allowed to occur while we are awaiting the return of the CRS report. It is my guess that our CRS report request would have</p>	<p>Although counterintuitive, burning under wetter conditions may produce fewer emissions and consequently lessen particulate concentrations. This occurs because less fuel is consumed which produces less smoke (Smoke Management Guide for Prescribed and Wildland Fire, 2001 Edition, December 2001, pg. 148).</p> <p>Our analysis indicates smoke will not likely be noticeable beyond thirty miles from the burn site. Cleveland is nearly two hundred miles from the burn location.</p>

<p>to wait in line behind the budget related reports and all CRS work has been slowed down this year due to the budget cuts which have caused a loss of clerical staff in the CRS.</p>	
<p>No where in the scoping report did I see a reference to the condition of the forest being impacted by air pollution. I've still not seen any sign that you understand the point being made in "The Dying of the Trees" by Charles Little.</p>	<p>Comment noted.</p>
<p>Global warming</p>	
<p>The FS' insistence to contribute to global warming with more burning of forests and the release of the carbon stored in the forests violates NEPA.</p>	<p>Global warming was also raised as an issue (Appeal Issue XVIII) in the appeal of the ROD for the FEIS for the 2006 Wayne Forest Plan. The appeal decision found that the appellants questions were identified and adequately addressed, and that there was not a violation of NEPA.</p>
<p>Burning reduces the carbon stored in the forest and increases the carbon in the atmosphere, and generates heat, all of which is contributing to global warming. This should be considered, especially since the FS is increasing burning across the entire eastern and southern regions of the US.</p>	<p>The potential effects of the prescribed burning program described in the LRMP for all the alternatives considered for the 2006 Forest Plan on air quality is addressed in the FEIS for the Plan on FEIS pages 3-29 through 3-31. This topic is included in the Response to Comments Appendix to the FEIS for the 2006 Forest Plan on pages RTC-57 through RTC-59.</p>
<p>Fragmentation</p>	
<p>Consider the fragmented character of this area.</p>	<p>The Baileys have some of the most unbroken forest within the Wayne, having been acquired in large tracts from primarily industrial owners.</p>
<p>IBs are negatively affected by increased forest patchiness.</p>	<p>Low-intensity prescribed fire does not increase forest patchiness.</p>
<p>General Wildlife</p>	
<p>Concern about the viability of non-game species of wildlife on the forest. Be sure to consider impacts to the Cerulean Warbler.</p>	<p>BE-pg 29-43. Cerulean warbler analysis pg 33-36.</p>
<p>Proposed burning will perpetuate the early successional aspect of the Wayne devoid of all life save that of non-native species and destructive tree diseases. One of the consequences of such a forest is the overabundance of early successional wildlife. Heartwood is concerned that the Wayne justifies all projects in the name of Indians and promised oak trees.</p>	<p>FEIS pg 3-36 to 37, 3-59, 3-62: About 94% of Wayne lands are forested. Only about 5.4% of the forest cover on the Wayne is currently early successional habitat, and this habitat type has actually declined on the Forest since the 1988 Plan was implemented. Providing all successional stages of forest across the landscape are necessary to conserve plants and animals, and some species require this habitat type. About 35% of terrestrial vertebrate species known to occur on the Wayne use early successional forest habitat during their life cycle,</p>

	<p>and since this habitat type is ephemeral and created by repeated disturbances, fire is one tool that we can use to provide this type of habitat on the landscape. However, most of the burns on the Wayne are low-intensity and would not create early successional habitat from mature forest habitat (as is the case over most of the Baileys area), rather it would maintain early successional habitat where it already exists.</p>
<p>Heartwood is concerned that burning will be used that will have a significant effect on soils, wildlife and plant diversity.</p>	<p>FEIS pg 3-26 soil effects – see soil questions Absolutely, fire will have effects on wildlife and plant diversity over time. For some species, fire has positive effects, while for others it results in a loss or change in habitat. We intend to use prescribed fire as a tool to regenerate oak forest, which we consider a “return to historic conditions.” The proposed project falls within the Historic Forest MA, for which the emphasis is on moving conditions toward the “historic range of variability.” This includes maintaining and increasing the predominance of oaks and hickories on most sites, featuring larger and older trees with more open stands than currently cover most of this area. These conditions would be promoted through a combination of mostly uneven-aged timber harvest, frequent prescribed fire, and herbicide use, where necessary, to promote oak and hickory regeneration. FEIS pg 3-39 to 55 discusses at length the importance of oak-hickory forest, as well as why fire is a good tool to manage for it and what effects there might be to the landscape. FEIS pg 3-183 to195 gives a thorough discussion of the effects of fire to multiple resources.</p>
<p>We ask for the peer-reivewed documentation that short-turn-around burns do not harm the viability of wildlife and restore the forest.</p>	<p>Van Lear and Watt 1992, Keyser and Ford 2005, Ford et al. 1999, and Renken 2005 provide this review,. These research articles are available on request from the Athens Ranger District.</p>
<p>Soils</p>	
<p>Heartwood is concerned that soils in the project are be identified in a site-specific manner with field data showing where each soil type is, what its condition is and how these proposed activities will impact it. Heartwood is concerned that site-specific data and information on soils, past soil loss, current</p>	<p>Mapping of soil units is available, but is awkward to view due to the small size of polygons. A more useful view is the Ecological Land Type Phases (ELTP), for which a map was made. Having walked across the burn units and studied this map, it was observed that fire behavior (intensity, flame height, scorch height, fuel consumption) follows the ELTP map. This confirms research</p>

<p>sediment load in the streams, and realistic estimations of future sedimentation of streams in and below the project are be collected and used for any decision.</p>	<p>which states that fire intensity and expected results, and existing vegetative composition, are largely based on moisture availability. Coves which receive less sunlight due to topographic interference, east slopes which receive morning sun, and north slopes which receive less direct sunlight experience much less fire intensity. Southern and western aspects, which receive longer periods of more direct sunlight, have drier fuels and burn with a higher intensity. No soil loss or stream sedimentation related to prescribed fire was observed during the collection of field data by the fire prescriptionist, the wildlife biologist, the botanist, or fire personnel.</p>
<p>What is the recovery time for the forest? What baseline data do you have in place? What is the status of the downed woody debris in this forest? What indirect effects will occur to the soil health due to the removal of downed woody debris that would naturally return to the soil? Where will future soil come from?</p>	<p>Baseline data exists through the descriptions of existing condition on this and all other projects which have undergone NEPA analysis. The Forest Service Combined Data System, now being replaced by a program called FSVeg, has existed for over 20 years to track overstory species composition. There is very low consumption of fuels greater than 3” in diameter, most of which would be considered downed woody debris because of the role they play in soil development and their persistence on the landscape. This debris remains on the forest floor through burning operations (see Firemon data).</p>
<p>Process</p>	
<p>Burning will violate NEPA, NFMA, ESA, CWA and Clean Air Act.</p>	<p>The procedures followed in the analysis of this project follow the NEPA process and follow guidance in the 2005 Revised Wayne National Forest Land and Resource management Plan. The public was given an opportunity for 30-day notice and comment on this project, per the October 2005 Earth Island decision, and the decision will be subject to appeal. The Departments of Interior and Agriculture reviewed over 3,000 hazardous fuels reduction and rehabilitation/stabilization projects completed between FY 1998 and 2002, including those conducted with prescribed fire, in order to determine the environmental impacts of these activities. The result of this study was that, in the absence of extraordinary circumstances, these types of activities do not result in significant cumulative effects on the human environment, and therefore, should be categorically excluded from further documentation. The acre limit for prescribed fire applied to Category 10 is 4500 acres. This project, consisting of 2000 acres burned in smaller blocks, is far less.</p>
<p>The scoping letter ignores the direct, indirect, and cumulative</p>	<p>Since a national study of prescribed burning projects under 4500 acres indicated</p>

effects of this burning in light of the Nelsonville Bypass, the active mining and oil and gas exploration, the burning and logging in state forests and private forests.	no cumulative effects, they were not analyzed in detail for a project in Category 6(see Project File 6-5). The biological evaluations for wildlife and botany did consider all other projects on the Athens District, concluding that this project would not add to the cumulative effects of other activities on the District (see Project File 5-5 and 5-6).
The fact that the FS is proposing this project a mere 2 miles from the Nelsonville Bypass confirms that the agency has no intent of abiding by any of the laws passed by Congress and applicable to the National Forest.	Air quality impacts as disclosed in the US 33 Bypass EIS were reviewed. See the Discussion of Cumulative Impacts on Air and Water Quality in Project File 4-19.
The fact that the Daniel Boone can burn up to 50,000 acres of its forest cannot be dismissed with the fact that it is 100 air miles away. The cumulative effects to the trees and the species must be considered.	There is no cumulative effect from a smoke event over 100 miles away.
Violation of NFMA. The scoping letter has no adequate data to show that viability will be protected for any species.	See Biological Evaluation for Wildlife Project File 5-5.
NEPA requires that the real world visual impacts be fully identified and considered. Concerned that impacts to recreation from active burning operations are downplayed and considered inconsequential merely because they are temporary. District needs verifiable information that recreational users are not adversely impacted by burning before such impacts are dismissed.	No adverse comments have been received from local residents who would be the recreation users during the early spring burning period. Local residents favor burning and some have asked to have their property burned as well.
Impacts from roads and road reconstruction have not been adequately identified...	Not applicable to this project.
The next document should articulate clear objectives, demonstrate that the objectives are important, show that the project is feasible and consider whether negative effects outweigh the benefits. The next document should articulate specific ecological, social, and economic benefits expected and consider the spatial and temporal contexts in which such benefits will occur.	Comments noted.
Why am I not seeing information about the impact of logging, mining, grazing and all of the other real problems the forests	Not applicable to this project.

have in this area on your list of problems for the forest?	
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Fire Program	
<p>Ask that the next NEPA document explain how much money the Wayne is receiving from funds funneled through HFI and/or HFRA. Heartwood is concerned that the Wayne is taking money from the western forest where fire threats are greater and there is historical, natural justification for burning.</p>	<p>This issue was raised as a comment to the Draft EIS for the recent revision of the Wayne Forest Plan.</p> <p>The rationale for using prescribed burning on the Wayne National Forest is in the ROD on page ROD-11. The analysis and science behind that decision is documented in the FEIS pages 3-183 through 3-195. More information on this and the response to the comment that were made on the Draft EIS for the 2006 Forest Plan is found in the Response to Comments Appendix to the FEIS on pages RTC-150 through RTC-152.</p> <p>This comment makes a simple conclusion about a very complex budgeting process, concluding that: if the Wayne was not receiving the funding to carry out this prescribed burn, then those dollars would be spent on a western forest. While this conclusion is a possibility, it is not very likely based on the reality of the Forest Service budgeting process.</p> <p>The Forest has addressed and analyzed the need for prescribed burning; has submitted budget proposals to implement the program, including this particular project; and has received funding through the normal Eastern Region of the Forest Service budget allocation process.</p>
<p>Concerned about the economics of the proposed project and that the final decision fully identify and consider not just the economics of the burning but also the economics of recreational impacts, wildlife impacts and water quality impacts.</p>	<p>No direct or indirect economic impacts have been identified from the implementation of prescribed burning on the Athens District. From three years experience conducting prescribed burns in the Bailey Run area, most residents are unaware that burning is or has occurred. Burning typically occurs during the early spring prior to turkey season and prior to the season visitors would be using the nearby Utah Ridge pond. There are no designated hiking or ORV trails near the burn area.</p>

<p>What components of biodiversity will benefit from the project? Actions should be designed to increase resilience of ecosystems so that future management is unnecessary.</p>	<p>See project file 4-1 for an analysis of the need for and expected results of burning in the xeric/mesic ecosystem. Burning to establish an understory of desirable tree species which include a mix of oaks and hickory is most necessary during a 10-20-year establishment period in the Historic Forest.</p>
<p>We ask that all peer-reviewed articles concerning burning in the Wayne be available and referenced. NEPA and NFMA require that the project incorporate monitoring before and after implementation, using comparable un-manipulated sites as controls.</p>	<p>A bibliography is available in the project file and a hard copy of all referenced research articles is also available in the District office. Most references have been found and are available to the public on the internet. Monitoring has been done throughout the Baileys (see Project File 4-11, 4-12 and Firemon results) and in the Gore-Greendale area to determine the status of understory vegetation.</p>
<p>What percentage of the project’s budget is dedicated to monitoring?</p>	<p>Monitoring occurs at various stages in the process, from project development through implementation and post-activity. No calculation has been made on the percentage of the fire or other resource budgets is dedicated to monitoring.</p>
<p>It seems to me that you started with the assumption that you want to burn and then spent 28 pages trying to justify your desires. Per the Goals of the Forest Plan pg 5 it was apparent that the goal was to burn and then objectives were listed to support this goal.</p>	<p>Comment noted.</p>
<p>The purpose of this project is to move the Historic Forest Management Area toward the desired future condition. The forest didn’t historically need management and I can’t imagine that there was ever a historic 2052-acre burn in one day in this exact area, nor that it would have been repeated 2 more times after that in a space of less than 10 years.</p>	<p>We do not propose to burn 2052 acres in one day. It is more likely (see Decision Memo) that 300-600 acres may be burned in one day.</p>
<p>You said that you were emulating the historic fire regime but gave no evidence of what you think that was or how this was determined. I also wonder how historic these forests could ever be without the chestnut tree.</p>	<p>See Fire Prescription (Project File 4-1) pg 4 – 8 for a review of the purpose and need for this project and references to dendro-ecological research on fire history in oak-hickory forests.</p>
<p>Mixed mesophytic hardwood forests do not naturally burn. Your plan on pg 6 is to destroy the maple/beech/mixed hardwood forest in the hope of creating the oak/hickory forest. How can this be called historic when you are waging a war with fire, chemical and tools to destroy the existing forest which you have described earlier in your document as being exceptionally</p>	<p>Extensive research has been done on the role of fire in the development of the mesic and xeric forests in the Central Hardwood region. Fire intensity and frequency vary based on many factors, including moisture regime. The type of fire expected and the results are described in the Fire Prescription, (Project File 4-1).</p>

natural.	
On pg 6 you are claiming that the fire will destroy the honeysuckle and leave behind the blueberries and spice bush and solomon’s seal. I find this hard to believe.	This is a misinterpretation of information contained on pg 6.
Your goal on pg 8 “to prescribe silvicultural and fire treatments…” sound like a “jobs guarantee”.	Opinion.
On pg 10 & 11 you speak of moist soils and then maple, YP and beech out-growing oak. It makes no sense to try to promote oak over these trees in the moist valleys which would be included in your 2000+ acre burn.	See fire prescription (Project File 4-1) for a description of the type of fire expected and the anticipated results.
Logging increases the chance of fire, taking out the biggest, most fire-resistant trees and covering the ground with discarded twigs and branches. Smaller, secondary-growth trees make better fuel and are more of a fire hazard.	No references cited. There is no logging in this project.
The Fs does not have clear evidence and studies to show that fire will help regenerate oak and hickory seedlings.	See research cited in the Fire and Veg prescription, Project File 4-1.
FS lack evidence that oaks are more desirable than maples in the areas where they are burning.	See response to wildlife comments and Forest Plan.
Natural selection might bring back oaks and hickories, particularly if they were in those areas to begin with. Why are oaks and hickories no longer in these areas? Does the FS have a prohibition against logging of oaks and hickories in the WNF?	See research cited.
Is the FS burning to manage a natural area, or to manage the Wayne as a tree farm? A one-size-fits-all prescribed burn cannot address site differences (micro climates, aspect, moisture, bedrock, soil type, or replace natural selection and regeneration.	See discussion on Historic Forest Management in Scoping Report, Purpose and Need, pgs 4-12.
Fires have a devastating effect on wildlife. Burning their habitat unnecessarily is cruel.	Conjectural. No references cited.
Unnatural burning will have other effects on the forest, which the FS has not and probably cannot document adequately, because each differing ecosystem will be affected in a different	See effects description in Scoping Report, pages 20-29, see references cited. See Fire and Veg Prescription, Project File 4-1.

<p>manner. There is no historic record of large and regular burns in the Eastern Heartland Forest.</p>	
<p>Logging of mature oak and hickory trees continues to be allowed in the Wayne. This relegates unnatural, prescribed burns to being a silvicultural act and not an act that is geared to promote a balanced ecosystem.</p>	<p>See Forest Plan, discussion on Historic Forest Management, pgs 3-11 through 3-18.</p>
<p>Prescribed fire is artificial, unnatural, damaging, destructive, degrading and catastrophic to the forest ecosystem. It's harmful immediately and long term, to individuals and populations, to cycles, processes and functions.</p>	<p>Commenter does not cite any references, so comment is considered opinion. See fire prescription for documentation of fire effects.</p>
<p>Claiming that fire will result in increased oaks and hickories is not credible. USFS research is incomplete and inconclusive. Cites Hutchinson et al 2005. Ten years of research is inadequate. No one conducting the fires today will live long enough to see the end result.</p>	<p>Hutchison reports that stem density in smaller size classes was reduced, although the numbers of oak seedlings was not increased. He cites that “the application of fire alone, without partial harvesting, failed to improve oak regeneration consistently”. In the long-term planning for the Historic Forest management area of the Baileys, harvesting is planned. Establishing a favorable environment for existing oak regeneration to develop into larger seedlings prior to a harvest improves their competitive advantage when harvest occurs.</p>
<p>Trying to increase only oaks and hickories is not a worthwhile goal – is a goal for private commercial trees farm, not a public and natural national forest.</p>	<p>The Forest Plan identifies the benefits to wildlife from the oak hickory forest.</p>
<p>Nothing, not one species much less an entire ecosystem is either fire dependent or fire adapted, that needs fire or should have fire in any way in the Wayne.</p>	<p>FEIS pg 3-35: Species viability evaluations indicated that fire is important in the maintenance of healthy populations of many species (and several examples with citations are given). FEIS pg 3-183: Fire has been used to enhance rare plant populations, as well as soft-mast producing species. The concept of adaptation of species and ecosystems to periodic disturbance by fire is a well-accepted scientific fact. Ferry et al. (1995) is an example of an article written by 6 authors from 4 different federal agencies who state that fire-adapted ecosystems with fire-dependent species exist all across the USA. BCI (2001): Experts recognize that bats and forests have evolved together with fire as a natural disturbance, and when used appropriately, prescribed fire can be a good tool to maintain healthy forest ecosystems (pg 105).</p>

<p>I'm also opposed to any further burning of the Buffalo Beats RNA. If natural forces are creating forest, then it's not a true prairie anyway. If the Wayne management plan can justify an artificial prairie wild flower garden then manage in the least harmful way possible. Cut the trees by hand. Graze it with cattle for a few weeks in winter every couple of years.</p>	<p>FP pg 3-53: the designation of Research Natural Area means the area is nationally significant with a unique ecosystem deemed worth of preservation for scientific purposes. The Environmental Assessment (1998) prepared for the proposal to change the Management Area of Buffalo Beats to Research Natural Area includes documentation about the history of the area, why the prairie exists there, and why the Wayne wishes to maintain the unique ecosystem. In short, find on pg 10-11 that a phytolith analysis of the area concluded that this clay lens contained vegetation other than forest over much of the area's history. Most likely, the vegetation was forb-dominated, and the fire-adapted prairie forbs and grasses <i>Gentiana alba</i>, <i>Eryngium yuccifolium</i>, <i>Andropogon gerardii</i>, and <i>Sorghastrum nutans</i> occur there now. It is considered a fire-dependent ecosystem. On pg 17: The area is a small relict prairie surrounded by deciduous forest. It is thought this relict plant community may date from a period of about 4000 years ago. It is recognized by both The Nature Conservancy and ODNR Division of Natural Areas and Preserves as nationally significant, both floristically and ecologically.</p>
<p>Trying to grow oaks and hickories at the expense of all other species associated and interdependent, including some necessary for the health and well-being and long term survival of oaks and hickories, is ignorant or willful foolishness on the part of humans. By focusing so narrowly on two genera and a few species of organisms out of 50,000 to 100,000 or so, USFS violates its own rules, regulations and guidelines for multiple use.</p>	<p>See prescription for Historic Forest in Forest Plan, Chapter 2 as cited in Fire and Veg Prescription and Purpose and Need in Decision Memo.</p>
<p>The US is party to international treaties to protect migratory bird species...USFS's own research, see abstract for Artman et al. 2001, shows the severe damage to ground nesting and low vegetation nesting that result from unnatural prescribed fire disturbance. A prescribed fire may not kill individual birds, but it disturbs, alters, and destroys nesting habitat.</p>	<p>FEIS pg 3-76 to 77: effects of fire on ground- and shrub-nesters discussed. Fire may be detrimental to these species where the fires burn hot and more uniformly and in units burned more frequently. However, the mesic sites are not as likely to burn hot or uniformly, so patches of unburned dense understory habitat are likely to be left for these species. Fire is planned across the landscape in scattered locations across time and planned so that they burn in</p>

	<p>mosaic patterns, so no one kind of habitat should be affected all across the forest at the same time. Furthermore, the proposed project occurs in the Historic Forest MA, which was developed with other species' needs in mind (besides ground nesters'), whereas other MAs, like Future Old Forest, were developed for species that require mature forest for ground-nesting. There must be give-and-take across the landscape for the Wayne to effectively manage for the broad spectrum of species it is charged with protecting.</p> <p>Artman et al. (2001), in addition to reporting negative effects of fire on ground- and shrub-nesting birds, also indicated that fire improved foraging habitat for several species of ground-foraging birds, probably by increasing accessibility of food resources (insects, seeds, nuts). In conclusions, the researchers reported that fire did not eliminate any species of birds from the areas that were burned, nor did it change total breeding bird population levels in areas where fire was used for the purpose of maintaining a mixed-oak community, which is basically the purpose of the proposed project. That is, oak-hickory is the prevalent overstory component now, and we want to ensure that the understory is primed for oak regeneration, rather than allowing succession to beech-maple.</p> <p>FEIS pg 3-59 to 62: Fire can help maintain early successional habitat and oak-hickory habitat, which are each required by multiple other species of neotropical migrant birds with other types of nesting requirements that may not be provided in the same areas as ground-nesting species.</p> <p>Although not a migratory species, turkeys are ground-nesters too. The National Wild Turkey Federation supports prescribed burning as a management tool. Their research indicates that the benefits of fire to habitat in spring far outweigh the loss of nests and that 2/3 of turkeys will be able to re-nest (NWTF 2006).</p>
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