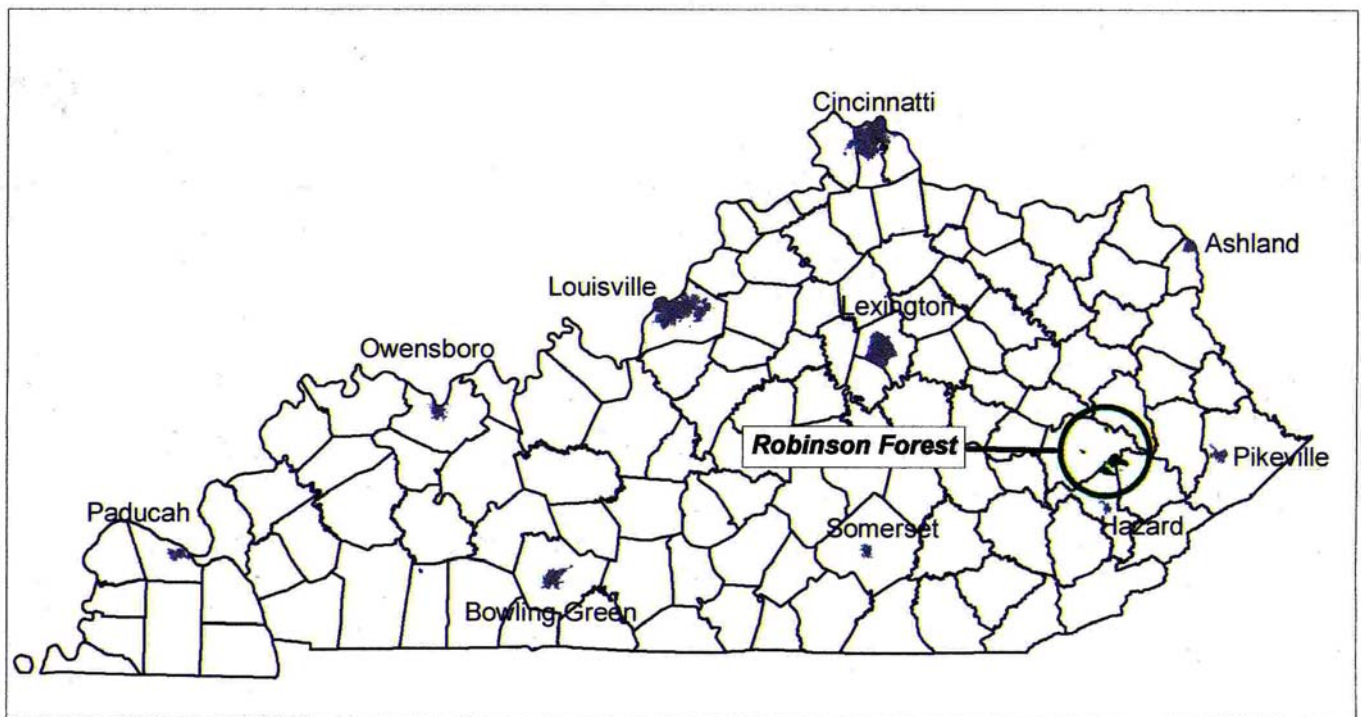
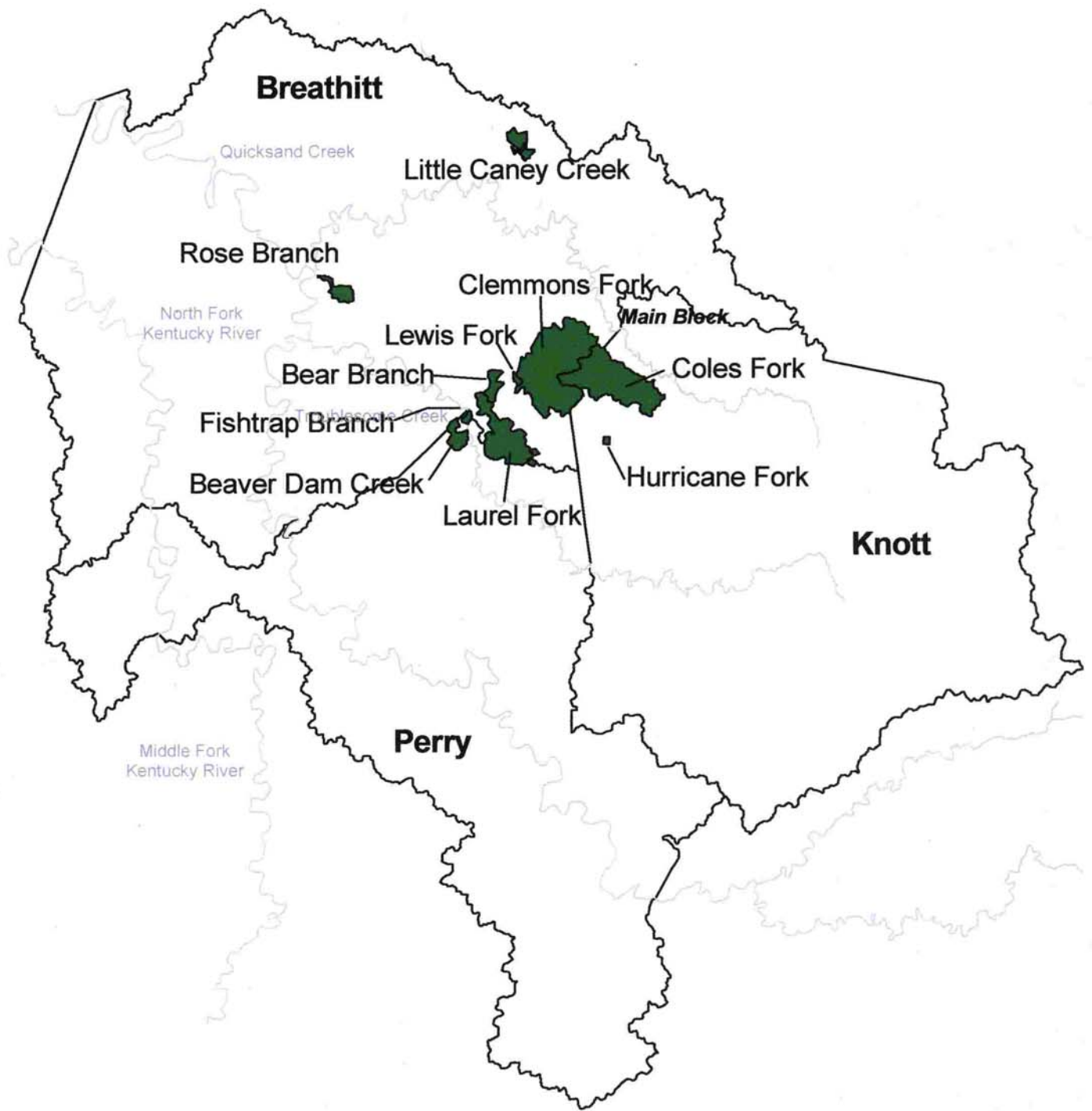


A REPORT ON THE ROBINSON FOREST

Prepared for the Board of Trustees
of
The University of Kentucky



September 2003



Tracts of the Robinson Forest

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INTRODUCTION

At a meeting of the University of Kentucky Board of Trustees on September 17, 2002, Dr. Grady Stumbo said that he has been asked to bring a resolution to the Board on behalf of the East Kentucky leadership that was extremely important to people residing in that area of the state. Dr. Stumbo then introduced the following resolution:

Whereas, the University of Kentucky has owned and operated the Robinson Forest as an outdoor classroom and research forest since 1923, and

Whereas, the University of Kentucky Board of Trustees has not recently examined the use of the Robinson Forest for purposes of teaching, research and service, and

Whereas, the main block of the Robinson Forest has been designated by the Kentucky Department of Natural Resources and Environmental Protection as Unsuitable for Mining, and

Whereas, the Board of Trustees should establish a policy on how the Forest should be used in the future,

Now, therefore, be it resolved that the Board of Trustees direct the President of the University to conduct a thorough review of the Robinson Forest, including an assessment of the resources of the Forest, and prepare a comprehensive report for presentation to the Board.

Be it further resolved, that the President shall have the authority to engage the services of engineers, geologists, and other professional consultants as are necessary to gather the information to prepare the report for the Board.

President Lee Todd subsequently formed a committee to respond to the Board's directive. The members of the committee included:

Dr. Jack C. Blanton, Senior Vice President for Administration, Chair
Dr. James C. Cobb, Director of the Kentucky Geological Survey
Dr. M. Scott Smith, Dean of the College of Agriculture
Mr. Paul C. VanBooven, General Counsel

Each member of the committee was assigned a portion of the report that the Board had requested. Under Dr. Blanton's direction, the chapters of the report were then consolidated and edited. The report was completed in August and recently approved by President Todd. It is herewith submitted to the Board of Trustees for further consideration. It was not necessary to engage external consultants in preparing this report.

CHAPTER ONE

THE ACQUISITION OF THE ROBINSON FOREST

Mr. Edward O. Robinson of Newport, Kentucky and Mr. Frederick W. Mowbray of Cincinnati, Ohio became business partners at the turn of the Twentieth Century. Together they formed the Mowbray and Robinson Company that was primarily engaged in harvesting hardwood timber in eastern Kentucky. In the late teens of the last century and early into the twenties they acquired tracts of some 14,000 acres in fee simple in Breathitt, Knott and Perry Counties and cut all of the usable timber off the entire acreage.

With the timber gone, Mowbray and Robinson had no further use for the land. So on June 28, 1922 the company conveyed the land, excluding oil, gas, coal and other mineral rights to the E. O. Robinson Mountain Fund. The Mountain Fund had been established the day before on June 27th as a charitable corporation, i.e. a trust. Both Robinson and Mowbray were among the seven original trustees of the Mountain Fund. The main purpose of this fund as set forth in its articles of incorporation was to serve the "general welfare and education needs" of Breathitt County, Kentucky, and the adjacent community as well as the "Southern Appalachian Range of Mountains."

One of the seven original Mountain Fund trustees was C. N. Manning, a prominent Lexington banker and trustee of the University of Kentucky. Manning as one of the original incorporators was aware of the Trust's objectives, so he suggested to Robinson that the University of Kentucky could be the instrument for carrying out the purposes of the Trust. Robinson was very receptive to this suggestion.

Manning then raised the possibility of the University acquiring the 14,000 acres that had been cut over in the three East Kentucky counties with Dr. Thomas Poe Cooper, the Dean of the UK College of Agriculture. Dean Cooper was equally receptive to the idea of the University becoming the owner of what eventually became known as the Robinson Forest. In December of 1922 in a long letter to Manning, Dean Cooper expressed great interest in using the East Kentucky lands for agricultural experimentation and teaching. He proposed three tracks of endeavor to Manning: (1) the establishment of a school that would provide formal academic training in vocational and home industries; (2) junior agricultural extension work (later known as 4-H); and (3) investigational and demonstration work to be undertaken by the Agricultural Experiment Station.

The letter to Manning was passed along to Robinson, who was most attracted to Dean Cooper's suggestions. Soon thereafter in the early part of 1923 negotiations between the University and the Mountain Fund got underway. President McVey and Dean Cooper represented the University. Judge Edward O'Rear of Frankfort, President of the Mountain

Fund, and Manning represented the Fund. Initially it was proposed that the University lease the land from the Mountain Fund for a period of 75 years with the possibility of a renewal.

The lease of the land went awry on two accounts. First, UK President Frank McVey* objected to a clause that allowed either of the parties to cancel the lease with three-years' notice. McVey* believed that such a clause could disrupt the work of the College in the area. Richard C. Stoll, chairman of the UK Board of Trustees who was kept abreast of the negotiations, raised more serious objection. Stoll said it would not be fair for the State and the University to invest heavily in the property, and then have the benefit of reforestation revert and accrue to the owner. Robinson relented and stated that he would support the conveyance of the property to the University in fee simple with an iron clad agreement that the University be required to use the proceeds of the sale of any timber or any other product on the land to carry out the general purpose of the E.O. Robinson Mountain Fund. The University quickly conceded this point and on October 10, 1923, the Mountain Fund conveyed the surface estate of the 14,000 acres to the University of Kentucky in trust.

The terms of the trust were as follows:

TO HAVE AND TO HOLD ALL of the foregoing described property and its appurtenances unto the second party and its successors in fee simple forever.

The aforesaid properties, appurtenances and easements are each and all conveyed to the second party and its successors upon the trust and for the uses and purposes hereinafter mentioned; that is to say, for the purpose of agricultural experimental work and teaching, and for the practical demonstration of reforestation. The second party will institute and maintain upon said lands such model farm or farms, orchards and such experimental farm development as may be desirable within its judgment, to the end that practical demonstration, study and work in operating farms in the mountain region and in teaching agriculture therein, so as to conserve the soil fertility, add to it and utilize it most profitably and practically among the inhabitants in the mountain region.

The proceeds of the sale of said property or any part thereof and the net revenues derived from the operation of said property of the University shall be used to further the purposes of the trust hereinabove defined, and for such other purposes as will tend to the betterment of the people of the mountain regions of Kentucky as may be agreed upon by the parties hereto.

A section of the last paragraph stating that any net revenues derived from the property shall be used "for such other purposes as will tend to the betterment of the people of the mountain regions of Kentucky as may be agreed upon by the parties" is very general. Over time the University as a matter of prudence has treated this phrase to require the concurrence of the Robinson Foundation Board for expenditures netted from the Forest that were not specifically identified in the second paragraph above. The use of Forest revenues

*Original text distributed at the September 16, 2003 Board of Trustees meeting contained a misspelling of McVey. Correction was made in the web version at the request of the author.

for the explicit purposes set forth in the second paragraph above is exempt from the Foundation Board's concurrence.

Also in the deed of conveyance was a reversionary clause that stated if the University failed to carry out the terms of the trust within three years, the land would revert back to the Foundation. The purpose of this clause was to give Dean Cooper leverage in dealing with the state General Assembly in obtaining an appropriation for the College to initiate its work on the bare 14,000 acres. The Foundation had pledged start-up funds for the work there. Dean Cooper was successful in getting the 1924 Legislature to create by statute the Robinson Substation as an agricultural experiment station, and provide an appropriation of \$25,000 to get work underway in filling the terms of the trust.

A Lingering Problem

The 1923 conveyance left one big problem. It only included the surface rights. Robinson and Mowbray retained oil, gas and mineral rights. On August 1, 1925, Robinson and Mowbray sold the mineral rights except for oil and gas to W.E. Chilton for \$45,570 on credit. Promissory notes tendered by Chilton were secured by a mortgage on the minerals. The sale of the mineral rights was of grave concern to Dean Cooper and he expressed his concern to Robinson in a series of communications. He stated on more than once occasion that he was fearful the ownership of the sub-surface rights by owners other than the University could sometime in the future cause great disruption of the work that would be carried on at the substation. Fortunately for Dean Cooper, Chilton encountered financial difficulties and failed to pay the property taxes assessed against the minerals.

On December 15, 1927, in acknowledgement of Dean Cooper's concern, Robinson wrote a letter to the Dean informing him of the failure of Chilton to pay his property tax on the minerals. He suggested that UK buy the property at delinquent tax sales in the three counties in which the Robinson-Mowbray tracts were located. The University agreed, but the plan fell through when Chilton came up with enough money to pay the delinquent taxes. Even though Chilton took care of his tax bill, he could not come up with sufficient funds to cover the promissory note owed Robinson and Mowbray.

In the meantime Mowbray died and Robinson acquired Mowbray's estate interest in the all the mineral rights. In March of 1928 Robinson wrote to Dean Cooper stating that he intended to convey the ownership of Chilton's promissory notes to the University, and the University could foreclose on the property since the notes were long overdue. For unknown reasons Robinson rather than the University foreclosed on the outstanding notes. Chilton had one year to redeem the mineral rights after the foreclosure, but failed to do so.

On November 18, 1930, Robinson and his wife conveyed the mineral rights to the Commonwealth of Kentucky for the benefit of the Robinson Substation, i.e., the University. Prior to his conveyance, Robinson had sought to sell the mineral rights for the sum of

\$20,000, but could not find a buyer, and in a letter to Dean Cooper expressed his opinion that there was very little coal of any value in the three-county acreage.

The Oil and Gas Rights

Once it became clear to Dean Cooper that the mineral rights would be secured, he wrote an urgent letter to Robinson in May of 1930, asking that he also convey the oil and gas rights to the University. But it was too late. On April 22, 1930, Robinson and his wife had sold the oil and gas rights to Howe Oil Company for \$40,000. While the University currently holds title to the mineral rights in the Robinson Forest, it does not have title to the oil and gas rights that have passed through the hands of several owners over the past 73 years.

The UK Board of Trustees acknowledged the donation of the mineral rights to the University through the Commonwealth on December 16, 1930, and expressed deep appreciation to Robinson and his wife for their generosity. In a letter from Robinson to Dean Cooper that was read aloud at the December 16th Board meeting, Robinson wrote that he was gratified with the work on the 14,000 acres since the original conveyance of the surface rights. He noted that “The results have been very gratifying to me in the short time you have been working up there, as you have successfully handled this work” E. O. Robinson died in 1934, thus closing the first chapter on the history of the Robinson Forest.

Since it acquired title to the property in 1923, the UK College of Agriculture has had a significant presence in the area and has undertaken a great number of research and demonstration projects. Over the past 80 years the 14,000 acres have been reforested in what is known today as “The Robinson Forest.” The main 10,000-acre tract is the largest contiguous body of land undisturbed by mining in Eastern Kentucky.

CHAPTER TWO

THE DEVELOPMENT OF THE LAND AND THE VALUE OF THE TIMBER RESOURCE

Research and education activities at Robinson Forest and Robinson Substation were initiated by the College of Agriculture soon after the properties were transferred. In 1924 Dean Cooper appointed Roger W. (Major) Jones superintendent of the Forest and the newly established substation headquarters at Quicksand. The property at Quicksand was to become the primary location for horticultural and agronomic research and a “Wood Utilization Center.” In the same year a forester, C.H. Burrage, was employed to oversee reforestation in the land. This work proceeded apace over the next four decades.

The National Youth Administration, a depression-era program, began constructing buildings at the current Robinson Forest Camp in 1939. In 1947 a cooperative relationship was formalized with the Kentucky Department of Fish and Wildlife at Robinson Forest. This has been a fruitful partnership that has been sustained to this day. Through the 1950’s intensive research and education at the Forest were constrained by the lack of a UK forestry department and a forestry faculty, as well as limited on-site facilities and infrastructure. However, demonstrations of reforestation and forest management, as well as observational research were active during this period. In 1954 a sawmill was purchased and installed at the Forest. Timber has been harvested and milled at the forest up to the present.

Several forestry faculty were hired in the College of Agriculture in the 1960’s. As a result, quantitative research and substantial educational programs increased dramatically. (The nature and impacts of these activities are described in more detail below.) This growth spawned greater interest in the Forest and led to the creation of a Department of Forestry in the College in 1970. Today the Department has 12 faculty and enrolls an average of 48 undergraduates and 11 to 18 graduate students each school year.

The so-called “Robinson Forest Initiative” was established in the 1990s, fueled by a portion of the royalty income derived from mining the outlying tracts of the Forest. It funded major improvements in the Forest facilities, particularly at the Forest Camp. This Initiative also supported significant expansion of research and instructional activities in the forest.

Today the “economic value” of the Robinson Forest includes not only its timber and mineral resources but also the research and education programs conducted at the Forest.

The Forest as an Educational Asset

The Forest has long been an irreplaceable asset for university-based teaching in the Forestry and Natural Resource Conservation curricula, serving as an outdoor classroom for

undergraduate and graduate students in these programs. In addition, training and continuing education programs for the forest industry and forestry professionals have been a program emphasis at the Forest and Wood Utilization Center over the last decade. Such activities have far reaching economic benefits for the state forestry industry and forest owners in Kentucky. Some examples are noted below.

- In 2002, training programs for 1,287 forest industry personnel were carried out in the Wood Utilization Center resulting in over \$17.9 million earned or saved by the wood industry in Kentucky.
- Loggers trained at Robinson Forest annually impact \$8.3 million worth of timber in eastern Kentucky growing on 16,600 acres owned by 440 non-industrial private landowners.
- Annually 690 forestry and natural resource professionals are trained at Robinson Forest using the 15 long-term research and demonstration areas at the Forest. These professionals use this training to improve over 660,000 acres of forestland in Kentucky each year.
- Total benefits to professionals trained at Robinson Forest and the Wood Utilization Center result in over \$26 million of direct impact to forest industry and forest landowners in Kentucky and improvement of the state's of forest land annually.

Robinson Camp hosts a remarkable diversity of educational programs throughout the year. The following table shows the use of the Forest and its facilities by various organizations both within the University and without.

<u>Forest Users</u>	<u>Days of Use Annually</u>
Forestry's B.S. curriculum	60
Forestry Department research	40
UK Police	15
UK Biology, Entomology, Architecture	75
UK's KNRLI	30
Kentucky Geological Survey	20
Ag Ambassador Retreat	30
Robinson Scholars Program	100
Project Learning Tree by UK	50
Appalachian Explorers	35
Upward Bound Program	100
Governor's Scholars Program	35
Ag Alumni Association	25
Ag Area Director's Meetings	30
Kentucky Master Loggers	200
Professional Forestry Training Workshops by UK	70

Kentucky elementary and high schools	1000
Scouting / 4-H groups	50
Rocky Mt. Elk Foundation	100
State Groups: Division of Water, ADB board, Waste Management, PEW	100
Kentucky Water Watch Program	20
Transylvania University	60
Forestry Training Workshops by other organizations	60
Lunches for professional tours	50
HBCU historic black colleges and universities	20
KF&W's KNOW ky network of outdoor women.	30
KF&W Hunter safety trainings for youth and adults	50
Kentuckians for the Commonwealth	25
Heartwood	25

Research Value of the Forest

Since the establishment of the UK Department of Forestry in 1970, Robinson Forest has supported a large number and a wide variety of research studies, as is evidenced by the partial list of topics that have been featured in published articles shown below. Whereas the earliest work focused primarily on vertebrate life in the forest, the last three decades of research include a diversity of topics that reflect the activities of a department with interests and responsibilities ranging from forest ecology and forest management to biodiversity, conservation and the quality of student instruction. Research at Robinson Forest also has become multi-disciplinary with important activities conducted by other UK departments and by other universities.

Robinson Forest is scientifically significant for several reasons including the following:

1. It is a relatively rare, large and contiguous block of a forest-land type that is highly representative of the Cumberland Plateau.
2. Several elements of the flora and fauna are richly diverse and biologically interesting.
3. It has a unique value for forest hydrology and water quality research because of multiple watersheds suitable for monitoring, comparison and analysis.
4. A large body of baseline data on water quality, biodiversity and many other aspects of the Forest has been accumulated over a long time period.
5. Management and disturbance of the Forest has been known, defined, and controlled for many decades.

Not only has the research on Robinson Forest contributed to a larger body of forest-related science, it has set the foundation for long-term ecological and management-oriented studies that are relatively rare from a global perspective. Robinson Forest research results

have been featured in highly respected regional, national and international journals. Examples are listed below.

Forestry Department Research Publications (Pre-1970)

- Amphibian and reptile distribution
- Breeding bird communities
- Resident mammal species
- Stream fish taxonomy and distribution
- Stream classification

Post- Forestry Department Research Publications

Forest Ecology and Management

- Logging and fire effects on stand structure
- Tree and shrub distribution
- Lumber yield methodology
- Forest tree physiology
- Oak growth rates
- Forest measurement technique development
- Hardwood leaf physiology
- Remote sensing methodology
- Forest tree competition
- Clearcuts and herbicides in forest management
- Chestnut blight ecology
- Best management practices and forest management
- Nitrogen effects on black locust growth
- Timber stand improvement
- Paulownia growth
- Oak-hickory regeneration
- Root density in mixed mesophytic forests
- Windthrow ecology
- Crop-tree release in white oak
- Oak mortality
- Post-harvest forest succession
- Rhododendron and mountain laurel ecology
- Forest coarse woody debris
- Drought and frost effects on radial growth
- Fire effects on sapling size
- Effects of clearcuts on forest regeneration
- White oak genetics
- Flowering dogwood mortality
- Forest violet ecology

Wildlife Ecology and Distribution

Stream fish community ecology
Fish distribution and diversity dynamics
Mining effects on bird populations
Raccoon survival
Winter bird community ecology
Ovenbird density and distribution
Forest wildlife management
White-footed mouse nest box use
Tree cavity use by wildlife
Tree snags and wildlife
Rafinesque's big-eared bat ecology
Red bat ecology
Elk use of interior forest habitat
Songbird and elk interactions
Introduced elk activity and movements
Patterns of landscape colonization by introduced elk
Effects of reintroduced elk on native amphibians
Bobcat movements and habitat use
Flying squirrel distribution
Allegheny woodrat distribution and ecology
Mammal ecology and distribution
Meadow vole colonization
Fire effects on rodent populations
Amphibian abundance and distribution

Hydrology and Soils

Soil composition and classification
Road effects on water quality
Yellow-poplar/soil relations
Soil and vegetation relations
Fertilizer, stream flow, and water quality relations
Forest watershed hydrology
Atmospheric nitrogen and water quality
Soil and site effects on white oak growth
Leaf litter depth and acorn germination

Forest Entomology and Invertebrate Ecology

Webworm physiology
Insects and forest tree disease transmission
Chestnut borer and white oak stress
Earthworm assemblages in undisturbed forest

Gypsy moth suppression and impacts on ground arthropods

Other

Archaeological site distribution

Pedagogical methodology--Robinson Forest as outdoor classroom

Stewardship of university lands

Selected Publication Outlets for Robinson Forest Research

American Biology Teacher

American Midland Naturalist

Bat Research News

Bioscience

Canadian Field Naturalist

Canadian Journal of Forest Research

Forest Ecology and Management

Forest Products Journal

Forest Science

Journal of the American Chestnut Foundation

Journal of Cave and Karst Studies

Journal of Mammalogy

Journal of the Torrey Botanical Society

Journal of Wildlife Management

Kentucky Warbler

Natural Areas Journal

Occasional Papers of the Museum of Texas Tech University

Proceedings of the Southeastern Association of Fish and Wildlife Agencies

Southern Journal of Applied Forestry

Southeastern Naturalist

Tree Planter's Notes

Wild Earth

Wildlife Biology

Intrinsic Value of the Robinson Forest

The intrinsic value of the Robinson Forest is more difficult to document and measure. It includes for example the preservation of biodiversity or the education of youth about wild lands. The wealth contained in the Forest's genetic material, ecosystem processes and richness of plant and animal communities may be unparalleled elsewhere on the Cumberland Plateau, but remains impossible to quantify. These are assets that can accrue to many future generations of students, researchers and citizens. While society has deemed clean air, clean water, wildlife, and wild lands as valuable public assets, their monetary values are as elusive as are the rare species. Scholars such as Muir and Thoreau viewed

forests and other wild lands as sacred places—beyond any value that humans might ascribe to them. Because one cannot put a dollar value on the utility of these kinds of assets, forest land too often is appraised for its cash value, not for its intrinsic value.

The Value of the Timber

The value of the timber in the Robinson Forest is easier to quantify than the intrinsic values of the forest. The UK Department of Forestry currently estimates the value of the timber on the 14,000-acre tracts to be \$11,032,000. Using Robinson Forest solely for timber production could yield an annual harvest income of approximately \$308,000, assuming intensive forest management for timber production, according to the Department.

CHAPTER THREE

THE QUANTITY AND VALUE OF THE COAL RESOURCE

For purposes of this report the Kentucky Geological Survey (KGS) was asked to make a study of minable coal on the 10,000-acre main tract of the Robinson Forest. The Survey's report is incorporated into the text below.

In order to identify coal beds with potential for mining within the main tract of the Robinson Forest, borehole and outcrop data on file at the Geological Survey were reviewed to determine thickness parameters for known coal seams in the area. Those with sufficient thickness for mining were identified on the basis of total thickness and bed continuity. No coal quality data were considered to determine minability on the basis of quality. The extent of the known coal outcrop for the various coal seams was digitized from the geological quadrangle maps and converted to a geographic information system format.

Because of the lack of hard data on thickness of seams within the forest area, limited sample data from inside the forest and data from sites primarily within three miles of the forest border were analyzed to assess correlation and thickness variability for each of three identified coal beds or zones. Mining areas determined on the basis of extent of outcrop relative to surface drainage were assigned average minimum and maximum thickness values according to nearest data locations. The Francis coal (Hazard No. 8) was assigned only average thickness, as it is a more uniform coal. *Tonnage values for each area were calculated using the following method: Short tons = Acres x Thickness(ft) x 1800.*

Results

Francis Coal (Hazard No. 8). This coal lies at about 1,200 feet elevation and consists of three distinct and persistent benches. Thickness data proximal to the Forest range from 40 to 68 inches. An average thickness of 48 inches was used for all areas. The extent of Francis Coal within the Forest is approximately 6,700 acres. This represents in-place resources of 48 million short tons. This resource would be accessible by contour stripping methods and potentially highwall mining similar to that used at the outlying Laurel Fork Tract south of the main forest.

Tiptop Coal. The Tiptop coal zone is composed of three to five coal beds of varying thickness lying about 180 feet above the Hazard No. 8 coal. In tracts adjacent to the Forest, stratigraphic variation within this zone is high. Three main beds that were identified were correlated with some confidence, and each was evaluated separately using surrounding data points to estimate lateral thickness variation. Total cumulative coal thickness for the three beds ranges from 37 to 200 inches. Mining tracts were assigned an average minimum and a

maximum cumulative thickness value (i.e., the sum of the three main beds) based on the most proximate data. Tonnages were calculated for each thickness value to provide a range of estimates. Results for each mining area are given in the attached table. Total estimated tonnage for the Tiptop coal zone is between 40 and 51 million short tons covering 2,000 acres. Mining access would be by contour or area methods (mountain top removal).

Skyline Coal. The Skyline coal consists of a single bed approximately 60 feet above the top of the Tiptop zone. Its thickness ranges from 18 to 166 inches. Thickness variation appears to be related to removal by overlying sandstone channels. Tonnage estimates for each mining area are given in the attached table. Total estimated tonnage for the Skyline Coal is between 13 and 18 million tons covering 875 acres. Mining access would be primarily by area method (mountain top removal), possibly in conjunction with Tiptop mining.

Below Drainage Coals. There are insufficient data to determine the presence of minable coals in the forest area that are below stream drainage. There are three potential coal horizons that may exist in sufficient thickness for underground mining: the Fireclay, Amburgy, and Upper Elkhorn No. 2. Given a total area of 10,000 acres for the main Forest, a bed with average thickness of three feet would constitute 54 million in-place tons of coal. Exploratory core drilling would be necessary to establish the existence and determine minability of such resources.

Tonnage Summary

In summary, the estimated coal resource above drainage in the main Robinson Forest is as follows:

<u>Coal Bed</u>	<u>Estimated Minimum Tons</u>	<u>Estimated Maximum Tons</u>	<u>Estimated Average Tons</u>
Francis Coal (Hazard #8)	48,000,000	48,000,000	48,000,000
Tiptop	40,047,328	51,162,742	45,179,183
Sky Line	<u>13,729,800</u>	<u>18,523,350</u>	<u>15,605,700</u>
Total	101,777,128	117,686,092	108,784,883

Coal Value

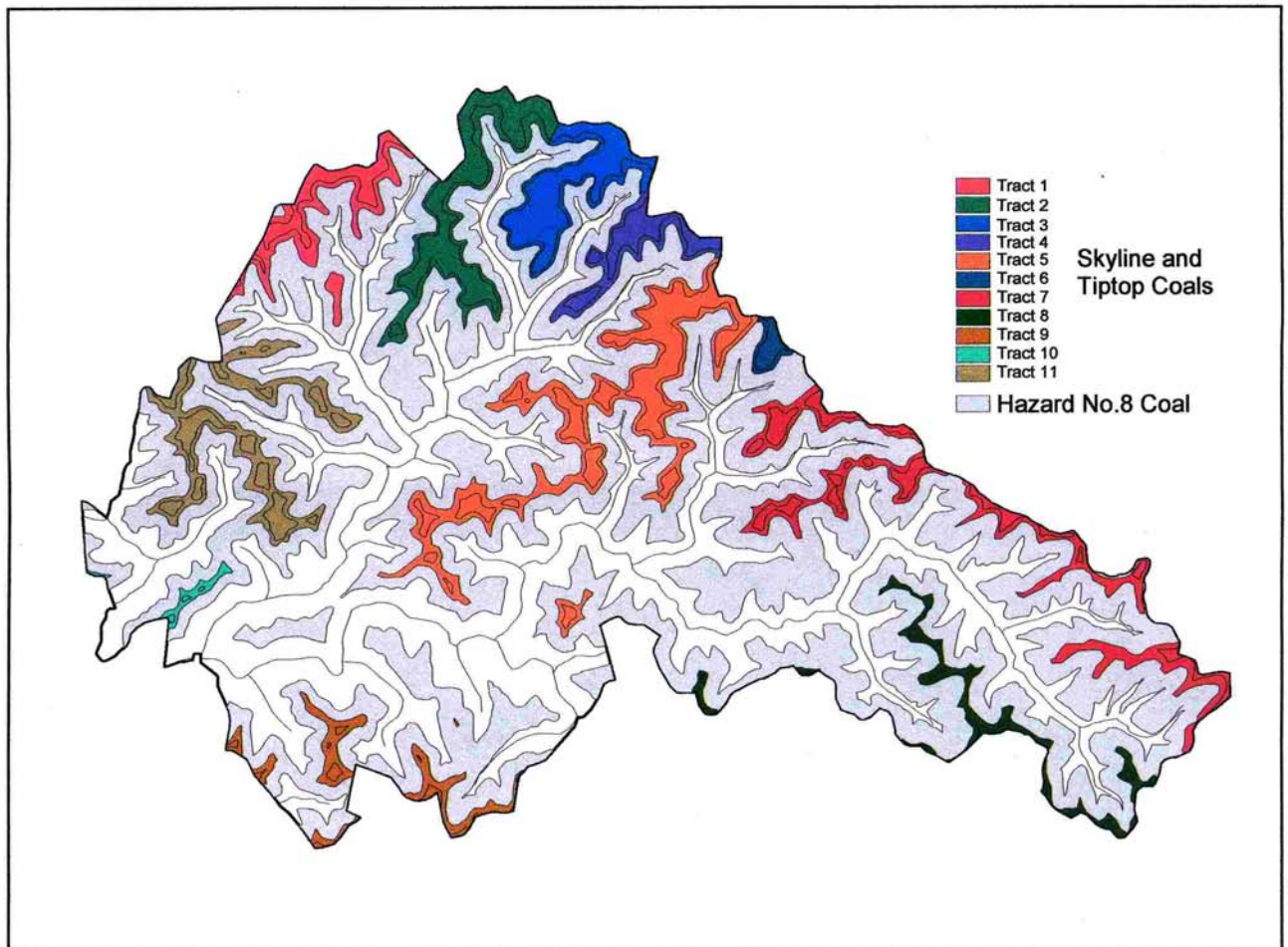
Attempting to place a value on the coal beneath the main tract of the Robinson Forest and calculating the return to the University is extremely difficult if not impossible. First, it is impossible without extensive drilling of numerous boreholes on a tight grid in the main forest tract to determine with specificity the thickness of the coal beds above drainage and their quality. Only when the depth of these seams is known would it be possible to calculate

the mineral tonnage beneath the surface. Second, the market for coal is very volatile and the given price per ton fluctuates from month to month based on quality as well as supply and demand. Eastern Kentucky mining companies must now compete with coal mining operations in the western United States, particularly in Wyoming, where the cost of mining a ton of coal is significantly less than in Kentucky. In order for Kentucky coal operators to make a profit, the sale price of coal on the open market must exceed the cost of mining. Failure of sale price to exceed mining cost has resulted in many mining bankruptcies in Kentucky. Third, the royalty payment that would come to the University could not be determined until some form of bidding or RFP process had been concluded.

In light of the variables cited above, it is exceedingly risky to place a value on the coal in the main block of the Robinson Forest or what the return to the University would be if the coal were mined. The sale price of coal presumed to be in the Robinson Forest is selling today (July 2003) between \$25 and \$40 per ton based on quality. We note that the royalty that came to the University from the coal mined in the outlying Forest tracts was \$3.00 per ton. This return in retrospect was exceedingly generous and very advantageous to the University, and has been the partial cause of the cessation of mining in the outlying tracts before the entire available mineral was extracted. The payment of the royalty to the University that was fixed by contract combined with a steep decline in the price of coal from the time the UK contract was signed has led to the halt in mining the outlying tracts.

Based on the information presented above, we leave it to each reader to calculate the value of the coal in the Robinson Forest and the return to the University if the coal were mined.

Robinson Forest Main Block Coal Assessment Tracts



September 2003

TABLE 1**COAL TONNAGE ESTIMATES FOR THE TIPTOP COAL ZONE ON
11 MINING TRACTS WITHIN THE MAIN ROBINSON FOREST**

TRACT	COAL	ACRES	AVERAGE TONNAGE	AVERAGE THICKNESS	MINIMU M TONS	MINIMUM THICKNESS	MAXIMUM TONS	MAXIMUM THICKNESS
Tract 1	Tiptop	151	3,132,945	138	3,110,243	137	3,155,648	139
Tract 2	Tiptop	255	6,626,073	173	5,706,849	149	7,660,200	200
Tract 3	Tiptop	194	5,027,294	173	4,329,865	149	5,811,900	200
Tract 4	Tiptop	113	2,943,509	173	2,535,161	149	3,402,900	200
Tract 5	Tiptop	475	12,277,730	156	10,610,215	149	14,241,900	200
Tract 6	Tiptop	27	707,916	173	609,708	149	818,400	200
Tract 7	Tiptop	308	5,218,227	113	4,802,616	104	5,680,017	123
Tract 8	Tiptop	107	959,670	60	591,798	37	1,311,549	82
Tract 9	Tiptop	98	1,416,384	96	1,254,091	85	1,799,988	122
Tract 10	Tiptop	20	383,765	131	354,470	121	413,060	141
Tract 11	Tiptop	254	6,485,670	170	6,142,312	161	6,867,180	180
Total		2003	45,179,183		40,047,328		51,162,742	

TABLE 2

**COAL TONNAGE ESTIMATES FOR THE SKYLINE COAL BED ON
11 MINING TRACTS WITHIN THE MAIN ROBINSON FOREST**

TRACT	COAL	AVERAGE ACRES	AVERAGE TONNAGE	AVERAGE THICKNESS	MINIMUM TONS	MINIMUM THICKNESS	MAXIMUM TONS	MAXIMUM THICKNESS
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Tract 1	Skyline	61	915,000	100	549,000	60	1,518,900	166
Tract 2	Skyline	164	3,567,000	145	3,321,000	135	4,083,600	166
Tract 3	Skyline	142	3,088,500	145	2,875,500	135	3,535,800	166
Tract 4	Skyline	63	1,370,250	145	1,275,750	135	1,568,700	166
Tract 5	Skyline	217	4,364,250	145	3,801,750	85	5,154,450	166
Tract 6	Skyline	18	270,000	100	175,500	65	364,500	135
Tract 7	Skyline	96	936,000	65	936,000	65	936,000	65
Tract 8	Skyline	14	136,500	65	136,500	65	136,500	65
Tract 9	Skyline	12	86,400	48	34,200	19	117,000	65
Tract 10	Skyline	2	7,500	25	5,400	18	11,400	38
Tract 11	Skyline	86	864,300	67	19,200	48	1,096,500	85
TOTAL		875	15,605,700		13,729,800		18,523,350	

CHAPTER FOUR

LEGAL ISSUES INVOLVING MINING

During the 80 years the University has owned the Robinson Forest, the most controversial issues have centered on mining the coal underlying the Forest.

In a letter to Agriculture Dean Thomas Poe Cooper on December 10, 1930, E. O. Robinson asked the Dean to advise the Board of Trustees on his reasons for giving the coal rights to the University:

As you know from my experience in the Mountains of Eastern Kentucky in comparing their situations with other hill countries in my visits abroad, I feel that it is possible for a farmer on quite a large portion of the land in Eastern Kentucky to make a comfortable living if given aid from the state and the government that he, as a citizen, is entitled.

There is also a large portion of the land that should be used for growing forests, and several years ago Mr. Mowbray and I gave to the University the surface of this land for the purposes mentioned herein.

First: the results have been very gratifying to me in the short time that you have been working up there, as you have so successfully handled this work and you personally feel that it would be a great advantage to own the coal.

Second: I believe this coal land, together with the forest that you are raising, will in years to come be of great value to the state, and will be used for the benefit of that part of the state where there lives a race (Hill People) that our state, our country and the world need at all times, and especially in a crisis.

Mrs. Robinson and I, the owners of the coal land, decided to deed it to the University.

The Board accepted the coal lands on December 16, 1930.

The next important event regarding coal in the Forest came in July 1937, when Professor P.C. Emrath of the University's Department of Mining Engineering prepared a document titled "Report on Coal Deposits of Clemons-Robinson-Coles Tract, a Portion of the Robinson Forest."

Although Professor Emrath stated that his report was "essentially a preliminary one," he noted the following: "The work covered in this report established one most important conclusion: **that it is definitely unlikely that any coal deposits of considerable value will be found above general drainage level on the tract.**" (emphasis added)

Time and technology have proven this conclusion woefully wrong. With the advent of modern surface mining methods that became common in Eastern Kentucky some 60 years after the Emrath Report was written, it has been clearly established that there are valuable coal deposits above the general drainage level in the areas surrounding the Forest and beneath the Forest itself. The main tract of the Robinson Forest now stands as an unmined island—an area with millions of tons of coal beneath the surface as indicated in Chapter Three above.

The 1981 Review

In 1981 the Board of Trustees appointed an ad hoc committee titled the Committee for the Future of the Robinson Forest. The charge to this Committee was to “evaluate the legal, environmental, economic, and technical aspects of conducting mining operations in Robinson Forest, and to make policy recommendations to the Board regarding the future use of the Forest.” As an early item of business, the Committee secured the services of Professor Jesse Dukeminier of the UCLA School of Law, formerly of the University of Kentucky College of Law Faculty and an expert on the law of trusts.

Professor Dukeminier was asked to review the deeds and terms of the trust and report to the Committee the limitations, if any, on mining the Forest, and the proper use of the proceeds of such mining. Professor Dukeminier concluded the following:

The University has the power to execute mineral leases. However, the Forest may not be mined in a way which would interfere substantially with the particular purpose of the Robinson Trust—“agricultural work and teaching and the practical demonstration of reforestation” as well as the general charitable purpose of the betterment of the mountain people.

According to the Dukeminier Report, Robinson thought that underground mining would not substantially interfere with surface activities. Dukeminier concluded that with respect to strip mining, the Board’s power was more limited. Yet, strip mining of a portion of the tract would not appear to be incompatible with the “practical demonstration of reforestation.” Dukeminier further concluded that:

Strip mining of the entire Robinson Forest without first demonstration of reforestation of strip-mined land would be imprudent and beyond the bounds of reasonable judgment as to what activities carry out the particular charitable purposes. The test for the Board of Trustees to apply in executing mineral leases is whether the specific mineral lease will substantially interfere with the agricultural and forestry objectives of the trust.

The result of the Trustee Committee for the Future of the Robinson Forest was action by the full Board of Trustees on September 21, 1982, when it adopted the policy recommendation of the Committee:

Be it resolved: That the University of Kentucky should not under present circumstances execute mineral leases or mine its holding in the Robinson Forest; and that the Dean of the College of Agriculture make an annual report to the Board of Trustees evaluating agricultural experimental work and teaching done at the Forest and the practical demonstration of the Robinson Forest.

Logging Considerations

The next action regarding the Forest to reach the Board of Trustees was on March 1, 1983. At the time, acting on the recommendation of the Finance Committee which had received a report on the status of the timber in the Forest, it was determined that:

Logging in the Robinson Forest not take place at this time. The College of Agriculture will continue to update the Forest inventory and will, as sections of the Forest reach maturity, develop a plan which will be presented to the Board for the logging of those sections. As the logging plan is developed, research, extension, and teaching plans will also be developed which will allow the maximum educational value to be obtained during and after the logging operation. All plans adopted will fully meet the conditions of the trust as stated in the deed and agreement conveying the property to the University of Kentucky.

Other Concerns in the 1980's and 1990's

The late 1980's and early 1990's were by far the most active in the life of the Forest, e.g., court battles over ownership of portions of the Forest, the filing of a "Lands Unsuitable Petition" by conservation groups, the Board joining that Petition, and a determination to lease portions of the 4,000 acres outside the "main block" of the Forest for coal mining purposes.

In 1987 the UK Administration reported to the Finance Committee of the Board the result of court actions dealing with ownership of the "Hudson Tract" (a tract not originally part of the Forest, but for which the University had acquired surface rights) and the "Bush Heirs Tract," which was part of the main Forest claimed by these heirs. The University at that time vigorously defended its ownership rights to these tracts, but ultimately lost. A company called Arch-On-The-North-Fork (now Arch Coal) proposed to mine the two tracts. The University hired Gaddy Engineering to evaluate Arch's mining plan, which called for all runoff from the mines to be diverted from the Forest watershed. Gaddy concluded that:

Whereas technically the plan can be made to work with proper supervision, it would certainly have a long-term effect on the statistics being compiled on the water resources, sediment, flow, area of the watershed, etc. For instance, it is obvious that

the mining would reduce the area of the undisturbed acreage within the watershed and percentage wise, the difference may be small, but could affect the statistical results of the study which might be crucial to the effectiveness of the final results of the study. It could render them unacceptable, thereby nullifying 30 years of experimentation on the property.

On February 2, 1990, the Arch company filed its preliminary application for a permit to mine multiple coal seams on the Hudson and Bush Tracts.

On February 28, 1990, the Kentucky Resources Counsel, Inc., the Sierra Club and the Kentucky Conservation Foundation filed a petition with the state's Natural Resources and Environmental Protection Cabinet to designate the Robinson Forest and eight private adjacent properties as "Lands Unsuitable for Mining" pursuant to state regulations and the Federal Surface Mining Reclamation and Control Act, including the area Arch was seeking to mine. On March 6, 1990, the Board of Trustees authorized the University's administration to join the petition to designate the Forest "Unsuitable for Mining," but only to the extent of the Clemons Fork watershed, which was the home of the majority of the research, teaching and extension activities of the Forest.

The battle for mining in the Forest now had begun in earnest, and was conducted in the media as much as it was in the halls of administrative agencies. The University hired outside counsel to assist with its efforts to stop Arch's permit application and to assist the conservation organizations in the petition to designate the Robinson Forest as "Unsuitable for Mining" under State and Federal law.

Throughout this battle, the Board of Trustees was very involved in monitoring the proceedings. At its September 18, 1990 meeting, the Board noted that a "negotiated settlement" of the crisis had been attempted but no resolution had been reached. The result was the adoption of Board Resolution FCR 8.

That the University's administration be authorized to prepare a Request for Proposal and solicit from financially sound and quality mining companies proposals and places to mine coal reserves in the Bear Branch, Beaverdam Creek, Fishtrap Branch, Little Caney Creek, Hurricane Branch, Rose Branch and Laurel Fork tracts . . . [all outside the main block of the Forest]

Prior to this action, the Board had requested that the Administration attempt to work out a fair and economically equitable trade of land and coal reserves with Arch-on-the-North-Fork in exchange for the title of the land and coal reserves in the Hudson and Bush tracts in order to protect the research and other activities in the contiguous acres of Robinson Forest including the Clemons Fork Watershed. No agreement could be reached. The stated reasons for moving ahead with mining on the "outer blocks" of the Forest were economic development and that royalty funds could be used to meet the conditions of the Robinson Trust for the benefit of the people of the mountains of Eastern Kentucky.

In February 1991, the Kentucky Natural Resources and Environmental Protection Cabinet issued its report and Order regarding the Petition to designate the Robinson Forest as Lands Unsuitable for Mining. The 125-page report and 7-page Order carefully analyzed the impact of mining in the Forest and came to two conclusions from which it drew its legal finding that the Forest should be designated as Unsuitable for Mining. The first of lesser importance was that some areas of the Forest had been identified by the UK Forestry Department with the admonition that no disturbance should take place in those areas. The more significant finding of the Cabinet under the law was that the Robinson Forest comprised "fragile lands" as defined by state and federal law. This meant simply that the land within the petition area

. . . contains important scientific resources, and provides a publicly owned area in which to conduct long term research. . . . The type and amount of scientific research within Robinson Forest demonstrates the area has significant scientific value.

These were the exact values that the conservations groups and the University had strived to prove to the Cabinet.

The one setback in the Order for the conservation groups and the University was that for the eight privately owned areas in the watersheds involved in the Petition, the Cabinet declined to designate those areas as Unsuitable for Mining because the University (quite naturally) was not conducting research on these private lands. (The lawyers involved in the Petition offered a more cynical view: the Cabinet did not want to effect a "taking" of coal which it would have to compensate the owners for under the "takings" clause of the Fifth Amendment of the U.S. Constitution.) The Cabinet did, however, require that any mining in those non-University areas be conducted in a manner that the spoil handling plan provide for isolation of acid producing spoils so that drainage through the spoils would not enter the Forest and, most importantly, that all runoff from any such mining operations be diverted from the Forest.

No appeals were taken from the Order, and Arch began its mining of the Bush and Hudson Tracts shortly thereafter. The mining proceeded without problems.

Mining the Outer Blocks

In early 1991 after a lengthy review of proposals from six coal companies that submitted plans for mining the "outer blocks" of the Forest, the University determined that Addington, Inc., had presented the best proposal, and a coal lease was executed with Addington in May of 1991. Several years later Addington, Inc. was acquired by Pittson Minerals, which currently holds the majority of the leases on the tracts for the "outer blocks." The only areas yet to be mined under the lease are the Beaver Dam Tract (approximately 450 acres, estimated 3 millions tons of coal) and Rose Branch (approximately 450 acres, estimated

600,000 tons of coal). Reclamation activities continue on the lands that have already been mined. No mining activities are contemplated in the immediate future for either tract, given the current price of coal. Use of the funds derived by the University from mining in the Forest are shown in Appendix A.

Obstacles to Mining in the Main Tract

Obviously before the Board could now consider mining additional portions of the Forest, two obstacles exist: one is the trust language as pointed out by Professor Dukeminier, and the other is the reversal of the Lands Unsuitable Petition.

Leaving aside for now the Trust, there is a defined process for seeking to reverse a Lands Unsuitable designation. The state regulations, following the Federal Law, are quite specific: in order to remove the designation, the University would have to prove by presenting substantial evidence (with substantial opposition from environmental groups) that "mining will not now result in significant damage to important. . . . scientific . . . values. . . . related to fragile lands." In other words, the University would have to seek to disprove all of those items it proved with success in the original Lands Unsuitable process. Although not impossible if a small enough area of the Forest were to be considered for mining, the process of reversal, and related appeals, would take an estimated five years, would involve outside counsel and expert fees in the range of \$1,000,000, would ensure a front page "blow-by-blow" of the administrative and legal battle, would create a hot political issue statewide, and would involve environmental groups nationally.

APPENDIX A

SUMMARY OF ROBINSON TRUST QUASI-ENDOWMENT REVENUES AND EXPENDITURES (Dollars in Millions)

Revenues from Forest (predominately coal)	\$21.1
Investment Income	<u>15.9</u>
Total Revenues	\$37.0
<i>Board-Approved Expenditures by Area of Emphasis:</i>	
Infrastructure	(\$1.3)
Multi-Disciplinary Research	(1.0)
Agricultural Experimentation and Reforestation	(9.4)
Economic Development	(1.1)
Health & Education	(8.0)
Environmental Education	(0.6)
Financial Aid	<u>(5.6)</u>
Total Approved Expenditures	(\$27.0)
Balance (Now Quasi Endowed)	\$10.0*

*The value of the quasi-endowment as of June 30, 2003, was approximately \$11 million. This endowment now serves the Robinson Scholars Program.