

Monitoring and Evaluation Report Land Between The Lakes National Recreation Area

Western Kentucky and Middle Tennessee
Fiscal Year 2014



Mission Statement

Land Between The Lakes National Recreation Area

To protect and manage the resources of the Recreation Area for optimum yield of outdoor recreation and environmental education through multiple use management by the Forest Service; to authorize, research, test, and demonstrate innovative programs and cost-effective management of the Recreation Area; to help stimulate the development of the surrounding region; and extend the beneficial results as widely as practicable

Table of Contents

Mission Statement.....	2
Land Between The Lakes National Recreation Area.....	2
A. Forest Supervisor’s Certification.....	5
B. Introduction.....	6
C. Executive Summary.....	7
D. Monitoring Results and Evaluations	8
Goal 1: Prioritize projects to provide the greatest recreation, Environmental Education (EE), and resource stewardship benefits.	9
Goal 2: Emphasize partnerships and cooperation with citizen groups, community businesses, private corporations, tourism organizations, and government agencies.....	12
Goal 3: Utilize a variety of methods and opportunities to provide an Environmental Education message to every visitor.	26
Goal 4: Manage natural and physical resources, and authorized Forest Service activities, to reduce erosion or deterioration of riparian areas and watershed conditions.	43
Goal 5: Use a collaborative approach to maintain and restore: 1) A diversity of plant and animal communities that support viability of associated plants, fish, and wildlife; and 2) Sustainable levels of habitat and wildlife populations to support public demand for wildlife-related recreation.....	55
Goal 6: Demonstrate and widely export innovative, efficient, and effective management techniques that can benefit others.....	67
Goal 7: Enhance dispersed recreational and EE opportunities throughout Land Between The Lakes.	70
Goal 8: The Land Between The Lakes Area Plan will remain effective and usable and lead to accomplishments that support National Strategic Goals.	84
E. Action Plan	91
F. Appendices.....	93
Appendix 1: Monitoring and Evaluation.....	93
Appendix 2: Friends Group Partners	94
Appendix 3: Annual Heritage Report	96

Fiscal Year 2014

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All program areas were consulted in the development of this report.

A. Forest Supervisor's Certification

This report describes the results of our Land and Resource Management Plan (Area Plan) implementation during Fiscal Year 2014, ending September 30, 2014. You can find our Area Plan on our website at www.landbetweenthelakes.us/stewardship/land-resource-management/planning/.

One of the highlights for this year includes the signing of a programmatic agreement for our Heritage Program. This agreement between Kentucky and Tennessee State Historical Preservation Offices outlines how heritage assets will be inventoried, monitored, and protected. It also outlines how that information will be shared between the two state historical programs. We completed our first annual report and will include the annual report from March 1 through February 28 in our yearly Monitoring and Evaluation report. You can find both the Programmatic Agreement and our Annual Report in full on our Heritage page under the Stewardship tab at www.landbetweenthelakes.us/stewardship/heritage/.

Readers of this report will notice a format change. Members of the public have asked that our documents and reporting material be more clearly defined and more easily understood. We believe we have moved closer to that goal with this report. The report is submitted to our Regional Office and posted on our website with previous years at www.landbetweenthelakes.us/stewardship/land-resource-management/planning/.

After reviewing our Monitoring and Evaluation Report for Fiscal Year 2014, I find we are in compliance with our Land and Resource Management Plan. I look forward to working with members of the public, regional leaders, and our partners on how to move forward in the future on implementing this area plan.



TINA R. TILLEY

Area Supervisor

Land Between The Lakes

National Recreation Area



Date



B. Introduction

Our annual Monitoring and Evaluation (M&E) Report summarizes the last fiscal year's efforts of implementing our Land and Resource Management Plan (Area Plan). You can find our Area Plan and other document links under the Stewardship tab on our new website at www.landbetweenthelakes.us/stewardship/land-resource-management/planning/. We include the reporting fiscal year's accomplishments and trends for the United States Department of Agriculture, Forest Service, Land Between The Lakes National Recreation Area.

The report emphasizes the findings and conclusions compiled from various monitoring activities and data sources available on the unit. As stated in Section 2 of the Area Plan, the monitoring and evaluation program serves as an important link between Area Plan implementation and on-the-ground accomplishments. Evaluations in this report serve as a springboard to any needed changes within the Area Plan or its implementation. The M&E program determines and informs the Area Supervisor on whether:

- Goals and Objectives are being achieved;
- Design Criteria are being followed;
- Implementation effects are occurring as predicted; and if
- Emerging or unanticipated issues are arising.

The heart of the report is the narrative in [Section D](#) focusing on significant items that have driven the conclusions presented. Section D is broken up into eight pieces, one for each of the Area Plan's eight goals. We did not receive any comments about last year's report.

Each goal has a table that combines, in one location, the desired condition and trend statements, and relevance discussed in the Area Plan. In an effort to make this a meaningful and usable document while still being a manageable size, we have attempted to summarize only the key conclusions within the body of a "monitoring results and evaluations narrative" following each goal's table.

It is important to us that members of the public understand our reasons for land and resource management and our efforts to achieve our desired states in our Area Plan.

Comments about our 2014 Fiscal Year Monitoring & Evaluation Report can be sent by mail to: Area Supervisor, 100 Van Morgan Drive, Golden Pond, KY, 42211; by electronic mail to **comments-southern-land-between-lakes@fs.fed.us**; or by phone to Barbara Wysock, Area Planner, at 270-924-2131. We welcome thoughts and comments about this report or any aspect of our management.

C. Executive Summary

This report serves as our comprehensive annual Monitoring and Evaluation Report where we review our progress toward achieving the goals and objectives of our Area Plan. The end of fiscal year 2014 completes the ninth full year of moving toward the desired conditions in the Area Plan.

This year we reformatted the report to specifically answer the monitoring questions and measurements listed in the table that describes the goal, its importance, and desired condition.

Monitoring and Evaluation Reports for FY2005-FY2013 can be found on our official website at <http://www.landbetweenthelakes.us/stewardship/land-resource-management/planning/>. Our Area Plan can be found at <http://www.landbetweenthelakes.us/wp-content/uploads/2014/05/LBLAreaPlan.pdf>.

Highlights from our 2014 Fiscal Year include:

- Provided educational opportunities and recreational activities for over 1.4 million visitors of which 259,714 visited our environmental education facilities or attended one of our off-site programs in our communities
- Succeeded with supporting the US Fish & Wildlife Red Wolf Recovery program as our two red wolves gave birth in May of 2014 at the Nature Station as part of this program
- Partnered with Trigg County High School in their new Problem Based Learning curriculum working with teachers and then supporting student field trips
- Executed the Heritage Programmatic Agreement with our heritage partners in both states
- Awarded a new maintenance contract to EnviroSmart with a revised statement of work that allows for greater flexibility and reduced costs
- Began our environmental assessment process for the Pisgah Bay Project
- Recycled over 40,000 pounds of material including 25,000 pounds of scrap metal
- Reduced fuels on 5,154 acres across the peninsula and thinned approximately 1,200 acres to improve habitat diversity and forest resiliency
- Experienced four ice events starting in December 5-6, 2013 and ending with the March 2-3 snow storm in 2014. In early spring, our growing season was cool and wet. Dry conditions followed in late spring and early summer. Summer brought temperatures mostly in 80-90s
- Closed the recreation area for two weeks during the Government Shutdown in October

D. Monitoring Results and Evaluations

Goal 1:	Prioritize projects to provide the greatest recreation, Environmental Education (EE), and resource stewardship benefits.
Sub-element NFS Generic Desired Condition	“LBL will play a pivotal role in supplying and supporting the recreational and EE experiences people seek.” “All vegetation management activities will be designed to sustain or improve wildlife habitats, forest health, recreation opportunities, or EE experiences.” [Area Plan, Vision]
Example Area Plan Desired Condition Statement	“The responsibility for meeting this (recreational and environmental education) increasing demand will fall to those areas and entities capable of providing outdoor recreational opportunities while sustaining natural environments.” “Vegetation management activities will incorporate environmental education messages, themes, and information in programs and projects as much as practical.” [Area Plan, Vision]
Desired Trend Statement	“Eighty percent of all special projects will have identified and demonstrated benefits to recreation, EE, and resource stewardship.” [Objective 1a]
Monitoring Questions	1. Has the Forest Service (FS) made progress toward providing satisfactory recreational and EE experiences to visitors while providing for resource stewardship? 2. Have resource management projects been integrated?
Area Plan Performance Measures	1. Trends in segmented visitation in comparison to numbers of related resource stewardship projects completed 2. Number of integrated projects being completed
Data Sources Utilized	--Summary of visitor satisfaction surveys or personal letters and notes received; visitation; and focused area accomplishments --Objective accomplishments, summary of integrated projects completed
Importance	This goal contains key emphases of the LBL Protection Act and reinforces the key purposes described for LBL when created in 1963. Optimizing efficiency and integration of resources are also primary objectives of both LBL and the agency.
What It Tells Us	The results related to this goal will provide key information about whether LBL is meeting its legislated objectives and tiering to national strategic goals.

Goal 1: Prioritize projects to provide the greatest recreation, Environmental Education (EE), and resource stewardship benefits.

The end of fiscal year 2014 completes the ninth full year of moving toward the desired conditions in the Area Plan. Recreation, environmental education, and resource stewardship continue to be the priorities for the work we accomplish.

Q1.1. Has the Forest Service (FS) made progress toward providing satisfactory recreational and EE experiences to visitors while providing for resource stewardship?

This section of the report highlights the integrated projects found in the remaining sections of this report. Recreation, environmental education, and resource stewardship continue to be the priority for the work we accomplish on the ground.

M Q1.1. Trends in segmented visitation in comparison to numbers of related resource stewardship projects completed.

Most of our visitors come here to experience wildlife in their natural environment. Many visitors leave with a greater understanding of wildlife habitat needs and how the Forest Service manages the land to improve a diversity of habitats to provide for a variety of wildlife.

We present visitation trends under Goals 2.3, 3.4, and 7.32 of this report.

Q1.2. Have resource management projects been integrated?

Our resource management projects involve all departments and affect most activities at Land Between The Lakes. Interdisciplinary teams provide insight and project management timelines while ensuring projects best meet our Area Plan's focus on environmental education, outdoor recreation, and caring for our natural resources.

Most of our integrated projects completed during FY14 had help from our many partners. Some of those key partnerships are with biking and off highway vehicle (OHV) users who work on trail maintenance and recreation site clean-ups.

Friends of Land Between The Lakes staff five visitor centers, deliver thousands of environmental and nature educational programs, and employs our interpretive staff who engage our visitors. We manage most of the vegetation to improve wildlife habitat across Land Between The Lakes using contracts and agreements. Our on-site maintenance contractor, EnviroSmart, continues to support our maintenance efforts from road improvements to campground repairs and mowing.

Projects and undertakings comply with our new "*Programmatic Agreement Regarding Undertakings at Land Between The Lakes National Recreation Area of April 2014.*" This agreement allows stewardship of the heritage resources to operate in a more efficient manner between Land Between The Lakes and the two state historic preservation offices. More information can be found online under our "Stewardship" tab Heritage Page at www.landbetweenthelakes.us/stewardship/heritage/.

M Q1.2. Number of integrated projects being completed

We completed some road and trail improvements along with habitat improvements in one of two at-risk watersheds. The 2011 watershed analysis identified the Prior Creek Project Area and the Turkey Bay OHV Area to focus on to protect their watersheds.

Our vegetation projects completed this year support the viability of plants, fish, and wildlife and sustainable recreation and can be found throughout this report.

The Pisgah Bay Project interdisciplinary team identified issues based on the comments received on the proposed actions in April of 2014. The team made progress toward completion of the analysis for the proposed actions. Early in FY 2015, members of the public raised additional concerns about logging and burning at Land Between The Lakes. Because of these concerns, the Pisgah Bay Project was cancelled as proposed, so we can work more with the public about management at LBL.

Goal 2:	Emphasize partnerships and cooperation with citizen groups, community businesses, private corporations, tourism organizations, and government agencies.
Sub-element NFS Generic Desired Condition	“LBL will continue to be a destination point for visitors throughout the region and nation, thereby contributing to the local and regional economy.” [Area Plan, Vision]
Example Area Plan Desired Condition Statement	“Maintaining and developing partnerships will be important to keeping LBL positioned as a premiere recreation/EE destination.” “The public will continue to play an important role in project-level actions and decisions.” [Area Plan, Vision]
Desired Trend Statement	“Establish at least one local partnership for tourism, economic development, or EE; and at least one new cooperative with a regional, state, and federal agency or organization annually in support of the LBL mission.” [Objective 2a] “Increase visitation to more than 2 million visitors per year by the end of 2015 to support local and regional economies. [Objective 2b]
Monitoring Questions	3. Has the Forest Service (FS) made progress toward supporting vitality of gateway communities and maintaining/enhancing relationships with its neighbors and regional organizations?
Area Plan Performance Measures	3. Trends in visitation, levels of community participation
Data Sources Utilized	--Summary of visitation results, community participation in meetings, programs provided, grants sponsored, cooperative gateway projects, feedback from elected officials and business leaders, and visitation --Number of Memorandum of Understandings (MOUs), partnership agreements, and challenge cost share agreements with local, regional, and state agencies
Importance	This goal contains important strategies for the collaborative delivery of goods and services at LBL. It also reinforces several of the key purposes described for LBL when created in 1963, namely to work cooperatively with the gateway communities in support of their strategic direction.
What It Tells Us	The results related to this goal will provide key information about whether LBL is meeting its stated objectives to work closely with partners and communities and developing strong relationships with local, state, and regional organizations and the public.

Goal 2: Emphasize partnerships and cooperation with citizen groups, community businesses, private corporations, tourism organizations, and government agencies.

Q2.3. Has the Forest Service (FS) made progress toward supporting vitality of gateway communities and maintaining/enhancing relationships with its neighbors and regional organizations?

All departments at Land Between The Lakes, including our Friends of Land Between The Lakes partner, work closely with our surrounding communities and host states.

Community Involvement and Outreach

Land Between The Lakes continues to serve as the keystone in the Western Kentucky and Middle Tennessee tourism industry through partnerships and community engagement. Land Between The Lakes has helped to generate over \$650 million in tourism dollars as the center piece for the region by working with citizen groups, community businesses, private corporations, non-profit groups, tourism organizations, and other government agencies. The 2007 Forest Service National Visitor Use Monitoring survey reported that our visitors spend over \$81 million dollars in the surrounding region each year.

Sources:

Forest Service National Visitor Use Monitoring Survey

www.fs.fed.us/recreation/programs/nvum/

Tennessee Tourism Economic Impact

www.tnvacation.com/industry/sites/default/files/Economic%20Impact%20of%20Travel%20on%20Tennessee%20Counties%202014.pdf

Kentucky Tourism Economic Impact

www.kentuckytourism.com/userfiles/Industry/Economic%20Impact%20of%20Kentucky%20Travel%20and%20Tourism%20Industry%202013-2014.pdf

Memberships included:

- Chamber of Commerce (10)
 - Cadiz-Trigg County, KY
 - Grand Rivers, KY
 - Hopkinsville-Christian County, KY
 - Lake Barkley-Lyon County, KY
 - Marshall County, KY
 - Murray-Calloway County, KY
 - Paducah Area, KY
 - Clarksville Area, TN
 - Paris-Henry County, TN
 - Stewart County, TN

- Tourism Organizations (4)
 - Kentucky's Western Waterland (KWW) (www.kentuckylakebarkley.org)
 - Kentucky Travel Industry Association (KTIA) (www.KTIA.com)
 - Land Between The Lakes Region Tourism Coalition (www.visitlbt.com)
 - Middle Tennessee Tourism (www.middletennesseetourism.com)
- Environmental Education and Interpretation (4)
 - Kentucky Environmental Education Association (<http://kaee.org>)
 - Tennessee Association for Environmental Education (<http://eeintennessee.org>)
 - North American Association for Environmental Education (www.naaee.net)
 - National Association for Interpretation (www.interpnet.com)

Community

- The heritage of Land Between The Lakes is very important to the area. Volunteers from Between the Rivers, Inc. and universities assist with archeological studies and identification of heritage sites. These activities are discussed later in Goals 2, 3, and 7 sections titled “Heritage.”
- After the successes of our on-site Familiarization (FAM) Tours for US Army Fort Campbell Morale Welfare and Recreation (MWR) personnel and our 50th Anniversary Tour, we developed an ongoing FAM Tour program for FY14. We held the first one the week before the new fiscal year with Elaine Walker, Commissioner of Kentucky State Parks, and other nearby Kentucky Parks’ personnel. We completed five tours our first year that included the front desk clerks from Kenlake and Lake Barkley State Resort Parks, Kentucky’s Western Waterland members, Fort Campbell’s Single Soldier Program, and members of the Friends of Land Between The Lakes Advisory Board.
- We updated our website into a responsive website in June of 2014 enabling visitors and potential visitors to access our information from any platform – Blackberries, smartphones, tablets, laptops, and desktop computers. To help nearby lodging front desk personnel and area tourism organizations and businesses learn to use the new “vacation destination” website, we printed comb-bound books and distributed them throughout the area to 80 different organizations/businesses.



Figure 1: Helping Marshall County students learn about ATV and helmet safety

Since we have spotty access to the internet in the area bordering the lakes, these books enabled front line personnel to assist

their customers in person and over the phone. The books were well received for the frontline personnel and their customers.

- Our trails staff hosted a learning station at the Marshall County safety day on ATV and helmet safety. Over 400 students participated in the safety day event.
- Land Between The Lakes Sportsman's Club continues to maintain our Kuttawa Landing lake access area. We work together on improvements while their volunteers mow and pick up trash regularly.
- We continued to strengthen our relationship with Ft. Campbell this year:
 - With the Friends of Land Between The Lakes, we promoted recreational activities and environmental education opportunities at Land Between The Lakes to military families at the June *Ft. Campbell Passport to Safety* event. We distributed close to 100 military passes and explained how they could be used our facilities.
 - We connected with the Single Soldier Program at the family safety day event and organized a familiarization (FAM) tour for them.
 - We continue to honor the Military Pass for free entry to some of our environmental education day-use attractions – Woodlands Nature Station, Golden Pond Planetarium, and Homeplace 1850s Working Farm.
 - Six Operation Warfighter participants worked at Land Between The Lakes, four in recreation and two with timber. The Operation Warfighter program assists military personnel with their transition to civilian life while they are undergoing medical evaluation from the military.

Conference exhibits included:

- American Bus Association *Market Place* in St. Louis, MO in January. With the Land Between The Lakes - Lakes Region Tourism Coalition we reached out to tour bus operators bringing tourists to Land Between The Lakes as a destination or stop along the way to other areas.
- The National Wild Turkey Federation *Convention and Sports Show* held in February 2014 in Nashville. We presented activities that emphasized environmental education opportunities and outdoor recreation activities with a focus on hunting and fishing.
- Fort Campbell *Passport to Safety* event in June. We promoted recreational activities and distributed free military passes good for free entry to three environmental education major attractions with the pass
- *Kentucky State Fair* in August. Kentucky's Western Waterland represented us at this weeklong event in eastern Kentucky distributing our brochures

Partnerships, Agreements and Memoranda of Understandings (MOUs)

Partnerships, agreements, and MOUs provide critical resources that augment facilities and services provided to visitors and our communities for recreation, natural resource management, and environmental education at Land Between The Lakes. While partnerships have always been a part of how we operate, the Area Plan places added emphasis on the value working together with outside organizations and communities brings to the surrounding region in addition to the recreation area.

In FY14 we had 27 active agreements that included eight new agreements and 17 modifications to existing agreements. New highlights included agreements with Fort Campbell sharing some of our resources; Murray State University for working on wildlife and environmental issues; Daniel Boone National Forest along with other cooperating agencies including the National Park Service, US Fish & Wildlife Service, National Weather Service, and State Division of Forestry units to cooperate as the Kentucky Interagency Coordination Center (<http://gacc.nifc.gov/sacc/dc/kykic/>); and USDA APHIS (Animal and Plant Health Inspection Service) helping us with feral swine control.

We continued our partnerships with:

- Central Hardwoods Joint Venture in restoring grassland birds' habitats;
- Western Kentucky Amateur Astronomers (www.wkaa.net) working with our Friends of Land Between The Lakes on Star Parties at our observatory in the summer and our annual National Astronomy Day free event in the spring;
- National Wild Turkey Federation in open lands management;
- Local counties in demonstrating biomass heating for the Lyon County School and Trigg County Hospital; and
- Regional Universities include multiple disciplines like biology, forestry, engineering and other departments in their curriculum:
 - Alabama Agricultural and Mechanical University, Huntsville, AL
 - Southern Illinois University in Carbondale, IL
 - Murray State University in Murray, KY
 - Austin Peay State University in Clarksville, TN
 - Tennessee Tech University in Cookeville, TN
 - University of Tennessee at Knoxville, TN

Friends of Land Between The Lakes

The cooperative partnership between the Forest Service and Friends of Land Between The Lakes (www.friendsoflbl.org) provides critical support in accomplishing our mission. Our friends group serves as our primary partner for implementing our environmental education program by providing naturalists and interpreters for our environmental education facilities and programs. They also maintain working relationships with other government agencies and non-government organizations in support of our environmental education mission.

Accomplishments include:

- Managed 14,035 volunteer hours in FY14; when combined with campground hosts, apprentices, and college interns the numbers grow to over 89,000 hours. Projects include trail work, shoreline cleanups, assistance at special events, and Elk-Bison Prairie monitoring. Groups included college students, scout troops, and youth groups. Volunteers come from the region and across the United States.
- Initiated our Press Corps volunteers who helped provide coverage of special events including wildlife sightings to increase our photo library.
- Our volunteer coordinator, Emily Cleaver, received the Region 8 Regional Forester Award recognizing the importance and impact of our program.
- Assisted over 84,000 visitors at our Elk & Bison Prairie through our Bugle Corps Volunteers who assist visitors and help provide animal care.
- Purchased a new Dodge Ram Truck for Bugle Corps monitors at the Elk & Bison Prairie.
- Joined “Get Connected” with the United Way in Calloway County to help volunteers find community programs by promoting the organizations’ volunteer needs.
- Provided gift shop services to our visitors in five locations and two developed campgrounds.
- Executive Director served as Treasurer for the LBL Lakes Region Tourism Coalition, Director of Kentucky’s Western Waterland tourism organization, and an active member in Trigg County Rotary Club.
- Represent the National Recreation Area with the Murray, Paducah, and Hopkinsville Chambers of Commerce in addition to the annual Murray Boat and Outdoor Show.
- Employed six naturalists for Woodlands Nature Station, seven interpreters for Homeplace 1850s Working Farm, nine food service and housekeeping personnel for Brandon Spring Group Center, and three people for Golden Pond Planetarium.
- Staffed three visitor information centers that interacted with many of our 1.4 million visitors.
- Delivered educational programs to over 62,000 visitors at the Woodlands Nature Station and Homeplace 1850s Working Farm. Over 20,000 people watched planetarium and laser light shows at the Golden Pond Planetarium and Observatory.
- Obtained funding and provided 12 benches for the Central Hardwoods Scenic Trail.
- Coordinated and raised funds for the Field Trip Grant Program allocating \$14,129 to 26 schools and 2,026 students for the 2014/2015 school year.

Environmental Education

Our environmental education programs have become staples to area families and visitors to the region. We offer three facilities where daily programs educate visitors about environmental issues, wildlife welfare, historical societies, and “dark sky” opportunities for great constellation viewing. These include the Woodlands Nature Station, Golden Pond Planetarium and Observatory, and the Homeplace 1850s Working Farm and Living History Museum. Friends of Land Between The Lakes manages the Planetarium and Observatory programming as well as serving as our primary partner for implementing our Environmental Education Master Plan, as stated above.



Figure 2: We presented hands on environmental education opportunities along with hunting and fishing information at the National Wild Turkey Federation's National Convention and Sports Show in February. The event drew over 48,000 people.

Soccer Kids in the Woods

We obtained funding from the 2011 More Kids in the Woods Challenge Cost Share initiative for Futskilz Soccer Academy to reach second grade students. Continuing this work in 2014, five schools brought 235 second graders plus 14 teachers to Woodlands Nature Station for spring field trips to learn about Wildlife and Water. Nature Station staff went to one preschool to teach 50 children and 10 adults about native wildlife.

Trigg County High School

Trigg County High School chose Land Between The Lakes National Recreation Area as a partner in their new Problem Based Learning curriculum. We hosted a training field tour for teachers, giving them an introduction to multiple environmental issues we face in our recreation area.

River Discovery Center

Nature Station partnered with the [River Discovery Center in Paducah](#) in a series of six field trips for Paducah 2nd graders. The programs took place at the Center in Paducah. Nature Station staff provided several hands-on activities. We have been asked to expand this event to nine field trips in the future.

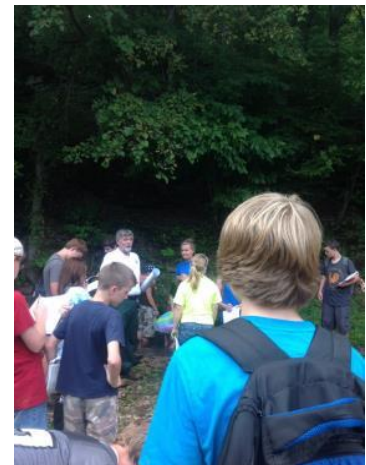


Figure 3: Students from Trigg County explore Ferguson Spring on a field trip

Heritage

Our Heritage program works with many individuals and groups to help preserve the rich history of this national recreation area.

Since 2007 our Heritage staff have provided professional archaeological expertise to Ft. Donelson National Battlefield on several projects. We do this through a Memorandum of Understanding (2007 renewed in 2013). The purpose is to build upon and expand interagency cooperation by encouraging partnership opportunities as well as assisting Fort Donelson with their heritage requirements to fulfill the mandate of Public Law 108-367: Fort Donelson Expansion Act of 2004. This year, we provided archaeological monitoring for Ft. Donelson on July 16, 2014 during the re-installation of six War Department plaques.

We continue to partner with Between The Rivers, Inc. (BTR) on various projects throughout Land Between The Lakes. BTR has helped us install many of the Lyon County church and school marker posts. We also have an MOU for cooperative maintenance of the restored St. Stephens Church.

Heritage Programmatic Agreement

In April 2014 Land Between The Lakes National Recreation Area, the Advisory Council on Historic Preservation (www.achp.gov/), the Kentucky State Historic Preservation Officer (<http://heritage.ky.gov/siteprotect/>), the Tennessee State Historic Preservation Officer (www.tn.gov/environment/history/), the Eastern Band of Cherokee Indians, the Eastern Shawnee Tribe of Oklahoma, and other consulting parties signed and executed the Programmatic Agreement Regarding Undertakings at Land Between The Lakes National Recreation Area.

This agreement outlines how heritage sites and findings will be inventoried, monitored, and protected. We followed the goals of Section 110 of the National Historic Preservation Act of 1966, As Amended (www.achp.gov/nhpa.html). This document also addresses how we share information which includes the annual report.

Our first report under our programmatic agreement can be found online at:
<https://drive.google.com/folderview?id=0BzSMivZ7G2Akbjc5Si1hRFZCOFk&usp=sharing>.

Tribal Relations

We continue to build relationships with our Tribes. Two Tribal partners accepted our invitation to become signatories to the Heritage Programmatic Agreement. In September 2014, heritage staff presented at the Eastern Band of Cherokee Indians 2014 Cherokee Archaeological Symposium.

This past year we consulted with Tribes concerning the Mississippian stone box grave burials we discovered in 2014. The Tribes accepted the research and protection plan we proposed.

This past year also saw some progress in our efforts under the Native American Graves Protection and Repatriation Act. We know of several locations where human remains were excavated. Working with the Tribes, we are seeking to locate the missing remains so that the Tribes can rebury.

We completed a Memorandum of Understanding (MOU) with the Eastern Band of Cherokee Indians for reburial of human remains on National Forest Land in 2014. The MOU is a first attempt to define the parameters for such collaboration. We provided a second reburial at Land Between The Lakes under this agreement. Our annual Heritage report contains the authorities we used for this work.

Heritage Volunteers

We rely upon our many volunteers to assist with our mission of preserving heritage at Land Between The Lakes. We coordinate with the Friends Group Volunteer Coordinator to determine viable projects. We also work with college students and their alternative break programs.



Figure 4: Eastern Illinois University volunteers clean St. Mary's Cemetery

During their 2014 Spring Break, Eastern Illinois University students spent three days working with us on several projects. The primary project involved cleaning up a relocated cemetery. Vegetation was so dense that you could not see from one end of the cemetery to the other. It took them two days and a chain saw – in addition to hand clippers, loppers, and rakes – but they managed to complete vegetation removal. The cemetery looked great when done.

Another project had the Eastern Illinois University students installing posts at Fisherman's One-Stop Resort – one of

several interpretive sites planned along the newly completed Central Hardwoods Scenic Trail, our bridge-to-bridge hike and bike trail along highway US68/KY80.

After the mosaic stones had been in place for a year, we found they had become difficult to find. We purchased some lightweight, durable trail marker posts and banded them with reflective tape. The students helped pound in posts at each of the 15 sites to help explorers locate the stones.

Fiscal Year 2014



Figure 6: Post and stone at the former location of cabin 7

For more information, check out the Heritage Annual Report and our Programmatic Agreement online with links on our official webpage at www.landbetweenthelakes.us/stewardship/heritage



Figure 5: Eastern Illinois University volunteer students prepping posts over 2014 Alternative Spring Break.

Land and Natural Resources

In FY2014, Special Use Permits with individual farmers and a Challenge Cost Share Stewardship Agreement with the National Wild Turkey Federation (NWTf) enabled us to restore, enhance, and maintain wildlife habitats for the benefit of outdoor recreation activities and environmental education opportunities throughout the forest. The National Wild Turkey Federation works with us on 3,294 acres of open lands.

We completed habitat improvement and species monitoring as described under [Goal 5](#) in partnership with non-profit groups, governmental organizations, and local universities, including:

- Austin Peay State University (APSU)
- Friends of Land Between The Lakes
- Kentucky Department of Fish and Wildlife (KDFWR)
- Murray State University (MSU)
- National Wild Turkey Federation (NWTf)
- Tennessee Wildlife Resources Agency (TWRA)
- University of Tennessee
- Kentucky State Nature Preserves Commission (KSNPC)
- Tennessee Department of Environment and Conservation (TDEC)
- US Fish and Wildlife Service

We continued to serve on the Kentucky Prescribed Fire Council, which includes state, federal, non-profit, and private sector partners. These numerous resource management partnerships help us share expertise, resources, and information on how to manage land and natural resources as effectively and efficiently as possible while working together with others.

M Q2.3 Trends in visitation, levels of community participation

Weather

We had four ice events starting on December 5-6, 2013 and ending March 2-3, 2014. These events delayed our opening until Wednesday, March 5th.



Figure 7: Eagles' nest at Turkey Bay OHV

The moisture and saturated ground kept Turkey Bay Off-Highway Vehicle Area closed for almost four full months from December 2013 through March 2014. Upon opening, we found a pair of eagles had moved into the area to nest. We worked with U.S. Fish and Wildlife to create a solution.

Fiscal Year 2014

Visitation

Land Between The Lakes continued to host a significant number of “regional events” and weekend programs that contributed greatly to area visitation. Our interactive calendar can be found at www.landbetweenthelakes.us/calendar/. Overall, however, visitation decreased by 12.5% in FY14 compared to FY13 because of the government shutdown. Even though overall visitation was down, all months of the fiscal year were strong for facilities, except October because of the government shutdown occurring during our peak fall season of school breaks.

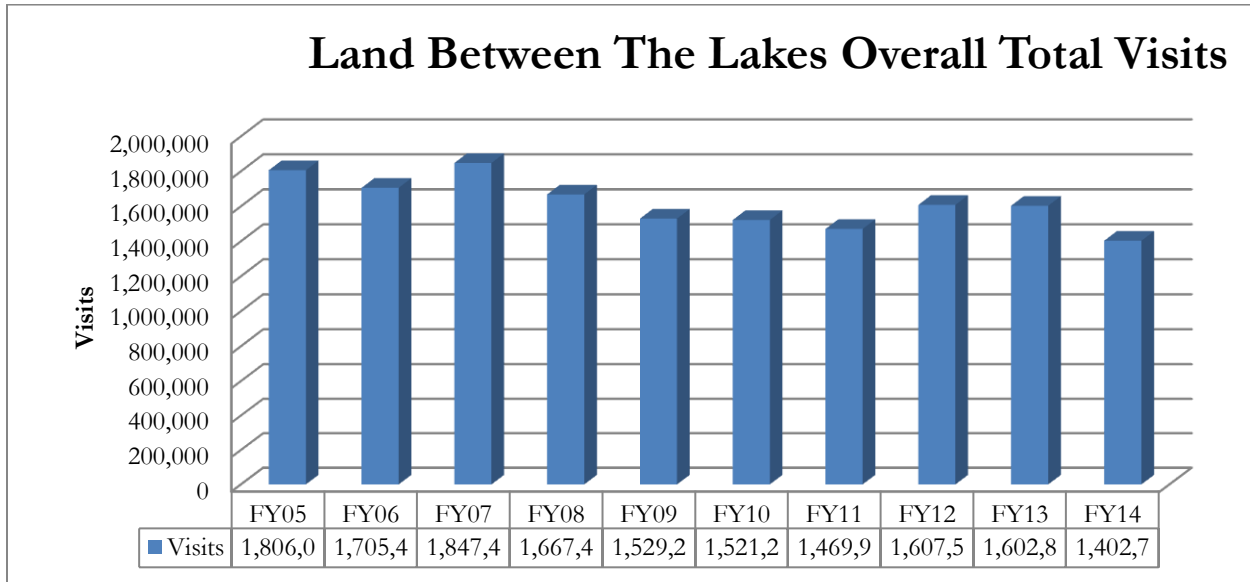


Figure 8: FY14 Visitation at Land Between The Lakes: Overall visitation derived from traffic counts

DIRECT TRAVEL EXPENDITURES IN KENTUCKY BY REGION, 2013 AND 2014

<u>Location</u>	<u>Direct Expenditures 2013</u>	<u>Direct Expenditures 2014</u>	<u>Change 2013-2014</u>
STATE	\$7,968,329,103	\$8,317,528,155	4.4%
WESTERN WATERLANDS	506,803,849	523,928,398	3.4

Figure 9: Tourist expenditures saw a slight increase in our region according to Kentucky's latest report.

Source:

www.kentuckytourism.com/userfiles/Industry/Economic%20Impact%20of%20Kentucky%20Travel%20and%20Tourism%20Industry%202013-2014.pdf

Fiscal Year 2014

When comparing Land Between The Lakes usage to regional destinations, we do well.

Location [Calendar Year]	2012	2013	2014	3 Year Avg.
Hillman Ferry	263,132	233,410	253,624	250,055
Energy Lake	23,653	19,722	21,452	21,609
Wranglers	69,080	51,171	60,190	60,147
Piney	215,669	252,620	266,477	244,922
Lake Access Campgrounds	54,220	48,983	55,768	52,990
Land Between The Lakes	625,754	605,906	657,511	629,724
Great Smoky Mountains	294,000	253,000	288,000	278,000

Figure 10 Developed camping overnight usage comparison

Sources:

Recreation Dynamics (Land Between The Lakes Reservation/POS system)

Land Between The Lakes Traffic Counters

National Park Service Visitor Use Statistics <https://irma.nps.gov/Stats/>

Visitors at Tennessee and Kentucky National Park Service facilities

Abraham Lincoln Birthplace NHP 2012 169,515 2013 163,928 2014 241,264	Mammoth Cave NP 2012 508,054 2013 494,541 2014 522,628	Cumberland Gap NHP 2012 853,998 2013 768,363 2014 879,934	USDA FS Land Between The Lakes NRA [Fiscal Year] 2012 1,607,597 2013 1,602,867 2014 1,402,723
Stones River National Battlefield 2012 260,537 2013 258,242 2014 272,499	Obed Wild & Scenic River 2012 212,446 2013 198,367 2014 215,767	Great Smokey Mountain NP 2012 9,685,829 2013 9,354,695 2014 10,099,276	Shiloh NHP 2012 587,620 2013 536,206 2014 409,086
Fort Donelson National Battlefield 2012 284,762 2013 247,734 2014 262,317	Big South Fork NRR 2012 600,161 2013 565,063 2014 599,906	Andrew Jackson NHS 2012 51,261 2013 42,929 2014 42,863	

Figure 11: Area National Park visitation comparison Source: <https://irma.nps.gov/Stats/>

NHP/National Historic Park | NP/National Park | NRA/National Recreation Area |

NRR/National River & Recreation Area | NHS/National Historic Site

Fiscal Year 2014

Environmental Education Participation

Participation in our recreational facilities has decreased slightly or stayed steady each fiscal year since our Area Plan-inspired focus. These include Homeplace 1850s Living History Farm, Golden Pond Planetarium, Woodlands Nature Station, and Brandon Spring Group Center.

Location	2012	2013	2014	3 year avg
Nature Station	39,309	39,261	36,163	38,244
Homeplace	36,542	34,481	28,668	33,230
Planetarium	21,537	24,138	21,082	22,252
Brandon Spring Group Center	16,078	15,064	13,576	14,906
Elk Bison Prairie	84,415	82,815	81,010	82,747

Figure 12: Environmental education facility participation numbers

Percent Change from Previous Year										
Location	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	Dif.
Homeplace Farm Admissions	7	9	-2	4	-3	-8	9.5	-5.6	-16.9	-6
Nature Station Admissions	8	10	0	10	2	-7	7	-1	-7.9	21.1
Brandon Spring Group Center Overnights	9	2	-6	-4	-9	6	0	-6	-10	-18

Figure 13: Yearly comparison of participation in environmental education focused facilities with the cumulative difference showing an increase/decrease through the years.

Goal 3:	Utilize a variety of methods and opportunities to provide an Environmental Education message to every visitor.
Sub-element NFS Generic Desired Condition	“EE messages, information and principles will be incorporated into all projects on LBL through diverse cooperative, interdisciplinary efforts designed to potentially reach every visitor to LBL.” [Area Plan, Vision]
Example Area Plan Desired Condition Statement	<p>“EE will emphasize more non-facility-based messages, programs, and projects. The current EE facilities will remain hubs for expansion of the reach and effect of the EE programs and projects. EE programs will be integrated with recreation activities and will provide messages and information to recreational visitors that make them more aware of the importance of sustaining their environmental surroundings while participating in their desired activity.”</p> <p>“Self-guided loop trails, road pull-offs, viewing blinds, and EE messages in these areas (Nature Watch Demonstration Areas) will engage visitors with the natural environment. “EE will be an integral component of activities in the Oak Grassland Demonstration Areas. Visitors will be able to watch and learn about the application of various vegetation management practices used to restore native ecological communities.” [Area Plan, Vision]</p>
Desired Trend Statement	<p>“Ensure that 80% of LBL communications, programs, and activities have an interwoven EE message.” [Objective 3a]</p> <p>“An average of one to two user impact challenges will be addressed annually through EE.” [Objective 3b]</p>
Monitoring Questions	4. Has the FS made progress toward successfully changing behaviors as a result of EE experiences to visitors?
Area Plan Performance Measures	4. Trends in on-site visitor behaviors and visitor comment surveys.
Data Sources Utilized	--Summary of visitor information surveys or personal letters and notes received, project accomplishments, annual monitoring results, programs, and communication products completed
Importance	This goal contains one of the key emphases of the LBL Protection Act and reinforces the key purposes described for LBL when created in 1963. Effective delivery of conservation education messages is also a primary objective of both LBL and the agency.
What It Tells Us	The results related to this goal will provide key information about whether LBL is meeting its legislated objectives.

Goal 3: Utilize a variety of methods and opportunities to provide an Environmental Education message to every visitor.

Overall we believe we provide ample opportunities for our visitors to enjoy nature and our natural environment through regular environmental education programs, educator support services, dispersed educational activities, and outreach into our surrounding communities.

Our customers' unsolicited ratings continue to reflect their high level of satisfaction.

We want to continue to improve our efforts. Currently we're exploring other areas to deliver our environmental education messages. This will include an electronic game for young visitors, roadside QR Codes (quick reference code) to access topic specific webpages, as well as roadside signs that encourage visitors to come and explore nature.

Q3.4 Has the Forest Service made progress toward successfully changing behaviors as a result of Environmental Education experiences to visitors?

From talking with our visitors, we believe they have changed their behaviors as a result of their environmental education experiences with us. We do know our visitors walk away with a greater appreciation and respect for the environment and our natural world.

Environmental Education

Environmental education activities can be found throughout the National Recreation Area. We design our programs so visitors can apply what they learn here to their own lives and communities. We develop opportunities that encourage parents, guardians, teachers, leaders, and other mentors to assist with youth development and appreciation of nature and our natural environments.

Building upon our popular "Homeschooler Day," we dedicated a month to home educators by developing special programming. Anyone can participate in these events designed to fulfill environmental school requirements at various grade levels.

Our Scout programs assist leaders in helping their troops earn badges and pins. Eagle Scouts worked with Nature Station staff and installed additional bat roosting boxes throughout the National Recreation Area. This ongoing community service provides roosting habitats for several bat species, while at the same time encourages more natural insect control in our recreation areas.

We continued other environmental education programs to encourage people to plant native plants at home, consider organic gardening, build bluebird and bat roosting boxes, and turn their yards into backyard habitat for monarch butterflies, pollinators, birds, bats and other wildlife. Native plant sales were held at several events this year. We partnered with a small local nursery that grows native plants from seeds and cuttings from the native gardens at Nature Station.

Many of our programs help visitors learn how to improve their outdoor environments at home through hands on activities that are both fun and educational.

Fiscal Year 2014

Woodlands Nature Station



Visitors get up close and personal with the natural world at our environmental education facility, Woodlands Nature Station. Nestled in the woods between Honker and Hematite Lakes, the Nature Station serves as a gateway to the 8,500-acre Nature Watch Area. Our Nature Station staff also serves as our “go to” specialists for wildlife viewing throughout Land Between The Lakes.

Figure 14: Backyard at Nature Station



Figure 15: Red Wolf pup

Land Between The Lakes is home to an adult pair of red wolves and a pup born on May 2, 2014. Red wolves are an endangered species. Daily red wolf programs, teach visitors the importance of protecting all species at risk, so people understand the significance of supporting recovery of endangered species. Nature Station has been involved with the Red Wolf Recovery Program since 1991, in partnership with the US Fish & Wildlife Service. Seven out of forty captive breeding sites were selected to have puppies. Nature Station was selected this year to preserve the genetic line of the male wolf, who was 13 years old. Red wolves usually do not live past 14 years.



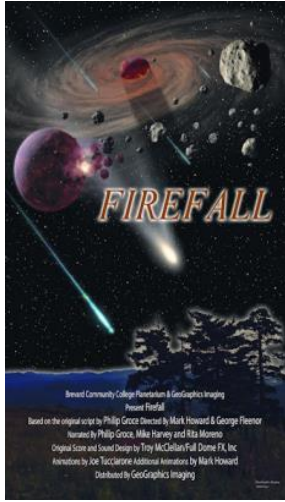
Figure 16: Homeplace 1850s offers fun for all ages.

Homeplace 1850s Working Farm and Living History Museum

Homeplace 1850s Working Farm and Living History Museum represents a two-generation, mid-nineteenth century farm. Visitors experience our “farm family” interpreters in period clothing going about their daily chores. We provide a blend of artifacts, restored historic structures, and traditional seasonal activities to help visitors step back in time and relive history before the Civil War. Our livestock includes rare heritage breeds.

We cultivate many varieties of garden plants and field crops; most from heirloom seeds dating back to before the Civil War. These heirloom seeds have been popular with families wanting to try organic farming and can be purchased in our gift shop.

Golden Pond Planetarium and Observatory



Our Planetarium uses special equipment to recreate the night sky from anywhere in the world without the issues of dust and other forms of pollution, cloud cover, or light pollution. We offer a variety of entertaining and educational planetarium programs in our 360 degree, surround-sound, 40-foot domed theater. Topics include weather, space travel, night skies, and other space-oriented topics centering on our solar system. Our programs reinforce Kentucky and Tennessee educational standards.

Since 2014 we now serve as a NASA Educator Resource Center. Educators can contact us at 800-455-5897 to receive educational materials provided by NASA.

Figure 17: Planetarium show poster

Elk & Bison Prairie



Figure 18: Bugling elk; photo by Sherry Bailey

The Elk & Bison Prairie provides native grassland habitat common in Kentucky more than a century ago. Elk and bison roam freely within this 700-acre enclosure. Visitors travel in their enclosed vehicle via a 3.5-mile paved loop road. Numerous other wildlife species such as wild turkeys, a variety of birds, small game, butterflies, and prairie mammals also find sanctuary in the Elk & Bison Prairie. This exhibit offers different experiences by season – in the spring visitors will see newborn calves, in the fall visitors will hear the elk bugling, and in the summer the elk and bison can be seen in the shade of the trees to stay cool.

Brandon Spring Group Center



Figure 19: Learning about habitats

Brandon Spring Group Center serves the area as a year-round, overnight facility for groups. Nestled on a wooded knoll, Brandon overlooks Bards Lake and Lake Barkley in Tennessee. Learning experiences include orienteering, outdoor survival, natural sciences, journal writing, photography, problem solving, outdoor recreation and species identification. Schools can choose programs that meet their state's core content for assessment.

Programs Highlights and Messages for our general visitors

We offer interpretive programs tied to academic standards for school groups that align to their respective state requirements. These lists cover our general programming which may include some school topics.

Nature Station Program/Activity	Frequency	Environmental Education Message/Take-a-way
Parade of Raptors	Daily	Owls and Hawks Increase knowledge of species Habitat needs Highlight endangered species
Cool & Crawley Critters Day	Annual	Bats, reptiles, and insects Community information booths, tours, and special programs Increase appreciation for these species and the role they play in our environment – pest control, pollinators, etc.
Wolf Week	Annual	Centered on our pair of red wolves in the Red Wolf Recovery Project and their new pup born in May of 2014 Focus around habitats and causes for declining species
Howl-O-Ween	Annual	Focuses on various native animals found in the forests in a fun learning atmosphere catering to young children focuses on friendly forest attitudes and introduction to wildlife
Scout, Homeschool, and Jr. Forest Ranger Days	Multiple	Multiple events designed to encourage adult mentors (parents/teachers/leaders) to work with youth on various environmental topics April is Homeschool Month
Hummingbird Festival and Month	Annual	Weekend celebration of humming birds and pollinators Multiple partners help with bird banding, demonstrations and other activities Focus on migratory birds, habitat needs, preparation, etc.
Eagle Tours	Annual	Two-month window for viewing eagle nesting Conduct van and boat tours
Wildlife tours	Multiple	Focus on plants and animals along water and hiking trails in certain areas
Nature and Wildlife special events	Multiple	Special events often introduce visitors to our forests and wildlife Fall Frolic, Spring Break Week, Wildflower Celebration, Summer Finale, Birding Bonanza, and more
Backyard plants and animals	Daily	Focus on native wildlife; their habitats, eating habits, and needs teaches backyard gardening for pollinators and native plants

Fiscal Year 2014

Homeplace Program/Activity	Frequency	Environmental Education Message/Take-a-way
Period Celebrations and Demonstrations	Multiple, Annually and Daily	Includes various celebrations and demonstrations that teach about life in the 1850s including handcrafts, stove cooking, music, quilt making, agriculture, woodworking, etc. These historic and cultural demonstrations tie people to the land; linking the past to the present. Visitors compare and contrast the use of the land and natural resources in the 1850's with today.
Civil War Program	Annual	Ties into the Civil War heritage of the area provide historical presentations around Ft. Henry work with Fort Donelson National Battlefield
Old-time Music Festival	Annual	Focus on music of the area including blue grass encourages people to bring instruments for jam sessions
Independence Day Celebration	Annual	Focus on historical times through an entertaining Chautauqua sponsored by the Kentucky Humanities Council and the National Endowment for Humanities
Children's Day	Annual	Helping children experience childhood in the 1850s through interactive play and chores washing, sewing, gardening, and ball games
Sheep Shearing	Annual	Conservation; all about use of wool, from sheep to shawl
Cooking and gardening	Multiple	Garden to table demonstrations; conservation measures and heirloom plants
Scout/Homeschool	Multiple	Multiple events designed to encourage adult mentors (parents/teachers/leaders) to work with youth on various historical activities April is Homeschool Month
Period Programs	Multiple	Various events like Sundays in the parlor, blacksmithing, and Arts & Crafts Fairs focus on historic people, families, and economics of the times
Heritage Breeds	Daily	Focus on the breed of then to now care and feeding daily program animals as workers
Farm Activities	Daily	Farm techniques and original organic living off the land

Fiscal Year 2014

Planetarium & Observatory Program/Activity	Frequency	Environmental Education Message/Take-a-way
Planetarium Shows	Daily	Various 45-minute shows about the moon, sun, planets, stars, basic science, earth sciences, and space exploration. These show the connection to space, weather, and our daily lives
Star Parties	Multiple	Night sky Allow visitors to look through powerful telescopes and talk with astronomers from West Kentucky Amateur Astronomers www.wkaa.net
National Astronomy Day	Annual	Sun Teach visitors about telescopes and binoculars for looking into space Talk to astronomers Family activities Powerful telescopes to view the sun
Night Sky	Daily	Help visitors recognize star patterns, planet positions, etc.
Elk & Bison Prairie Program/Activity	Frequency	Environmental Education Message/Take-a-way
Self-guided Tour and Displays	Daily	Focuses on wildlife and natural resource management in a prairie environment Focuses on songbirds, turkeys, prairie birds, reptiles, pollinators, wildflowers, and native grasses in addition to elk and bison
Celebration	Annual	Offers free access and interpretive stations and community wildlife booths Prairie ecosystem
Brandon Spring Group Center Program/Activity	Frequency Overnight Groups Only	Environmental Education Message/Take-a-way
Water Activities	As requested	Provide various water activities centered around safety, habitats, watersheds, and water quality Lake and stream
Land Activities	As requested	Focus on habitats, wildlife, plant/tree identifications, prescribed fire, ecosystems, and natural resources using activities like orienteering, survival skills, night hikes, beaver programs, and animal adaptations
Team Building	As requested	Activities built to strengthen team productivity in an environmental framework with certified instructors

Figure 20: Table of educational programs and activities at environmental education facilities

Fiscal Year 2014

Program Participation

Facilities	FY 10	FY 11	FY 12	FY 13	FY 14
Brandon Spring Group Center					
# attended	6,644	6,958	7,157	6,450	5,880
# overnight stays	n/a	n/a	n/a	n/a	13,576
Groups	87	108	109	106	89
Programs	482	461	585	570	580
Woodlands Nature Station					
# attended	40,135	41,526	44,764	37,537	35,718
# off site	3,491	1,278	511	128	624
Students	5,312	6,294	6,561	5,568	5,325
Golden Pond Planetarium & Visitor Center					
Visitors	78,415	94,381	71,258	70,098	70,219
# attended shows	15,545	9,127	19,034	20,321	17,453
Students	2,640	2,695	2,909	3,487	2,680

Facilities	FY 10	FY 11	FY 12	FY 13	FY 14
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Fiscal Year 2014

Homeplace 1850s Working Farm					
# attended	34,645	34,436	37,791	30,999	26,938
# off site	425	400	782	120	60
Students	4,015	5,354	5,901	4,863	3,656
Elk & Bison Prairie					
# of visitors	80,798	63,839	84,415	83,115	77,010

Figure 21: Participation in environmental education program facilities

Our Golden Pond Visitor Center and North/South Welcome Station staffs guide visitors to various programs and activities throughout the recreation area. We consider them to be instrumental in the success of our environmental education efforts at Land Between The Lakes.

In October of 2014, the federal government shut down for two weeks during area schools and regional universities' fall breaks. The shutdown affected participation in our environmental education programs specifically. For example, five groups cancelled at Brandon Spring Group Center because of the shutdown. Parents and care givers also cancelled planned activities at our other environmental education facilities and found alternative activities for fall break students.

Our normally full campgrounds were empty. They fell silent for almost a month with the shutdown and the uncertainty of reopening. That uncertainty continued long after our reopening.

Planned activities and major fall events were canceled due to lack of planning time during furlough. Fall break attendance was thus affected. October, normally a busy time with the weather changing to fall with colorful leaves, was heavily impacted due to the shutdown.

Fee Free Days and Free Pass Entries

The Forest Service offers "Fee Free Days" which we honor with free entry to our environmental education facilities. These days have become popular among our neighboring communities and usually fall on a weekend. We also offer free entry to the Nature Station, the Homeplace 1850s Working Farm, and the Golden Pond Planetarium for military families and their guests. Over 9,700 visitors gained knowledge about our connections with the environment through the programs described above.

Our free days offer an opportunity to those who may not be able to bring their families to our environmental education facilities and also expose them to the many opportunities for learning at Land Between The Lakes.

Fiscal Year 2014

Free Admission	Nature Station	Homeplace 1850s	Planetarium
Adults	1301	800	N/A
Children	2906	1745	N/A
Military Adults	308	447	N/A
Military Children	148	140	N/A
TOTAL	4,663	3,132	1,933

Campground Programs

Our environmental education staff developed entertaining educational programs for our two largest, developed campgrounds: Piney and Hillman Ferry. Interns volunteered for the summer season to deliver these programs. They presented 27 educational programs at Hillman Ferry Campground reaching 506 campers, and 3 educational programs at Piney Campground reaching 41 campers.

Field Trip Grants

Our field trip grant program encourages new schools and classes to bring students on single and multi-day trips to our national recreation area. Our Friends Group manages the program for us and applies for grants, donations, and other funding. A committee made up of both Forest Service and Friends Group environmental education personnel allocate the amounts to the individual classes.

Fiscal Year	Schools/Groups	Students	Total allocated \$
2006	16/19	1,249	\$13,078
2007	17/21	1,444	\$13,078
2008	21/32	2,493	\$12,580
2009	20/25	1,983	\$16,123
2010	22/24	1,771	\$17,271
2011	22/24	2,121	\$18,124
2012	26/29	2,380	\$19,846
2013	15/15	1388	\$16,124
2014	26/26	2,062	\$14,129

Figure 22: School grant program funding table

Heritage Education

In October 2014, Heritage staff held a free 3-day archaeological field school for youth ages 10 through 13. A total of 11 children from surrounding communities participated in the field school. This was a new program for us.

On the first day, students explored the newly completed interpretive site for the former Fenton Fisherman's One-Stop Resort along the Central Hardwoods Scenic Hiking Trail using Garmin GPS units. They were able to test their compass skills, reconstruct broken ceramics, and excavate their own mini-sites.

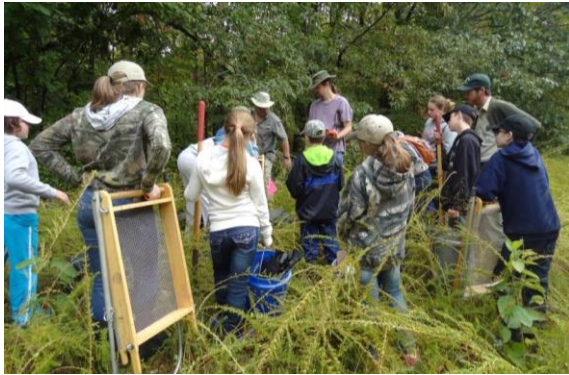


Figure 23. Learning how to dig a shovel test pit.

Day two, students had their first experience digging and shovel testing a possible location of the former Young's Grove Baptist Church. This church served the African-American community of Young's Grove in the early 20th century. Students used a metal detector to flag positive results at the adjacent Young's Grove School site.

On their final day of field school, the archeological students experienced some of our historic structures first-hand. Heritage staff led a van tour past the Cleo Griffin house. Then they went on a hike to the Will Flora cabin, which was built sometime in the 1920s by Luther Shaw. At the end of their last day, the students painted two rocks, one to take home with them and the other to leave at Young's Grove School steps in order to commemorate their experiences.



Figure 24. The whole field school gang and volunteers.

Nature Watch Demonstration Areas

In 2014 we opened up Empire Point to more visitors by providing a small, natural parking lot in our Woodlands Nature Watch Demonstration Area. Abundant wildlife provides optimum viewing to the delight of our wildlife watching visitors.

Our easy trail system in the north around the Woodlands Nature Station offers hiking for novices, families, and city dwellers. Trails include Long Creek, Hematite, Woodlands Walk, and Honker trail systems. These allow visitor access into the woods without getting too far from civilization -- a plus to many people.

Oak Grassland Restoration Demonstration Areas

We continue to demonstrate land and natural resource management practices in both our north and south Oak Grassland Restoration Demonstration Areas. The combined acreage is 8,630 acres. In both areas we seek to promote an understory of native grasses and wildflowers created by opening up the canopy in our oak/hickory forested areas. This ecosystem, with its abundant plants, seeds, and insects, heartily supports wildlife.

The two oak grasslands also support regional student studies on forestry, natural resources, environment ecosystems, and habitat management.

The southern area that surrounds the Homeplace 1850s Working Farm, operates as an oak grasslands classroom for forestry and wildlife students from the University of Tennessee at Knoxville. They're studying land management practices on oak grasslands that include the effects of fire on native wildlife and their habitats.

The northern area lies north and east of the Elk & Bison Prairie. Austin Peay State University in Clarksville, TN and Murray State University in Murray, KY use the area for various wildlife and environmental studies including the effects of fire on snakes.

Respect the Resource

We continue to use our Respect the Resource program to encourage visitors to recycle at Land Between The Lakes. In FY14 we managed to keep over 4 tons of trash out of landfills through

Type	Pounds	Comments FY14
Plastic Bottles	2,388	
Aluminum Cans	498	
Glass	1,380	
Scrap Metal	25,000	Cleaned up our “yard”
Batteries	202	
Fishing Line		Still collecting
Cardboard	4,100	
Paper	4,600	
Electronics	2,600	

Figure 25: Recycled trash in FY2014

recycling. We also cleaned up our maintenance yard and recycled over 12 tons of scrap metal.

We received a \$4,500 grant through the West Kentucky Regional Recycling Corporation (WKRRC) to purchase additional recycling bins and new signs. We placed these throughout the recreation area and believe these have successfully encouraged visitors to recycle.

This year West Kentucky Regional Recycling Corporation also distributed \$1,000 to each of the participating members of the corporation of which we are a member. We plan to put the funds back into our recycling program.

We also received a commercial van trailer donated by a local trucking company through the Friends of Land Between The Lakes. The used trailer has a value of approximately \$5,000. The trailer will be used for storing and transporting cardboard and paper directly to the recycling center. This trailer allows us to remove more paper and cardboard from the waste stream.



Figure 26: New cardboard trailer located in the maintenance complex

Volunteers

Environmental education benefited from 89,243 volunteer hours in FY14. Apprentices and interns presented programs and special events at Brandon Spring Group Center, Homeplace 1850s Farm, and Woodlands Nature Station. Resident Attendants work at the developed campgrounds. We work with the Friends of Land Between The Lakes volunteer coordinator in all areas of environmental education.

M Q3.4. Trends in on-site visitor behaviors and visitor comment surveys.

Awards

Kentucky's energy cooperative produces a statewide monthly magazine. Each year they conduct reader polls on Kentucky Favorites. In 2014 we received second place for the best Outdoor Recreation Spot and third place for the best Walking, Running, and Bicycling Trail.

In 2014, for the second year in a row, we received TripAdvisor's "Certificate of Excellence" in customer satisfaction. Of eleven reviews on Yelp, we rated 4.5 out of 5 possible. Of 29 Google reviews, we rated 4.6 out of a possible 5.0.

Surveys

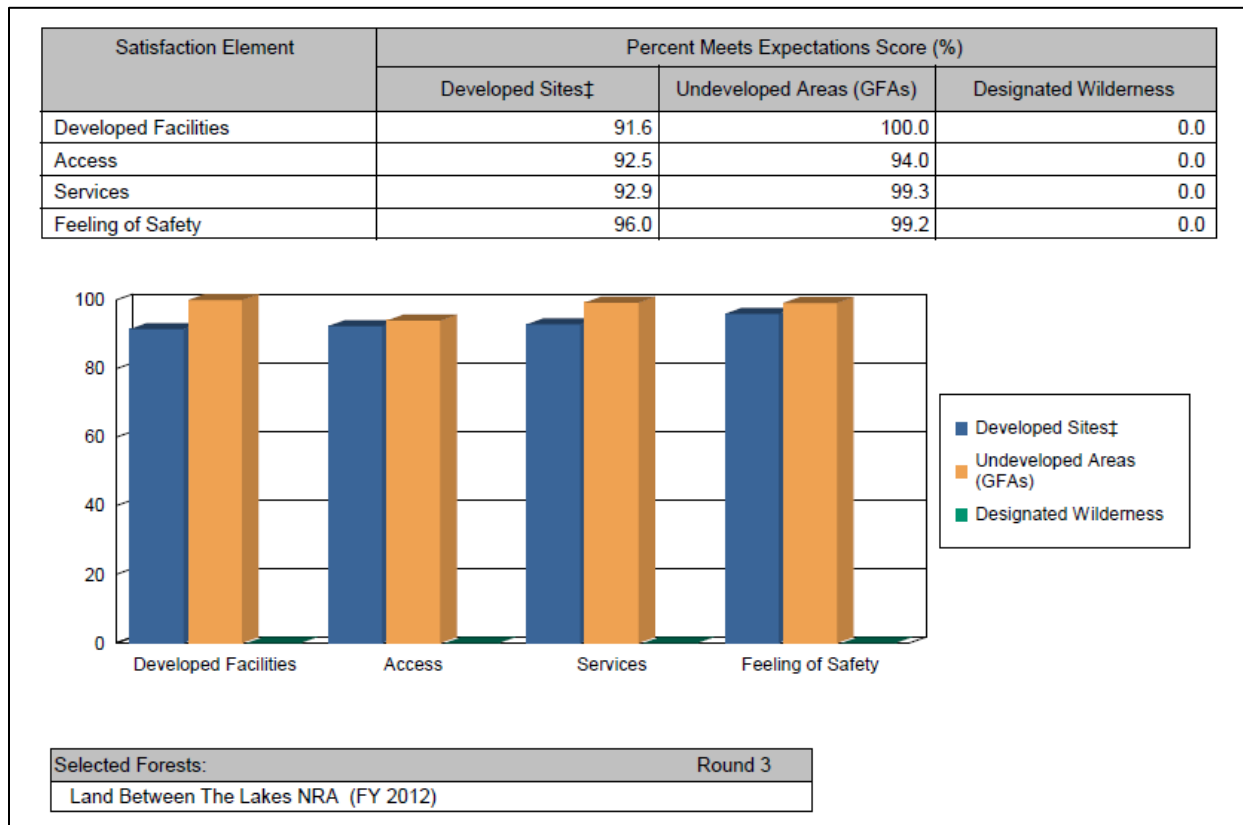


Figure 27: Satisfaction levels of customers – Forest Service report released in 2014 (we have no wilderness areas to rate)

Satisfaction Survey Results Source:

http://apps.fs.usda.gov/nrm/nvum/results/ReportCache/Rnd3_A08060_Master_Report.pdf

Comments

Environmental Education comments from School Grant Participants

Brandon Spring Group Center

Audubon Elementary: The programs presented by the Brandon springs staff were excellent. Especially the erosion and bat presentations.

Clark Elementary: My students learn so much about wildlife when we visit Brandon Spring! It is the "most-talked-about" field trip all year! Students compared stream life to pond life when we returned. I found out many students have never been to the pond, stream, or even a forest. They were able to write about their experiences using excellent details. Students now understand why it is so important to protect wildlife and ecosystems.

Olmstead School: What's so exceptional about the outdoor classroom experience at Brandon Springs is that students who are not typically viewed as leaders by their classmates or who are not as naturally athletic or outgoing as others often show surprising leadership capacity while engaged in the highly accessible activities led by the staff... Our students then left Brandon Springs with something many of them did not possess before arriving – undeniable evidence that they can lead and accomplish goals through working together.

Homeplace 1850s Working Farm

Calloway County Middle: The kiddos had a wonderful time and were able to connect to our standards through hands-on- experience. Thank you so much for this opportunity.

Camden Elementary: The stop at the Double Pen House was the most memorable. We saw how much daily life was different in 1850 because they did not have same technology we have today.

North Livingston Elementary: The students were allowed to till up the ground in a garden spot, using a garden implement of that time period. One of our students spotted an arrowhead on the ground, and was able to add this artifact to the museum collection. He was so excited along with our students. He will never forget this experience and neither will I.

Sedalia Elementary: Although our visit fell on a very cold November day, it did not dampen the excitement and enthusiasm that we experienced. The children were very impressed with the way of life that you portrayed from the 1850's. The absence of heat and air conditioning was almost more than they could comprehend. The farm animals and the scenery, which surround the farm was amazing and the grounds were immaculate. Thank you for your time, patience, and hospitality. Our trip was most definitely a memorable one that our students will remember for years to come.

Woodlands Nature Station

Ballard County Elementary: Students especially enjoyed the exhibits of the red wolves, eagles, owls, and coyotes. Many students recalled details about the animals the day following the visit. They were particularly impressed that they saw the only red wolves in Kentucky. Exhibits, vocabulary, and discussion during our

Fiscal Year 2014

Nature Station visit correlated with performance expectations of common core standards for science. It was observed that students made connections to previous instruction and also were introduced to upcoming concepts to be covered in class. It was a valuable experience for students to see animals that they may not have seen before.

Calloway County Middle School: Reading, studying and learning in the classroom are important, but visiting the Nature Station and being instructed by a naturalist allowed students to make connections regarding the ecosystem that could never be made inside a building. Students saw Red Wolves that were once near extinction. They were close enough to a Red-Tailed Hawk to gaze into its eyes. They laughed as the Naturalist wrestled a large Alligator Snapping Turtle just so that they could get a good look at the "lure" inside its mouth. They were able to get a close look at a Bald Eagle and were in awe of the talons on its feet. The whole experience was engaging, educational and fun for the students.

Planetarium

Sedalia Elementary: The trip was wonderful! We started at the Planetarium. It was completely aligned with core content.

Lowes Elementary: This was the first time our students visited the planetarium. Each child was very excited as we entered the planetarium. The students loved it! What a wonderful learning experience! The visit helped reinforce our unit on the planets. Thank you for giving our school this fantastic opportunity.

Overall Comments

5/5 Stars Trip Advisor

"We had the best time this was a well taken care of park, we even got to see a lot of bison and one Elk. We will be coming back here again."

Holly B. from Shepherdsville, KY. 9/8/2014

www.tripadvisor.com/ShowUserReviews-g3450976-d253284-r227755423-

Land_Between_the_Lakes_National_Recreation_Area-Golden_Pond_Kentucky.html#CHECK_RATES_CONT

Fiscal Year 2014

5/5 Stars Trip Advisor

“Land, Lakes and Leisure; Man, I love this place!”

“...LBL is in the wild. This is a warning because for some people they may not like that. For us it is what we love about it....

“...*IT IS WILD. This is a huge mass of land between two lakes that is simply for the enjoyment of God’s creation. There are tons of animals. Awesome Lakes. Deep and undiscovered woods. It's great.

“...My family and I loved this place and plan to be back annually....”

Full reviews can be found at the link.

More mentions on the Nature Station, EBP, Energy Lake Campground, and Grand Rivers.

Mark S. from Louisville, KY. 9/29/2014

www.tripadvisor.com/ShowUserReviews-g3450976-d253284-r231555216-Land_Between_the_Lakes_National_Recreation_Area-Golden_Pond_Kentucky.html#REVIEWS

5/5 Stars Yelp

“Being new to Western KY, we went quickly to LBtLakes. Wow--we were very impressed. Cannot wait for the leaves to change and to get out there and hike.”

Tina W. from Paducah, KY. 10/11/2013

www.yelp.com/biz/land-between-the-lakes-golden-pond

Goal 4:	Manage natural and physical resources, and authorized FS activities, to reduce erosion or deterioration of riparian areas and watershed conditions.
Sub-element NFS Generic Desired Condition	“Restoration of riparian area functioning and improvements of priority watersheds will be another focus of the resource improvements.” [Area Plan, Vision]
Example Area Plan Desired Condition Statement	<p>“Damage to natural resources caused by unmanaged recreation activities will be reduced...”</p> <p>“Roads will continue to be integral to many activities at LBL, but will be kept to the minimum number needed to meet the needs of multiple use management. The road system and its road segment maintenance levels will continue to be evaluated and modified, as appropriate. Evaluations will result in reconstruction or decommissioning of roads, when necessary, to improve watershed condition, facility and activity access, and wildlife habitat.” [Area Plan, Vision]</p>
Desired Trend Statement	<p>“Within a 10- year period, improve two watersheds by one condition class.” [Objective 4a]</p> <p>“The 10-year trend will be to reconstruct 10 to 15 miles of trail annually.” [Objective 4b]</p> <p>“Unneeded roads will be decommissioned to improve watershed condition and wildlife habitat. The 10-year trend will be one to three miles per year.” [Objective 4c]</p> <p>“Maintain to objective maintenance level, 75% of system roads and 75% of trails annually.” [Objective 4d]</p>
Monitoring Questions	<p>5. Has the FS made progress in reducing erosion and improving watershed conditions and how was this accomplished?</p> <p>6. Has the FS established baseline data for channel classification of its major intermittent and perennial streams?</p>
Area Plan Performance Measures	<p>5. Sediment transport, stream bank stability, water quality parameters, properly functioning riparian areas, watershed condition class.</p> <p>6. Completion of stream classification and determination of channel function process.</p>
Data Sources Utilized	<p>Watershed Watch program, stream and riparian surveys, number of improved or relocated roads and trails, summary of watershed improvement projects; sample projects during program reviews to determine and document where riparian values, and soil and water resource considerations were implemented through BMPs and design criteria.</p> <p>--Stream inventory of substrate, Level II Rosgen channel type, average water flow (discharge), and stream bank vegetation.</p>
Importance	This goal emphasizes LBL legislated multiple use mission and the need to direct resources and policies to sustain critical soil and water resources.
What It Tells Us	The results related to this goal will provide key information about whether LBL is meeting its legislated objectives and tiering to national strategic goals.

Goal 4: Manage natural and physical resources, and authorized Forest Service activities, to reduce erosion or deterioration of riparian areas and watershed conditions.

Properly functioning streams, lakes, riparian areas (interface between land and streams or rivers), and wetlands are critical in maintaining water quality, water quantity, riparian habitat, aquatic fauna populations and diversity, and downstream beneficial uses. We understand the need to direct resources and policies to sustain critical soil and water resources to support our multiple use missions. In doing so we follow the design criteria in the Area Plan and Forest Service policy such as the *Forest Service National Best Management Practices for Water Quality Management on National Forest System Lands* found at www.fs.fed.us/biology/resources/pubs/watershed/FS_National_Core_BMPs_April2012.pdf

Q4.5 Has the Forest Service made progress in reducing erosion and improving watershed conditions and how was this accomplished?

Yes, we're making progress in reducing erosion and improving watershed conditions.

Watershed Improvement

We chose two watersheds from the 2011 watershed analysis as program of work projects for improvement – *Functioning at Risk* and *Watershed Condition Class 2*

- Dry Creek/Cumberland River in the Prior Creek Project Area
- Ledbetter Creek/Kentucky Lake in our Turkey Bay Off Highway Vehicle Area with its 100 miles of trails.

As work continues in these watersheds, Dry Creek/Cumberland River watershed should receive a *Watershed Condition Class 1* rating in 2015 and Ledbetter Creek/Kentucky Lake in 2016. This is being accomplished by repairing and restoring trails, repairing hillside erosion, installing and replacing culverts and installing them at stream crossings. We're using a designated trail system, prescribed burns and vegetation treatments to accomplish these overall improvements.

Best Management Practices (BMPs) monitoring

We conduct best management practices monitoring to check for water quality management. This includes soil erosion and sediment runoff into our streams and lakes plus monitoring for any chemical contaminations.

In 2014 seven sites were selected for monitoring to determine if best management practices being used were effective.

We monitored the 1,486 acre prescribed fire in the Crooked Creek-Cumberland River watershed. We ran a transect, or path way, to monitor this Aquatic Management Zone (AMZ). This project was ranked as Fully Implemented.

Fiscal Year 2014

We monitored two Active Construction of Non-Corridor Facilities (facilities not located within riparian corridors) or for Non-Recreation Special Uses. We monitored one in the Turkey Creek-Kentucky Lake Watershed and the other in the Crooked Creek-Cumberland River watershed.

We monitored for Chemical Use Near Waterbodies in a 26-acre crop field in the Crooked Creek-Cumberland River watershed. Again we used a transect run ending at an Aquatic Management Zone. This site was listed as “Mostly Implemented” compared to “Fully Implemented” due to the fact that we did not conduct ground water tests in crop fields.



Figure 28: We use best management practices for Active Construction of Non-Riparian Corridor Facilities or for Non-Recreation Special Uses

Three sites were monitored for Ground Based Skidding and Harvesting to ensure loggers used appropriate methods and equipment that avoided soil erosion and protected water quality. Two of the sites were located in the Crooked Creek-Cumberland River watershed and one in the Demumbers Creek-Cumberland River watershed. Again, a transect was run on the site ending at an Aquatic Management Zone. All three were ranked as “Fully Implemented.”

Potable Water Monitoring

We have 18 main sites where potable well water can be drawn. McCoy and McCoy Laboratories regularly analyze water samples from these wells. They test our drinking water daily and send in monthly reports to the State of Tennessee and twice monthly reports for Kentucky sites. All sites undergo more extensive testing for drinking water once a year. These records are on file with McCoy and McCoy Laboratories.

In 2014 all potable water for public consumption in the National Recreation Area met all state regulations and requirements. This indicates our ground water is of good quality.

Watershed Watch

Watershed Watch volunteers monitor two sites on tributaries draining into Lake Barkley and Murray State Hancock Biological Station monitors 12 sites on Kentucky Lake and its tributaries. Both groups monitor for physical, chemical, and biological characteristics. 2014 Results from these sites indicated we have good water quality.

The Kentucky Lake watershed monitoring project began in July 1988. This long-term monitoring program encompasses 12 primary sites and a number of bays on the lower 90 miles of Kentucky Lake. Monitoring sites have been selected so that both the mainstream and shallower bays are sampled. Primary monitoring occurs at 16-day intervals coinciding with the overpass of the Landsat Thematic Mapper (TM) satellite. <http://landsatlook.usgs.gov/viewer.html>

Since 1995, Murray State University's Hancock Biological Station has monitored Ledbetter Creek, an agricultural/rural watershed, and its embayment.

Panther Creek in the Panther Creek-Kentucky Lake watershed, a pristine/forested watershed, and its embayment, is considered the baseline for watershed monitoring.

Objectives of the monitoring program include documentation of long-term changes, spatial variability in water quality, and integration of field observations with remotely sensed data.

Physicochemical parameters in the database include Specific Conductance, Total Nitrogen, Oxidation/Reduction Potential (ORP), Hydrolab/Grant YSI Profiles, pH Dissolved Oxygen, Phytoplankton, Alkalinity, Phosphate (Ortho) P, Light and Euphotic Depth, Turbidity, Phosphorus (total), Primary Production (14C), Chloride, Silica, Chlorophyll, Lake Elevation and Discharge, Ammonia, Sulfate, Nitrate, Conductivity, Secchi depth, etc.

In addition to the physicochemical parameters listed under the Kentucky Lake monitoring program, additional data on discharge, hyporheic chemistry, benthos, and algae can be found at <http://www.murraystate.edu/qacd/cos/hbs/hbs.htm>

Vegetation Management

Vegetation management treatments improve watershed conditions across the recreation area. These treatments improve watershed conditions by allowing new tree and herbaceous – plants and wildflowers – vegetation regeneration. We planted fourteen acres of River Cane in the Crooked Creek-Cumberland River watershed. For more detailed information about vegetation management projects, refer to the [Goal 5](#) section of this report.

Timber Treatments

Timber treatments occurred in the Crooked Creek-Cumberland River, the Demumbers Creek-Cumberland River, and the Panther Creek-Kentucky Lake watersheds. The forest management program at LBL inventoried approximately 500 acres in the in the Rushing Creek Area, working to



Figure 31: Skid trail results from mitigating soil erosion and water run off



Figure 31: We used seed, mulch, and timber slash on a skid trail in the Jenny Ridge timber sale to mitigate soil erosion and water run off



Figure 31: Skid trail in Demumbers timber sales after timber sale closed

meet the Goals and Objectives of the 2004 Area Plan. These compartments when finished will be used to develop integrated vegetative management treatments for these project areas as stated in the plan.

In 2014, LBL is beginning to restore over 626 acres of oak grassland and general forest with timber harvest or cut and leave (mechanical) treatments. These treatments were conducted in the Crooked Creek-Cumberland River and Demumbers Creek-Cumberland River watersheds. Additionally 308 acres of Timber Stand Improvement (TSI) was conducted in the Devils Backbone project area, the

Panther Creek-Kentucky Lake Watershed. This project improved site conditions for the development of natural shortleaf pine and oak regeneration. These treatments will improve watershed conditions by allowing new tree and herbaceous vegetation regeneration. Also in the Demumbers Creek-Cumberland river Watershed 42 acres of chestnut were planted.

This work is also described in Goal 5.

Non-native Invasive Species Treatments

In 2014 we treated 851 acres of Non Native Invasive Species (NNIS) in various watersheds. Three (3) acres of autumn olive were removed and burned from Turkey Bay day use area. This action will reduce the spread of a Non Native Invasive Species (NNIS) and contribute to an improved watershed condition. We permanently established 242 acres of clover and 62 acres of wildlife food plots.

The 242 acres of clover serve as a soil builder due to nitrogen fixing. Nitrogen is "fixed" in clovers through a symbiotic relationship with rhizobium bacteria that infect roots. The plant provides energy for the bacteria, and bacteria provide the "machinery" necessary to convert atmospheric nitrogen to a form available to plants. Nitrogen fixation is one of many economically important features of clover. This contributes to the overall nutrients available to other plants.

Prescribed Fire

We conducted prescribed fires in five, Level 6 Watersheds which resulted in 5,154 acres managed for Improved Watershed Conditions by controlling fuel loads, nonnative invasive species, and releasing native species. Prescribed burns ranged from 5 to over 2,000 acres. Additionally, prescribed fire maintained tall grass ecosystems at Three Ponds area.

A site preparation burn for chestnut regeneration was conducted after overstory of planted pines had been cut in Demumbers Creek area. A comparison of the 2011 and 2014 fuel data shows the prescribed fire was of moderate intensity and overall fuel volume remained relatively unchanged. There was only a slight increase in the amount of fuel volume found within the fine fuel class ($< 0.25''$). However, the average duff layer doubled, while the average fuel depth remained constant. The timing of the burns allowed for vegetation to establish or leaf fall for ground cover protection. Observations and monitoring showed the low intensity of these prescribed burns caused negligible damage to the duff/organic forest floor layer. For more information on our Prescribed Fire program go to the Prescribed Fire section in Goal 5 of this report.

The Level 6 Watersheds treated by prescribed fire in 2014 include:

- Demumbers Creek – Cumberland River Watershed: Demumbers H, and Demumbers Grass Field G burn.
- Dry Creek – Cumberland River Watershed: Three Ponds, Homeplace and Homeplace Protection burns.
- Crooked Creek – Cumberland River Watershed: Elk and Bison Prairie north blocks 1, 2, 3, and 4 burns. Also Crooked Creek Burn and Devil's Elbow debris piles.
- Turkey Creek-Kentucky Lake: Rushing Creek Blocks 1, 2 and 3 burns.
- Pisgah Creek-Kentucky Lake: Hillman Ferry Blocks 1, 2, and 3 burns.

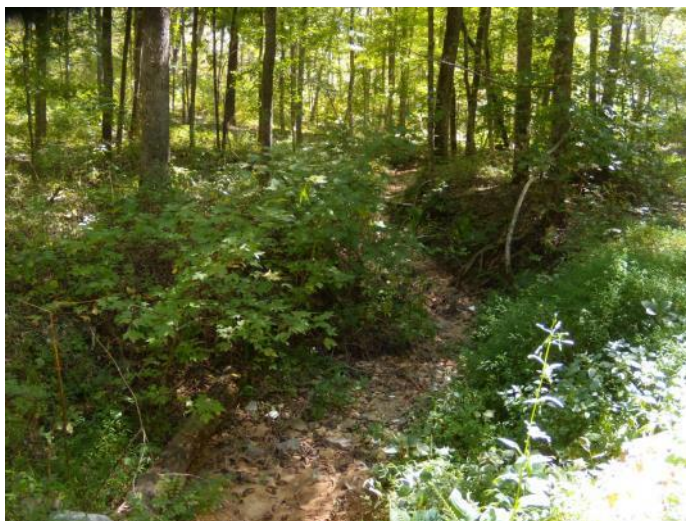


Figure 32: Crooked Creek post burn Aquatic Management Zone

Trails

Trail maintenance and improvements, closure of user made trails, and weather related closures contributed to reduced soil erosion and sediment movement, which also helped improve water quality and watershed condition.

During 2014, we maintained to standard 130 miles of trails and improved 7.3 miles to standard. Nearly 40% of all system trails were maintained to standard.

We installed arch culverts and French drains. We used a new product, Geo-pave, to harden trail surfaces designed to reduce erosion, sediment runoff and deposition plus protect the upstream and downstream drainage.

We used legacy roads and trails (CMLG) funds in the Dry Creek-Cumberland River watershed to improve equestrian trails and shared surface roads. We improved 8.2 miles of trails and shared surface roads to standard. Due to erosion concerns, we closed and rehabilitated three user-made equestrian trails and another user-made road with an eroded area of approximately one half acre in the Dry Creek-Cumberland River watershed.

We had to close Turkey Bay Off Highway Vehicle area from November 26, 2013 to March 27, 2014 due to excessive wet conditions.

Improving and maintaining a designated trail system and closing user made trails along with weather related closures all contribute to reduced soil erosion and sediment movement thus contributing to improved water quality and watershed condition class.

See [Goal 7](#) section for more detailed information and photographs on trails.

Roads

Funding for roads is a shared responsibility between the Forest Service, the Federal Highways Administration, the State of Tennessee, and the Commonwealth of Kentucky. We have approximately 465 miles of Forest System Roads. Public roads include 148 miles of paved roads, 180 miles of gravel roads and 113 miles of natural surface roads. Of those, 344 miles are considered Passenger Car Roads.

Improving, maintaining, and reconstructing roads reduce erosion and sediment runoff, improve water quality and improve the condition class of watersheds. Total road miles improved, maintained, or reconstructed equaled 239 miles, or 72% in FY14.

We also receive funding from the Emergency Relief for Federally Owned Roads (EFRO) Program in cases of storm damage. In Fiscal Year 2014, Emergency Relief for Federally Owned Roads Program funded the construction of a bridge on Road 130 (Newby Cemetery Road) and two aquatic-friendly culverts on roads 134 and 108 in the Pisgah Creek-Kentucky Lake Watershed.

Six additional culverts in the Demumbers Creek-Cumberland River and Crooked Creek-Cumberland River watersheds were replaced. These undersized and deteriorating culverts caused upstream and downstream erosion in the form of head cutting and gully erosion. Replacement with correct size culverts and using best management practices (BMP) during and after construction reduced erosion and sediment runoff to improve water quality.

Every year we conduct maintenance on some of the 267 known cemeteries' access roads at Land Between The Lakes. The work includes tree/debris removal, some spot graveling, creek crossing repair (which can be annual for some locations), tree trimming along access corridors, and mowing some portions. Catholic 1, Catholic 2 and Hicks Cemetery access roads received heavy maintenance to reduce erosion and improve access. These three areas had excessive downcutting in the drains crossing the access areas. Another user made road and eroded area approximately one half acre in size has been rehabilitated and closed.

Another project on road 147 near Ferguson Spring involved raising the road level with gravel, laying a layer of geo-textile to filter the sediments, applying another layer of finer gravel for more height, and lining the ditch with rip rap. This project was necessary for access and to reduce sediment transport into Energy Lake which also improved water quality.

Trigg County Fiscal Court and Trigg County Roads Department assisted with repairs at a low water crossing on road 145 that had become a safety issue.

Storm events in Fiscal Year 2014 damaged several roads creating a need for temporary repairs until Emergency Relief for Federally Owned Roads Program projects could be approved. We completed temporary repairs on Roads 144, 153, 112, and Greys Landing Road 79-A, 79-A2, 79-A3, and 79-A31 which helped to reduce any erosion caused by storm damage.

Fiscal Year 2014

We graded over 191 miles of roadway. In high traffic areas, some roads may require grading every year. Each year, as funds allow, we also add rock to our roads. In Fiscal Year 2014 we placed 2,700 tons of rock across Land Between The Lakes.

In Fiscal Year 2014, we paved Roads 206, 108, and southern portions of the Woodlands Trace National Scenic Byway. Additionally Federal Highways' funds provided mowing of our paved road right-of-ways, including such roads as the Trace (100), Mulberry Flat Road (135), and Silver Trail Road (133) in addition to roads 117, 118, 134, 165, 206 and Road 230. Mowing occurs throughout the growing season.

One special road project for Fiscal Year 2014 was a ditch restoration project on Road 127, which included mowing and side arming.



Figure 33: Road and water quality improvement in the Crooked Creek Cumberland River watershed

M Q4.5 Sediment transport, stream bank stability, water quality parameters, properly functioning riparian areas, watershed condition class.

Monitoring of watershed improvement projects using Best Management Practices (BMPs) and Design Criteria ensures that sediment transport and water quality objectives are met. See previous topics in this section for descriptions of projects.

Q4.6 Has the Forest Service established baseline data for channel classification of its major intermittent and perennial streams?

We establish baseline data for intermittent and perennial streams as we complete environmental assessments in project areas. Panther Creek in the Panther Creek-Kentucky Lake watershed and its embayment provides the baseline information for watershed monitoring. The Panther Creek monitoring is described in the Watershed Watch section above.

M Q4.6 Completion of stream classification and determination of channel function process

Completion of stream classification and determination of channel function process are done on a project level basis. Land Between The Lake averages one project area per year. In 2014 portions of the Pisgah Creek-Kentucky Lake watershed were analyzed.

Fiscal Year 2014

Goal 5:	Use a collaborative approach to maintain and restore: 1) a diversity of plant and animal communities that support viability of associated plants, fish, and wildlife; and 2) sustainable levels of habitat and wildlife populations to support public demand for wildlife-related recreation.
Sub-element NFS Generic Desired Condition	“Visitors to LBL will see active management of forests and other vegetation designed to support ecological needs for forest health and wildlife habitat, in addition to supporting recreational and EE goals.” [Area Plan, Vision]
Example Area Plan Desired Condition Statement	<p>“Much of the vegetation management program will be aimed at restoring ecological conditions to those best suited for sustaining native wildlife species. Vegetation management will target restoration and maintenance of oak woodlands and open oak forests, native short-leaf pine forests, canebrakes, and diverse structures characteristic of old growth forests.”</p> <p>“Sustainable open land management will be demonstrated through ecological restoration of native grasslands, maintenance of hayfields, and rights-of-way, and continued agricultural practices. Open lands management is directed at providing habitat for wildlife, especially those species in demand for hunting and viewing. Open lands located on sites incompatible with sustaining other resources (such as in riparian corridors) will be allowed to revert to forest, or will be maintained in native grassland or canebrake.”</p> <p>“Active management techniques will include the increased use of prescribed fire, which is documented to sustain native ecological communities and improve habitat for many wildlife species.”</p> <p>“Habitats will be provided for native and desired non-native plants, fish, and wildlife. All vegetation management activities will be designed to sustain or improve wildlife habitats, forest health, recreation opportunities, or EE experiences. The public will continue to play an important role in project-level actions and decisions.” [Area Plan, Vision]</p>
Desired Trend Statement	<p>“In mature oak forests, provide open forest structure on approximately 19,000 acres by the end of the first decade with a long-term objective of 31,000 acres.” [Objective 5a]</p> <p>“In mature oak forests, provide woodland structure on approximately 6,000 acres by the end of the first decade with a long-term objective of 30,000 acres.” [Objective 5b]</p> <p>“Provide a sustained supply of regenerating forest habitats totaling approximately 5,400 acres at any point in time. Regenerating forest will be treated predominantly within oak forests although other forest types and natural disturbances will be included.” [Objective 5c]</p> <p>“Increase the abundance of mature forest habitats toward achieving the long-term objective of approximately 123,000 acres of mature forest, of which 52,000 acres will meet old growth criteria.” [Objective 5d]</p> <p>“In mature forests on moist sites, provide canopy gaps on a minimum of 1,600 acres by the end of the first decade with a long-term objective of a minimum of 9,000 acres.” [Objective 5e]</p> <p>“Create and maintain at least 250 acres of short-leaf pine forests by developing desired mature open forest and woodland structural conditions over the first</p>

Fiscal Year 2014

	decade with a long-term objective of 450 total acres of shortleaf pine forest.” [Objective 5f]
	<p>“Restore 50 acres of canebrake over the first 10 years of Area Plan implementation, with a long-term objective of 240 total acres of canebrake.” [Objective 5g]</p> <p>“In addition to the approximately 600 acres of open lands currently in native grasses, restore native grasses and forbs to another 750 acres of current open lands within the first 10 years of Area Plan implementation, with a long-term (50-year) objective of 2,600 total acres of native grassland.” [Objective 5h]</p> <p>“Maintain approximately 10,600 acres in open lands-cultivated and grassland cover types to support game species, early successional species, and watchable wildlife. Approximately 1,100 acres of this 10,600 will be converted from cultivated field to grassland within riparian corridors over a 10-year period to improve riparian functions.” [Objective 5i]</p> <p>“Restore and maintain fire regimes and fire return intervals in fire dependent communities by prescribed burning an average of approximately 10,000 acres per year by the end of the first decade, with a long-term objective of 21,000 acres per year on average. Some acres will incur repeat fire application during the planning period.” [Objective 5j]</p>
Monitoring Questions	<p>7. How well are species of viability concern being maintained on LBL?</p> <p>8. Are non-native invasives an increasing threat to LBL?</p> <p>9. How is management of LBL affecting recovery of threatened and endangered species? (Duplicate questions for Measures 9-10)</p> <p>11. How is management of LBL affecting demand for wildlife-related recreation? (Duplicate questions for Measures 11-14)</p> <p>15. How is management of LBL affecting special habitats and major biological communities? (Duplicate questions for Measures 15-25)</p> <p>26. Is the forest less likely to be affected by insects, disease, and wildfire? (Duplicate questions for Measures 26-28)</p> <p>29. Has the FS made progress towards identifying old growth stands on the ground?</p>
Area Plan Performance Measures	<p>7. Trends in key habitats and/or populations of viability concern species.</p> <p>8. Trends in highest risk species.</p> <p>9. Trends in Price’s potato bean populations in relationship to Threatened & Endangered (T&E) Recovery.</p> <p>10. Trends in bald eagle populations in relationship to T&E Recovery.</p> <p>11. Trends in Eastern bluebird populations as a Non-game Demand species.</p> <p>12. Trends in white-tailed deer populations as a Demand Game species.</p> <p>13. Trends in Eastern wild turkey populations as a Demand Game species.</p> <p>14. Trends in Northern bobwhite quail populations as a Demand Game species.</p> <p>15. Trends in pileated woodpecker populations in relationship to Snags in Forested Situations.</p> <p>16. Trends in Eastern bluebird populations in relationship to Snags in Open Forested Situations.</p> <p>17. Trends in Acadian flycatcher populations in relationship to Mature Riparian Forests.</p>

Fiscal Year 2014

	<p>18. Trends in Northern bobwhite quail populations in relationship to Grasslands.</p> <p>19. Trends in prairie warbler populations in relationship to Oak Woodlands.</p>
	<p>20. Trends in Great-crested Flycatcher populations in relationship to Mature Open Oak Forest.</p> <p>21. Trends in wood thrush populations in relationship to Mesophytic and Riparian Forests with Canopy Gaps and Mature Forest Interior.</p> <p>22. Trends in Eastern meadowlark populations in relationship to Grassland.</p> <p>23. Trends in Yellow-breasted chat populations in relationship to All Forest Type Regeneration.</p> <p>24. Trends in composition of aquatic communities dependent on clear water and stable channels.</p> <p>25. Trends in bat population levels.</p> <p>26. Trends in early, mid-, and late-successional forests by prescription group.</p> <p>27. Trends in species diversity, structural diversity, age class, and stocking levels.</p> <p>28. Trends in native insect and disease effects.</p> <p>29. Completed inventory of old growth stands.</p>
Data Sources Utilized	<p>--Habitat trends for key factor indicators used in the species viability analysis assessed through ongoing inventory of vegetation cover and structure types; population status for selected species inventoried and monitored as appropriate for species or species group; species selected based on priorities identified and modified throughout plan implementation using improving information about threats and risks, and in cooperative efforts with conservation partners</p> <p>--Periodic survey and assessment of highest risk species occurrences; project level survey information and accomplishments</p> <p>--Periodic assessment of status of known occurrences; new occurrence inventory</p> <p>--Breeding Bird Survey/Point counts occurrence trends for the bird communities</p> <p>--Summary of data received in deer surveys, harvest statistics; summary of comments related to recreational uses of white-tailed deer</p> <p>--Summary of data received in Breeding Bird Surveys/Point counts, harvest data, and poult summaries; summary of comments related to recreational uses of Eastern Wild Turkey</p> <p>--Surveys similar to those done by the CATT</p> <p>--Collection and analysis of area bat survey data-map and update changes through routine inventories; monitor acres by successional stage and trend; fuel monitoring following regional protocol and condition classes</p> <p>--Acres of hazardous fuels treated through wildland fire use, prescribed fire, and mechanical treatments</p> <p>--Sample for specific insects or disease as evidence of infestations occurs following established protocols for the organisms of concern; track forest health monitoring results to identify emerging concerns</p> <p>--Collection and analysis of old growth characteristics data, locations, and patch size</p>
Importance	<p>This goal contains key emphases of the LBL Protection Act and reinforces the key purposes described for LBL when created in 1963, as well as those legislated for the FS in 1998. Managing LBL under a multiple use plan should lead to many on the ground accomplishments and support primary objectives of both</p>

	LBL and the agency.
What it Tells Us	The results related to this goal will provide key information about whether LBL is meeting its legislated objectives, managing ecosystems in a healthy and sustainable way, and are tiering to national strategic goals.

Goal 5: Use a collaborative approach to maintain and restore: 1) A diversity of plant and animal communities that support viability of associated plants, fish, and wildlife; and 2) Sustainable levels of habitat and wildlife populations to support public demand for wildlife-related recreation.

We continue to manage our natural resources to improve sustainability, wildlife diversity, and forest health as a multi-use national recreation area. We will address many of the measures for the monitoring questions in this goal in the 10-year monitoring report. This year we tracked treatments that improved habitat conditions for species of viability concern and demand species.

Open Lands

We completed open land management on a total of 5,891 acres to enhance wildlife habitat diversity through local contracts and partnership agreements. Activities included mowing, reclamation/restoration, herbicide applications, disking, fertilizing, and planting.

We did not complete conversion of any areas to native warm season grasses. Instead we reclaimed/restored 161 open land acres that had grown up into trees and shrubs through partnership with the National Wild Turkey Federation.

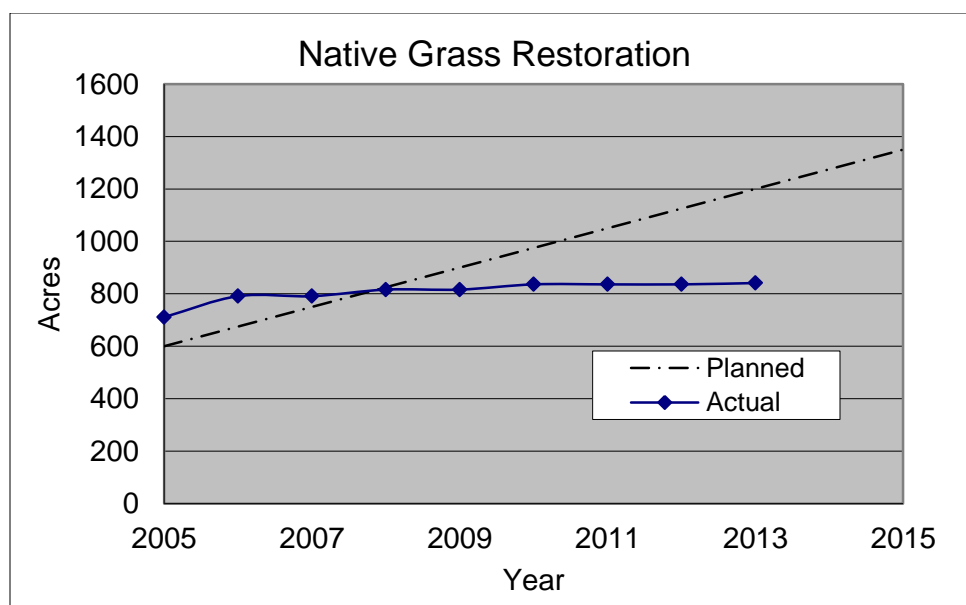


Figure 34: Native Grass Restoration chart

Prescribed Fire

We use prescribed fire as a tool for improving wildlife habitats, native warm season grasses established within open lands, and hazardous fuels reduction in our forest. In 2014, Forest Service staff implemented 5,154 acres of prescribed burning using a combination of hand and aerial ignitions. Fourteen prescribed burns ranging from 5 to over 2,000 acres were accomplished.

Prescribed fire reduced fuel loads and maintained scenic quality in Hillman Ferry Campground, a 36-acre restoration area within Turkey Bay Off-Highway Vehicle Area, and storm damaged piled material in the Devil's Elbow and Empire Farm areas.

Additionally, oak-grassland restoration efforts were made in Homeplace and Crooked Creek treatment units and within adjacent managed tall grass in open lands at Three Ponds. The continuation of fire use in the Elk and Bison Prairie was conducted as a critical ecological disturbance.

Habitat improvement and fuels reduction treatments were made in Rushing Creek, as well as a site preparation burn for chestnut regeneration conducted after the overstory of invasive loblolly pines had been cut in Demumbers.

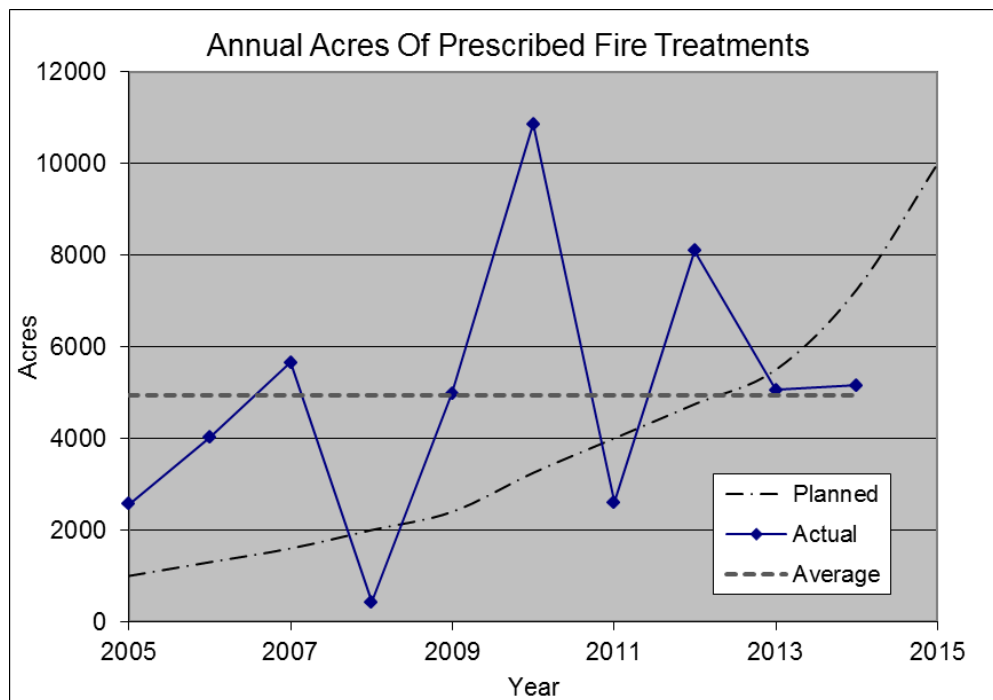


Figure 35: Chart of annual acres treated with prescribed fire

Non-Native Invasive Species

Non-native invasive species (NNIS) are one of the Forest Service's Four Threats to the health of forests ecosystems. (Information on the four threats can be found at <http://www.fs.fed.us/projects/four-threats/>)

In 2014, we treated 851 acres within open land areas to reduce and control non-native invasive species vegetation with a combination of fire, reclamation, mowing, and approved herbicides. The overall success rate for the control of NNIS varied from 25-100% across the areas treated.

Primary NNIS species targeted included:

- Autumn Olive (*Elaeagnus Umbellata*)
- Chinese Privet (*Ligustrum Sinense*)
- Japanese Privet (*Ligustrum Japonicum*)
- Loblolly Pine (*Pinus Taeda*)
- Sericea Lespedeza (*Lespedeza Cuneata*)
- Fescue (*Schedonorus Phoenix*)
- Johnson Grass (*Sorghum Halepense*)
- Pigweed (*Amaranthus Hybridus*)
- Cocklebur (*Xanthium Spinosum.*)
- Foxtail (*Setaria Sphacelata*)

We began receiving increasing reports of Imported Fire Ants (IFA) on Land Between The Lakes in mid-2013. We collected samples and positively identified these ants as Imported Fire Ants (*Solenopsis invicta* Buren, *S. richteri* Forel) or their hybrids. In 2014 we increased monitoring efforts and collaboration with Tennessee and Kentucky State Entomology Offices. In September 2014, the Stewart County, Tennessee portion was quarantined. We initiated an Environmental Assessment to be able to treat these invasive ants, with an expected decision around May 2016.

Timber Treatment

We continue to use multiple treatment activities throughout our diverse forest vegetation to meet our prescription objectives in the Area Plan for forest structure. This year we treated over 626 acres in the Oak Grassland Restoration Demonstration Area and in General Forest with timber harvests or cut and leave (mechanical) treatments.

We managed seven timber sale contracts during the fiscal year. Two sales are now closed, the Hurricane Creek sale and the Jenny Ridge Salvage sale. The three timber sales listed in the table below were awarded to local logging companies during FY14. We also awarded the timber stand improvement to a contractor to perform cut and leave treatments for the service work.

Sale Name/Silvicultural Treatment	Acres Treated
Old Ferry Road	430
Jenny Ridge Salvage	64
Paradise	406
Timber Stand Improvement (Mechanical)	308
Total Acres	1,208

Figure 36: Forest thinning and silvicultural treatments accomplished

The Jenny Ridge salvage sale resulted from a major wind event that crossed our region back in April of 2011. We awarded all sales in FY14 through a public bidding process. Old Ferry Road and Paradise were the third and fourth sales to be sold out of the Demumbers Creek Environmental Assessment and both have a shortleaf pine restoration component in them.

These three sales encompass 900 acres and will generate approximately 10,000 CCF (100 cubic feet) of volume for local wood production. Our purpose for these sales is to create regenerating, mature open, and oak woodland forest structures. This will improve habitat diversity, forest resiliency and help prevent insect and disease infestations.

We continued to implement timber stand improvement (TSI) using chain-saw cut and leave thinning of the forest vegetation. FY2014 timber stand improvement treatments served as part of an integrated treatment process to increase and develop site conditions favorable for the establishment of shortleaf pine and oak regeneration. We treated approximately 308 acres of forest within the Devil's Backbone project area. This project improved site conditions for the development of natural shortleaf pine and oak regeneration.

Trigg County Hospital and the Lyon County High School continue to utilize biomass generated from our timber sales

We initiated the Pisgah Bay Project Area in the beginning of the year. This project has been scoped with comments received. This project will promote approximately 3,000 acres of mature forest and just over 1,500 acres of regenerating oak-hickory and shortleaf pine forests. (2015 Update: We cancelled this project as proposed to focus on collaboration with the public about land management at Land Between The Lakes.)

We collected fuels data for the Demumbers project area using photo plots and a modification of Brown's Protocol in the summer of 2011 before prescribed burning and then again the summer 2014 after our prescribed burning. The chart below summarizes the results.

A comparison of the 2011 and 2014 fuel data shows the prescribed fire was of moderate intensity and overall fuel volume remained relatively unchanged. There was only a slight increase in the amount of fuel volume found within the fine fuel class ($< 0.25''$). The average duff layer of dead plant material doubled; while the average fuel depth remained constant.

Another change in fuel composition is a slight increase in the rotten, and larger increase in the sound, woody debris greater than 3" diameter size.

Year	Avg. duff depth (inches)	Avg. fuel depth (inches)	Avg. woody debris >3" diameter, sound (inches)	Avg. woody debris >3" diameter, rotten (inches)
2011	0.6	0.8	5.7	6.2
2014	1.2	0.8	7.1	6.8

Figure 37: Demumbers fuels surveys 2011 and 2014



Figure 38: Photo comparison of Demumbers Vegetation Plot 12 on an East Slope Aspect: Before management (left photo) and After timber sale, herbicide treatment, and prescribed fire (right photo).

Q5.7. How well are species of viability concern being maintained on Land Between The Lakes?

We report on species of viability concern annually, every 2 or 3 years, and every 5 years. Species' reports that follow are on the annual cycle.

MQ5.7 Trends in key habitats and/or populations of viability concern species.

Trends will be addressed in the 10 year report for Fiscal Year 2015.

Q5.8. Are non-native invasives an increasing threat to Land Between The Lakes?

See the discussion for non-native invasive species at the beginning of goal 5.

MQ5.8. Trends in highest risk species.

Trends will be addressed in the 10 year report for Fiscal Year 2015.

Q5.9. How is management of Land Between The Lakes affecting recovery of threatened and endangered species?

(Duplicate questions for Measures 9-10)

We continue to manage our natural resources to help provide habitats for native wildlife and for the recovery of threatened and endangered native species.

M Q5.9 Trends in Price's potato bean populations in relationship to Threatened & Endangered (T&E) Recovery.

Price's Potato Bean

During 2014 our wildlife staff surveyed Price's potato bean stem and flower production in July at all known sites in Land Between The Lakes. We also surveyed pod production in September at three of the known Kentucky sites. We conduct this work in cooperation with the Kentucky and Tennessee US Fish and Wildlife Service (USFWS) and the Tennessee Department of Environment and Conservation.

Our growing season in early spring was cool and wet followed by some dry conditions in late spring/early summer. Summer temperatures were mostly in the 80s and 90s. In comparison to previous years of observations, the overall vine growth was fair to good on four of the five sites. For all sites combined, we counted a total of 122 vines, 1,033 flowers, and 54 bean pods. The US Fish and Wildlife Service collected some of the bean pods to be used for further research and propagation.

Monitoring of populations and habitat conditions will continue for all sites with implementation of the Price's Potato Bean Recovery Plan. The recovery plan for the Price's potato bean populations

will be revised as needed in cooperation with our partners and based on results obtained through management, monitoring, and research.

MQ5.10. Trends in bald eagle populations in relationship to Threatened & Endangered (T&E) Recovery.

Bald Eagle

We continue to monitor winter occurrences, nesting sites, and nesting success for the bald eagle. We monitor in partnership with the Kentucky Department of Fish and Wildlife Resources (KDFWR), Tennessee Wildlife Resources Agency (TWRA), U.S. Fish and Wildlife Services as well as their partners and our volunteers through the Friends of Land Between The Lakes.

During the January 2014 midwinter survey, we counted 212 bald eagles along the shorelines of Kentucky Lake and Lake Barkley - 163 adults and 49 immature. Of the 212 eagles observed, 88 eagles were on our shoreline - 63 adults, 25 immature eagles with 59 of them in Kentucky and 29 in Tennessee. The following figure shows the trend in bald eagle populations on our shoreline.

In the April 9, 2014, Kentucky Midwinter Eagle Survey Report, the Kentucky Department of Fish and Wildlife Resources avian biologist stated that harsh winter weather conditions in early 2014 in the Great Lakes region, and in Kentucky likely led to a higher count of wintering eagles in the Commonwealth in comparison to counts in recent years. Per this report, our midwinter eagle surveys at Land Between The Lakes produced the highest count on record since 2010, the last really cold winter.

Midwinter Eagle Counts through aerial surveys on our shoreline						
2008	2009	2010	2011	2012	2013	2014
87	77	118	27	28	48	88

Figure 38: Midwinter Eagle Survey Counts

Bald eagle fledging success in Land Between The Lakes has been monitored since 1984 when the first successful nesting of bald eagles occurred in Tennessee. Over the past ten years, the number of eaglets fledged has remained fairly constant with a slight increase beginning in 2007 when the bald eagle was delisted.

In 2014 the nesting season was later than in past years due to a late spring. We monitored 19 active nests which produced 26 fledglings. The fledgling period was 3 months long. The first fledgling left the nest on April 7, 2014.

Eaglets Fledged from nests on Land Between The Lakes Monitoring began in Tennessee in 1984 and Kentucky in 1989					
Year	Totals	Year	Totals	Year	Totals
1984	1	1998	5	2012	19
1985	1	1999	14	2013	28
1986	0	2000	18	2014	26
1987	2	2001*	7		
1988	2	2002	15		
1989	4	2003	20		
1990	4	2004	14		
1991	4	2005	16		
1992	2	2006	12		
1993	4	2007	22		
		Species Delisted			
1994	6	2008	21		
1995	4	2009**	Unknown		
1996	6	2010**	8		
1997	4	2011***	16		
Total Eaglets Fledged:					305
* 2001: Transfer to Forest Service; insufficient staff to monitor nests					
** 2009 and 2010: weather related events diminished ability to monitor nest sites and assess fledging success					
*** 2011: LBL TN only one nest monitored for fledgling success					

Figure 39: Table of fledge eaglets since 1984

Q5.11. How is management of LBL affecting demand for wildlife-related recreation?

(Duplicate questions for Measures 12-14)

Land Between The Lakes continues to be a destination forest for wildlife-related recreation. See the tracking in Goal 7 for participation in hunting activities on Land Between The Lakes.

MQ5.11. Trends in Eastern bluebird populations as a Non-game Demand species.

Trends will be addressed in the 10 year report for Fiscal Year 2015.

MQ5.12. Trends in white-tailed deer populations as a Demand Game species.

Trends will be addressed in the 10 year report for Fiscal Year 2015.

MQ5.13. Trends in Eastern wild turkey populations as a Demand Game species.

Trends will be addressed in the 10 year report for Fiscal Year 2015.

MQ5.14. Trends in Northern bobwhite quail populations as a Demand Game species.

Trends will be addressed in the 10 year report for Fiscal Year 2015.

Q5.15. How is management of LBL affecting special habitats and major biological communities?

Treatments to manage habitats were discussed at the beginning of the goal 5 section. Some of the measures below were addressed and the others will be addressed in the 10-year M&E report.

(Duplicate questions for Measures 15-25)

MQ5.15. Trends in pileated woodpecker populations in relationship to Snags in Forested Situations.

Trends will be addressed in the 10 year report for Fiscal Year 2015.

MQ5.16. Trends in Eastern bluebird populations in relationship to snags in Open Forested Situations.

Trends will be addressed in the 10 year report for Fiscal Year 2015.

MQ5.17. Trends in Acadian flycatcher populations in relationship to Mature Riparian Forests.

Trends will be addressed in the 10 year report for Fiscal Year 2015.

MQ5.18. Trends in Northern bobwhite quail populations in relationship to Grasslands.

Trends will be addressed in the 10 year report for Fiscal Year 2015.

MQ5.19. Trends in prairie warbler populations in relationship to Oak Woodlands.

Trends will be addressed in the 10 year report for Fiscal Year 2015.

MQ5.20. Trends in Great-crested Flycatcher populations in relationship to Mature Open Oak Forest.

Trends will be addressed in the 10 year report for Fiscal Year 2015.

MQ5.21. Trends in wood thrush populations in relationship to Mesophytic and Riparian Forests with Canopy Gaps and Mature Forest Interior.

Trends will be addressed in the 10 year report for Fiscal Year 2015.

MQ5.22. Trends in Eastern meadowlark populations in relationship to Grassland.

Trends will be addressed in the 10 year report for Fiscal Year 2015.

MQ5.23. Trends in Yellow-breasted chat populations in relationship to All Forest Type Regeneration.

Trends will be addressed in the 10 year report for Fiscal Year 2015.

MQ5.24. Trends in composition of aquatic communities dependent on clear water and stable channels.

Trends will be addressed in the 10 year report for Fiscal Year 2015.

MQ5.25. Trends in bat population levels.

Our bat survey is scheduled for 2015 and trends will be discussed in the 10-year M&E report.

Q5.26. Is the forest less likely to be affected by insects, disease, and wildfire?

(Duplicate questions for Measures 26-28)

Land Between The Lakes and our partners actively manage and monitor the forest. These treatment efforts lead to a resilient forest to better withstand impacts.

MQ5.26. Trends in early, mid-, and late-successional forests by prescription group.

See the discussion of treatments above and trends will be evaluated in the 10-year M&E report.

MQ5.27. Trends in species diversity, structural diversity, age class, and stocking levels.

See the discussion of treatments above and trends will be evaluated in the 10-year M&E report.

MQ5.28. Trends in native insect and disease effects.

Insects and Disease

We placed twenty-seven gypsy moth traps across the forest, and did not find any moths.

A new exotic insect of concern is the emerald ash borer which is often transported by people through bringing firewood onto a property. Confirmed populations are located in southern Indiana and central Kentucky. Because of this, we placed emerald ash borer traps throughout the peninsula, with a focus on high use recreational areas. We did not find any of these beetles.

Though no insects were found, we will continue to use insect traps to determine the presence or absence of the Gypsy Moth and Emerald Ash Borer.

Concerns for forest health go beyond sporadic weather events. Oak decline along with other forest pests and pathogens can have an effect on our predominantly oak-hickory forest. You can find out more about “oak decline” in the pamphlet at

www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsbdev2_043214.pdf.

Due to ice storm damage of 2009, multiple wind events in 2011, and drought conditions in 2012 – oak decline is of concern. Storm damage to more than a third of the crowns will reduce photosynthetic capability to a point where root function is compromised.

These factors can incite and contribute to forest health concerns with respect to resilience and successional development. It can also leave oaks more susceptible to *armillaria* root rot, *hypoxylon* canker, and various insects including the two-lined chestnut and red oak borers.

We found no overt signs of an oak decline breakout in FY14. However our continued observation and inventory data collection reaffirms the trend of increased mortality of older trees throughout the forest, especially among tree species within the red oak family.

Wildfires

In addition to prescribed fire operations, we had three wildfires (8.5 total acres) ranging from 0.1 to 8.3 acres. The largest fire (8.3 acres) was located across from Wranglers Campground. Fire staff contained the incident while implementing a prescribed burn in Crooked Creek area.

Q5.29. Has the FS made progress towards identifying old growth stands on the ground?

Land Between The Lakes identifies old growth on a project by project basis. Since approximately 42,000 acres of Core Areas have had little to no management for the last two decades, we expect Core Areas to contain some old growth stands; although we have not inventoried these acres specifically.

MQ5.29. Completed inventory of old growth stands.

We identify old-growth tree stands when we conduct inventories of the forest as part of our land and natural resource management duties. We did not identify any stands of old growth.

We inventoried approximately 500 acres in the Rushing Creek Area (compartment 63). We will finish the inventory in Rushing Creek and Ginger Bay (Compartment 65) within the next fiscal year. These compartments, when finished, will be used to develop integrated vegetative management treatments for these project areas as stated in the plan.

Prescription Area	Acres Inventoried
General Forest	500
Core Areas	0
Total Acres	500

Figure 40: Forest acres inventoried during FY2014

Fiscal Year 2014

Goal 6:	Demonstrate and widely export innovative, efficient, and effective management techniques that can benefit others.
Sub-element NFS Generic Desired Condition	“Through the Demonstration Project role, the FS will continually seek to sharpen its management policies and techniques with an eye toward exporting these innovative and beneficial approaches to others locally, regionally, and nationally.” [Area Plan, Vision]
Example Area Plan Desired Condition Statement	“In its demonstration role, LBL will develop and test the programs, methods, and systems by which recreation, EE, and vegetation are managed, with the intention of promoting those elements that would provide benefits to other public and private land managers and units.” [Area Plan, Vision]
Desired Trend Statement	“Each year, export three to five demonstration products.” [Objective 6a]
Monitoring Questions	30. Has LBL produced measurable results from demonstration projects that have led to positive changes on other units? 31. How many demonstration products have been exported?
Area Plan Performance Measures	30. Trends and annual summary of accomplishments and results 31. Trends and annual summary of accomplishments and results
Data Sources Utilized	--Annual summary of units supported, accomplishment reports, feedback, policies changed, results; tracking, by documenting the assistance provided, support to specific organizations and agencies --Track annual accomplishments with standard tracking system
Importance	This goal contains one of the key emphases of the LBL Protection Act and reinforces the key purposes described for LBL when created in 1963. Effective delivery of conservation education messages is also a primary objective of both LBL and the agency.
What It Tells Us	The results related to this goal will provide key information about whether LBL is meeting its legislated objectives.

Goal 6: Demonstrate and widely export innovative, efficient, and effective management techniques that can benefit others.

Q6.30 Has LBL produced measurable results from demonstration projects that have led to positive changes on other units?

M Q6.30 Trends and annual summary of accomplishments and results

Shrinking budgets and workforce has shifted our demonstration efforts into an internal focus. We have mostly served other forest and public land units in advisory capacities or for site visits.

Our work on trail maintenance and repairs in Goal 7 serves as an example of demonstrating new methods to achieve greater sustainability.

Woody Biomass

We continued our five-year commitment to develop biomass harvesting operations in our timber sale and stewardship projects to provide a fuel source for the biomass boiler demonstration projects completed in 2011 at the Lyon County High School and 2012 at the Trigg County Hospital.



Figure 41: Woody Biomass Demo Project

Per the five-year agreement, we continued to provide wood chips to reduce hazardous fuel levels and to provide heat for the two facilities. Wood chips are composed of a mixture of hardwood and softwood material originally from storm damaged trees that would otherwise have little or no economic value.

We partnered with a local company to demonstrate the use of wood pellets for fuel in the cold months of FY14 and will share the results in the FY2015 M&E report.

Tourism Marketing & Promotion

We continue to help surrounding tourism industry members, both government and private, with their marketing and communication efforts to promote our region as a tourist destination.

Because of the Land Between The Lakes Protection Act of 1998, we can advertise to draw tourism dollars to the region.

(http://thomas.loc.gov/cgi-bin/cpquery/?&dbname=cp108&sid=cp1088FKTw&refer=&r_n=hr195.108&item=&&&sel=TOC_392685&) Since 2013 we have integrated our successes in traditional advertising with responsive internet communications, social media, and third party apps on smart phones and tablets.



Figure 42: New website screen shot on iPhone5

In June of 2014, our new responsive website went live. You can find it at www.LandBetweenTheLakes.us. Now our visitors can plan their visits from anywhere, at any time, and on any device.

We also encouraged employee engagement in social media, especially our young interns and apprentices. To reach a younger audience we established separate Twitter accounts for our environmental education facilities to include Nature Station @LBLnature, our 1850s Homeplace working farm @LBLhomeplace, and our Golden Pond Planetarium @LBLplanetarium.

We cross promote through all Twitter channels, while customizing content for their particular audiences. We've picked up quite a few educators as well as special interest followers through this effort.

We network with chamber organizations, convention and visitor bureaus, tourism organizations, government agencies, and universities to promote regional tourism facilities and opportunities. As more organizations become active, our reach grows.

Also in 2014, we helped other government and member businesses with establishing a social media presence. We shared our guiding principles and our reference site, DigitalGOV at www.digitalgov.gov/resources/

Valles Caldera National Preserve

Our working relationship with Valles Caldera National Preserve began in August of 2013. At that time four members of Valles Caldera National Preserve www.vallescaldera.gov/ conducted a site visit at Land Between The Lakes. The 89,000 acre property is remotely located in the Jemez Mountains in northern New Mexico.

During their visit we discussed business practices, friends groups, and planning practices.

Follow up continued in FY14; we shared documents, agreements and the Executive Director of Friends of Land Between The Lakes visited Caldera. Our marketing plan and social media strategies were later shared with their Public Affairs Specialist. In the summer of 2014, the Valles Caldera's landscape architect detailed to Land Between The Lakes for four months to conduct landscape inventory surveys.

Q6.31 How many demonstration products have been exported?

LBL assisted San Dimas Research and Technology Development Center is producing a new trail monitoring publication. LBL's remote soil moisture monitoring station was published in "Remote Soil Monitoring for Data Based Road Closure Decisions" and will be available agency wide in FY 15.

M Q6.31 Trends and annual summary of accomplishments and results

Reference above for results.

Fiscal Year 2014

Goal 7:	Enhance dispersed recreational and EE opportunities throughout LBL.
Sub-element NFS Generic Desired Condition	<p>“...management will also promote and increase support for dispersed day-use and extended-stay activities in anticipation of increased demand in dispersed recreational and educational activities and experiences.</p> <p>“Hunting and fishing will continue to be important dispersed recreation opportunities at LBL.” [Area Plan, Vision]</p>
Example Area Plan Desired Condition Statement	<p>“Dispersed activities and opportunities will become an extension of the developed Rec/EE facilities and sites that currently exist.”</p> <p>“Program and project efforts will be directed toward improving and developing self-guided trail systems for nature viewing, hiking, biking, and horseback riding. Scenic lake vistas will be opened up, and the road system will support scenic driving, access to cemeteries, and access to dispersed recreational opportunities.” [Area Plan, Vision]</p>
Desired Trend Statement	<p>“Rehabilitate one to two areas contributing to dispersed recreation opportunities (e.g. backcountry, lake access, etc.) annually as determined by the realignment process, based on meeting present and anticipated user needs, providing resource protection, reducing maintenance costs, and reducing infrastructure.” [Objective 7a]</p> <p>“An average of one to two miles of trail will be constructed annually.” [Objective 7b]</p> <p>“Complete an average of one interpretive project annually within the Nature Watch Demonstration Areas and Oak-Grassland Demonstration Areas.” [Objective 7c]</p>
Monitoring Questions	32. Have dispersed recreational and EE opportunities at LBL been enhanced? (Duplicate question for Measures 32-35)
Area Plan Performance Measures	<p>32. Trends and annual summary of accomplishments and results</p> <p>33. Backlog of facility and trail maintenance needs and trends</p> <p>34. Results and trends in user satisfaction ratings</p> <p>35. Trends in financial resources needed and available to provide recreation opportunities</p>
Data Sources Utilized	<p>--Objective accomplishments, percentage of visitation utilizing dispersed Rec/EE opportunities</p> <p>--Analysis of Infra Deferred Maintenance Report and reporting of percent change in backlog</p> <p>--Summary of visitor satisfaction surveys or personal letters and notes received; objective accomplishments, integrated projects completed</p> <p>--Analysis of incoming funds-traditional budgets and fee collections-and costs of operations, in view of needs; reports using standard tracking systems</p>
Importance	This goal contains one of the key program changes displayed in the LBL Area Plan and responds to concerns voiced by the visiting public during the planning process that LBL

	was not meeting changing customer demands through existing services.
What It Tells Us	The results related to this goal will provide key information about whether LBL is meeting its stated objectives in the Plan and is responding to the feedback of the public.

Goal 7: Enhance dispersed recreational and EE opportunities throughout Land Between The Lakes.

Q7.32 Have dispersed recreational and EE opportunities at LBL been enhanced?

(Duplicate question for Measures 32-35)

We continue to enhance recreational and environmental education opportunities at Land Between The Lakes.

In September of 2014, we improved customer satisfaction by offering backcountry permits and equestrian day-use permits for sale online through our reservation system. This gave customers 24/7 access to purchase permits. Users requested this change for greater convenience.

Our new responsive website also went live in June of 2014. Now you can access our website on any device – from desktop to smartphone. You can find our website at www.LandBetweenTheLakes.us.

M Q7.32 Trends and annual summary of accomplishments and results

We continue to provide outdoor recreational activities that people desire according to Outdoor Industry Association's Participation Topline Report for 2014 found at <https://outdoorindustry.org/research-tools/research-reports/>.

“The most popular activities among young people, in terms of overall participation, continued to be running, biking, fishing, camping and hiking. Running, biking and skateboarding were among their top five favorite activities as measured by frequency. Adults reported similar favorite outdoor pursuits.”

“Participation in racing, such as adventure racing and triathlons, has increased significantly over the past three years. Water sports, like stand up paddling and kayak fishing, have also seen an increase in participation during the past several years.”

From the respondents interviewed, the report estimates that 7.2 billion outdoor outings occurred during the year of their study which equated to 77 average outings per participant.

Because of the urbanization of America and growing trend among young people to be wired to the internet, we decided to participate in the Get to Know Organization's *Agents of Nature* game. They designed this nature game to entertain fourth through sixth grade students as they discover nature by walking around outside. You can find out more information about the game at <http://agentsofdiscovery.net/>.

We anticipate the game will go live in the spring of 2015. It will be headquartered out of Woodlands Nature Station.

M Q7.33 Backlog of facility and trail maintenance needs and trends

In March of 2014, we implemented a new maintenance contract that allowed for greater flexibility to better meet unexpected needs, needs, such as those caused by weather and on-going maintenance requirements.

Deferred Maintenance

We completed some of our deferred maintenance projects by replacing the bathhouses in Piney Campground that were built in the 1980s. Replacement of a total of 8 bathhouses, including four accessible bathhouses, improved camping experiences for our Piney visitors.



Figure 43: New bathhouses at Piney Campground include 4 accessible facilities

We also painted one dormitory and replaced some siding on our dormitories at Brandon Spring Group Center in FY2014.

Trails

During FY14, our staff and volunteers maintained to standard about 158 miles of trail routes and improved to standard 18 miles of trail routes. The 158 miles of trails account for nearly 49% of all system trails at Land Between The Lakes. We also used a new trail hardening product that uses crushed aggregate in an effort to reduce maintenance needs and improve rain runoff.

Miles	Trails
16	Nature Station Trails - 8 miles twice Hematite, Center Furnace, Woodland Walk, and Honker Trails
58	North/South Trail
27	Fort Henry Trails Pickett Loop, Telegraph, Piney, Artillery, Devil's Backbone, Tennessee Ridge, and Peytona Trails
11	Central Hardwoods Scenic Trail
14	Canal Loop and Connectors (Volunteers)
5	Hillman Heritage Trail
9	Brandon Spring Trails Yellow, Blue, Red, White, Orange, and Paw Paw Trails
18	Wranglers Horse Trails 3,4,5,6,7, and 8
158	Total Trail miles

Figure 44: Trail miles maintained in FY14

We completed improvements on the Central Hardwoods Scenic Trail, including installation of new arch culverts and French drains. We used a new product Geo-pave. Our Friends of Land Between The Lakes provided and installed one new bench and two bikes racks along the trail.



Figure 45: Central Hardwood Scenic Trail improvements completed for FY14

Trail condition surveys were completed on one equestrian trail, five off highway vehicle trails and one bike/hike trail. Our trail conditions passed inspection 100% for the last 5 years.



Figure 46: North/South Trail improvements L-R: poorly drained section on the trail south of FS Road 110. Trail site was a safety concern, especially for bikers.



Figure 47: Before and after on North/South Trail improvement

We completed the Turkey Bay Off-Highway Vehicle Area Site Plan which included recommendations for a new precast gatehouse. Recommended campground improvements included 25 new fire rings, new picnic tables, and new gravel parking areas.



Figure 48: Installing the precast gatehouse at Turkey Bay OHV Area in early FY2015

Hematite Trail

We contracted with a former Forest Service employee and member of Trails Unlimited to develop trail improvement suggestions for Hematite trail. Recommendations included a range of alternatives and associated costs to complete. Trail structures evaluated included two observation blinds, a new accessible trail to a lake-view overlook, replacement of three major trail bridges, and upgrades for around 1,100 feet of boardwalk sitting on the marsh ecosystem.

We're currently evaluating the recommendations and costs. Friends of Land Between The Lakes has offered to raise funds for Hematite Trail as their next major fundraiser.

Because of safety concerns with the rotting wood and encroachment of snakes, we had to tear down the observation blind on Hematite trail. Six Interns, trail staff, and seasonal hires from Clarks River National Wildlife Refuge completed the demolition and back haul. We left the observation deck and boardwalk supports for waterfowl, wading birds, and other aquatic wildlife to use for nesting and feeding areas.



Figure 49: Hematite Trail observation blind obliteration

Wrangler Horse Trails

We improved equestrian trails and shared surface roads in the Dry Creek Watershed area. We improved 8.2 miles of trails/shared surface roads using legacy roads and trails (CMLG) funds. An additional 9.8 miles of trails/shared surface roads were improved using Watershed funds. We closed and rehabilitated three user-made trails.



Figure 50: Wranglers Trail #7 and shared surface Forest Service Road 353 improvements



Figure 51: Wrangler Trail #3 improvements



Figure 52: We filled the entrenched Wranglers Trail #4 and installed appropriate water drainage structures using onsite material as can be seen in these before and after photos

We decided to test a new trail hardening product on Wranglers trail #6. The new product, Geo-Pave, is made with crushed aggregate to reduce horse hoof post holing and standing water.

Fiscal Year 2014



Figure 53: Wranglers Trail #4 before, during, and after maintenance



Figure 54: Wranglers Trail #8 and Forest Service Road 352 improvements

M Q7.34 Results and trends in user satisfaction ratings

User satisfaction can be found in [Goal 2](#) under Measurement Question 2.3 *Trends in visitation, levels of community participation.*

Special Events

We continued to serve as a preferred location for many special events organized by our communities and enjoyed by over 3,500 recreationists. FY 2014 events included:

- The Land Between The Lakes Challenge
- Race to the Canal
- White Lightning Cross Country Mountain Bike Race
- 12 hours of the Canal Loop Mountain Bike Race
- Annual Land Between the Lakes National Dual Sport/Trail Ride Series – since 1986
- Jeep Jamboree
- LBL 200
- West Kentucky Runners Marathon
- Various motorized and non-motorized military trainings
- ATV Safety Institute trainings
- Kentucky Lake Drag Boat Races
- Carporee Bowfishing Tournament
- Several Raccoon and Squirrel Dog Trails
- Wranglers Primitive Rodeo
- Piney's Camper Fair

Hunting

We now manage an online quota hunt application process. Many hunters appreciate the online quota system. It saves staff time when compared to other more laborious paper methods. We continue to respond to hunters' questions during the application process.

Thousands of hunters apply for deer and turkey quota hunts each year. The number of hunters that applied for quota hunts during 2014 was down slightly by approximately 2.5 percent over last year. Turkey applications increased 4.5 percent while deer applications decreased 4.5 percent.

Deer quota hunt harvests were 20 percent lower in fall of 2014 than during the previous 5-year average.

Turkey quota hunt harvest numbers were down 25 percent compared to the previous 5-year average. This is thought to be in part due to a very late spring green up which also delayed turkey breeding behavior until late in the season.

In partnership with the National Wild Turkey Federation (NWTf), we continued to provide turkey and deer hunting opportunities for hunters who are confined to wheelchairs.

Species And Year	Quota Hunt Applications	Number Harvested During Quota Hunts
Deer		
2006	12,312	843
2007	12,414	731
2008	11,965	796
2009	10,166	544
2010	9,307	641
2011	9,032	537
2012	8,779	627
2013	8,575	565
2014	8,209	468
Turkey		
2006	2,724	164
2007	2,583	117
2008	2,629	113
2009	2,292	114
2010	2,407	130
2011	2,232	132
2012	2,261	174
2013	2,322	121
2014	2,425	101

Figure 55: Quota Hunt Results FY14

Fiscal Year 2014

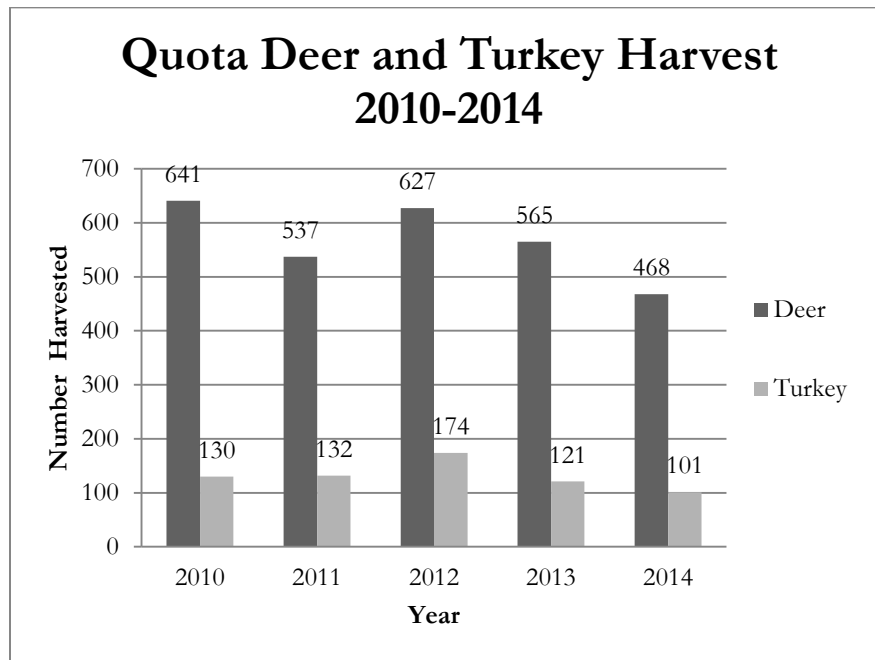


Figure 56: Harvest Comparison by year

Environmental Education Program

Woodlands Nature Station continues to serve as the hub for the Woodlands (northern) Nature Watch Area. We've designed the area to get our visitors out into nature, to see wildlife, and to explore on their own. Activities include canoe tours, eagle van tours, nature watch tours, night hikes, nature hikes and evening programs.

We secured funding through the Region's More Kids in the Woods Challenge Cost Share program to build a game application for smart phones and tablets that encourages grade school age children to get out into nature. Youth will hike the Woodlands Walk (around Nature Station), searching for clues to answer. We are working with the Get to Know Group to develop our "Mission Site" for their international Agents of Nature mobile game. We expect to go "live" in April 2015.

Our off-site programs included outreach in the nearby communities at library events, senior citizen gatherings, other agency camps, and state parks. In 2014, interpreters reached 624 people.

Heritage Program

As we design the interpretation and education outreach elements of our heritage program, we decided on a theme of "Gone but not Forgotten: All About Discovery." The people who once lived here no longer do; only remnants of their physical lives remain. This fact means many heritage opportunities will be dispersed; located all across Land Between The Lakes. Visitors can discover the history of the area as they enjoy the landscape the former residents called home.

This year we finally completed the Fisherman's One-Stop interpretation project. This is one of several interpretive sites we are developing along the newly completed Central Hardwoods Scenic Trail along Kentucky Hwy 68/80. Fisherman's One-Stop Resort stretched across a hillside within the former community of Fenton. The resort became popular as visitors began to travel for recreation to the area after the creation of Kentucky Lake in the 1930s and 1940s. We held a series of six public outreach meetings with members of the public and former residents of Land Between The Lakes in 2007. The number one requested project was to mark the former locations of churches and schools within Land Between The Lakes. The project is a way to remember and acknowledge the sacrifices people made when the recreation area was created. It's also a way to help LBL visitors learn about the historic communities that once flourished here.

In 2011, funds became available to design and purchase approximately 99 posts to mark the former locations of churches and schools. In the spring of 2012, Between The Rivers, Inc., a local group of former residents from the Lyon County, Kentucky volunteered to install many of the Lyon County church and school posts.

We marked former locations of churches and schools with the remainder of the posts, trying to ensure at least one installation day per month of around 5-6 posts.

M Q7.35 Trends in financial resources needed and available to provide recreation opportunities

These trends will be discussed in our 10 year report.

Fiscal Year 2014

Goal 8:	The LBL Area Plan will remain effective and usable and lead to accomplishments that support National Strategic Goals.
Sub-element NFS Generic Desired Condition	"...as a unit of the FS, LBL will actively fulfill its role in support of the FS's National Strategic Goals." [Area Plan, Mission]
Example Area Plan Desired Condition Statement	"The programs and methods used at LBL will be in a constant state of evaluation for improvement and refinement, assuring that LBL will maintain a cutting-edge management focus in all disciplines." [Area Plan, Vision]
Desired Trend Statement	"A user-friendly and informative Area Plan monitoring and evaluation report will be produced annually and include comparison of LBL accomplishments and National Strategic Goals." [Objective 8a]
Monitoring Questions	36. Are the goals of the LBL Plan leading to accomplishments that support national objectives? (Duplicate question for Measures 36-39)
Area Plan Performance Measures	36. Trends and annual summary of accomplishments and results. 37. Determine whether standards, guidelines, and management requirements are being met and are effective in achieving expected results. 38. Determine if planning information or physical conditions have changed and provisions remain scientifically valid. 39. Comparison of estimated and actual costs of plan implementation.
Data Sources Utilized	--Comparison of projects and recent accomplishments to the National Strategic Plan goals and objectives; public comments; standard tracking systems --Interdisciplinary review; sample projects to observe effectiveness of implemented standards --Interdisciplinary review of Area Plan for needed changes as new information becomes available and/or significant changes in conditions are observed --Compare trends in operating budgets to the estimated costs of implementing the Area Plan
Importance	Ensures that the Plan stays usable and is working to support not only LBL goals, but those of the agency. Aids in communication with stakeholders.
What It Tells Us	By reviewing the accomplishments, we are able to find trends that indicate if the Plan is moving towards desired conditions, and should emerging issues begin to occupy more time and resources than the objectives in the Plan, indications for a "need for change" can be identified.

Goal 8: The Land Between The Lakes Area Plan will remain effective and usable and lead to accomplishments that support National Strategic Goals.

Q8.36 Are the goals of the Land Between The Lakes Plan leading to accomplishments that support national objectives?

(Duplicate question for Measures 36-39)

The 2004 Area Plan remains aligned with the goals of the Forest Service and Region 8. The planning information, assumptions, and provisions of the Area Plan remain scientifically valid.

M Q8.36 Trends and annual summary of accomplishments and results.

We continue to contribute to the achievement of the National Forest Service strategic goals by completing the assigned Performance Attainment Reporting (PAR) targets. The table below displays key accomplishments for the last five full fiscal years of the 2004 Area Plan implementation.

Fiscal Year 2014

Specific National Objective (Target)	Unit of Measure	FY10 Accomp.	FY11 Accomp.	FY12 Accomp.	FY13 Accomp.	FY14 Accomp.
Miles of high clearance system roads receiving maintenance	Mile	0	14	0	25	13
Miles of passenger car system roads receiving maintenance	Mile	0	147	108	234	241
Miles of road decommissioned	Mile	0.5	0	0	0	0
Total trail system miles meeting standard	Mile	329	179	97.4	92	132
Miles of system trail improved to standard	Mile	18	17	11	3	8
Miles of system trail receiving maintenance to standard	Mile	200	183	98.7	89	124
Number of interpretive and conservation education plans implemented	Plan	1	1	1	1	1
Priority Heritage assets managed to standard	Asset	4	5	6	N/A	N/A

Fiscal Year 2014

Heritage program managed to standard	Program	N/A	N/A	N/A	1	1
Recreation site capacity (number of People At One Time) operated to standard	PAOT (Core)	2,525,000	2,600,000	1,482,105	1,300,449	1,240,613
	(Integrated)	3,130,661	3,288,379	3,288,379	3,075,212	5,863,009
Number of wildlife interpretation and education products	Product	42	42	128	---	---
Acres of inland lake habitat enhanced	Acre	107	266	1,843	2,371	1,385
Acres of inventory data collected or acquired meeting corporate standards	Acre	52,785	9,878	7,850	6,000	15,260
Acres of non-threatened/endangered terrestrial habitat enhanced	Acre	7,889	4,443	17,811	14,688	13,742
Soil and water resource acres improved	Acre	92	37	6,592	6,593	802
Volume of Regular Timber Sold	ccf	1,665	6,513	7,615	2,949 plus 3,829*	9,853*
Number of forest special products permits issued	Permit	15	44	31	33	na
Annual monitoring requirements completed	Number	12	13	13	10	10
Landscape scale or Ecosystem assessments completed	Assessment	1	1	1	1	0

Fiscal Year 2014

Highest priority acres treated annually for noxious weeds and invasive plants on NF lands	Acre	498	771	432	808	851
Land use authorizations administered to standard	Authorization	42	32	43	38	27
Total Acres Treated For Haz. And Secondary Fuels	Acre	10,866	4,681	8,097	5,793	11,083
Haz. Fuels Acres Treated with Prescribed Fire	Acre	6900	2,600	5,172	5,698	5,154
Secondary Fuels (FN Other Acres Treated)	Acre	3966	2,081	3,125	---	5,929
Number of land use proposals and applications processed	Application	16	12	10	9	8
Recreation Special use Authorizations Administered to Standard	Authorization	303	259	250	200	208
Threatened & Endangered (T&E) and non-T&E Habitat Enhanced	Acre	900	9,848	17,806	14,688	13,741
Stewardship	Acre	4,402	4,984	3,783	5,010	5,380

Figure 57: Key accomplishments in 2014

*Due to accounting system, 3,829 ccf sold in FY13 was accounted in FY14.

In FY13 the Forest Service began tracking the heritage program as a whole, instead of tracking priority assets. The large increases between FY11 and FY12/13 in the number of acres of natural resource improvements came from a change in reporting to use of integrated accomplishments. These habitats include inland lake habitat enhanced, soil and water resource acres improved, threat and endangered (T&E) and non-T&E habitat enhanced. The actual acres treated are approximately the same numbers as FY11 and earlier.

The value for timber volume sold in the table has approximately 3,800 ccf from FY13 accounted for in FY14 in addition to the FY14 volume target.

M Q8.37 Determine whether standards, guidelines, and management requirements are being met and are effective in achieving expected results.

We monitor individual projects upon implementation and meet the plan direction, including the design criteria.

We continue to contribute to the achievement of the National Forest Service strategic goals by completing the assigned Performance Attainment Reporting (PAR) targets. Above table displays key accomplishments for the last five full fiscal years of the 2004 Area Plan implementation.

In FY13 the Forest Service began tracking the heritage program as a whole, instead of tracking priority assets. The large increases between FY11 and FY12/13 in the number of acres of natural resource improvements came from a change in reporting to use of integrated accomplishments. These habitats include inland lake habitat enhanced, soil and water resource acres improved, threatened and endangered (T&E) and non-T&E habitat enhanced. The actual acres treated are approximately the same numbers as FY11 and earlier.

The timber volume sold in the table has approximately 3,800 ccf from FY13 accounted for in FY14 in addition to the FY14 volume target.

M Q8.38 Determine if planning information or physical conditions have changed and provisions remain scientifically valid.

The leadership and interdisciplinary team who developed this report determined no changes are needed in the Area Plan at this time. The Area Plan is based on best available science and this is reviewed periodically during analysis of projects.

M Q8.39 Comparison of estimated and actual costs of plan implementation.

Funding – Budget

Our annual operating budget in fiscal year 2014 was approximately \$12.3 million: \$8.1 million in federal appropriations and \$4.2 million in revenue receipts.

Fiscal Year 2014

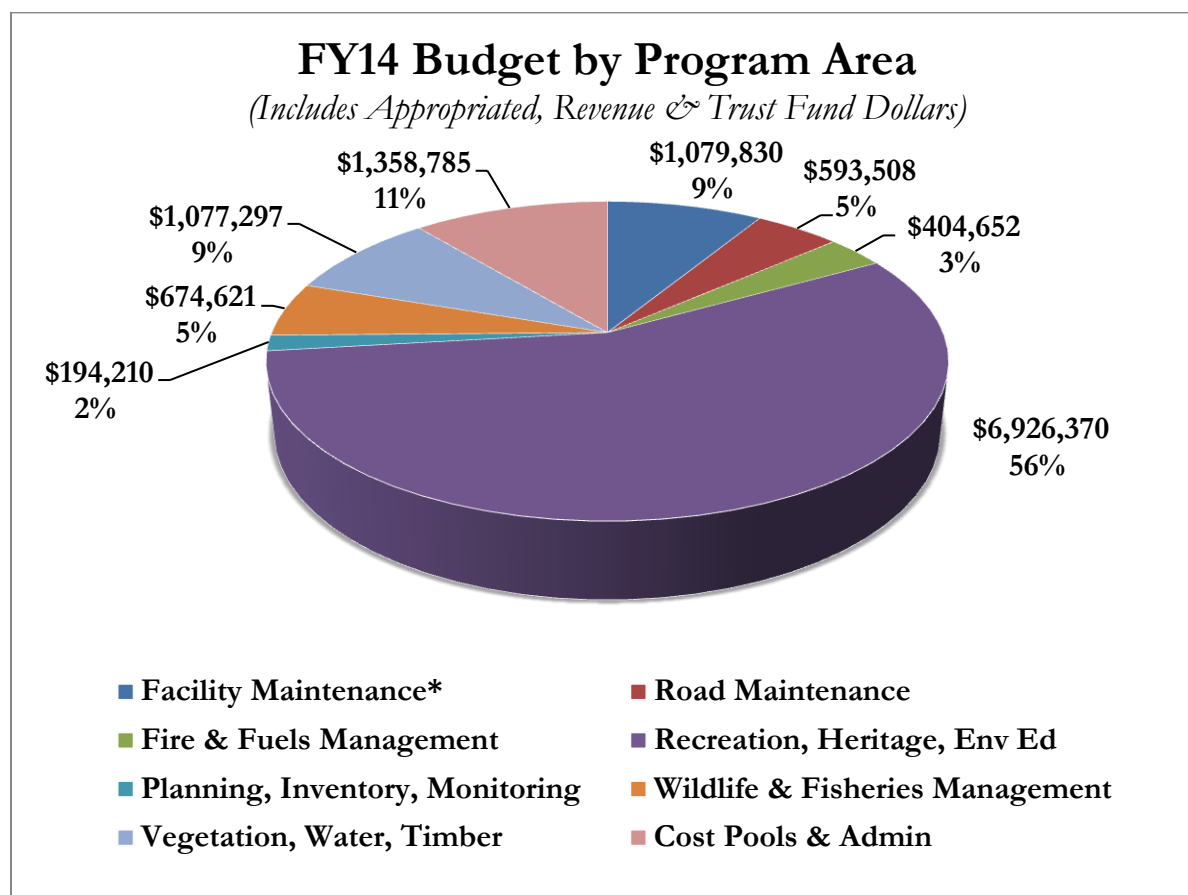


Figure 58: Budgeted dollars for FY14 with pie chart

Program Area	Amount	%
Facility Maintenance*	\$ 1,079,830	9%
Road Maintenance	\$593,508	5%
Fire & Fuels Management	\$404,652	3%
Recreation, Heritage, Env Ed	\$6,926,370	56%
Planning, Inventory, Monitoring	\$194,210	2%
Wildlife & Fisheries Management	\$674,621	5%
Vegetation, Water, Timber	\$1,077,297	9%
Cost Pools & Admin	\$1,358,785	11%
TOTAL	12,309,273	100%
*Includes recreation and environmental education maintenance dollars		

Volunteer Support

Volunteers provided 89,243 hours of service in FY2014 while our Public Land Corps Program for our apprentice and intern program provided 25,784 hours of service. The total of 115,027 hours, or 64 people-years, provided a \$2,593,860 value to Land Between The Lakes.

Partnership with the Friends of Land Between The Lakes provided an additional, in-kind assistance valued at around \$985,000 in addition to direct cash contributions of a \$350,000.

When we combine volunteer hours with all other in-kind assistance and cash contributions from partners, the value of total savings to the taxpayer in FY2014 reached over \$3.9 million.



Figure 59: Volunteers, like these trail workers, serve as an integral part of our overall success in visitors enjoying the region.

E. Action Plan

We did not find any need for any major actions or changes at this time in our FY14 Land Between The Lakes monitoring results. There are a number of minor actions listed below that implement several program initiatives outlined in the Area Plan or have some level of public expectation. These action items are drawn from the prior year's M&E Reports and have been updated. In addition, this report indicates no need for any additional Area Plan amendments.

Action Items and Status

1. Action: Develop a Programmatic Agreement with both State Historic Preservation Offices (SHPOs). Concurrently a Heritage Implementation Plan will be completed. (FY09)

Responsibility: Customer Service Department Staff

Completion Date: April, 2014

Status: Completed

2. Action: Implement the Area Plan strategies associated with the State Natural Area in the Devil's Backbone area in Tennessee by completing an environmental assessment (EA) to promote shortleaf pine regeneration. (FY07)

Responsibility: Environmental Stewardship Department Staff

Completion Date: September, 2013

Status: Completed

3. Action: Implement the first phase of the Prior Creek project. Offer the Crockett Creek Timber Sale Unit and begin harvest on this unit. Develop EE materials to interpret the Prior Creek project. (FY07)

Responsibility: Environmental Stewardship (timber) and EE (interpretation)

Completion Date: September 30, 2011

Status: Timber sale (Crockett Creek) offered but did not sell in 2008. Crockett Creek timber sale was sold in FY09 and timber was harvested during FY10. EE materials will be developed from monies generated by the timber harvest.

4. Action: Provide support to the Highway 68/80 improvement project. Implement mitigation items described in the decision documents. (FY07)

Responsibility: Customer Service (trail) and Environmental Stewardship (support)

Completion Date: Mitigations FY11.

Status: Support to highway improvement continued into FY14. We received funding for the mitigation items during FY13 and began implementation and planning of these items. We continue to explore alternatives for the mitigation of the equestrian trail with users. We completed the design, production, and placement of "you are here" maps in pullouts along the highway during FY14.

5. Action: Complete an Economic Impact Study to understand the economic impact specific visitor groups have on the outlying communities (Day use vs. overnight), and compare groups within uses (example: Nature Station vs. Homeplace – Wranglers Campground vs. Hillman Ferry Campground) (FY10).

Responsibility: Business Performance Department Staff

Completion Date: September 30, 2014

Status: In FY12 the Land Between The Lakes Business Plan was completed which serves as a step toward the completion of the Economic Impact Study. The Economic Impact Study was on schedule to be completed during FY13, but was dependent on the successful transition of the new Forest Service financial system (FMMI). The transition to FMMI caused delays in the Economic Impact Study. therefore this action item is incomplete.

6. Action: Implement the Area Plan and recommendations from the 2009 Ice Storm Assessment by completing an EA to improve habitat and recreation in the Pisgah Creek area. (FY12)

Responsibility: Environmental Stewardship Department

Completion Date: December 2014 (Decision Date)

Status: The project team began developing proposed actions to be evaluated in the Environmental Assessment during FY12. Field data was collected during FY13. Scoping for the proposed actions occurred in March/April 2014. The team considered the comments received as they worked on the environmental assessment draft for the Pisgah Bay area. During FY15 we cancelled this project as proposed to focus on collaboration about forest management at Land Between The Lakes.

Completion Date: anticipated September 30, 2015

7. Action: Collaborate with stakeholders about forest management at Land Between The Lakes. (FY14)

Responsibility: Area Supervisor

Completion Date: September 30, 2016

Status: Leadership Team made a renewed commitment to collaborate relative to forest management. We plan for collaboration to be integral to our planning and decision making efforts by September of 2016. During FY15, conversations with the public and elected officials will be ongoing.

F. Appendices

Appendix 1: Monitoring and Evaluation

The following section is a direct excerpt from Section 2 of the Area Plan. It clearly articulates both the reasons to develop this report and the methodologies being employed.

Monitoring and Evaluation

Monitoring constitutes an important link between the goals of the Area Plan and annual program accomplishments. The planning process has identified key monitoring questions that address each of the priority goals and objectives; they are listed in Part 1 of the document (*2004 Area Plan*) under Area Wide Goals. The monitoring program will focus on some risks mentioned previously while addressing suitable uses, use strategies, and design criteria. Much of what we monitor includes species' trends. For trends, we usually address every five years.

Our monitoring will track the wide variety of components of the Area Plan. Roles and contributions identified include our interdisciplinary program specialist who will complete data gathering and evaluation of the Area Plan's implementation. Additionally, both the general public and stakeholders will be involved to capture the perceptions of how successfully we achieve our area wide goals and objectives. Monitoring will track how well implementation of the Area Plan's goals and objectives is bringing the conditions of Land Between The Lakes to the desired conditions specified by the Area Plan.

Because this Area Plan also supports the Forest Service National Strategic Goals, the monitoring program will also weigh the Area Plan's progress and achievements in supporting these national goals. However, as these national goals are likely to change over time as national issues and special initiatives dictate, they were not included as formal goals of the Area Plan. This monitoring program, therefore, will include a comparison of this Area Plan's goals, annual program accomplishments, and current or future national goals as part of the monitoring process.

By applying the evaluation questions and measures for each area goal, results and trends will provide a clearer picture of progress toward the vision. The evaluation of monitoring information will measure how close LBL is to reaching desired conditions identified in the Area Plan, including goals, objectives, and susceptibility to emerging issues.

An important concept incorporated in this Area Plan is the continuing use of some evaluation factors used in the analyses of the Environmental Impact Statement (EIS) alternatives. This approach allows for those EIS evaluation factors to serve as benchmarks from which original assumptions can be tested, and progress toward desired conditions can be measured.

Evaluations will serve as the springboard from which the resource specialist can identify changes needed in the Area Plan or its implementation, or research needed to clarify and address management issues. Results will also be used to help set shorter-term (three-to-five-year) strategic direction, as well as annual work plans. Existing strategies will be updated as needed, based on these evaluations. Results will be in the Area Plan M&E annual report. The Monitoring Summary Table in the Appendix (*of the Area Plan*) includes a complete list of questions, measures, method of collection, frequency, and responsible staff."

Appendix 2: Friends Group Partners

Partners of Friends of Land Between The Lakes

Support our environmental education mission

State Parks:

- Kentucky Dam Village State Resort Park
- Lake Barkley State Resort Park
- Paris Landing State Park
- Kenlake State Resort Park

Conservation Organizations:

- Ducks Unlimited
- National Wild Turkey Federation
- Monarch Watch
- North American Butterfly Association
- North American Bluebird Society
- Purple Martin Conservation Association
- National Audubon Society
- National Wildlife Federation
- Frogwatch AZA
- Operation Rubythroat
- Red Wolf Coalition
- Living Lands & Waters
- Kentucky Waterwatch
- Cumberland River Compact
- Kentucky Bowfishermen

Universities & Colleges

- Murray State University
- University of Kentucky Extension
- Purdue University
- Austin Peay State University
- Southern Illinois University
- University of Tennessee, Martin

Federal Agencies:

- Natural Resource & Conservation Service
- Tennessee National Wildlife Refuge
- Clarks River National Wildlife Refuge
- US Fish & Wildlife Service
- Monitoring Avian Productivity and Survivorship (MAPS)
- Partners in Flight
- National Park Service

State Agencies & Local Organizations:

- Kentucky Department of Fish & Wildlife Resources
- Tennessee Wildlife Resources Agency
- Tennessee Aquarium
- Louisville Zoo
- Nashville Zoo
- Chattanooga Nature Center
- Caldwell County Conservation District
- Marshall County Public Library
- Logan County Public Library
- Western Kentucky Amateur Astronomers

Children's Organizations:

- West Kentucky 4-H
- Boy Scouts of America
- Trigg County High School Environmental Science Club
- Girl Scouts of America
- Joshua Tree Home Educators Association
- Highland Rim (middle TN) Headstart
- Futskilz Soccer Training

Professional Organizations:

- National Association for Interpretation
- Region 3 of National Association for Interpretation
- Kentucky Association of Environmental Education
- Tennessee Environmental Education Association
- North American Association for Environmental Education

Appendix 3: Annual Heritage Report

Available on the Internet at: www.landbetweenthelakes.us/stewardship/heritage/



Model Tennessee Post Office, 1964