

1. Proposed Treatment

We propose restoring the ecological landscape, with all of its components, of approximately 340,000 acres in western Kentucky and Tennessee that is inclusive of Land Between The Lakes National Recreation area (LBL). Terrestrially, this means, restoring the canebrakes, riparian areas, warm season grasslands, oak-grasslands, oak-hickory barrens, savannahs and woodlands, oak-hickory forests, shortleaf pine forests, and mesophytic forests mosaic that once moved within this landscape. Aquatic restoration would include wetland restoration/mitigation, addressing historic stream channelization, head cutting, aquatic organism passage and restoring historical flows to the channels by the creation of grasslands, barrens, savannahs and woodlands on a landscape scale. By restoring all of LBL, within a relatively short period of time, we can physically demonstrate to the public what ecological restoration and maintenance of a landscape looks like and what it costs. This also fulfills the LBL's mission to optimize environmental education while serving as a national demonstration area. There is similar work in all these areas going on in the surrounding area as well, thus adding to synergy and creating greater cumulative effects to help realize landscape scale goals.

The Vision and Desired Condition sections of the LBL Area Plan are guided by extensive and continuous public involvement wanting a landscape scale focus on restoration of pre-European settlement ecosystems. This is elaborated upon in the goals and objectives of the Plan, which calls for extensive native warm season grasses, oak-grassland, cane and shortleaf pine restoration. During Plan development, the use of the Central Hardwoods Joint Venture (CHJV) landscape strategy provides a foundation for this landscape restoration. The partners within the CHJV are strong supporters of these strategies as they focus on species of concern within this ecoregion, and correlate closely with the efforts being employed on other federal, state and conservation agency lands. The Collaborative Forest Landscape Restoration Program (CFLRP) offers a unique opportunity to move ahead with this critical work even more quickly and effectively.

When the first Native Americans roamed the area, most of western Kentucky and Tennessee were considered oak-hickory barrens. The oak and hickory were widely spaced in woodland fashion, with a fine grass understory that was maintained periodically by fire. This is the landscape that the first European explorers encounter as described in some of the first maps of the area. The area has a rich history.

An example of the role that LBL played in history is the area's pivotal role in the War Between the States. Fort Henry, and the subsequent retreat trails to Fort Donelson, are wholly within the boundaries of LBL and marked the beginning of the Vicksburg Campaign. In fact, 2012 is the 150th anniversary of those events within this area. In this portion of LBL, we propose restoring shortleaf pine, the historic landscape, which will clearly illustrate what that part of the area looked like 150+ years ago. This historical restoration would be a starting point for a complete ecological landscape restoration of LBL. We can use this unique opportunity to restore landscape context for the historical civil war events that

happened at “between the rivers.” This unique opportunity will provide both a historical and environmental education perspective for the many visitors who are coming to the area.

The Landscape to be considered is approximately 340,000 acres with 172,000 acres being National Forest System lands (NFS). NFS lands are a contiguous ownership with the mixed private and other ownership surrounding NFS lands. The treatments planned for the other federal, state and private lands within the project area polygon, but outside of LBL, have similar desired conditions and planned activities. Our goal is, in collaboration with our partners, to restore the historical and pre-European ecological landscape and waterscapes. Treatment objectives are to restore the vegetative landscape mosaic and the aquatic ecosystems of Land Between The Lakes National Recreation Area using management practices that emulate natural disturbance regimes. For example, using prescribed fire and fire use on the landscape to emulate the disturbance effects of natural wild fire disturbance in the ecosystem. By managing beaver activities effect by using water levelers to limit the amount of water to be impounded also mimics the natural disturbance effects of flooding in the aquatic systems. Such techniques allow us to put these disturbances back into these systems. The desired outcomes are to develop a mosaic of forests, woodlands, savannahs, barrens, grasslands and wetlands that transition into properly functioning riparian areas, with streams that provide for aquatic organism passage and have restored flow regimes.

Treatment objectives include environmental education opportunities for the visiting public (2 million visitors each year at LBL) about the role of natural disturbance processes at a landscape scale. The public will observe the restoration and maintenance of the pre-European landscape that provides a diversity of wildlife habitats, produces timber and biomass, minimizes non-native invasive species, enhances Forest and watershed health, and provides a variety of recreational opportunities. Our desired outcome is a vegetative mosaic that will be allowed to shift across the landscape through time while providing goods and services to the American public.

Strategically we have scattered land treatments in the north and south of LBL. We will use additional land treatments in these areas to block up our existing treatments. Once this is done, we will work to connect these large blocks. LBL has 42,000 acres of core areas (Man and the Biosphere sites). These core areas are essentially old growth areas with very limited active management and will provide much of the mesophytic forest component of the Landscape mosaic. Most of the remaining 130,000 acres will be treated over time to provide the other components of the mosaic.

Our proposed restoration activities are congruent with our Area Plan (see table 1).

Table 1.

Restoration Activities by Program Area						
	Timber		Biomass	Fire	Wildlife	Watershed
Year	CCF	Acres	CCF	Acres	Acres	Acres
2010	4000	600	0	11,000	7000	20
2011	5000	800	1000	15,000	7500	20
2012	6000	1000	8000	15,000	8500	50
2013	8000	1300	8000	15,000	8500	50
2014	8000	1000	8000	15,000	8500	50
2015	8000	1000	8000	15,000	8500	50
2016	8000	1000	8000	15,000	8500	50
2017	8000	1000	8000+?	15,000	8500	50
2018	8000	1000	8000+?	15,000	8500	50
2019	8000	1000	8000+?	15,000	8500	50

The existing NEPA decisions include Prior Creek EA, Open Lands EA, 5 Burns EA, and numerous CEs. We currently have a total of 37,000 acres in our NEPA pipeline. We are currently working on the Demumbers and Devil’s Backbone EAs with expected decisions in December 2010. Future EAs will address the remaining six high priority compartments identified in the 2009 Ice Storm Assessment and CEs will be used as appropriate.

LBL’s Forest Plan designated two oak-grassland areas (8600 acres) and restoration has begun on these areas. We recently completed a 3500 acre under-burn for shortleaf pine restoration of Devils Backbone and an 840 acre burn for restoration purposes.

Treatments that will be used to restore the landscape include, but are not limited to, prescribed fire, fire use, timber harvest, commercial and non-commercial thinning, utilization of smaller diameter wood for biomass, mechanical methods, replacing road stream crossings, use of manual, chemical, and bio-control methods for invasive species and managing water levels in beaver ponds. Stream channel restoration will occur to arrest ongoing head cuts and to address the dewatering of some riparian areas. Large woody debris will be added to our streams where needed. Current management of the forest is designed to meet wildlife habitat needs, enhance visual quality of the landscape, promote use of environmentally responsible management practices, demonstrate sustainable forest management compatible with other uses, and support research methods and techniques in ecosystem management. Open lands management provides early plant succession to meet wildlife habitat needs, enhance visual quality and wildlife viewing opportunities, provide supplemental wildlife food and cover, and demonstrate ecological restoration measures. Approximately 10,650 acres of open lands are managed for these objectives.

We will use every tool available to get the work done. We currently use stewardship contracts and agreements, normal timber sale contracts (3T and 6T), along with Challenge Cost Share agreements and regular contracting methods. We also use Job Corps, Youth Conservation Corps, apprentices, interns, regular workforce, volunteers and partners to accomplish our work.

Treatments match closely with activities of our partners including The Nature Conservancy, National Wild Turkey Federation, Fort Donelson National Battlefield, United States Fish and Wildlife Service, Kentucky Department of Fish and Wildlife Resources, Tennessee Wildlife Resources Agency and Central Hardwoods Joint Venture.

Forest monitoring will continue in accordance with the Forest Plan and in conjunction with our partners. Monitoring frequency and intensity varies by species and treatment. Here are a few examples of our monitoring activities. Austin Peay currently monitors for bats on LBL. There are different protocols for annual monitoring and the five year monitoring. The Nature Conservancy has vegetation monitoring transects in our Oak Grassland restoration to monitor changes in the understory vegetation. The United States Fish and Wildlife Service and Kentucky Department of Fish and Wildlife Resources help with the monitoring of the endangered Price's Potato Bean. We have an annual bird survey that monitors changes in bird species and abundance and is tied into a regional modeling protocol. The monitoring results will help determine the success of the various treatments, as well as, accomplishment reports and responses from our stakeholders.

2. Ecological Context

LBL is part of the Western Highland Rim subsection of the Interior Low Plateau Physiographic Province and the Coastal Plain Physiographic Province. Most of the area consists of highly dissected uplands. Approximately 92 percent of the LBL is forested, with mostly second and third-growth hardwoods comprised mainly of oak species. Approximately 8% of the LBL is in open land cover types. Oak forest types includes white oak, northern and southern red oak, post oak, blackjack oak, chestnut oak, black oak, and pignut hickory. Mesophytic forest species on the LBL include sugar maple, American beech, mockernut hickory, pignut hickory, sweet gum, yellow poplar and elm. The oak forest cover type dominates 82% of the NRA's landscape, with mesophytic/riparian forests comprising 7%, and pine forest (mostly planted) on the remaining 3%.

In general, this area of the Western Highlands Rim is suffering from effects of nearly a century of fire exclusion. On the LBL, fire exclusion began approximately 60 years ago and aboriginal use of fire has been documented as early as 1568.

The result of fire exclusion is succession and densification of the forest canopy. Closed canopy forests on these dry site types is very rarely suitable habitat for forest interior species and lacks herbaceous ground cover and scattered shrub components desirable to a host of declining open forest and woodland/savanna species. The forest on LBL is a fire-mediated ecosystem suffering from intentional fire exclusion. Oak woodlands and savannas have declined by 99% and are one of the most imperiled communities in North America.

Across the LBL regeneration of oak species is failing due to forest densification, as a result of fire exclusion, which has allowed oak forests to begin to succeed to more mesophytic forest types. The rich herbaceous layers that were historically a part of this community, and which provided habitat for many species of viability concern, are also suppressed.

Prior to fire exclusion, oak forests existed in a constantly migrating pattern of savanna, woodland, open-oak forest, and oak forest in both a spatial and temporal sense – a landscape mosaic. Fire affects Western Highlands Rim ecosystems primarily by having a thinning effect on the forest canopy and mid-story, as well as removing accumulated duff. Prescribed fires with mechanical treatments are needed to restore the vegetative landscape. The densification has also affected the aquatic systems. The increased forest density results in an increased evapo-transpiration rate across the landscape. Reducing the forest density, where appropriate, results in less water transpired with more water infiltrating to the groundwater, resulting in increase flow duration in the streams of LBL.

By restoring the landscape mosaic and the aquatic systems we provide a diversity of ecosystems which are better able to adapt to climate change – ecological adaptation.

There are an estimated 1,300 plant species and 355 animal species supported by LBL's landscape. Of these species, the 119 are endangered, threatened, or sensitive species. Currently, LBL cooperates with

the USFWS to manage for four federally listed species: the bald eagle, the Interior least tern, gray bat, Indiana bat, and Price's potato bean.

Seven locally-rare communities are identified on LBL. Rare communities contribute significantly to plant and animal diversity. They occur infrequently on the local landscape, can provide key habitat attributes for threatened, endangered, and sensitive species, are generally characterized by discrete boundaries, and are small in area. The rare communities on LBL include calcareous cliffs and talus, canebrakes, springs and seeps, rocky shores and bars, lakeshores and mudflats, Virginia pine, and mountain-laurel.

Twenty-one species of fish inhabit LBL's interior lakes, while more than 75 species are found in streams. Invertebrate studies have found eight species of gastropods and numerous populations of macro-invertebrates. Thirty-one species of fish were captured in the 11 perennial streams of LBL during a recent survey.

Demand species are associated with recreational wildlife pursuits such as hunting, fishing, and viewing. Because these activities are generally limited or restricted on private lands, LBL offers a unique opportunity within the region for those wishing to participate in these activities. Some demand species of interest at LBL are the bald eagle, Eastern bluebird, white-tailed deer, eastern wild turkey, gray squirrel, and northern bobwhite quail.

We expect the landscape restoration will improve the habitat for our Threatened and Endangered species as well as many game species, and allow for visibility for wildlife viewing of others.

The restoration activities at a landscape scale are expected to improve water quantity/flow in many of the streams by reducing tree density and therefore reducing evapo-transpiration. Addressing head cutting and replacing road stream crossings will reduce both channel erosion and sediment delivery to the waterscape of LBL. The treatments themselves, with the use of Best Management Practices are not likely to adversely affect water quality. Of the 80 watersheds across LBL, 72 are in excellent watershed condition. Seven watersheds are average and one is below average. We will maintain the excellent watersheds and work on improving the average and below average watersheds. We will emphasize river cane restoration in the riparian areas. We will rehabilitate, close, relocate, gate or decommission improperly functioning roads and stream crossings.

Every project in this landscape restoration effort will address the control of non-native invasive species. The result of the restoration should produce a landscape in which native species can better compete with the non-native invasive species (NNIS).

Invasive plant species may be dispersed by natural agents such as wind, water, and wildlife, and intentionally or unintentionally by humans. Invasive species have been present on LBL since before it became a National Recreation Area (NRA). Open land habitat diversity on the NRA has been, and continues to be, adversely affected by invasive species and productivity and recreational benefits of open lands have been degraded with the invasion of undesirable vegetation. Invasive species are less problematic in forested areas of the NRA; however, forest-adapted species do occur.

Invasive species known to occur on LBL areas include Sericea lespedeza (*Lespedeza cuneata*), loblolly pine (*Pinus taeda*), Johnson grass (*Sorghum halepense*), tree of heaven (*Ailanthus altissima*), crab grass (*Digitaria* spp.), autumn olive (*Eleagnus umbellata*), multiflora rose (*Rosa multiflora*), Japanese stiltgrass (*Microstegium vimineum*), giant foxtail (*Setaria faberi*), Chinese yam (*Dioscorea oppositifolia*), purple morning glory (*Ipomoea purpurea*), and Chinese privet (*Ligustrum sinense*). Reduction of NNIS will allow native plants more opportunity to compete and thrive in both open lands and forested areas.

We use Integrated Pest Management (IPM) approaches to maintain pest populations below nuisance levels. Nuisance levels are determined from analysis of pest populations and/or visitor and employee complaints. We apply best available science to minimize the introduction of non-native invasive plant and animal species. For example, all mechanical treatment activities have a contract clause requiring the cleaning of equipment prior to coming onto LBL. Our Environmental Education efforts promote understanding and preventing of introduction of non-native invasive species into new areas.

Fire will reduce the presence of non-native invasive species in the open lands portion of each project area, making their populations more easily controlled by other management actions already approved in the project areas. Other management actions include mowing, tilling, and use of herbicides. Reduction of NNIS, even if by small measures, will allow native plants more opportunity to compete and thrive.

Insect and disease concerns will be addressed by thinning. Oak-hickory restoration and shortleaf restoration is in progress on stands that were affected by wind and ice damage. Thinning will reduce the availability of unhealthy trees and decrease the likelihood of an insect epidemic on LBL.

A roads analysis is completed for LBL to determine roads to be maintained, decommissioned or rehabilitated. In the Environmental Analysis process we further refine our road and trail systems addressing any need to obliterate, close or relocate existing roads or trails by identifying stream crossings that are delivering sediment, causing an aquatic organism passage problem, or has significantly altered the hydrology of the stream.

3. Collaboration

The groundwork for the work we propose to accomplish over the next ten years has been evolving since the formation of the Central Hardwoods Joint Venture nearly 10 years ago. Since its inception, the focus for this collaborative landscape scale effort has been restoration of disappearing or extirpated habitats that once covered our region of the country. The group exists to advance conservation efforts at a landscape scale by building a sound scientific basis for adaptive management, strengthening the biological foundation upon which planning and evaluation are based, and delivering this work through partnerships. The focal areas for that landscape strategy were described in 2003 in the Concept Plan, and included all the areas (and restorative treatments) that this proposal covers. Over time these strategies have been refined and refocused but they match the restoration work that is proposed. The partnerships to do this work are both long standing and extensive.

The following interests and groups are being represented in this collaborative process:

- Central Hardwoods Joint Venture Management Board
- Northern Bobwhite Conservation Initiative
- Kentucky Department of Fish and Wildlife Resources
- Tennessee Wildlife Resources Agency
- The Nature Conservancy
- US Fish and Wildlife Service
- National Park Service
- Department of Defense – Fort Campbell
- American Bird Conservancy
- Wildlife Management Institute
- Fire Learning Network
- National Wild Turkey Federation
- National Resources Conservation Service

This specific proposal has been under discussion and was recommended for development by the Central Hardwood Joint Venture Management Board last spring, at our April meeting in Arkansas, when we became aware of the Title IV – Forest Landscape Restoration of the 2009 Omnibus Public Lands Management Act. Our most recent meeting was April 28, 2010, at which time the board voted to write a letter of support for this proposal.

The best example of the connection of the partners to this proposal was the supportive science peer review that was done during the Draft Area Plan for LBL in 2004. In addition to tribal consultations, members of the technical committee of the Central Hardwoods joined with other regional experts and members of academia to debate and make recommendations on the desired conditions, goals and objectives and the long range vision of the Area. The group came out strongly in favor of the restoration of native warm season grasses, shortleaf pine, oak grassland/woodlands and river cane, which was included in the final Land and Resource Management Plan. The treatments planned for the other federal, state and private lands within the project area polygon, but outside of LBL, have similar desired conditions and planned activities. All of these interests remain connected today to the goal of restoring

these ecosystems on a broad scale, some of which are now underway, even though their particular areas of interest and expertise vary widely. The same partners are already becoming a cornerstone of the Landscape Conservation Cooperatives initiative which is quickly coming on line in the Southeast and will ultimately enhance our proposal over time.

In just the last three years, this group has collectively funded the research, modeling and monitoring tool development, and data collection, including intensive monitoring within the project area. These models and tools are available for use at this time. The scientific assessment and monitoring tools have been developed by leading experts in their respective fields, bringing the best available science to bear on our management practices while helping articulate needed actions to achieve desired results.

This collaboration is already tied into using the extensive forest bird monitoring protocols that were developed by the group in conjunction with the research arm of the Forest Service. Regional universities have developed others, specifically for the other ecosystems, such as grasslands. All of the partners contributed either funding or in kind services in their development and collection, and in funding both a Science Coordinator and in sponsoring a technical committee that meets annually. Partners have already helped LBL collect data from initial restoration activities and in establishing baseline information for planned work. The collected data will be tracked and used to evaluate results of management actions, refine scientific models, adopt future management practices and publicize conservation delivery accomplishments. A new position is now being established by the Joint Venture to aid in what the management board describes as “bringing the combined programmatic capabilities of all partners to bear in a coordinated fashion to effect landscape change.” The stars are aligned for this project to move forward, not just on the NFS lands, but on the other land ownerships within the Landscape.

4. Wildfire

Wildfire puts the recreating public and their property at risk. During major holiday weekends there are upwards of 60,000 people visiting and/or camping at LBL. In strictly monetary terms, it cost us more than twice as much per acre to suppress wildfires as it does to conduct prescribed burns.

Fire and timber treatments will be major tools in restoring the landscape. After restoration we expect to prescribe burn every 3-5 years to maintain a natural fire regime and the more open components of the landscape. Current fire behavior is atypical as there are huge piles of woody debris on the ground and stacked around LBL as a result of the 2009 ice storm. For example, last fall someone ignited a large slash pile at dusk. We responded, but because of the hazards to our fire fighters we pulled back and contained the fire from the road that night, controlling the other large piles immediately threatened by the fire within the road system and suppressed the fire the next morning in the daylight.

Uncharacteristic wildfires will be suppressed. In a restored landscape normal wildfires may be used as a controlled burn or be suppressed depending on the situation. It is expected that the long term fire management cost would decrease and stabilize to a level required to maintain the natural fire regime, meaning there would be a stable and lower prescribe burn cost from year-to-year after restoration is completed. We would still respond to wildfires within LBL, but we expect suppression cost to decrease as fuel loading decreases.

We work with our local communities outside of LBL to strengthen their fire suppression capabilities and to collaborate with local emergency response units to conduct search and rescue as well as respond to natural disasters.

5. Utilization

Woody biomass extracted from restoration treatment areas would initially be utilized by the two biomass community projects LBL has initiated. The material would be used for a combined heat and power project for the Trigg County Hospital and the Lyon County High School starting sometime between FY2011 and FY2012. Five years after the inception of this biomass utilization project, LBL would evaluate biomass integration into its developing timber management program and new developments in the local forest products industry. Biomass utilization would demonstrate the synchronizing of LBL's timber program expansion, habitat restoration efforts, and the ability to create new partnerships.

The five year time period between FY2012 – FY2016 the estimated volume of biomass being utilized is 8,000 CCF (3,200 tons). This material will likely be in the form of chipped biomass and come from a mix of underutilized material from timber sales, and small diameter material (less than 5.9" dbh). Underutilized material is the woody biomass that makes it to a log landing but not on to a haul truck. The biomass captured would include hollow section, sweeps, and tree top deformities that do not meet contract utilization specifications. Collecting small diameter material concurrent to timber harvesting would provide a better quality restoration effort and a faster response time over a greater treatment area.

Biomass usage in the near future would come in the form of the combined heat and power projects developing in the surrounding counties (Trigg & Lyon). These projects give LBL a great starting point in establishing efficiencies gained between biomass harvesting and restoration efforts. Once these projects are operational new areas will be explored. The next series of biomass utilization efforts could demonstrate the benefits to restoration projects, as well as LBL's most widely known mission: providing recreational and environmental education (EE) opportunities. Understanding private industry biomass demands is a common idea and parallels conventional forest product usage coming from NFS land. This theme has great potential; however, possibilities exist in utilizing biomass directly at LBL National Recreation Area. Possible demonstration projects to consider would be retrofitting or hybridizing one of LBL's large campsites or facilities to utilize woody biomass for energy needs. Restoration areas are strategically placed in general forest areas close to developed recreation sites for the purpose of serving as a "hub" for dispersed recreation and EE opportunities. The reverse of this concept makes biomass utilization feasible because the anticipated haul cost (usually the limiting factor in biomass transport) is kept very low. This is a great example of resource integration at an exceptional level.

Currently, chipped biomass has an approximate value of \$25.00/ton delivered. The initial offset of treatment cost would be gained by reducing the number of acres of non-commercial thinning activities. An oak grassland restoration project that was completed here at LBL before biomass was a viable option prescribed 700 acres of non-commercial thinning. At \$100/acre this means \$70,000 was spent to restore Oak Grassland habitat without any financial return or added utilization benefits. These areas

were identified as possibly being integrated into commercial treatment areas if biomass was an option. Although woody biomass is a low value product, if properly used in combination with commercial timber sales the cost of treatment areas will be reduced if not nullified. Cancellation of cost is not limited to just the restoration area. A reduction in energy cost to county and LBL facilities would result in repeated annual savings for all participating organizations.

6. Investments

The primary federal investments within the landscape will be those of LBL, as we focus our integrated resource management work on this restoration strategy. These funds come from our regular appropriations, the Economic Recovery Act, stewardship contracts and our retained revenue from forest products. Over time, we anticipate other efforts both inside of the LBL part of our landscape area, and on other federal properties, most notably the three USFWS refuges, (Clark's River, Tennessee National and Cross Creeks). USFWS mitigation offset funds will be used to enhance habitat on state and private lands, and in conjunction with efforts with Ft. Campbell. In-kind resources are identified at this time.

Non-federal investments within LBL are largely in-kind services aiding in our data collection, monitoring, and project planning. Outside of LBL, but within the landscape polygon, there will be a series of investments made through restoration work on state and private lands, most notably on wildlife management areas.

Outside of the landscape, there are many other efforts ongoing that will cumulatively add to successful restoration on an even greater landscape scale within the Interior Lowlands Plateau ecoregion. All of the partners listed in the collaboration section of this document are working together in nearby areas with similar goals. The Shawnee NF, though outside our project proposal area, is also engaged in these restoration activities. Added together, the results will be significant. In addition, the Central Hardwoods Joint Venture spends nearly \$400,000 each year investing in research, modeling, geographic information systems, peer review, and technical application science, along with outreach and delivery coordination which leads to enhanced restoration activities within our ecoregion. This project is a part of that strategy and uses that work to inform, direct and adapt our restoration work.

Restoration capacity is increased as adaptive management among all partners is shared and expertise sharpened. Already signs of this exist through the Central Hardwoods Joint Venture activities, where partners are sharing resources and expertise as needed and as work done in one area lends credence and support to work beginning in others. The combined efforts of our partners is also bringing the best available science to the table strengthening our decision making processes and ultimately leading to better decisions.

We fully expect future costs to decline. Several markets that are struggling with "fits and starts" in our program delivery will be much more stable through this proposal. This leads to increased competition and investment in more efficient and effective equipment. The maturation of a biomass industry will provide revenue we currently do not have available, over time, which will then become usable through stewardship contracting as a "goods for service" further reducing the costs for the restoration work we need to undertake. Certainly as our program reaches the third tier, the experience and lessons learned from our ramping up will begin to reduce our costs as well as we build on the momentum of the regional effort and enjoy the support of our partners that see needed work happening on a landscape scale.

We have already proven through the work we did through the Economic Recovery Act that jobs are both created and retained. The logging, transportation, milling and utilization markets all will benefit from our increased timber operations. The development and stabilization of an alternative energy market, using biomass as the fuel source, has incredible potential. The increased level of activity overall will last ten years, as a minimum, with some extending on beyond that as we move to maintenance of the restored systems. Estimating the number of jobs is a bit daunting, given the changes in efficiency we also anticipate, but we feel comfortable in saying, based on what we saw in the ARRA projects, that approximately 40 short and long term jobs would be added through this landscape scale effort.

Training opportunities will be a priority for local private, nonprofit, and/or cooperative entities. Environmental Education opportunities for the general public and our schools will also be emphasized, estimated to reach over 30,000 people each year. Skill training will be provided through the use of Job Corps enrollees along with jobs created for interns, apprentices and trainees.

Small business training and development is already conducted periodically for the surrounding community by LBL, including one scheduled for this fall. The cadre consists of professionals from the Small Business Administration, KY and TN Small Business Centers, regional university professors specializing in business and specific business professionals focused on state of the art technological tools, such as websites, marketing and business acumen.

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7. Funding Estimate

LBL FY 2010 Collaborative Forested Landscape Restoration Fund	
Fiscal Year 2010 Funding Type	Dollars/Value Planned
FY 2010 Funding for Implementation	725,000
FY 2010 Funding for Monitoring	150,000
1. USFS Appropriated Funds	450,000
2. USFS Permanent & Trust Funds	200,000
3. Partnership Funds	
4. Partnership In-Kind Services Value	125,000
5. Estimated Forest Product Value	100,000
6. Other (specify)Biomass	0
FY 2010 Total (total of 1-6 above for matching CFLRP request)	875,000
8 FY 2010 CFLRP request (must be equal to or less than above total)	450,000
Funding off NFS lands associated with proposal in FY 2010 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2010 Funding Type	Dollars Planned
USDI BLM Funds	
USDI (FWS) Funds	\$125,000 for p-burn on private land within polygon
Other Public Funding	
Private Funding	

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LBL FY 2011 Collaborative Forested Landscape Restoration Fund	
Fiscal Year 2011 Funding Type	Dollars/Value Planned
FY 2011 Funding for Implementation	778,000
FY 2011 Funding for Monitoring	150,000
1. USFS Appropriated Funds	450,000
2. USFS Permanent & Trust Funds	200,000
3. Partnership Funds	
4. Partnership In-Kind Services Value	125,000
5. Estimated Forest Product Value	138,000
6. Other (specify)Biomass	15,000
FY 2011 Total (total of 1-6 above for matching CFLRP request)	928,000
8 FY 2011 CFLRP request	450,000
Funding off NFS lands associated with proposal in FY 2011(does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2011 Funding Type	Dollars Planned
USDI BLM Funds	
USDI (FWS) Funds	\$125,000 for p-burn on private land within polygon
Other Public Funding	
Private Funding	

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LBL FY 2012 Collaborative Forested Landscape Restoration Fund	
Fiscal Year 2012 Funding Type	Dollars/Value Planned
FY 2012 Funding for Implementation	800,000
FY 2012 Funding for Monitoring	160,000
I. USFS Appropriated Funds	450,000
2. USFS Permanent & Trust Funds	200,000
3. Partnership Funds	
4. Partnership In-Kind Services Value	125,000
5. Estimated Forest Product Value	165000
6. Other (specify)Biomass	20,000
FY 2012 Total (total of 1-6 above for matching CFLRP request)	960,000
8 FY 2012 CFLRP request (must be equal to or less than above total)	650,000
Funding off NFS lands associated with proposal in FY 2012 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2012 Funding Type	Dollars Planned
USDI BLM Funds	
USDI (FWS) Funds	\$125,000 for p-burn on private land within polygon
Other Public Funding	
Private Funding	

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LBL FY 2013 Collaborative Forested Landscape Restoration Fund	
Fiscal Year 2013 Funding Type	Dollars/Value Planned
FY 2013 Funding for Implementation	800,000
FY 2013 Funding for Monitoring	187,000
1. USFS Appropriated Funds	450,000
2. USFS Permanent & Trust Funds	200,000
3. Partnership Funds	
4. Partnership In-Kind Services Value	125,000
5. Estimated Forest Product Value	192000
6. Other (specify)Biomass	20,000
FY 2013 Total (total of 1-6 above for matching CFLRP request)	987,000
8 FY 2013 CFLRP request (must be equal to or less than above total)	650,000
Funding off NFS lands associated with proposal in FY 2013 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2013 Funding Type	Dollars Planned
USDI BLM Funds	
USDI (FWS) Funds	\$125,000 for p-burn on private land within polygon
Other Public Funding	
Private Funding	

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LBL FY 2014 Collaborative Forested Landscape Restoration Fund	
Fiscal Year 2014 Funding Type	Dollars/Value Planned
FY 2014 Funding for Implementation	800,000
FY 2014 Funding for Monitoring	225,000
1. USFS Appropriated Funds	450,000
2. USFS Permanent & Trust Funds	200,000
3. Partnership Funds	
4. Partnership In-Kind Services Value	125,000
5. Estimated Forest Product Value	220,000
6. Other (specify)Biomass	30,000
FY 2014 Total (total of 1-6 above for matching CFLRP request)	1,025,000
8 FY 2014 CFLRP request (must be equal to or less than above total)	900,000
Funding off NFS lands associated with proposal in FY 2014 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2014 Funding Type	Dollars Planned
USDI BLM Funds	
USDI (FWS) Funds	\$125,000 for p-burn on private land within polygon
Other Public Funding	
Private Funding	

A Landscape Restoration of Land Between The Lakes National
Recreation Area

LBL FY 2015 Collaborative Forested Landscape Restoration Fund	
Fiscal Year 2015 Funding Type	Dollars/Value Planned
FY 2015 Funding for Implementation	800,000
FY 2015 Funding for Monitoring	225,000
1. USFS Appropriated Funds	450,000
2. USFS Permanent & Trust Funds	200,000
3. Partnership Funds	
4. Partnership In-Kind Services Value	125,000
5. Estimated Forest Product Value	220,000
6. Other Biomass	30,000
FY 2015 Total (total of 1-6 above for matching CFLRP request)	1,025,000
8 FY 2015 CFLRP request (must be equal to or less than above total)	900,000
Funding off NFS lands associated with proposal in FY 2015 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2015 Funding Type	Dollars Planned
USDI BLM Funds	
USDI (FWS) Funds	
Other Public Funding	
Private Funding	

A Landscape Restoration of Land Between The Lakes National
Recreation Area

LBL FY 2016 Collaborative Forested Landscape Restoration Fund	
Fiscal Year 2016 Funding Type	Dollars/Value Planned
FY 2016 Funding for Implementation	800,000
FY 2016 Funding for Monitoring	225,000
1. USFS Appropriated Funds	450,000
2. USFS Permanent & Trust Funds	200,000
3. Partnership Funds	
4. Partnership In-Kind Services Value	125,000
5. Estimated Forest Product Value	220,000
6. Other Biomass	30,000
FY 2016 Total (total of 1-6 above for matching CFLRP request)	1,025,000
8 FY 2016 CFLRP request (must be equal to or less than above total)	800,000
Funding off NFS lands associated with proposal in FY 2016 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2016 Funding Type	Dollars Planned
USDI BLM Funds	
USDI (FWS) Funds	
Other Public Funding	
Private Funding	

A Landscape Restoration of Land Between The Lakes National
Recreation Area

LBL FY 2017 Collaborative Forested Landscape Restoration Fund	
Fiscal Year 2017 Funding Type	Dollars/Value Planned
FY 2017 Funding for Implementation	800,000
FY 2017 Funding for Monitoring	225,000
1. USFS Appropriated Funds	450,000
2. USFS Permanent & Trust Funds	200,000
3. Partnership Funds	
4. Partnership In-Kind Services Value	125,000
5. Estimated Forest Product Value	220,000
6. Other Biomass	30,000
FY 2017 Total (total of 1-6 above for matching CFLRP request)	1,025,000
8 FY 2017 CFLRP request (must be equal to or less than above total)	700,000
Funding off NFS lands associated with proposal in FY 2017 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2017 Funding Type	Dollars Planned
USDI BLM Funds	
USDI (FWS) Funds	
Other Public Funding	
Private Funding	

A Landscape Restoration of Land Between The Lakes National
Recreation Area

LBL FY 2018 Collaborative Forested Landscape Restoration Fund	
Fiscal Year 2017 Funding Type	Dollars/Value Planned
FY 2018 Funding for Implementation	800,000
FY 2018 Funding for Monitoring	225,000
1. USFS Appropriated Funds	450,000
2. USFS Permanent & Trust Funds	200,000
3. Partnership Funds	
4. Partnership In-Kind Services Value	125,000
5. Estimated Forest Product Value	220,000
6. Other Biomass	30,000
FY 2018 Total (total of 1-6 above for matching CFLRP request)	1,025,000
8 FY 2018 CFLRP request (must be equal to or less than above total)	600,000
Funding off NFS lands associated with proposal in FY 2018 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2018 Funding Type	Dollars Planned
USDI BLM Funds	
USDI (FWS) Funds	
Other Public Funding	
Private Funding	

A Landscape Restoration of Land Between The Lakes National
Recreation Area

LBL FY 2019 Collaborative Forested Landscape Restoration Fund	
Fiscal Year 2017 Funding Type	Dollars/Value Planned
FY 2019 Funding for Implementation	800,000
FY 2019 Funding for Monitoring	225,000
1. USFS Appropriated Funds	450,000
2. USFS Permanent & Trust Funds	200,000
3. Partnership Funds	
4. Partnership In-Kind Services Value	125,000
5. Estimated Forest Product Value	220,000
6. Other Biomass	30,000
FY 2019 Total (total of 1-6 above for matching CFLRP request)	1,025,000
8 FY 2018 CFLRP request (must be equal to or less than above total)	500,000
Funding off NFS lands associated with proposal in FY 2019 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2019 Funding Type	Dollars Planned
USDI BLM Funds	
USDI (FWS) Funds	
Other Public Funding	
Private Funding	

8. Funding Plan

The National Forest System (NFS) lands in the southeastern United States offer unique opportunities for restoring the native forests and ecological systems that were once commonly found throughout the region. In many developed areas, the NFS lands are some of the few remaining large, forested landscapes in the South. Restoring and sustaining these lands and doing so in close coordination with our partners and neighboring landowners were a key part in the establishment of the Southern Region national forests and continue to be an emphasis in our management goals for today.

The Collaborative Forest Landscape Restoration Program (CFLRP) will supplement the Southern Region's work priorities very well. The Southern Region has developed a Strategic Framework to guide the important work we do. This Strategic Framework has identified restoration as one of the main areas of emphasis for developing programs of work. The goal for this region-wide focus is "ecological systems are returned to their natural resilience and sustained," which also supports the intent of the CFLRP.

The Southern Region's program of restoration work includes a broad set of management practices designed to control the establishment, growth, composition, health, and quality of forests to meet the diverse needs and values of society on a sustainable basis. In developing our regional funding plans, the integration of multiple programs is the primary driver for budget development. Annual funding requests are made by each national forest based on their integrated capacity to accomplish needed work to support land management goals and objectives. The goals and objectives are guided by Land Management Plans, the Region's Strategic Framework, and other restoration strategies. Our regional program managers (fire, fuels, wildlife, forest health protection, vegetation, and watershed management) will then work together to develop a seamless regional budget package that takes full advantage of the strengths of each individual program.

Vegetation treatment activities for restoration are designed to protect and restore ecosystems, address energy and other social needs, and protect human communities. The funding identified through the process above is used to plan, implement, and monitor the work activities to be accomplished in each fiscal year. The Southern Region will continue to utilize this process to inform allocation decisions in support of CFLRP requirements and to assure that CFLRP funding allocated in FY2010 and FY2011 will be used on this proposal in the year transferred. The Region has also committed to assuring that funding will be available to support the long-term multiparty monitoring requirement for this proposal. The Southern Region has a proven track record for delivering a very efficient program of work with high integrity for producing results.

9. USDI Funding

The proposal as submitted is a minimum and estimates are conservative. For example, In 2012 Fort Donaldson National Battlefield has the 150th anniversary of the Civil War at Land Between The Lakes (LBL). We are proposing the restoration of historical landscapes, illustrating what the area looked like 150 years ago. We can provide both historical and environmental education for visitors to the area. We have yet to work out the details but the superintendent has expressed an interest in partnering on this event. We are currently consulting with the tribes that formerly inhabited the area related to cane restoration projects. The US Fish and Wildlife Service has prioritized restoration work on private lands surrounding LBL and is pursuing grants at this time.

10. Other Funding

At this time no additional money has been made available, although in-kind services have been committed and other funding is being pursued.

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11. Maps

See PDF in file

12. Landscape Strategy

The Central Hardwood Joint Venture Strategy can be found at <http://chjv.org/>. This proposal is for 340,000 acres within the [Central Hardwoods Bird Conservation Region](#) (CHBCR). The Landscape to be considered is approximately 340,000 acres with 172,000 acres being National Forest System lands. NFS lands are a contiguous ownership with the mixed private and other ownership surrounding NFS lands.