#412

Joint Legislative Committee on Performance Evaluation and Expenditure Review (PEER)

Report to
the Mississippi Legislature

A Review of the Mississippi Forestry Commission

The Mississippi Forestry Commission compiles information about Mississippi's forests and provides leadership in forest protection and forest management. Its primary responsibility is fire control. With over 18.5 million acres in forestland, timber is the number one agricultural crop in the state.

Generally, the Forestry Commission's management does not use information recorded and compiled at various levels within the organization to operate the agency more efficiently.

Within the Forestry Commission's Forest Protection Division, PEER found weaknesses in the method of distributing fire units and fire investigation personnel, evaluating of fire reporting methods, monitoring utilization of aircraft, and assessing insect and disease control program efficiency.

Within the commission's Forest Management Division, the lack of accurate and detailed information on program operations such as sixteenth section land management, cost share, and crew assistance inhibits the commission's central office managers from making informed decisions on allocation of resources. In the absence of such information, the Forestry Commission can offer little assurance that current program operations are responsive to landowner needs.

December 6, 2000

PEER: The Mississippi Legislature's Oversight Agency

The Mississippi Legislature created the Joint Legislative Committee on Performance Evaluation and Expenditure Review (PEER Committee) by statute in 1973. A standing joint committee, the PEER Committee is composed of five members of the House of Representatives appointed by the Speaker and five members of the Senate appointed by the Lieutenant Governor. Appointments are made for four-year terms with one Senator and one Representative appointed from each of the U. S. Congressional Districts. Committee officers are elected by the membership with officers alternating annually between the two houses. All Committee actions by statute require a majority vote of three Representatives and three Senators voting in the affirmative.

Mississippi's constitution gives the Legislature broad power to conduct examinations and investigations. PEER is authorized by law to review any public entity, including contractors supported in whole or in part by public funds, and to address any issues that may require legislative action. PEER has statutory access to all state and local records and has subpoena power to compel testimony or the production of documents.

PEER provides a variety of services to the Legislature, including program evaluations, economy and efficiency reviews, financial audits, limited scope evaluations, fiscal notes, special investigations, briefings to individual legislators, testimony, and other governmental research and assistance. The Committee identifies inefficiency or ineffectiveness or a failure to accomplish legislative objectives, and makes recommendations for redefinition, redirection, redistribution and/or restructuring of Mississippi government. As directed by and subject to the prior approval of the PEER Committee, the Committee's professional staff executes audit and evaluation projects, obtaining information and developing options for consideration by the Committee. The PEER Committee releases reports to the Legislature, Governor, Lieutenant Governor, and the agency examined.

The Committee assigns top priority to written requests from individual legislators and legislative committees. The Committee also considers PEER staff proposals and written requests from state officials and others.

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The Mississippi Legislature

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December 6, 2000

Honorable Ronnie Musgrove, Governor
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On December 6, 2000, the PEER Committee authorized release of the report entitled **A Review of the Mississippi Forestry Commission.**

Senator William Canon, Chairman

This report does not recommend increased funding or additional staff.

December 6, 2000

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Review of the Mississippi Forestry Commission

Executive Summary

PEER conducted a cycle review of the Mississippi Forestry Commission (MFC), which is a review not based on a complaint or allegation of misconduct. State law authorizes the Forestry Commission to prevent, control, and extinguish forest fires; enforce laws pertaining to the protection of forests and woodland in the state; and encourage forest and tree planting for the production of a wood crop and other beneficial purposes.

Forest Protection

PEER found weaknesses in MFC's Forest Protection division's method of distributing fire units and fire investigation personnel. MFC bases its assignment of fire fighting units on historically established levels that are disproportionate to basic indicators of need, such as number of forested acres and the number of acres burned. MFC assigns arson investigator resources almost solely within the Southeast District where forty percent of arson cases are reported, rather than basing assignment on needs evident throughout all districts.

MFC's management cannot assess the cost effectiveness of fire reporting methods because the agency does not capture sources of reports (air surveillance or toll-free calls) and compare this information to cost.

Because MFC does not document the purposes for which its aircraft are used, the agency cannot allocate related costs or evaluate the efficiency of this method of fire, insect, and disease detection within the state's forested areas.

Forest Management

Within MFC's Forest Management Services, PEER determined that the lack of accurate and detailed information on some program operations (sixteenth section land management, cost share, and crew assistance) inhibits MFC's central office managers from

making informed decisions on allocation of MFC resources. MFC does not maintain an up-to-date inventory of sixteenth section forestland in accordance with its board directive. Information on landowners' applying for assistance is retained at the county level until work is completed, rather than being transmitted to the district and central offices to serve as a basis for planning and resource allocation decisions.

Within the Forest Regeneration Program, MFC's nurseries did not generate enough revenue during three of the past five fiscal years to be self-sufficient. MFC seedling prices are comparable to those of other public nurseries in the southeastern states, but are lower than those of private nurseries.

Recommendations

Distribution of Fire Fighting Units

1. MFC management should develop a formal mechanism for collecting and analyzing information concerning fire incidence and risk factors in order to use this information as a basis for fire unit assignment. MFC should examine experience factors and area needs, project levels of basic service, and supplement these levels based on risk of forestland damage or loss.

Investigation of Fires

2. MFC management should evaluate its fire investigative resources and determine the placement of personnel needed to conduct forestry arson investigations across the state. MFC should capture and analyze reliable historical information on district needs for investigators.

3. MFC should develop and implement performance measurement standards that provide a means of evaluating how arson investigation activities contribute to overall reduction of timber loss. MFC should expand performance measures (the number of arson fires, total acres burned, total number of misdemeanor and felony cases) to include such factors as:

   - the number of cases investigated and presented; and,

   - the value of property loss as a result of arson.

4. MFC should allocate personnel to investigate fires and collect fire suppression costs based upon statewide fire

occurrences. The agency should report detailed information annually by district and county on the number of active and closed fire suppression cases, as well as the costs imposed and collected for each case.

Fire Reporting Methods and Use of Surveillance Aircraft

5. MFC should identify and capture costs associated with the various methods of fire detection and identify the source of fire reports according to the detection or reporting method. Central decisionmakers should use this information to evaluate the cost efficiency and risk associated with each method.

6. MFC should revise its flight logs to capture pertinent information such as the purpose of the flight, passenger lists, and the departure and return time. MFC should use such information to evaluate the cost effectiveness of its air surveillance efforts for relevant program areas (e.g., detection and monitoring fire and insect/disease outbreaks).

7. Given the number of hours flown, MFC should assess the cost effectiveness of each of its eleven aircraft and consider reducing its fleet to minimize costs associated with aircraft usage. MFC should identify the purpose and rate of usage of each aircraft and dispose of units used least or having highest operation costs.

Insect and Disease Control

8. MFC managers should capture and report information on actual hours spent and costs of conducting aerial surveillance to identify insect and disease infestations.

9. MFC should identify and track costs associated with ground crew investigation and eradication efforts and the number of insect disease-related technical assists provided to private and industrial landowners.

10. MFC should assess the historical impact of its efforts and projections of changes in total costs and losses of the state's insect disease control program.

Sixteenth Section Land

11. As the manager of state forestland for sixteenth section school trust, MFC should maintain a current inventory of land for which it is responsible. MFC should develop a method of identifying types of forestland, service needs, and acreage.

Landowner Services

12. MFC should expand its work order system to track pending requests for services so it could be used as a resource for assessing and prioritizing types of services needed by landowners. Such a tracking system would allow the district and central office to know what types of services are requested and provided and to allocate available resources to meet future needs and priorities.

For More Information or Clarification, Contact:

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Review of the Mississippi Forestry Commission

Introduction

Authority

The PEER Committee authorized a review of the Mississippi Forestry Commission (MFC) pursuant to the authority granted by MISS. CODE ANN. Section 5-3-57 et seq. (1972). This review is a "cycle review," which is not driven by specific complaints or allegations of misconduct.

Scope and Method

PEER reviewed relevant sections of state laws, rules, regulations, policies, and procedures regarding MFC programs. PEER also examined MFC financial records and program performance data for fiscal years 1996 through 1999.

PEER also interviewed staff and analyzed documents from MFC, other state agencies, associations, federal agencies, and other states.

Background

In 1926, the Mississippi Legislature formed the Mississippi Forestry Commission to provide leadership in forest protection and forest management and to compile information about the forests of Mississippi. Its primary responsibility is fire control. With over 18.5 million acres in forestland, timber is the number one agricultural crop in the state.

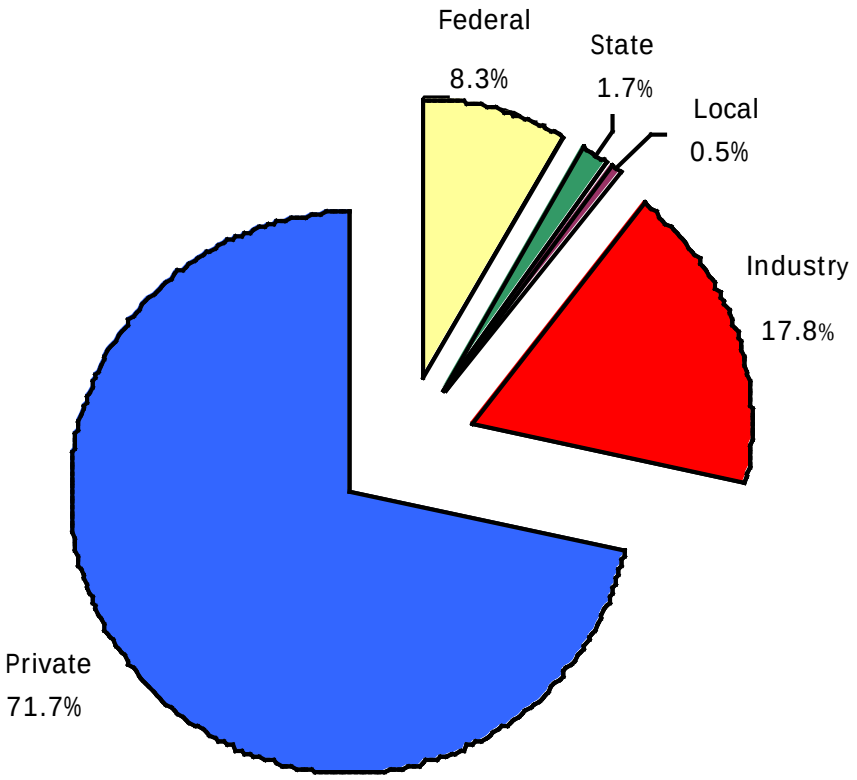
The forest industry is one of the driving forces of the state's economy. Raw materials from the state's timberlands support the production of lumber, plywood, wood pulp, paper, furniture, and many other semi-finished and finished forest products.

Federal and state public policy tools encourage wise management of forest resources and if Mississippi's forests are to meet the state's timber demands, public policy will need to address continued encouragement and intensification of environmentally sound forest management practices in Mississippi.

Summary of Forestland by Owner

The state of Mississippi has approximately 18.5 million acres of forestland, which constitutes approximately 61% of the state's land area. According to information provided by the Forest and Wildlife Research Center, Department of Forestry at Mississippi State University, the total economic impact of forestry on the state is approximately $11.4 billion annually. Almost 72 percent of Mississippi's forestland is owned by private, non-industrial landowners, while industry owns approximately 17.8% (see Exhibit 1, page 3). The state of Mississippi owns approximately 1.7%, local municipalities own 0.5%, and federal government owns 8.3% of the state's forestland.

Exhibit 1: Mississippi Forestland by Type of Ownership



Total Acreage = 18,587,400

SOURCE: US Forest Service, 1996 Survey.

Statutory Responsibilities

The Mississippi Forestry Commission is charged with the direction and control of all matters relating to forestry (MISS. CODE ANN. Section 49-19-3). The State Forester is to:

- provide an organized means to prevent, control, and extinguish forest fires, including enforcement of laws pertaining to the protection of forests and woodlands;

- encourage forest and tree planting for the production of wood crops, for the protection of water supplies, and for windbreaks and shade;

- conduct technical investigations and studies concerning forest conditions; the propagation, care, and protection of forest and shade trees; the care and management of forests; their growth, yield, and the products and by-products; and,

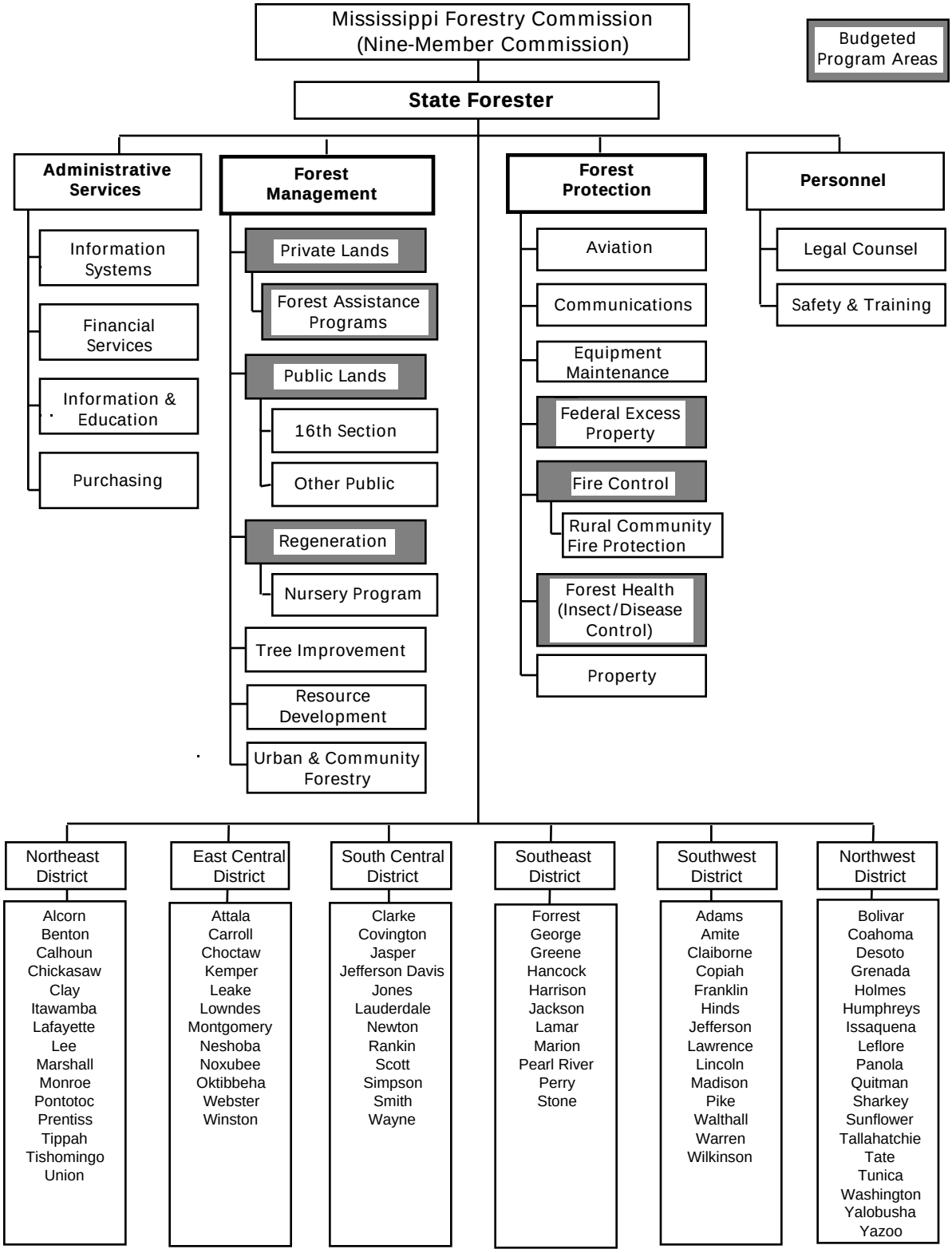
- encourage public interest in forestry by means of correspondence, the public press, periodicals, the publication of bulletins and leaflets for general distribution, and cooperate with private timber owners in laying plans for the protection, management, and replacement of forests and in aiding them to form protection associations.

The State Forester is also responsible for the protection and management of lands donated, purchased, or belonging to the state or state institutions, and all other lands reserved by the state as state forests.

MFC Organization and Service Delivery Structure

The Mississippi Forestry Commission is currently organized into four divisions (Administrative Services, Forest Protection, Forest Management, and Personnel) which incorporate seven budgetary program areas. These budgeted program areas appear highlighted on MFC's organization chart (see Exhibit 2, page 5).

Exhibit 2: MFC Organization Chart (As of August 1, 2000)



SOURCE: Mississippi Forestry Commission.

Forest Protection Programs

Program Responsibilities

The Mississippi Forestry Commission is responsible for several programs that focus on protecting and managing Mississippi's forest resources. These programs and the department's specific responsibilities follow:

Fire Control--This program provides fire prevention, detection, and suppression activities to all state and private timbered and uncultivatable acres in Mississippi. Fire Control staff engage in cooperative training and fire control efforts with the forestry industry, U. S. Forestry Service, and other federal agencies in the state.

Federal Excess Property--The U. S. Secretary of Agriculture is authorized to loan excess Department of Defense property (i.e., fire fighting equipment) to state forestry departments. State forestry departments are responsible for passing the equipment on to local fire departments. The MFC Federal Excess Property program fulfills this function.

Insect/Disease Control--This program is designed to provide protection from and reduce insect and disease losses to forests of the state, including losses of MFC nurseries and seed orchards.

Funding and Forest Protective Areas

MISS. CODE ANN. Section 49-19-115 requires county boards of supervisors to levy a forest acreage tax (currently nine cents per acre) on all timbered and uncultivatable lands for "the financial and supervisory cooperation of the State Forestry Commission in carrying out organized forest fire control and other provisions of Sections 49-19-111 through 49-19-117."

Section 49-19-117 requires MFC to expend the proceeds of the forest acreage taxes for forestry education, timber management and organized forest fire control and other forestry conservation activities or practices, as the commission may deem necessary. Section 49-19-117(3) authorizes MFC to use the additional forest acreage tax of nine cents per acre levied under Section 49-19-115(2) to purchase "fire support equipment, including transport trucks, tractors and other related fire support equipment."

The lands on which the forest acreage taxes are paid are designated as forest protective areas. Paying the proceeds of the forestry acreage tax to the Forestry Commission

entitles the county to MFC's protection from forest fires in these forest protective areas. Section 49-19-9 authorizes MFC to extend fire protection services to Choctaw Indian lands, and Section 49-19-11 authorizes the commission to protect state-owned lands intermingled with or adjacent to organized forest protective areas. The U. S. Department of Agriculture's Forest Service protects national forests, but MFC is responsible for privately owned lands located within the boundaries of national forests and parks. In August 1985, MFC and the U. S. Forest Service entered into a cooperative fire control agreement to assist each other in the suppression of wildfires in the state.

Forest Management Programs

The Forest Management Division of MFC includes programs designed to provide forest management services to state forestland owners. Each program and its purpose is listed below.

Private Land--This program provides motivation, technical assistance, and advice to landowners to help them make their lands more productive.

Public Land--This program is responsible for insuring a sustained yield of timber production on school trust and sixteenth section lands.

Forest Resource Development Program Cost Share--This program provides financial assistance to eligible landowners for establishing and improving a crop of trees. This helps offset a landowner's expense by sharing the cost of implementing specific forestry practices designed to produce timber and enhance wildlife development.

Regeneration (Seedling Nursery Program)--This program produces and distributes quality seedlings to assure forest regeneration and the ability to sustain Mississippi's forest resources.

Tree Improvement--This program's goal is to produce a sufficient supply of quality genetically improved seed for MFC and contracted nursery operations.

Geographic Information Systems/Remote Sensing--This program is responsible for developing a geographic information system to aid state agencies in monitoring activities, making decisions, and in managing the forest resources of Mississippi. MFC is currently working with the Mississippi Automated Resource Information System (MARIS) relative to a remote sensing project wherein MFC, via satellite data, will have a county-by-county assessment of timber by forest type, changes in forest land, areas

harvested, and areas regenerated. This information will eventually be available to each MFC district and county office for landowner information.

Urban and Community Forestry--This program provides for the management and protection of trees in and around cities and towns.

Service Delivery Structure

Responsibilities for providing services and managing and coordinating programs are distributed among three levels within the MFC organization: central, district, and county. MFC divides the state into six district service areas that are overseen by district office management personnel responsible to central office program administrators (see Exhibit 3, page 9). District office personnel are responsible for overseeing activities of county personnel (e.g., county foresters, fire crews, and support staff).

Central Office

The MFC Central office located in Jackson is responsible for the overall administrative functions of the agency. The central office allocates and distributes resources, receives and manages federal grants, and provides direction to the six district offices located throughout the state.

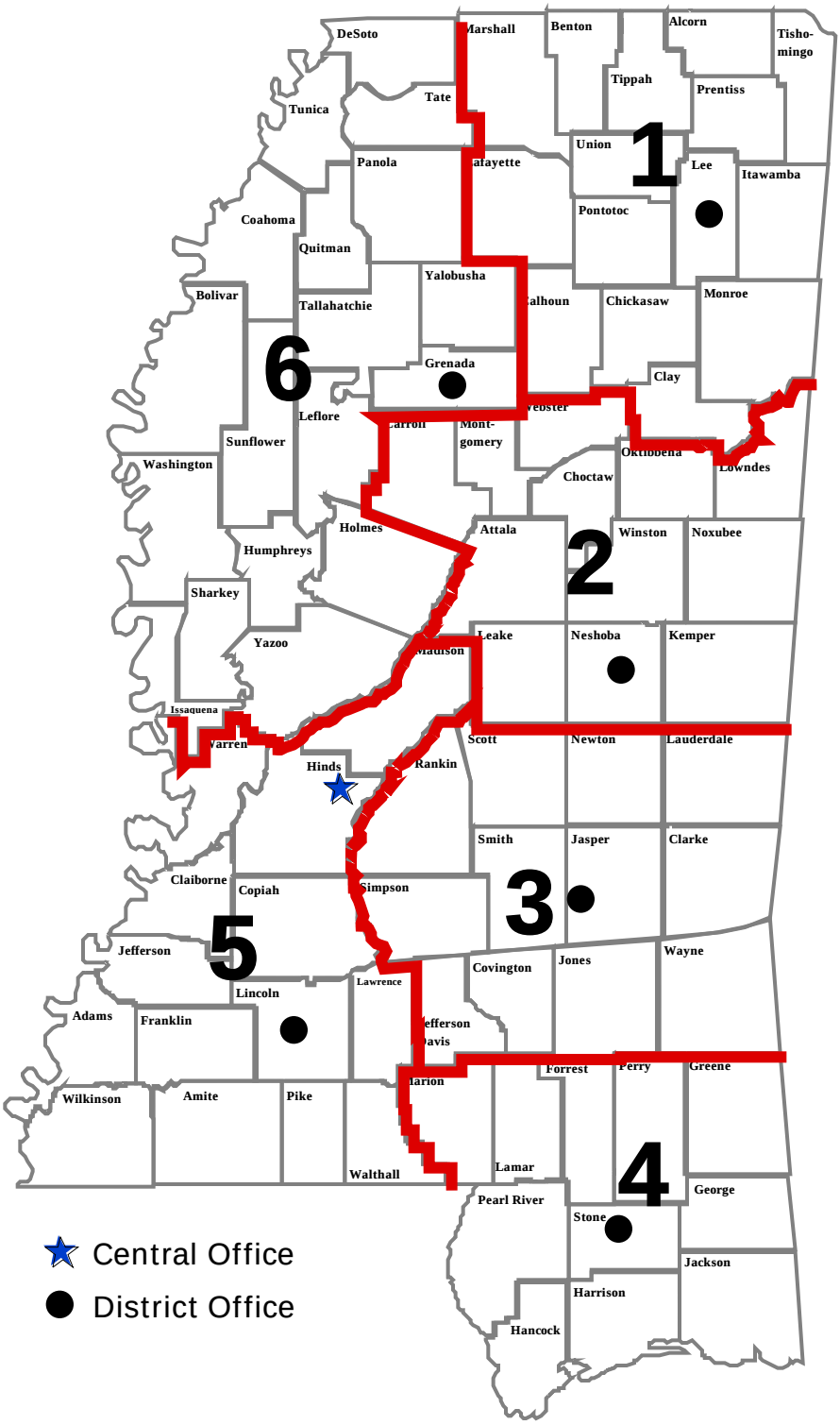
District Office

Each district office staff consists of a district forester, several area foresters, and clerical and support staff. Area foresters assigned to district offices are responsible for managing and monitoring work assignments of county foresters and crews. Area foresters supervise from two to four county offices throughout their assigned districts. Area foresters supervise county foresters by conducting site visits of work in progress and making spot checks of work completed by county foresters and crews.

County Office

County foresters are responsible for meeting with landowners to discuss and establish proper forest management practices and for fire protection and forest management assistance to private/public/other public and sixteenth section school trust landowners. Requests for landowner assistance are made at the county level. Each

Exhibit 3: Map of MFC District Service Delivery Areas



SOURCE: Mississippi Forestry Commission.

county office consists of a county forester, clerical/office support staff, crew chief, and crewmembers.

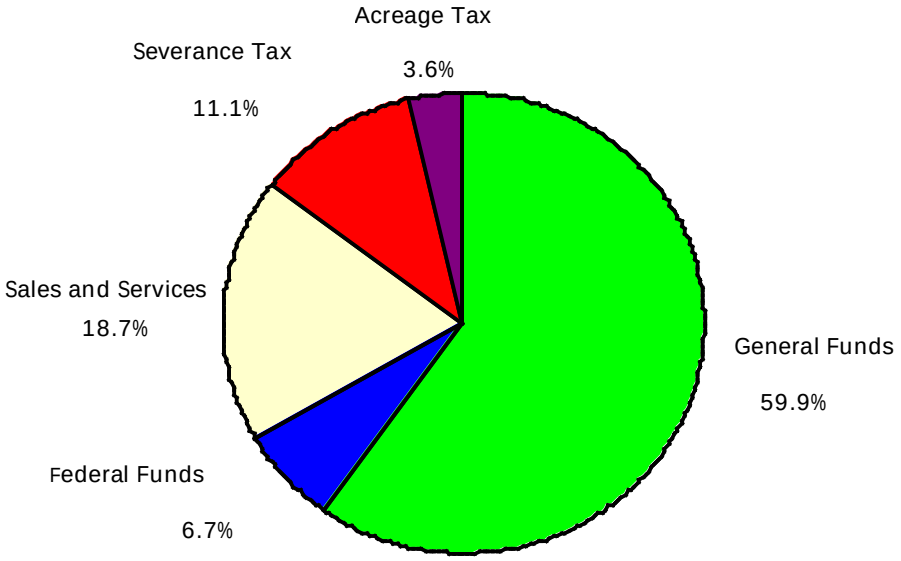
MFC Crew Assistance

When not responding to forest fires, crews assist landowners under the state and federal cost share programs as well as continuing efforts on sixteenth section school trust lands. Crew assistance consists of site preparation, fire lane construction, prescribed burning, firebreak/road maintenance, planting by machine, conducting timber sales, timber marking assistance, southern pine beetle suppression activity, tree planting, and other services at rates approved by MFC.

Program Revenues and Expenditures by Source

In FY 1999, MFC received 59.9% of its revenue from its general fund appropriation (see Exhibit 4, page 11). The greatest portion of agency revenue is concentrated within the fire control program, which expended $18.9 million of the total $34.7 million expended in FY 1999 (see Exhibit 5, page 12). MFC's Private Lands and Public Lands programs are also supported primarily by general funds, while the Forest Resource Development program operates on receipts from the Severance Tax. Other programs depend on revenue from a combination of state, federal, and other sources.

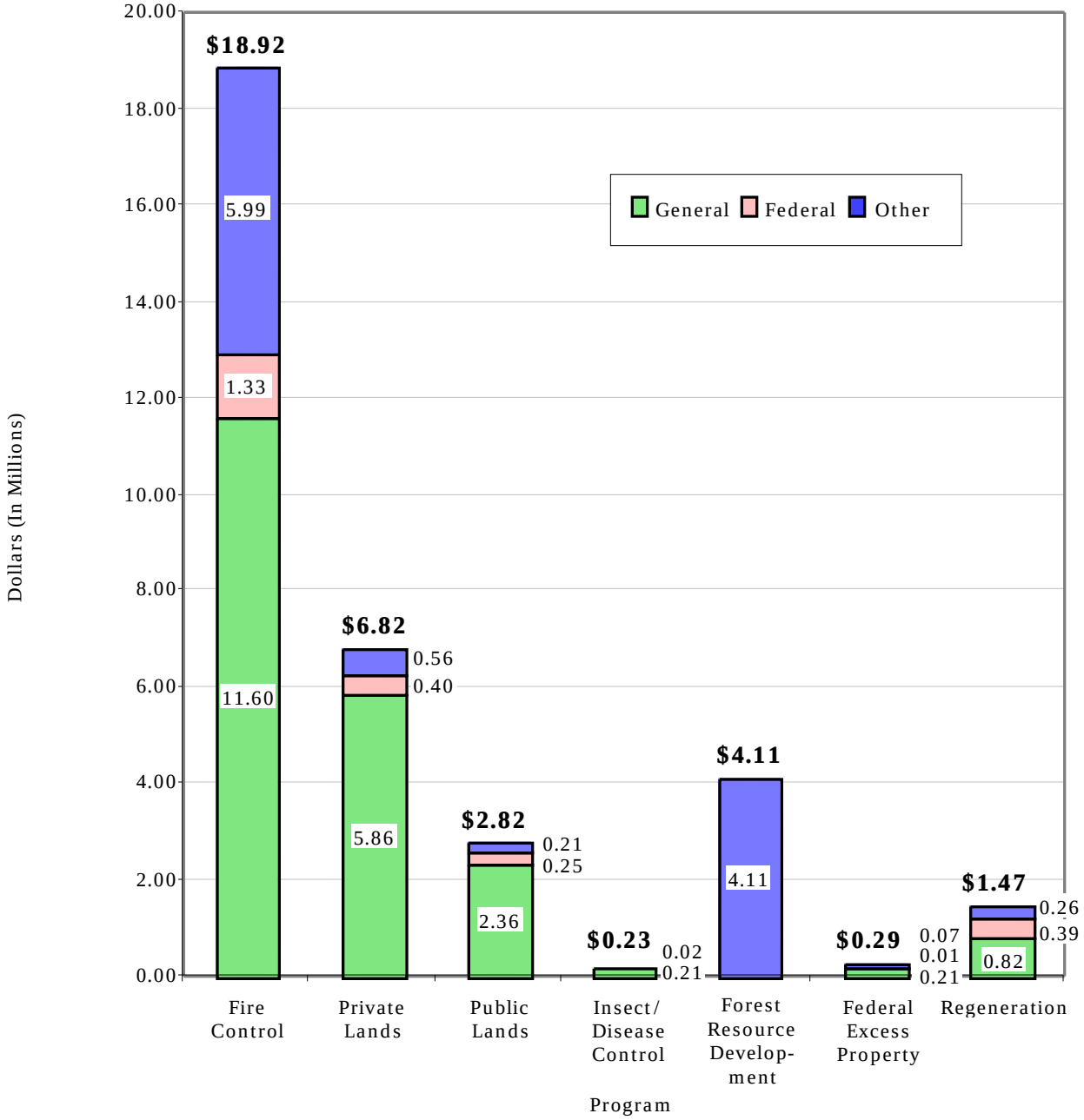
Exhibit 4: FY 1999 Sources of Funding



Total Revenue = $35,172,816

SOURCE: MFC FY 2001 Budget Request.

Exhibit 5: FY 1999 Program Expenditures by Source



Total Expenditures = $34,656,470

SOURCE: MFC FY 2001 Budget Request.

Conclusions

Forest Protection

Of the seven program areas within the Forest Protection Division, PEER found weaknesses in MFC's method of distributing fire units and fire investigation personnel, evaluating of fire reporting methods, monitoring utilization of aircraft, and assessing insect and disease control program efficiency.

Fire Control

Fire Fighting Responsibilities, Staffing, and Equipment

MISS. CODE ANN. Section 49-19-3 authorizes the Mississippi Forestry Commission to "take such action and provide and maintain such organized means as may seem necessary and expedient to prevent, control and extinguish forest fires, including the enforcement of any and all laws pertaining to the protection of forests and woodland" in the state. MFC assigns fire units (a crawler tractor with fire plow attachment, and transport truck) and crews to locations throughout the state to meet its fire control responsibilities.

MFC currently has 179 fire units operated by two- or three-person forestry crews. The tractor has a fireplow that is used for plowing fire lanes to isolate the fire by removing the fuel from its path. Each fire unit is also equipped with hand tools, a shovel, axe, fire extinguisher, and other tools that are used to suppress fires.

Although most MFC equipment is used in fire suppression, MFC also uses its equipment to construct fire lines, plant trees, and conduct direct seeding and site preparation for natural regeneration. While MFC assigns fire crews and fire units to counties within the six districts, a fire situation may require fire fighting personnel and equipment to travel to another county to assist in fire suppression.

Collection of Fire Data

MFC policy requires that an individual fire report be made each time MFC fire crews are dispatched to a fire. MFC district personnel collect and report daily fire data to MFC's Jackson office. The fire report captures the following information: number of acres burned, fire

MFC management does not review fire data and does not use the information to designate placement of fire control personnel or fire units.

location, fire cause, fire crew personnel response, and suppression times. MFC fire reports also provide information on the number of MFC fire crews and other fire fighter assistance given to suppress fires. As discussed in the following sections, MFC management does not review fire data and does not use the information to designate the placement of fire control personnel or fire units throughout the state.

Distribution of Fire Fighting Units

MFC bases its assignment of fire fighting units on historically established levels that are disproportionate to basic indicators of need, such as number of forested acres and the number of acres burned.

Exhibit 6, page 15, shows that MFC deploys fire fighting units for the protection of all forested and uncultivable land in the state except for federal lands that fall under the protection of the U. S. Forest Service. With the exception of counties located in the Delta, each county has at least one fire unit assigned to it, with some counties having as many as four units.

Forested acres are disproportionate between districts when compared to the number of fire units.

In the fire control program, fire fighting personnel and fire unit allocations to districts are disproportionate to basic indicators of need such as the number of forested acres and the number acres burned. Forested acres are disproportionate between districts when compared to number of fire units (see Exhibit 7, page 16). For example, District 3 has thirty-eight fire fighting units for its 3.4 million forested acres, while District 5 has twenty-six fire fighting units for its 3.9 million forested acres.

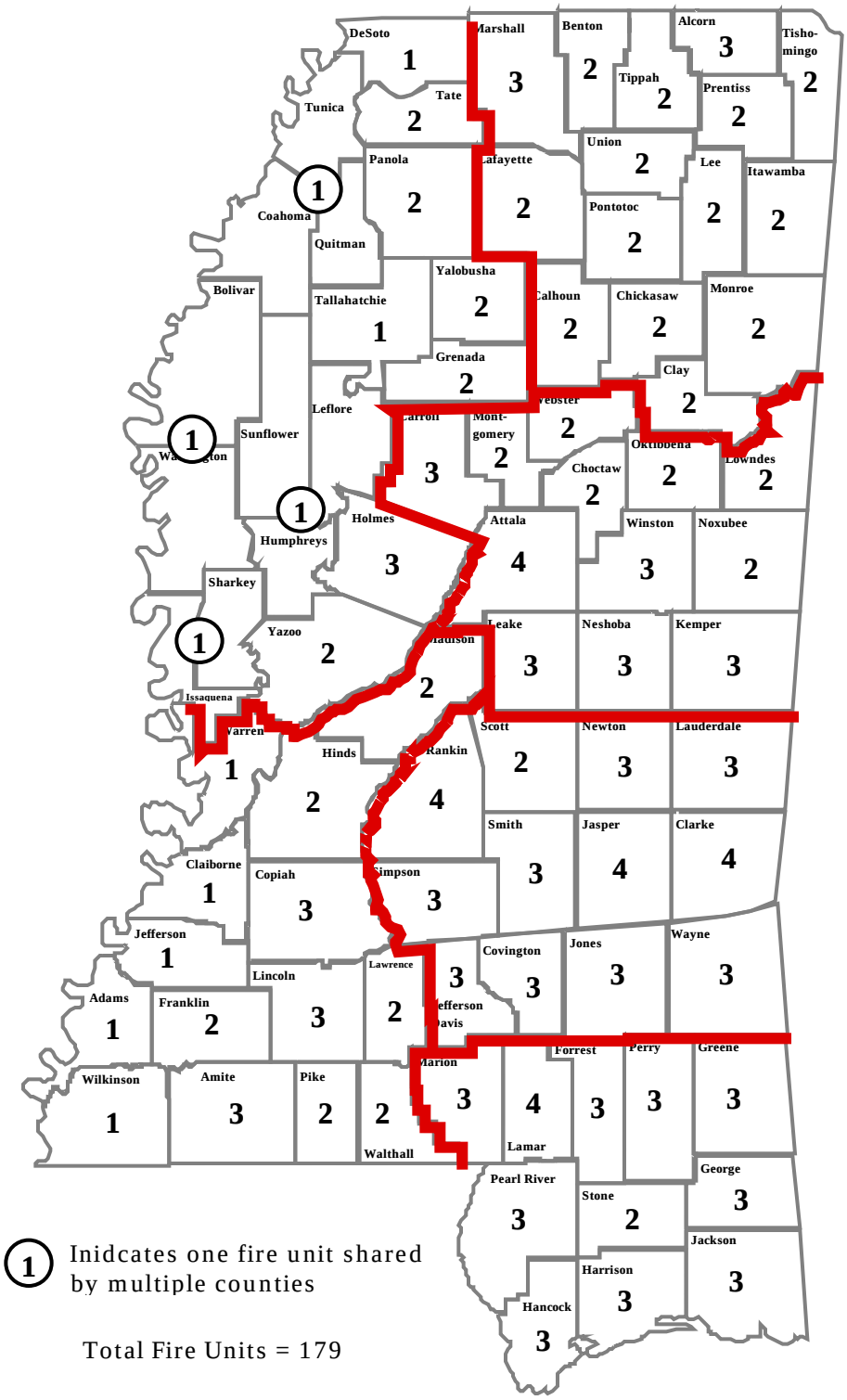
Similar disparities in fire unit assignments are also evident when comparing the number of acres burned in districts.

Similar disparities in fire unit assignments are also evident when comparing the number of acres burned for districts (see Exhibit 8, page 16). The number of acres burned in districts 1, 2, and 3 is disproportionate to the the number of fire units assigned, while the number of acres burned in districts 4, 5, and 6 is proportionate to the number of fire units assigned.

Although MFC personnel from other districts or counties may respond where an immediate need arises, the disparity in the distribution among districts of fire units and acres burned may indicate the need to reallocate these units using objective criteria such as the total forested acres, fire incidence, and other risks.

Proper allocation and use of resources is necessary to insure that maximum service needs are met with the least amount of resources possible. The risk of timber loss requires continual evaluation of fire control performance by MFC management in reducing fire crew response time

Exhibit 6: Distribution of Fire Fighting Units (As of September, 2000)

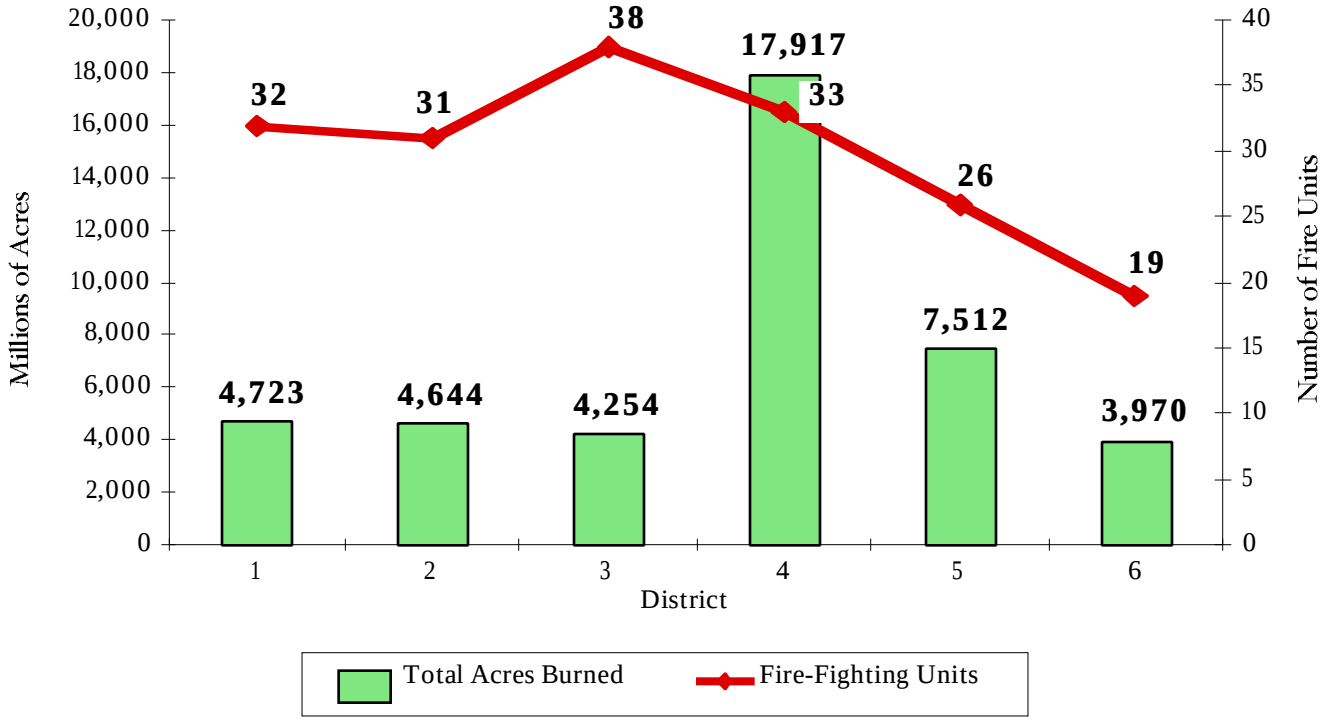


SOURCE: Compiled from Mississippi Forestry Commission data.

Exhibit 7: Forested Acres and Fire Fighting Units by District (FY 1999)

SOURCE: US Forest Service forestry survey and MFC fire unit data.

Exhibit 8: Total Number of Acres Burned by District (FY 1999)



SOURCE: Compiled from MFC data.

and putting the necessary resources where they should be in order to investigate fires in a timely manner.

MFC should place fire crews and equipment based on criteria such as fire data, weather, and availability of local and volunteer fire fighters.

Good management practice requires that Mississippi Forestry Commission administrators develop methodology for the placement of fire crew and equipment based upon criteria which includes, but is not limited to, fire data, weather, consideration of crew fire control and fire management responsibilities, the availability of local and volunteer fire fighters, and other factors.

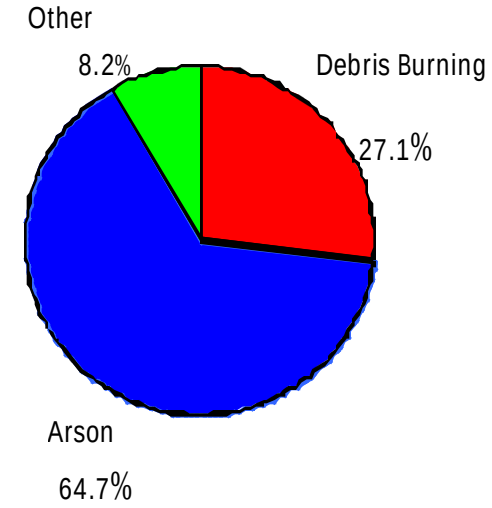
Fire Detection and Suppression

The Mississippi Forestry Commission is the state agency most suited for forestland fire fighting. Fires are detected in the MFC fire districts by means of aircraft or are reported by MFC fire crews, local or volunteer fire departments, landowners, law enforcement, and public citizens.

The Fire Control Program consists of prevention, detection, and suppression. In addition to the destruction of valuable forestland and the impacts on the economy through the loss of this important resource, wildfires seriously threaten countless rural structures on a daily basis. The damage to property and forestland can be prevented by timely and effective wildfire suppression.

MFC fire crews often receive assistance from local cooperators comprised of individuals, businesses, and organizations from the community offering equipment, water, and fire fighting labor forces in addition to local and volunteer fire fighters. In 1999 (which is indicative of other years), arson and debris fires were responsible for the majority of acreage burned. Exhibit 9, page 18, shows the total number of acres burned by cause for FY 1999. MFC reported that incendiary (arson) fires burned 27,843 acres in 1999, representing 64.7% of the total acres burned. Debris fires burned 11,650 acres, representing 27% of the total acres burned. The remaining 3,527 acres (8.2%) resulted from other causes, including lightning, campfires, smoking, railroad use, children, or miscellaneous.

Exhibit 9: Number of Acres Burned by Cause (For FY 1999)



(Total Acres Burned = 43,020)

SOURCE: PEER analysis of 1999 MFC fire data.

Investigation of Arson and Public Nuisance Fires

Although arson poses a statewide threat to forest resources, in FY 1999, MFC assigned investigator resources almost solely within the Southeast District, where 40% of arson cases are reported, rather than basing assignment on needs evident throughout all districts. The lack of investigator presence in other districts inhibits MFC's ability to deter arson and recover costs of suppressing fires.

MFC's Statutory Authority Regarding Fire Investigations

MISS. CODE ANN. Section 49-19-3 (2) authorizes the Mississippi Forestry Commission to enforce all laws relating to the protection of forests and woodlands. Section 49-19-3 (10) authorizes the commission to appoint, upon the State Forester's recommendation, two law enforcement officers to bear arms, investigate, and make arrests for wood arson. This provision of law was amended in the 2000 legislative session to authorize MFC to utilize six positions for fire investigators; however, to date, districts have not chosen to allocate additional personnel for this purpose.

(Although MFC has forest protection responsibilities, it does not investigate timber theft. MISS. CODE ANN. Section 69-29-1 authorizes the Mississippi Department of

Agriculture and Commerce, Livestock Theft Bureau, to conduct timber theft investigations. The U. S. Forest Service law enforcement personnel are responsible for conducting investigations on federal lands.)

MISS. CODE ANN. Section 49-19-25 gives the Mississippi Forestry Commission the authority to recover attorneys' fees and the costs of abating fires that have been declared a nuisance from individuals or corporations responsible for such nuisance by civil action in the proper court.

MISS. CODE ANN. Section 97-17-13 authorizes the conviction and fine requirements for misdemeanor and felony prosecutions for arson on any woods, meadow, marsh, field, or prairie.

MFC sets forth policy regarding fire law enforcement responsibilities which include:

- investigating the cause of fires and gathering evidence against persons suspected of fire law violations;
- swearing affidavits against suspects;
- presenting the evidence to the proper authorities;
- serving as witnesses in court cases; and,
- collecting suppression costs from persons responsible for starting certain fires.

MFC's Deputy State Forester told PEER that if the fire crew on site determines that an investigation is warranted, then MFC's fire investigator is called on the case.

Arson Investigation Resource Allocations

In FY 1999, MFC assigned investigator resources almost solely within the Southeast District, where 40% of arson cases are reported, rather than basing assignment on needs evident throughout all districts.

While the Southeast District reported 816 (39.6%) of total fires and 13,876 (49.8%) of total acres burned from arson fires in 1999, arson fires were reported in each of the other fire districts. Exhibit 10, page 20 , shows the total number of arson fires and acres burned in 1999 by district.

Exhibit 10: Number of Arson Fires, Acres Burned and Investigations by District (FY 1999)

Region	Number of Arson Fires	Percent of Total Arson Fires	Total Acres Burned Due to Arson	Percent of Acres Burned Due to Arson	Number of MFC Investigations
1. Northeast	228	11.1%	3,176	11.4%	0
2. East Central	361	17.5	2,817	10.1	0
3. South Central	243	11.8	2,494	9.1	2
4. **Southeast**	**816**	**39.6**	**13,876**	**49.8**	**120**
5. Southwest	378	18.3	4.966	17.8	1
6. Northwest	35	1.7	514	1.8	1
TOTAL	**2,061**	**100%**	**27,843**	**100%**	**124**

SOURCE: PEER analysis of MFC fire data

In FY 1999, MFC conducted 120 of its 124 arson fire investigations within the Southeast District.

Of the total 2,061 arson fires reported in FY 1999, MFC investigated only 124, or six percent, of reported arson fires. As noted in Exhibit 10, MFC conducted 120 of its 124 arson fire investigations within the Southeast District.

According to MFC's Deputy State Forester, MFC's only two fire investigators are located in the Southeast District. State law does not limit MFC's investigation of arson activity to the Southeast area of the state. Although the highest number of incendiary fires may be reported in the Southeast, good management practice requires fire investigations of arson in all areas of the state. Arson fires may be reduced when prompt and thorough investigations lead to conviction.

Arson Prosecutions

The lack of a statewide arson investigator presence may inhibit MFC's ability to deter arson.

According to MFC officials, when sufficient evidence is available, arson cases are prepared for presentation to the district attorney for prosecution. The district attorneys

require clear, concise evidence in order to proceed with prosecution.

Only one conviction resulted from 2,061 forestry arson cases reported in FY 1999.

MFC reported a relatively small number of misdemeanor and felony cases, trials, and convictions from FY 1995 through FY 1999. Of the 2,061 reported arson fires in FY 1999, nine investigations led to misdemeanor and felony court cases and one led to an arson conviction.

Fire Suppression Cost Recovery

The lack of a statewide arson investigator presence may inhibit MFC's ability to recover costs of suppressing fires.

State law (MISS. CODE ANN. Section 49-19-25) allows MFC or its authorized agent to recover suppression costs for abating fires from an individual, firm, or corporation responsible through civil court action. Collecting fire suppression costs and imposing misdemeanor and felony charges upon responsible individuals are enforcement tools that can be used in the prevention of future fires. Individuals might be less likely to violate forest fire laws if they know the agency conducts thorough investigations to ensure fire fighting costs are recovered and violators are convicted.

Individuals might be less likely to violate forest fire laws if they knew that MFC conducts thorough investigations to ensure fire fighting costs are recovered and violators are convicted.

In FY 1999, MFC reported a total of sixty-two fire suppression cases that involved nuisance fires and the collection of costs for fire suppression. These reported cases involved only those occurring in the Southeast District. MFC's two investigators located in the Southeast District are also responsible for investigating misdemeanor and felony forest fire violations. Of the $10,912 in fire suppression costs assessed during FY 1999, MFC collected $7,817.

If MFC fails to investigate and collect fire suppression costs in other districts, it has no means of recouping any portion of the costs of fighting nuisance fires. MFC's allocation of personnel resources to investigate fire violations throughout the state could reduce the number of fires and decrease the annual amount of timber loss.

During the 2000 Regular Session (House Bill 245), the Legislature amended MISS. CODE ANN. §49-19-3 to increase the number of investigators to six. The increase in the number of forestry arson investigators who are required by law to have applicable minimum education and training standards for law enforcement officers should affect the number of arson and other fire violation investigations throughout the state. The law does not designate or require that an investigator be assigned to each district. MFC officials stated that it depends on the

district and whether it is willing to change an existing position to an investigator position.

Lack of Evaluation of Fire Reporting Methods

MFC's management cannot assess the cost effectiveness of fire detection reporting methods because the agency does not capture sources of reports (air surveillance and toll-free calls) and compare them to cost.

Currently, MFC receives reports of wildfire occurrence through two methods: aircraft surveillance and toll-free telephone calls. MFC uses eleven airplanes to conduct aircraft surveillance and relies on public officials and citizens to report fires by calling MFC's toll-free number.

Because the district offices do not record the sources of wildfire reports, districts cannot provide summary data to the central office.

Dispatchers within the district office receive the air surveillance and toll-free calls; however, the source of the report is not recorded or compiled for analysis. As a result, the district is unable to provide summary data to the central office for consideration in assessing the reliability and success of each method.

The success rate of aerial fire detection effort for each of the airplanes is critical in determining whether they are being flown at the most optimum level of utilization for fire detection or whether resources should be reallocated to its toll-free telephone reporting system. Without this information, the agency has little justification for utilizing these resources in the detection and suppression of fires and insect disease throughout the state.

Lack of Documentation on Purpose of Airplane Use

Because MFC does not document the purposes for which its aircraft are used, the agency cannot allocate related costs or evaluate program efficiency.

In addition to surveillance for fires, MFC aircraft are used for such purposes as insect or disease detection, staff transport to other MFC offices, and out-of-state travel. Flight data records do not indicate for which of these purposes an airplane is used.

MFC aircraft are used during the fire season for fire detection, but they are also used beginning in the early spring to detect insects or disease throughout the state. MFC also conducts aircraft surveillance for fire detection on federal forestland in the state. The U. S. Forest Service reimburses MFC for its flight services. In addition to fire and insect/disease detection, MFC has used its aircraft to transport central office staff to various district offices, as well for as out-of-state travel.

Pilots record flight information and report to the district and central office on a monthly basis. However, data collected on these monthly flight reports does not indicate

the purpose of the flight or the amount of time that may be logged to a particular program activity. Absence of this information precludes MFC management from identifying the flight time and costs associated with a program and comparing them to program benefits.

By not adequately monitoring the operations, costs, and benefits of its decision to use airplanes to detect fires and insects throughout the state, MFC management cannot accurately gauge the future needs for airplane usage in the six forest districts. For example, MFC may want to decrease aerial flights in areas where fire detection by citizens using 911 or toll-free telephone calls is higher. MFC managers could also intensify ground check activity for insect disease control and use forestry personnel to conduct initial surveys in certain areas in order to decrease operational costs for airplane usage.

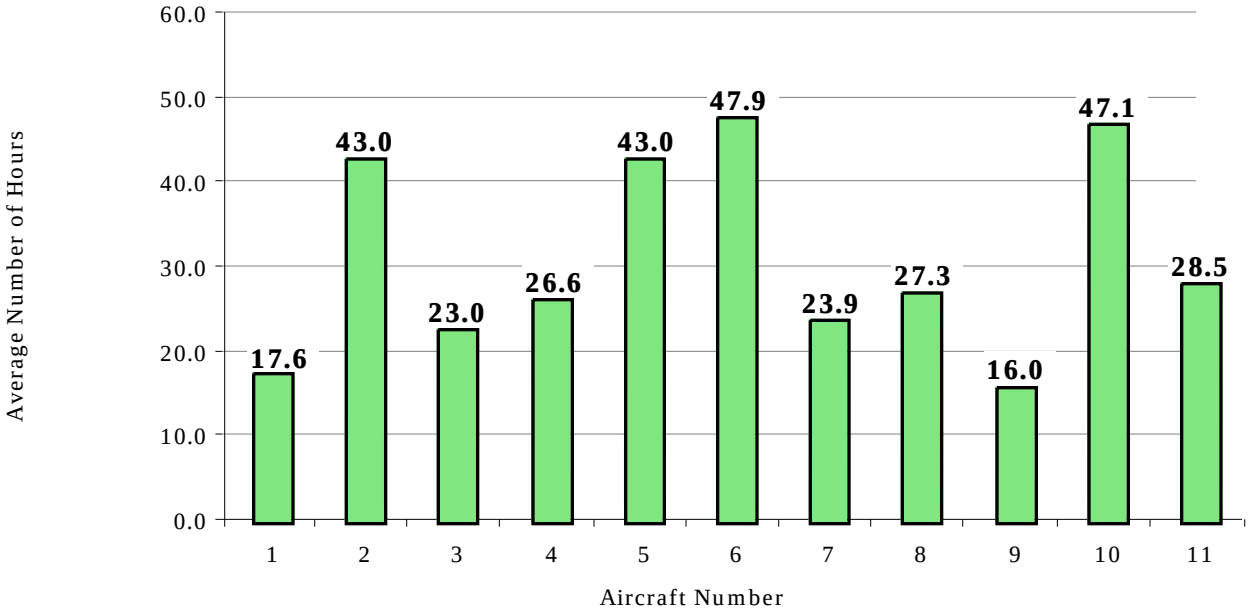
Operation and Support Cost of MFC Air Surveillance Activities

MFC used its each of its eleven aircraft an average of thirty hours per month in Fiscal Year 2000 at a total combined operation and support cost of $637,313.

Use of MFC-Owned Aircraft

During Fiscal Year 2000, MFC operated eleven airplanes. The airplanes are high-wing, single-engine aircraft. MFC owned and operated five Cessna 172s, five Cessna 172RGs and one Cessna 182. During Fiscal Year 2000, MFC flew approximately 3,779 flight hours, or about thirty hours per month per aircraft, on average (see Exhibit 11, page 24). Average monthly usage of aircraft ranged from sixteen hours (for Airplane 9, the central office plane housed at Madison, MS) to a high of forty-eight hours (for Airplane 6, the southeastern district plane housed at Wiggins).

Exhibit 11: Average Number of Hours Forestry Commission Aircraft Used Per Month



SOURCE: Compiled From MFC aircraft logs.

Operation and Support Cost

MFC does not include all flight-related operation and support costs in its determination of hourly rates.

Although MFC management has collected information on aircraft maintenance and operating expenses, the agency does not include all flight-related operation and support costs in its determination of hourly rates. During FY 2000, the cost of operating and supporting the MFC aircraft totaled $637,313 (see Exhibit 12, page 25). This included costs for operation, storage, MFC pilots, and contractual pilots. Although MFC reported average hourly operation costs ranging from $65 to $92, when PEER included other associated costs, the average hourly rate approximated $169 per hour.

Operational Costs

The operational cost (including maintenance, fuel, insurance, hanger utilities and miscellaneous cost) of the eleven airplanes totaled $259,540.

Exhibit 12: Summary of Aircraft Operation and Support Costs (For Fiscal Year 2000)

Cost Category	Units	FY 2000 Cost
MFC Owned Aircraft Costs:		
Operation Costs (Including fuel, maintenance, insurance, utilities, and miscellaneous expenses)	3,779 Hours	$259,540
Storage Costs	11 Aircraft, 5 Airports	$8,182
Aircraft Mechanic Salaries, Wages and Fringes	2 Full-time Mechanics	$96,018
Pilot Salaries, Wages and Fringes	7 Full-time Pilots (of 9 Authorized)	$253,574
Contractual Pilot Services	673 Hours	$20,000
Cost of Operating MFC Aircraft*		**$637,313**
Contractual Aircraft:		
Contractual Plane/Pilot Services	269 Hours	$18,276
TOTAL COST OF AIRCRAFT SERVICES		**$655,589**

* Does not include costs for other support personnel.
SOURCE: Compiled from Information provided by MFC.

Storage Costs

MFC's eleven airplanes are housed at the following locations throughout the state: Hattiesburg Airport, Tupelo Airport, Madison Airport, Leake County Airport, and Grenada Airport. During Fiscal Year 2000, MFC expended approximately $8,182 on airplane storage and hangar leases.

MFC Aircraft Mechanic Salaries, Wages, and Fringes

During FY 2000, MFC employed two full-time aircraft mechanics to service MFC aircraft at a cost of $96,018, including fringe benefits. For FY 2000, the average salary, including fringe benefits, for an MFC aircraft mechanic was $48,009.

MFC Pilot Salaries, Wages and Fringes

MFC is authorized nine full-time single engine pilot positions. During FY 2000, MFC employed seven full-time single engine pilots at a cost of $253,574. For FY 2000, the average salary and fringe benefits for an MFC pilot was $36,225. According to the deputy director for fire protection, when MFC pilots are not flying, they are responsible for performing minor maintenance and inspections of their aircraft to ensure airworthiness. The deputy director also said the pilots serve as the property or safety officers for their respective district office and assist with the maintenance of vehicles and equipment. Contrary to this contention, pilot job descriptions do not include duties and responsibilities as a property or safety officer.

Contractual Pilot Services

In addition to employing the seven pilots in FY 2000, MFC contracted with private pilots to provide additional pilot services. According to MFC, these services are used when in-house pilots are on vacation or during heavy fire season when additional surveillance is required. Out of the 3,779 hours flown in FY 2000, contractual pilots flew 673 hours (or 18%) at a cost of $20,000.

Additional Contractual Aircraft Costs

During this same period, MFC contracted with various companies and individuals to provide air patrol services. The air patrol service vendors provide their own airplane and pilot. During FY 2000, MFC paid an additional $18,276 for air patrol services. When these additional aircraft services costs are included, MFC's total in-house and contractual aircraft cost for FY 2000 was $655,589.

Insect and Disease Control

Due to inadequate cost and performance information, MFC management cannot evaluate the efficiency of its insect and disease control program, including whether aerial surveillance and ground crew investigation and eradication efforts are effective.

MFC's Statutory Responsibility

MFC's responsibility relative to insect/disease control is set forth in MISS. CODE ANN. Section 49-19-7 (1972). This section authorizes the state Forestry Commission to control disease or insect infections or infestations in timber and timber products within this state. MFC is authorized by state law to remain informed regarding the known varieties of pine beetles and other timber insect pests and diseases; the origin, locality, nature, and appearance thereof; the manner in which they are disseminated; and approved methods of treatment, control, and eradication.

The commission is also authorized to make rules and regulations for carrying out the provisions and requirements, including rules and regulations, under which its employees shall (1) inspect places, timber, and timber products; (2) investigate, control, eradicate and prevent the dissemination of pine beetles and other timber insect pests and diseases; and (3) supervise or cause the treatment, cutting, and destruction of timber or timber products.

Method of Detection

MFC uses annual aerial surveys as its primary method of detecting early signs of southern pine beetle outbreaks.

In order to detect potential or actual forest pest outbreaks, MFC's policy requires a minimum of one annual aerial statewide survey. The use of periodic aerial surveys is the primary method of detecting the early signs of southern pine beetle outbreaks. The purpose of the aerial detection survey is to locate and plot individual infestations, determine their relative size and number, and provide the means to evaluate the need for control.

As infestations are identified from the aerial survey, county and crew personnel conduct forest evaluations or ground checks based on priority. Priority spots located on survey flights are ground checked before the next flight is made. All landowners with spots on their property are contacted and informed of the existence of the spot and its location and are offered assistance in marking and controlling the spot. In the case of spots occurring on

industry lands, the information is given to the nearest company office.

Measurement of Costs and Achievements

MFC does not separate cost information on its ground crew investigation and eradication efforts from other program costs, such as aerial surveillance.

MFC management does not collect and evaluate information on the total hours flown annually by each airplane for insect disease control. As discussed on pages 22-23, MFC management does not require that flight logs contain flight purposes (or program activities). Because of this, costs associated with aircraft use cannot be allocated to a particular program. Likewise, cost information on MFC's ground crew investigation and eradication efforts is not separated from other program costs to be used in evaluating the economy and efficiency of this activity.

MFC's Insect and Disease Performance Reporting

Information on insect control program achievements reported in annual pest control reports from 1994 through 1999 is limited. MFC's five-year plan for FY 2001 through FY 2005 provides only one performance indicator (acres infested) for the insect and disease control program. MFC provides no information on the number of aerial hours spent or costs of performing the annual survey of the state's public and private forestlands. MFC managers did not report the number of hours devoted to conducting ground checks once the spots are located or providing technical assistance to landowners. These reports do not include cost data on the total hours spent by personnel giving technical assistance to landowners, inspecting nurseries and seed orchards, or the total number of acres checked by ground crews.

Forest Management Services

To manage resources effectively in providing forest management services to Mississippi landowners, MFC should have accurate and complete information on the quantity and types of forestland and the service needs of landowners and the amount of resources expended to support specific program operations. This accurate and

complete management information could serve as the basis for resource allocation decisions and provide assurance that limited dollars are targeted toward meeting needs.

The lack of accurate and detailed information on some program operations (sixteenth section land management, cost share, and crew assistance) inhibits MFC's central office managers from making informed decisions on allocation of MFC resources. In the absence of such information, MFC can offer little assurance that current program operations are responsive to landowner needs.

Lack of Accurate Inventory of Sixteenth Section Forestland

MFC does not maintain an up-to-date inventory of sixteenth section forestland in accordance with its board directive.

MFC has statutory authority to manage school trust (sixteenth section) forestlands. During the review, PEER requested MFC to identify the total forestland managed from fiscal years 1996 through 1999. Although MFC could not provide a yearly total of managed forestland, it subsequently provided a listing of sixteenth section and school trust forestland by county.

MFC advised that the total acreage of forestland under its management could change yearly due to timber sales, forest fires, or reclassification of the land from forestland to commercial, agriculture, farm residential, recreational, or other classifications.

Based on 1997 inventory information provided by MFC, the agency is responsible for managing a total of 438,118 acres of merchantable acres of sixteenth section lands. (Merchantable means a stand of trees that are of sufficient size and volume per acre to provide a commercial cut.) Of the total sixteenth section acreage amount, 296,517 acres was listed as forestland.

MFC failed to follow through with a request from its board to detail sixteenth section lands by landowner, acreage, and location.

Although MFC board minutes dated July 9, 1998, show that the commission requested MFC staff to complete a list of the total acreage and landowners of sixteenth section lands, MFC management has not updated the 1997 inventory.

No Central Assessment of Landowner Services and Assistance Needs (Requests)

Information on landowners' applying for assistance is retained at the local level until work is completed, rather than being transmitted to the district and central office to serve as a basis for planning and resource allocation decisions.

When private landowners request forest management services, (e.g., site preparation, tree planting, firebreak construction) the county forester completes an authorization for services form. The form authorizes MFC personnel (crews) to perform the listed work and notes its cost. The county forester does not submit this information to the district office until the work is completed, which may be months in the future.

Upon completion of the work, the county forester submits a photocopy of the form to the district office. Next the district office reviews the authorization for services form and checks it for accuracy. After reviewing the form, the district office completes a service information form and forwards it to central office in Jackson for billing. Central office forest management staff review the form and enter the information for processing.

Cost Share Assistance Requests (Forest Resource Development Program)

A similar application process is used to manage landowner requests received through the Forest Resource Development Program (FRDP). The program was created to help offset a landowner's expenses by sharing the cost of implementing specific forestry practices such as establishing a crop of trees or improving an existing crop of trees. A landowner can request to participate in the FRDP program by completing the required application (Form 660.2), which is accepted year-round. The landowner signs and dates the form and it is filed with other FRDP applications at the county office until funds become available. The application is maintained at the county office until the district office distributes funds. The district office is not notified of the pending FRDP application until funding for the program becomes available. The county forester selects applicants for funding based on the first to apply.

Rural Forestry Assistance Report

The rural forestry assistance report, also known as the accomplishment report, is utilized by central office

officials as a method of determining what services have been provided to private landowners. The monthly report identifies the following: forest management plans completed, timber stand improvement, reforestation efforts, dispersed recreation, wildlife habitat improvement, watershed protection, timber harvesting assisted, referral to consultants, forest landowners assisted, and urban areas assisted. It further identifies the number of landowners by race and gender. The information collected on the rural forestry assistance report is also reported to the U. S. Forest Service.

Because MFC central management does not assess service needs by examining data on pending cost share assistance requests, as well as other landowner service requests captured at the county level, MFC cannot ensure that resources are allocated economically and efficiently.

The report captures only forest management assistance provided to private landowners. It can include landowners that received FRDP cost share assistance. However, it does not capture data on sixteenth section school trust or other public land accomplishments. MFC Forest Management Deputy Forester stated that the accomplishment reports are reviewed annually to determine what county crews have been doing.

Because MFC central management has failed to assess service needs by examining data on pending cost share assistance requests, as well as other landowner service requests captured at the county level, MFC cannot ensure that resources are allocated economically and efficiently.

MFC's Management of Forest Regeneration Program Resources

MFC's nurseries, which have seedling prices comparable to those of other public nurseries but below those of private nurseries, have not generated enough revenue in the past five fiscal years to be self-sufficient.

MFC's Regeneration Seedling Nursery Program

The Regeneration Program involves the selection, grafting, and breeding of genetically improved trees for the production of tree seed for out-planting at tree nurseries. The program consists of two nursery facilities that provide pine and hardwood seedlings for Mississippi landowners. Hardwood seedlings are grown at the Winona Nursery. This nursery has the capacity to produce five million seedlings annually. Pine seedlings are grown at the Waynesboro Nursery, which has the capacity to produce thirty-five million seedlings annually.

The program also includes a genetic researching and testing facility (Craig Seed Orchard) to develop select trees under controlled conditions to produce seeds with

improved genetic characteristics. These seeds are provided to nurseries to produce custom-grown, superior seedlings, also known as Mississippi's Own Super Tree (MOST), for sale to Mississippi landowners. MFC may acquire seedlings from other suppliers (through contractual arrangements) in periods when landowner demand is high.

During May of each year, MFC solicits seedling orders from landowners. Each nursery enters the seedling request into the revenue system on a first-come basis in accordance with the postmark on the envelope. During this time, MFC begins sowing the seed that will germinate into the seedling crop, which can be harvested from December until March of the following year. From spring through fall, inventories are routinely taken to monitor the health and stocking of the seedling crop. Invoicing for seedling purchases normally begins in July. Payment must be received by November 15 to reserve seedlings; otherwise, the agency will cancel the landowner's order.

The weather conditions dictate the start of lifting season, which entails the harvesting, packaging, and shipping of seedlings. The target dates to begin lifting seedlings are the first Monday in December for pine and the third Monday in December for hardwood. The lifting season ends by March 1. MFC guarantees seedlings through the final MFC distribution point.

Nursery Operation Financial Status

Although the commission intended to make nurseries self-funded, the nurseries have not generated revenue to cover expenses for three of the five years examined.

The December 10, 1991, minutes of the Mississippi Forestry Commission require that MFC "take appropriate measures to improve. . .efficiency." The minutes further states that the "objective is to make the nursery operation self-funded."

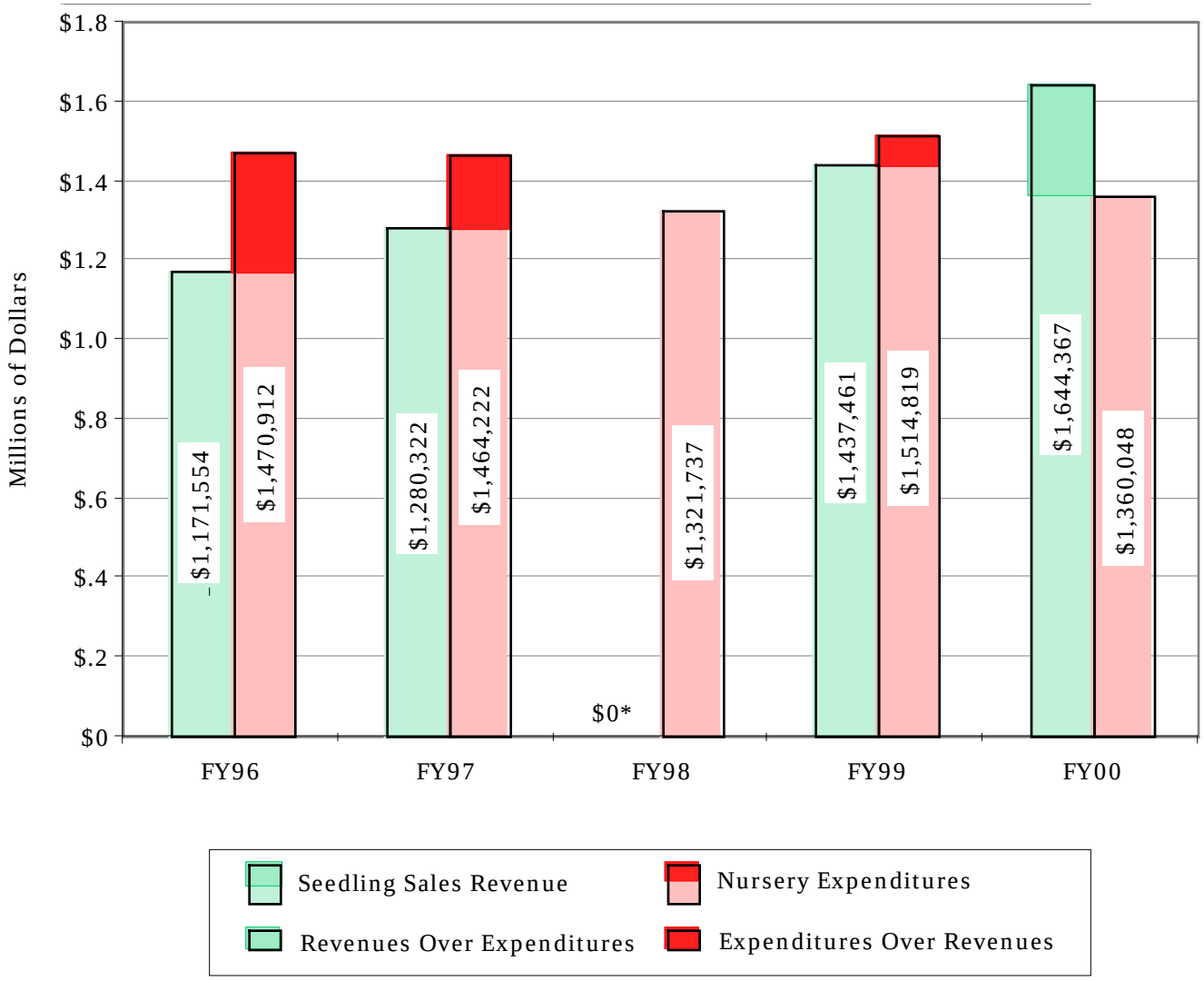
Nursery Revenues and Expenses (FY 1996-FY 2000)

Declining revenue collections in FY 1996, FY 1997, and FY 1999 created a situation in which seedling revenue was insufficient to cover the costs of the nursery operation. Exhibit 13, page 33, shows that the expenses exceeded revenues for three of the five years reviewed. The nursery operation suffered a revenue shortfall of $299,358 in FY 1996, $183,900 in FY 1997, and $77,358 in FY 1999. It was not until FY 2000 that the commissioners voted to increase seedling rates (that had remained constant from

FY 1988 through FY 1999) due to an increased production cost, which resulted in a profit of $284,319 for FY 2000.

PEER did not include FY 1998 revenue figures in Exhibit 13, because MFC could not determine the number of seedlings purchased and available for sale. This prevented an accurate determination of nursery revenues because revenue from contractually purchased seedlings could not be extracted.

Exhibit 13: Revenues and Expenditures of MFC's Nursery Operation (For Fiscal Years 1996 through 2000)



*Revenues for FY 1998 are not presented because revenue from contractually purchased seedlings could not be extracted.

SOURCE: Compiled from information provided by MFC.

The pattern of persistent change in seedling revenue and operational cost creates the need for the agency to review and forecast revenues to determine an estimate of the next year's revenues and obligations. This pattern also creates the need for the agency to adjust rates periodically according to the nurseries' operational cost. The failure to take such action could result in the operation's inability to be self-sustaining in the future.

Comparison of MFC's Seedling Rates with Selected Southeastern States

Current seedling rates in selected southeastern states are comparable to rates charged by public nurseries and less than those of private nurseries.

PEER compared pine and hardwood seedling rates of both public and private sectors located in Southeastern states and found that MFC's seedling rates are comparable to those of other states and cheaper than the private sector. As shown in Exhibit 14, page 35, PEER found that other state nurseries' loblolly improved softwood seedling prices were sold at an average rate of $36 per one thousand as compared to MFC's rate of $33. Additionally, hardwood was sold at an average rate of $175 to $190 per one thousand seedlings as compared to MFC's rate of $200.

The private sector seedling rates were higher than MFC's rates. The private nursery seedling rates for loblolly and slash improved softwood were $39 and $38, respectively, per one thousand seedlings, compared to MFC's price of $33. Private nursery rates for hardwood seedlings ranged from $225 to $325 per one thousand seedlings compared to MFC's rate of $200.

Exhibit 14: Comparison of Seedling Rates For Public and Private Nurseries in Selected Southeastern States*

	MFC Rate (Per 1,000)	Public Nurseries Average Rate (Per 1,000)	Private Nurseries Average Rate (Per 1,000)
Softwood:			
•Loblolly, Improved	$33	$36	$39
•Slash, Improved	$33	$33	$38
•Longleaf	$150	-	$150
Hardwood:			
•Green Ash	$200	$175	$225
•Swamp Chestnut	$200	-	-
•Cypress	$200	$175	$220
•Cherrybark Oak	$200	$175	$235
•Nuttall Oak	$200	$183	$235
•Sawtooth Oak	$200	$188	$275
•Shumard Oak	$200	$175	$260
•Water Oak	$200	$183	$260
•Willow Oak	$200	$175	$235
•Pecan	$200	$190	$325
•Sycamore	$200	$175	$220
•Sycamore, Improved	$200	$190	-
•Yellow Popular	$200	$175	$290

*Selected Southeastern states include Alabama, Arkansas, Louisiana, Florida, South Carolina, and Kentucky.
SOURCE: ***Forest Landowner***, Volume 58, Number 5, pp. 49-53.

Recommendations

Distribution of Fire Fighting Units

1. MFC management should develop a formal mechanism for collecting and analyzing information concerning fire incidence and risk factors in order to use this information as a basis for fire unit assignment. MFC should examine experience factors and area needs, project levels of basic service, and supplement these levels based on risk of forestland damage or loss.

Investigation of Fires

2. MFC management should evaluate its fire investigative resources and determine the placement of personnel needed to conduct forestry arson investigations across the state. MFC should capture and analyze reliable historical information on district needs for investigators.

3. MFC should develop and implement performance measurement standards that provide a means of evaluating how arson investigation activities contribute to overall reduction of timber loss. MFC should expand performance measures (the number of arson fires, total acres burned, total number of misdemeanor and felony cases) to include such factors as:

   - the number of cases investigated and presented; and,

   - the value of property loss as a result of arson.

4. MFC should allocate personnel to investigate fires and collect fire suppression costs based upon statewide fire occurrences. The agency should report detailed information annually by district and county on the number of active and closed fire suppression cases, as well as the costs imposed and collected for each case.

Fire Reporting Methods and Use of Surveillance Aircraft

5. MFC should identify and capture costs associated with the various methods of fire detection, and identify the source of fire reports according to the detection or reporting method. Central decision-makers should use this information to evaluate the cost efficiency and risk associated with each method.

6. MFC should revise its flight logs to capture pertinent information such as the purpose of the flight, passenger lists, and the departure and return time. MFC should use such information to evaluate the cost effectiveness of its air surveillance efforts for relevant program areas (e.g., detection and monitoring fire and insect/disease outbreaks).

7. Given the number of hours flown, MFC should assess the cost effectiveness of each of its eleven aircraft and consider reducing its fleet to minimize costs associated with aircraft usage. MFC should identify the purpose and rate of usage of each aircraft and dispose of units used least or having highest operation costs.

Insect and Disease Control

8. MFC managers should capture and report information on actual hours spent and costs of conducting aerial surveillance to identify insect and disease infestations.

9. MFC should identify and track costs associated with ground crew investigation and eradication efforts and the number of insect disease-related technical assists provided to private and industrial landowners.

10. MFC should assess the historical impact of its efforts and projections of changes in total costs and losses of the state's insect disease control program.

Sixteenth Section Land

11. As the manager of state forestland for sixteenth section school trust, MFC should maintain a current inventory of land for which it is responsible. MFC should develop a method of identifying types of forestland, service needs, and acreage.

Landowner Services

12. MFC should expand its work order system to track pending requests for services so it could be used as a resource for assessing and prioritizing types of services needed by landowners. Such a tracking system would allow the district and central office to know what type of services are requested and provided and to allocate available resources to meet future needs and priorities.

MISSISSIPPI FORESTRY COMMISSION

SOUTHERN HARDWOOD

SOUTHERN PINE

November 21, 2000

RECEIVED
NOV 21 2000
PEER
COMMITTEE

MEMO TO: Ms. Joyce McCants, PEER Committee

FROM: James L. Sledge, Jr., State Forester

SUBJECT: PEER Report Response

The portion of the PEER report addressing aircraft usage in fire control did not seem to consider the advantage from the tactical use of aircraft in fire suppression. While air patrol is costly, it does give precise information about the fire and what it is doing. Many private citizens who call in fires are unable to relay information needed to quantify the severity of the situation, the type fuels burning, or fire behavior information.

This data can influence the priority of resource assignment, how many resources may be needed to suppress a fire, and to some degree, the safety of the crew personnel sent to suppress the fire. It is not unusual to send aircraft to check fires reported by call-ins for aerial detection, and to assess the situation and provide direction to fire crews on the ground.

Crew personnel can only view a small area of a fire in which they are working. Aircraft can provide information as to the best access to a fire location and advise crews when fires have jumped the containment lines and threaten to trap them or burn structures adjacent to a fire.

Often, fires are called in that already have been controlled or fires that are legal burns and not wildfires. We have fires called in that no one could find when the location was checked. When the plane checks a fire, they are able to advise dispatch that the fire is not a wildfire; time and mileage is not wasted for a fire unit to be dispatched to false alarms, which make up a significant part of the calls received.

Planes are less costly than the fire detection system they replaced. The salary cost for the personnel to staff the old tower system, based on the current minimum wage and fringe benefits would be over $1.6 million.

PEER report mentions that the MFC does not keep records of fire reporting methods. I checked with the Districts and all of them are keeping information on how their fires are reported.

I also have some comments on the use of aircraft vs. ground survey in insect and disease surveys. The MFC surveys 17 million acres for forest pest activity and makes survey results available to landowners. I do not think that this could be done effectively or in a timely fashion, by ground surveys.

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Much of the ground crew investigation mentioned in the reports is a sampling of the damage observed to determine the causal agent and estimate the timber volume damage for reports made to the USDA Forest Service. We have not used personnel on ground surveys for detecting pest damage surveys.

The only other method available to detect pest damage over large areas would be to use remote sensing to acquire current aerial photography or satellite imagery. Both are expensive, and in years that have severe pest outbreaks such as pine beetle epidemics, more than one set would have to be acquired.

The portion of the report on pest also mentions eradication efforts and cost-tracking. We advise landowners of control methods, but rarely engage in actual control work. This was done in the past, but little or none is currently undertaken. The time spent in program areas, such as forest pests, is recorded on our time sheets.

According to our records, we did not lose money on our seedling sales. We feel the difference is in the handling of the seedling revolving account.

Our manning and distribution of fire units is based on past fire occurrence, and we believe this is the best means of making that decision.

The inventories and plans on 16th Section School Lands are kept in the County and District offices where the decisions are made and where the work is done.

JLS/mem

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