

Supplemental Environmental Assessment Bluegrass Ridge Restoration Project

Ironton Ranger District
Wayne National Forest
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(corrected September 2002)

Introduction

The Bluegrass Ridge Restoration Project Environmental Assessment (EA) was completed, and a Decision Notice and Finding of No Significant Impact (DN/FONSI) was signed November 3, 1994. Five alternatives were considered in the analysis, and Alternative 2 was selected for implementation. As part of the implementation of this decision, the Markin Fork and Bluegrass Timber Sales were sold on August 31, 1995 and September 29, 1995, respectively.

Biological evaluations of the potential effects on federally listed endangered, threatened and proposed species (PETS), and Forest Service Regional Forester sensitive species, were completed as part of the EA. Subsequent to the completion of the EA, signing of the DN/FONSI, and sale of the Markin Fork and Bluegrass Timber Sales, some new information has become available regarding PETS and sensitive species, and there have been a number of changes in the status of these species on the Wayne National Forest (i.e. some species have been added while others have been dropped).

The Wayne National Forest completed on March 12, 2001 a programmatic Biological Assessment (BA) of the potential effects of continued implementation of the Forest's Land and Resource Management Plan on five endangered species and four threatened species. The US Fish and Wildlife Service issued a Biological Opinion (BO) on September 20, 2001.

The Markin Fork and Bluegrass Sales have been suspended while this new information has been considered. This supplemental EA documents the analysis of this new information. This supplemental EA and public comments on it will be considered to determine if the original decision is to remain in effect and unchanged, or if a new decision is needed. The proposed action analyzed remains the same: complete the Markin Fork and Bluegrass Timber sales, and related post-sale treatments including prescribed burning, with minor modifications to implement conservation measures recommended by the US Fish and Wildlife Service for the protection of the Indiana bat.

Background

On November 3, 1994, a Decision Notice and Finding of No Significant Impact (FONSI) was signed by the Ironton District Ranger, Roger P. Wong, for the Bluegrass Ridge Restoration Project Environmental Assessment (EA) (US Forest Service 1994). Approved activities included:

- Thinning and prescribed burning an estimated 200 acres of upland oak/hickory forest, to encourage oak/hickory regeneration, and to create an open oak/hickory forest which would provide suitable habitat for several rare plants.
- Single tree cutting on an estimated 500 acres of mixed hardwood forest, to accelerate development of an all-aged forest. This method mimics the natural creation of canopy gaps caused by individual tree mortality. It can result in the formation of old growth forest conditions faster than would naturally occur.

The activities above were designed to move the Bluegrass Ridge area closer to the Desired Future Condition described in the Wayne National Forest Management Plan (US Forest Service 1988) and in the Bluegrass Opportunity Area Analysis (US Forest Service 1991).

On December 23, 1994, the above Decision was appealed by the Buckeye Forest Council, Heartwood, and Protect Biodiversity in Public Forests (Buckeye 1994). The appeal claimed that the EA did not adequately analyze the project; it did not contain an adequate range of alternatives, site-specific analysis, visual quality analysis, nor a clearly stated need for the project. The Decision was subsequently upheld by the Regional Forester on February 2, 1995 (US Forest Service 1995a).

Two timber sales were prepared to implement the EA (US Forest Service 1995b). Markin Fork was sold August 31, 1995 and Bluegrass on September 29, 1995. Both sales had July 1 to December 1 operating seasons and a termination date of December 1, 1997. The Buckeye Forest Council (BFC) filed a suit against the USDA Forest Service, essentially alleging the EA was inadequate. BFC subsequently agreed to drop the suit if the Forest Service modified the sale areas to conform to the areas proposed for treatment in the alternative selected in the DN/FONSI. A Consent Decree was issued by the US District Court August 1, 1996 based on this agreement (US District Court 1996). The Consent Decree directed the Forest Service to either modify the cutting unit boundaries to match maps in the EA maps, or to supplement the EA to consider effects of treatments of areas not considered in the EA. The Forest Service modified the sale area boundaries. The sale modifications resulted in volume reductions for both sales, from 668 to 608 thousand board feet (MBF) for Markin Fork, and 724 to 596 MBF for Bluegrass. Although the EA approved 200 acres to be thinned and burned, the two sales combined included only 93 acres of such activities. The EA also approved 500 acres of single tree cutting, but the sales totaled only 209 acres.

During November 1996, the Bluegrass timber sale contractor cut Unit #2, totaling 210 MBF. This is the only cutting that has been done on either sale. On July 15, 1997, the Forest Service Washington Office suspended both sales because of the US Circuit Court of Appeals' reversal of the US District Court's decision (which had supported the Forest Service) in the Sierra Club lawsuit against the Wayne National Forest Management Plan (US Forest Service 1997). Even though the lawsuit was not directed specifically at the Bluegrass or Markin Fork sales, the District Court issued a temporary restraining order on September 5, 1997, prohibiting cutting or burning in conjunction with either sale (US Forest Service 1997a).

On July 16, 1997 a federally endangered Indiana bat was netted by a Forest Service contractor over Paddle Creek, about three miles west of Bluegrass Ridge (Eco-Tech, Inc. 1997). This was only the second Indiana bat ever documented on the Wayne National Forest (the first was found July 7, 1997 on the Athens Ranger District). Two sites within or near the sale boundaries were also netted in July 1997, but yielded no Indiana bats. During July and August 1998, eleven more sites netted in or near the sales also produced no Indiana bats, nor did a site in the sale area in June 2000 (Eco-Tech, Inc. 1998; Appalachian Technical Services, Inc. 2000).

On March 12, 1998 the purchaser of the Markin Fork sale was awarded \$8,034.15 as a settlement for his claim to cover lost interest and lost equipment time due to the delay of the sale (US Forest Service 1995b). On December 17, 1998 the purchaser of the Bluegrass sale was awarded \$15,589.94 for a similar claim.

On September 2, 1998 the US Fish and Wildlife Service (USFWS) sent the Wayne National Forest (NF) a letter, summarizing recent informal consultation, stating that the Bluegrass and Markin Fork timber sales should not adversely affect the Indiana bat if cutting were done during the bat hibernation season (September 15 to April 15). Additional reasons the bat should not be impacted, according to the letter, were that the netting in the sale areas produced no Indiana bats, plus the existing mitigation measures protected habitat by leaving all dead trees, hickories, and undisturbed filter strips along streams (US Fish & Wildlife Service 1998).

On August 11, 1998, the temporary restraining order was vacated by the US District Court, in accordance with the May 18, 1998 US Supreme Court decision reversing the US Circuit Court of Appeals' reversal of the District Court's original decision (US Forest Service 1998). However, on August 28, 1998, the Wayne NF Supervisor extended the suspension of both timber sales until formal programmatic consultation could be completed with the USFWS regarding the discovery of the federally endangered Indiana bat on the forest (US Forest Service 1998a).

On March 12, 2001, the Wayne NF completed a Programmatic Biological Assessment (BA), which addressed the potential effects of forest plan implementation on federal threatened and endangered plants and animals, and proposed additional mitigation measures to minimize adverse impacts (US Forest Service 2001). On September 20, 2001, the USFWS issued a Biological Opinion (BO) which addressed impacts on the three species which are likely to occur on the forest: Indiana bat, American burying beetle, and bald eagle (US Fish & Wildlife Service 2001). Terms and Conditions (T&C) were presented which the Wayne NF must apply when implementing projects, in order to protect these species. If the T&C preserving certain types of suitable bat roost trees are applied, tree cutting can proceed throughout the year, not just during the hibernation season.

New Information

Indiana Bat

When the Bluegrass Ridge Restoration Project EA was written, the Indiana bat was not known to occur in Lawrence County, Ohio, or the Wayne NF. The only previous survey on the forest was completed in 1978 to 1980 (Lacki & Bookhout 1981). Sixty-eight mines and caves were

surveyed in the winter for hibernating bats, locating 110 bats of four species. One hundred, sixty-three different riparian sites were netted in the summer, capturing 261 bats of eight species, but no Indiana bats.

The Biological Evaluation (BE) for the EA indicated that the approved activities should not adversely affect the Indiana bat because the tree canopy would generally remain continuous (providing roost trees), plus filter strips along streams would protect habitat, and Indiana bats were unknown from the project area (Flegel 1994).

Four old limestone mines on the Ironton Ranger District about eight miles northwest of Bluegrass Ridge were surveyed for bats in the winter in 1999 and 2000. One of the mines contained approximately 150 hibernating Indiana bats (Andrews 2000). Between 1996 and 2000, a total of 377 nights of netting on the Wayne NF yielded 1743 bats of eight species, including 16 Indiana bats (Andrews 2000; Eco-Tech, Inc 1997 & 1998; Appalachian Technical Services, Inc 1999 & 2000). Five male Indiana bats with radio transmitters attached were relocated on 29 days in 14 different roost trees of seven species: American elm, shagbark hickory, pignut hickory, red maple, sugar maple, black oak and white oak (Schultes & Elliott 2002). Elm was used the most: six different trees on 15 of the 29 days. All of the trees were dead, and averaged 20 feet taller than the other trees in the stand. The bats switched roost trees every two to three days, on average.

During the netting described above, in July 1997 one site was netted within the Bluegrass and Markin Fork Timber Sale area boundaries, and one just outside (on two different nights). In July and August 1998, ten sites were netted on 13 nights within the sale area, and one just outside. In June 2000, one site in the sale area was netted. No Indiana bats were captured during any of this netting. The concentrated netting in 1998 was done at an intensity agreed upon with the USFWS state field office in Reynoldsburg, Ohio, to make a reasonable effort to determine if the Indiana bat was present (US Fish & Wildlife Service 1998).

As stated in the Background portion of this report, in September 1998 the USFWS sent a letter to the Wayne NF stating that the Bluegrass and Markin Fork sales should not adversely affect the Indiana bat if cutting were confined to the bat hibernation season. The bat should also not be impacted because netting in the sale areas found no Indiana bats, and mitigation measures required leaving all dead trees, hickories, and filter strips along streams.

However, the Wayne NF Forest Supervisor extended the suspension of both timber sales until formal programmatic consultation with the USFWS was completed regarding the Indiana bat. Thus, the Wayne NF prepared a BA in March 2001 to address the effects of continued implementation of the Land and Resource Management Plan on federal threatened and endangered species. In September 2001, the USFWS issued a BO addressing impacts on the Indiana bat, American burying beetle, and bald eagle. The BO establishes terms and conditions which must be met in project implementation in order to minimize adverse impacts on the Indiana bat, bald eagle, and American burying beetle. Since no habitat for the eagle is available on Bluegrass Ridge, and the burying beetle is only known to occur near the Athens Ranger District, only potential effects on the Indiana bat are considered in this supplemental EA.

Interdisciplinary Review

Interdisciplinary (ID) review of the Bluegrass Ridge Restoration Project EA began on October 1, 2001, with a meeting including the Wayne NF silviculturist, the Ironton District wildlife biologist, the Ironton District Ranger and the acting Athens District Ranger. The decision was made to establish an ID team to review the EA and new information. The ID team was officially chartered in a November 27, 2001 letter from Ironton District Ranger Mike Baines (US Forest Service 2001a). The ID team consisted of the Ironton District wildlife biologist as leader, the Wayne NF silviculturist, and the Forest botanist/ecologist.

On November 5, 2001, the ID team, Ironton District Ranger, Forest Planner, and the Forest Natural Resources Group Leader met. The EA and BEs were reviewed and the determination made that both the animal and plant BEs needed to be updated.

On November 15, 2001, ten basal area sample plots were taken on each of the two timber sales (Bluegrass and Markin Fork). As summarized below in the Effects of Implementation of the BO Terms and Conditions portion of this report, data from the plots indicated that all of the Terms and Conditions in the BO to protect the Indiana bat could be met by deducting potential roost trees from the sales. On December 5, 2001, the ID team met to continue reviewing the new information.

An updated animal BE was completed on February 26, 2002 and the plant BE on March 18, 2002. Both BEs concluded that the Bluegrass Ridge Restoration Project should not jeopardize the continued existence of any Federal Threatened or Endangered Species, provided the BO Terms and Conditions for protection of the Indiana bat were implemented, and the skid/haul roads and log landings were surveyed for rare plants prior to ground disturbance. Both BEs also concluded that the Project would not contribute to the loss of viability or cause to move toward federal listing any Regional Sensitive Species, provided the BO Terms and Conditions for protection of the Indiana bat were implemented, and the skid/haul roads and log landings were surveyed for rare plants prior to ground disturbance.

Effects of Implementation of the Terms and Conditions of the BO

The original marking guidelines for the sales directed that the average basal area remaining after cutting should be 70 to 80 square feet per acre (US Forest Service 1995c). The emphasis was on removing poor quality (badly formed, diseased, injured) or short-lived trees, such as black or scarlet oak, not expected to live until the next stand entry. All hickories, den trees, and dead trees were to be left. The density of remaining trees would be higher in some areas and lower in others (such as when necessary to remove a clump of declining scarlet oak).

The BO directs that hardwood timber harvests should leave at least a 60% canopy cover whenever possible. No dead trees over six inches dbh (diameter at breast height) are to be cut unless a safety hazard. Shagbark and shellbark hickory over six inches dbh, and all trees over six inches dbh that are hollow, have major splits or broken tops are to be cut only during the bat hibernation season, unless a safety hazard. At least 12 trees per acre over six inches dbh with large areas of loose bark are to be left, unless a safety hazard. Also, at least three of the largest

trees per acre over 20 inches dbh should be left, of the “preferred species” listed in the BO. An additional six “preferred” trees per acre over 11 inches dbh must also be left. If the 20 inch trees are unavailable, a total of 16 of the largest “preferred” trees must be left per acre. Per acre requirements apply to the entire stand average.

In November, 2001, Wayne NF employees took 10 sample basal area plots in Cutting Unit #1 on the Bluegrass Timber Sale, and 10 plots also in Unit #1 of the Markin Fork Sale. The purpose of the sampling was to determine to what extent implementation of the BO terms and conditions would alter the sales. Following is a summary of the findings (Perry 2001). The entries under Bluegrass and Markin Fork represent what would remain in the stand after harvesting the timber and after deducting from the sale any trees which must be left to provide Indiana bat roosting habitat (i.e. shagbark and shellbark hickory over six inches dbh, all trees over six inches dbh that are hollow, have major splits or broken tops, and any trees over six inches dbh which have died since originally being marked to be cut).

Table 1

Item	BO Requirement	Bluegrass	Markin Fork
Canopy cover	60%	82% stocking	79% stocking
Trees/acre > 6” dbh with loose bark	12	1.8*	0**
Preferred trees/acre > 20” dbh	3	3.3	3.8
Preferred trees/acre >11” dbh & <20” dbh	6	36.7	5.0*
Dead trees/acre > 6” dbh	All	13.6	4.2
Shaggy hickory/acre > 6” dbh	All***	0**	2.6
Hollow, split, broken trees/acre > 6” dbh	All***	1.8	0.5

* None marked to be cut

** None found in sample plots

*** Can cut only in hibernation season

Percent canopy cover is not equivalent to percent stocking, but they are reasonably comparable. In a study by Ohio University of canopy cover remaining in Bluegrass sale Unit #2 the summer after it was cut, the average was 84%, with a minimum of 74% (McCarthy 1997). Since the other units were all marked with similar guidelines, the assumption can be made that at least 60% canopy cover would be left. Note: taking sample plots revealed that while the original marking guidelines called for leaving 70 to 80 basal area, Bluegrass was actually marked only to 105, and Markin Fork to 99. In other words, more trees could have been marked and still been within the guidelines.

Only two trees with large areas of loose bark (both white oaks on the Bluegrass sale) were found in the sample plots (equal to 1.8 trees per acre). Neither was marked to be cut. 3.7 preferred species trees per acre over 20 inches dbh were found on the Bluegrass sale, and 5.4 on Markin

Fork. After cutting, 3.3 would be left on Bluegrass and 3.8 on Markin Fork, above the three required by the BO. The only preferred species over 20 inches dbh found in the sample plots were red oak, white oak and white ash. Other, smaller, preferred species trees also included shagbark hickory and shellbark hickory. 45.6 preferred species trees per acre between 11 inches and 20 inches dbh were found on the Bluegrass sale and 5.0 on Markin Fork (none of the latter were marked to be cut). After cutting, 36.7 would be left on Bluegrass and 5.0 on Markin Fork. The BO requirements are not met on either sale for trees with loose bark or on Markin Fork for the smaller preferred trees, but if the trees are not already present they cannot be created, and none were marked for cutting on the sample plots. The large number of 11 to 20 inch trees on Bluegrass is probably due to the southern aspect of the sample plot, which typically results in a larger number of smaller trees. Both sales are a mix of south and north aspects.

No dead trees were originally marked to be cut in the sales, but 1.3 marked trees per acre have since died on the Bluegrass sale and 1.4 on Markin Fork, according to the sample plots, and would need to be deducted from the sales. Both marked and unmarked dead trees total 13.6 on Bluegrass and 4.2 on Markin Fork. The larger number for Bluegrass is due to a number of small dead trees (eight inches dbh). No hickories were marked to be cut either. No shagbark or shellbark hickories were found in the sample plots on the Bluegrass sale; 2.6 per acre were found on Markin Fork. Two trees were found that were hollow, and two with broken tops. No trees with major splits were found. One of the trees with a broken top (on Bluegrass, equal to 0.6 trees per acre) was marked to be cut, and would need to be deducted from the sale.

In March 2002, Wayne NF employees completely remarked both the Bluegrass and Markin Fork timber sales, applying the BO requirements (Forest Service 2002b). A total of 102 trees which could provide Indiana bat roosting habitat were deducted from the Bluegrass sale, and 187 trees were deducted from the Markin Fork sale. Approximately 90% of these trees were deducted because they were dead; the remainder were hollow, had major splits, broken tops, or large areas of loose bark. Deducting the trees resulted in a 3% volume reduction for Bluegrass, from 596 to 580 mbf, and a 5% volume reduction for Markin Fork, from 608 to 578 mbf. This volume reduction is not likely to be of concern to the timber sale purchasers (they will not have to pay for the volume deducted). They have both submitted claims and received compensation for past delays of the sales. Additional claims for lost time, or for sale cancellation should that occur, are possible.

In terms of environmental effects, implementation of the Terms and Conditions of the BO to the Bluegrass and Markin Fork Timber Sales would not substantially alter the ecological consequences of the approved activities. Approximately 90% of the trees that would need to be deducted from the sales to protect the Indiana bat would be deducted because they have died since originally being marked to be cut. The remaining trees would be deducted because they are hollow, have broken tops, major splits or large areas of loose bark. Only about 10% of the trees that would need to be deducted from the sales because they provide Indiana bat roosting habitat would still be alive and thus working against the purpose of the project. As stated earlier, neither sale was marked to the target basal area of 70 to 80 square feet per acre. One alternative would be to mark more trees at this time, in order to achieve the original purpose of the project. Another possibility would be to allow cutting only during the hibernation season. The live trees

with bat roosting habitat could then be cut, but dead trees would still have to be deducted from the sale, unless they need to be cut to avoid undue safety hazards for the loggers.

Biological Evaluations

Both the animal and plant BEs have been updated (Flegel 2002; Larson 2002). As stated in the New Information portion of this report, the original BE (1994) indicated that the federally endangered Indiana bat was unknown from Lawrence County and the project area. Extensive netting, plus some mine surveys, between 1996 and 2000, has confirmed the bat in Lawrence County, although not within the sale area boundaries. It has been found within three miles of Bluegrass Ridge, as well as at several other locations across the Wayne NF. Since the USFWS now considers the presence of the Indiana bat a possibility in every county in Ohio, the species must be addressed during NEPA for all projects on the forest. In March 2001 the Wayne NF completed a BA addressing the effects of the forest plan on federally listed species. In September 2001 the USFWS issued a BO, which included Terms and Conditions to protect the Indiana bat. The BO projects that the continued existence of the Indiana bat would not be jeopardized, if the BO's Terms and Conditions are applied to management actions like the Bluegrass Ridge Restoration Project.

As stated in the Effects of Implementation of the Terms and Conditions of the BO portion of this report, applying the Terms and Conditions to the Bluegrass and Markin Fork Timber Sales would be a relatively simple procedure, involving deducting trees which provide Indiana bat roosting habitat. The result would be an approximately 3-5% reduction in the volume of the sales. Since about 90% of the trees to be deducted are already dead, it would not change the purpose of the project as described in the original EA, which is to create open oak/hickory forest and natural canopy gaps.

In addition to the discovery of the Indiana bat on the Ironton Ranger District, new information has also become available on several other animal species, which were addressed in the original BE. A bald eagle (now a federally listed threatened species) was sighted in 2001 at Lake Vesuvius, three miles west of Bluegrass Ridge. The federally listed endangered American burying beetle was reintroduced near the Athens Ranger District in 1998. Regional Forester Sensitive Species: the river otter has been documented now in Symmes Creek; research and surveys have been conducted which indicate that prescribed fire and uneven-aged timber cutting does not adversely affect cerulean warbler populations (Artman 2002); the timber rattlesnake has been confirmed twice in recent years on the Ironton Ranger District, approximately ten miles north of Bluegrass Ridge; the lake chubsucker is known from Black Fork Creek, a tributary in the headwaters of Symmes Creek. Despite this new information, the final determination of the BE does not change for any of these species, i.e. implementation of the Bluegrass Ridge Restoration Project would not jeopardize the continued existence of any federally listing species, nor contribute to the loss of viability or move toward federal listing any Regional Sensitive Species. Also, additional mitigation measures are not needed to protect these species.

Four animals which were not addressed in the original BE were included in the updated BE: the evening bat and three mussels, the fanshell, round hickorynut and lilliput. The fanshell is a

federal endangered species which was not known to occur near the Wayne NF at the time. The others had been added to the Wayne's Regional Sensitive Species list in 2000.

Evening bats usually roost in attics, but have been found in tree cavities and under loose bark. The same T&C which protect the Indiana bat would also protect the evening bat. Thus, the Bluegrass Ridge Restoration Project should not contribute to the loss of viability of the evening bat or cause the bat to move toward federal listing.

The fanshell should not be affected by the project since no suitable habitat (i.e. large rivers) is available near Bluegrass Ridge and the nearest known location is 50 miles downstream, in the Ohio River. Both the round hickorynut and the lilliput are known from the Symmes Creek watershed (into which Bluegrass Ridge drains), but neither species should be adversely affected by the Bluegrass Ridge Restoration Project because the standard erosion control measures included in the EA and the timber sale contracts would minimize sedimentation into nearby streams.

The cerulean warbler is a Regional Forester Sensitive Species of considerable interest. Monitoring of birds in the Bluegrass Ridge area include spring territory-mapping surveys conducted in 1995, 1996, 1997 and 1999 in a fire study area on Bluegrass Ridge adjacent to the timber sales (Artman 2002 and 2002a). The study, done by the US Forest Service Forestry Sciences Lab in Delaware, Ohio, centered on the effects of prescribed fire on oak regeneration, and was conducted in oak-hickory forest similar to that found in the timber sale units to be thinned and burned. The surveys found an average of about 1.2 pairs of cerulean warblers per 100 acres, and analysis indicated that burning had no effect on cerulean warbler populations. Presence/absence surveys were conducted in old clearcuts and grassy/brushy areas within two miles of Bluegrass Ridge in the spring of 1995 and 2000; cerulean warblers, ruffed grouse, white-eyed vireos, common yellowthroats and field sparrows were the bird MIS found (US Forest Service 1995; Liston 2000). Monitoring for cerulean warblers and other breeding birds was conducted on the Bluegrass and Markin Fork Timber Sales in May and June, 2002 (Artman 2002). This survey detected only one cerulean warbler breeding pair within the sale areas. This pair was located on a control plot, not in a unit marked for harvest.

Bird monitoring has been conducted across the Ironton Ranger District (not just Bluegrass Ridge) in recent years. One hundred twenty point-count surveys were run twice each spring in mature forest habitat from 1992 to 1994. Presence/absence surveys for cerulean warblers conducted in the spring of 1997 and 1998 in uncut areas and in recent single-tree and group cuts in the Pine Creek South area (approximately 10 miles northwest of Bluegrass Ridge) found similar numbers of warblers in all the areas, suggesting that even-aged timber management does not significantly affect the bird (Flegel 1998).

Breeding Bird Survey data collected from 1966 to 1994 throughout Ohio can be used to estimate population trends (Earnst and Andres 1996). The cerulean warbler was found to be stable in numbers.

The cerulean warbler could to be impacted by the Bluegrass Ridge Restoration Project, since all of the timber harvest and prescribed fire activities will occur in mature hardwoods. Individual

cerulean warblers could be harmed, but according to the BE, the species should not lose viability or move toward federal listing because large acreages of suitable undisturbed habitat will remain nearby, (aforementioned) studies indicate that burning and single-tree cutting do not affect the bird, and only a very small number of individual birds are likely to be harmed.

No federally listed plants were addressed in the original BE, because the USFWS did not list them as likely to occur in Lawrence County (Boyle 1994). The running buffalo clover was found in Lawrence County in 1994, approximately 15 miles south of Bluegrass Ridge. The small whorled pogonia and Virginia spirea are known from neighboring Scioto County to the west. The northern wild monkshood is only known from near the Athens Ranger District. According to the BA, suitable habitat exists for all four plants on the Ironton Ranger District, therefore the plants could possibly be present. However, after reviewing the Bluegrass Ridge Restoration Project again in 1998, the USFWS determined that “the Bluegrass and Markin Fork timber sales will not adversely affect Federally listed species.” Therefore, no federally listed plants were addressed further in the updated BE.

Four plants which were not addressed in the original BE were included in the updated BE because they were added to the Wayne’s Regional Sensitive Species in 2000: juniper sedge (*Carex juniperorum*), Philadelphia panicgrass (*Panicum philadelphicum*), blue scorpionweed (*Phacelia ranunculacea*) and pigeon grape (*Vitis cinerea*). Also, new information became available on the striped gentian when two populations were discovered within approximately one half mile of Bluegrass Ridge (one in a small oak barren and another in a research burn plot). The juniper sedge is known from within approximately one-quarter mile of Bluegrass Ridge, in a ridgetop oak forest. Philadelphia panicgrass is known from within one mile of Bluegrass Ridge, in a small opening in oak forest. The blue scorpionweed is known from about six miles north of Bluegrass Ridge, along a creek and on a dry brushy hillside. Pigeon grape is known from Lawrence County, in moist bottomlands, but not near Bluegrass Ridge.

At least some suitable habitat is available for all five of these plant species within the Bluegrass Ridge area. All five species typically grow in open habitats and/or open woods, and thus habitat for the species would be improved by timber harvest and prescribed fire activities such as those included in the Bluegrass Ridge Restoration Project. Individual plants, however, could be harmed during construction of skid/haul roads and log landings. Therefore, roads and landings will be surveyed by a botanist prior to ground disturbance, and if any plants are found, appropriate mitigation measures will be applied. Thus, the Bluegrass Ridge Restoration Project should not contribute to the loss of viability of any of these plants or cause them to move toward federal listing.

Summary

In 1994, a Decision Notice and FONSI was signed by the Ironton District Ranger for the Bluegrass Ridge Restoration Project EA. Two timber sales (Bluegrass and Markin Fork), comprised of eight cutting units total, were sold in 1995 to implement the EA. The two sales combined included 93 acres of thinning and burning, and 209 acres of single tree cutting. One cutting unit was cut in 1996.

In 1997, due to an appeal of the Wayne NF plan, the sales were suspended by the Forest Service Washington Office and a restraining order was issued by the US District Court, prohibiting cutting or burning on either sale. Also in 1997, the federally endangered Indiana bat was documented for the first time on the Wayne NF. Thus, when the restraining order was lifted in 1998, the Wayne NF extended the suspension of the sales until formal consultation could be completed with the USFWS regarding the bat.

In March 2001, the Wayne NF completed a programmatic BA which addressed the effects of forest plan implementation on federally listed species. In response, in September 2001 the USFWS issued a BO, which addressed impacts of the plan on the three species likely to occur on the Wayne NF: Indiana bat, American burying beetle and bald eagle. The BO contained Terms and Conditions, which the Wayne NF must apply when implementing projects, in order to avoid adversely impacting these species. Since no eagle habitat is available on Bluegrass Ridge, and the burying beetle is known only from the Athens Ranger District, only the Indiana bat is likely to be affected by the Bluegrass Ridge Restoration Project.

The Terms and Conditions in the BO direct that hardwood timber harvests should leave at least a 60% canopy cover when possible, and also certain types of suitable bat roost trees such as, for example, dead or hollow trees, shagbark hickories, and trees with major splits or broken tops. Also, specific numbers of trees with loose bark or large trees of certain species are to be left uncut. In November 2001, sample plots revealed that all the Terms and Conditions could be met on the Bluegrass and Markin Fork Timber Sales by deducting from the sales any trees with bat roost characteristics. In March 2002, both sales were completely remarked, applying the BO requirements. Deducting the roost trees resulted in a 3-5% reduction in timber volume. Approximately 90% of the trees were deducted because they had died since being originally marked to be cut.

In addition to discovery of the Indiana bat on the Wayne NF, new information has also become available on several other rare animal and plant species. The updated BEs indicate, however, that none of these species should be negatively impacted by the Bluegrass Ridge Restoration Project and that additional mitigation measures are not needed (unless rare plants are found in skid/haul road and log landing sites). Habitat for these species will not be substantially altered by the project because only about 20% of the trees will be harvested. Although the overstory canopy will be made more open in areas harvested, these areas will continue to provide mature hardwood forest habitat.

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