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# ***ANNUAL REPORT***



*Missouri Department of Conservation*  
*2001-2002*



# MISSOURI DEPARTMENT OF CONSERVATION

## *Headquarters*

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JOHN D. HOSKINS, Director

December 20, 2002

The Honorable Bob Holden  
Governor of Missouri  
State Capitol Building  
Jefferson City, Missouri 65101

Dear Governor Holden:

Transmitted herewith is the report of activities, accomplishments and transactions of the Department of Conservation for fiscal year July 1, 2001 through June 30, 2002. This annual report was submitted to the Conservation Commission by Director John D. Hoskins, and formally approved for printing and distribution at our regular monthly meeting on December 20, 2002.

Sincerely,



HOWARD WOOD, Chairman  
Conservation Commission

## COMMISSION

STEPHEN C. BRADFORD  
Cape Girardeau

ANITA B. GORMAN  
Kansas City

CYNTHIA METCALFE  
St. Louis

HOWARD L. WOOD  
Bonne Terre

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***Missouri Department of Conservation  
Fiscal Year July 1, 2001 to June 30, 2002***

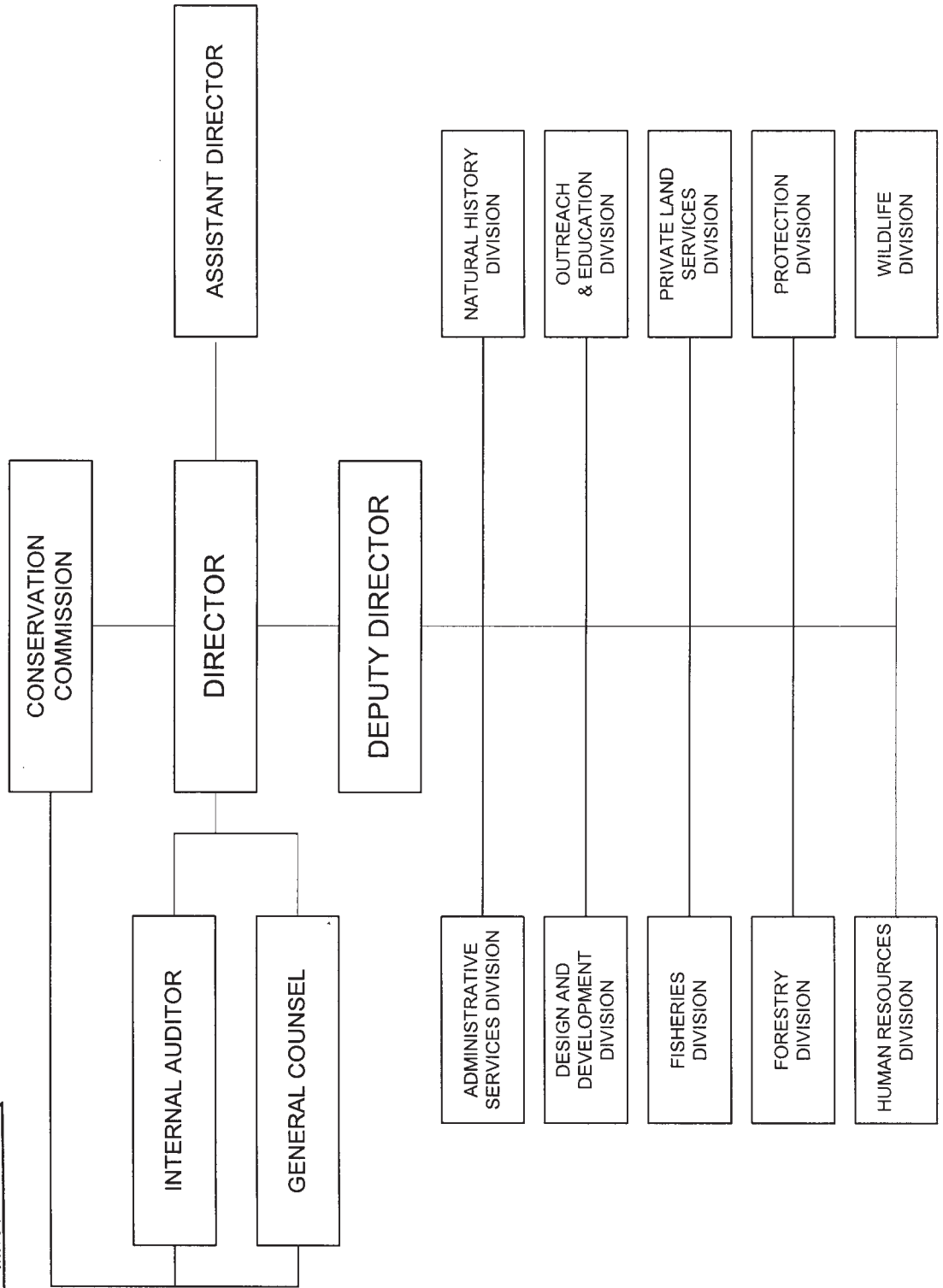
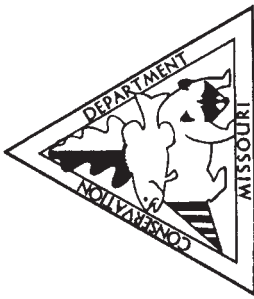


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# MISSOURI DEPARTMENT OF CONSERVATION







**JERRY CONLEY, DIRECTOR**

**JOHN D. HOSKINS, DIRECTOR-DESIGNATE**

**JOHN W. SMITH, DEPUTY DIRECTOR**



Mr. Conley and Mr. Smith share responsibility for administration of the Department's ten divisions—Administrative Services, Design and Development, Fisheries, Forestry, Human Resources, Natural History, Outreach and Education, Private Land Services, Protection and Wildlife. The General Counsel and Internal Auditor report to the Conservation Commission and to the Director; the Assistant Director performs special assignments and reports to the Director. The functions and activities of the divisions and sections are summarized in the following pages for fiscal year 2001–2002.

## **GENERAL COUNSEL**

All legal services to the Department of Conservation are supplied by two attorneys and secretary with offices in the headquarters in Jefferson City. The general counsel serves as legal advisor to the Conservation Commission and to the Department's staff. The general counsel attends all meetings of the Conservation Commission. All litigation in which the Department of Conservation, the Conservation Commission or a member of the staff is a party is managed by the general counsel. Other functions include services to other attorneys and prospective donors for the Department's Donation Program; assistance in law enforcement training for conservation agents and other employees; and liaison with the office of the Attorney General and prosecuting attorneys.

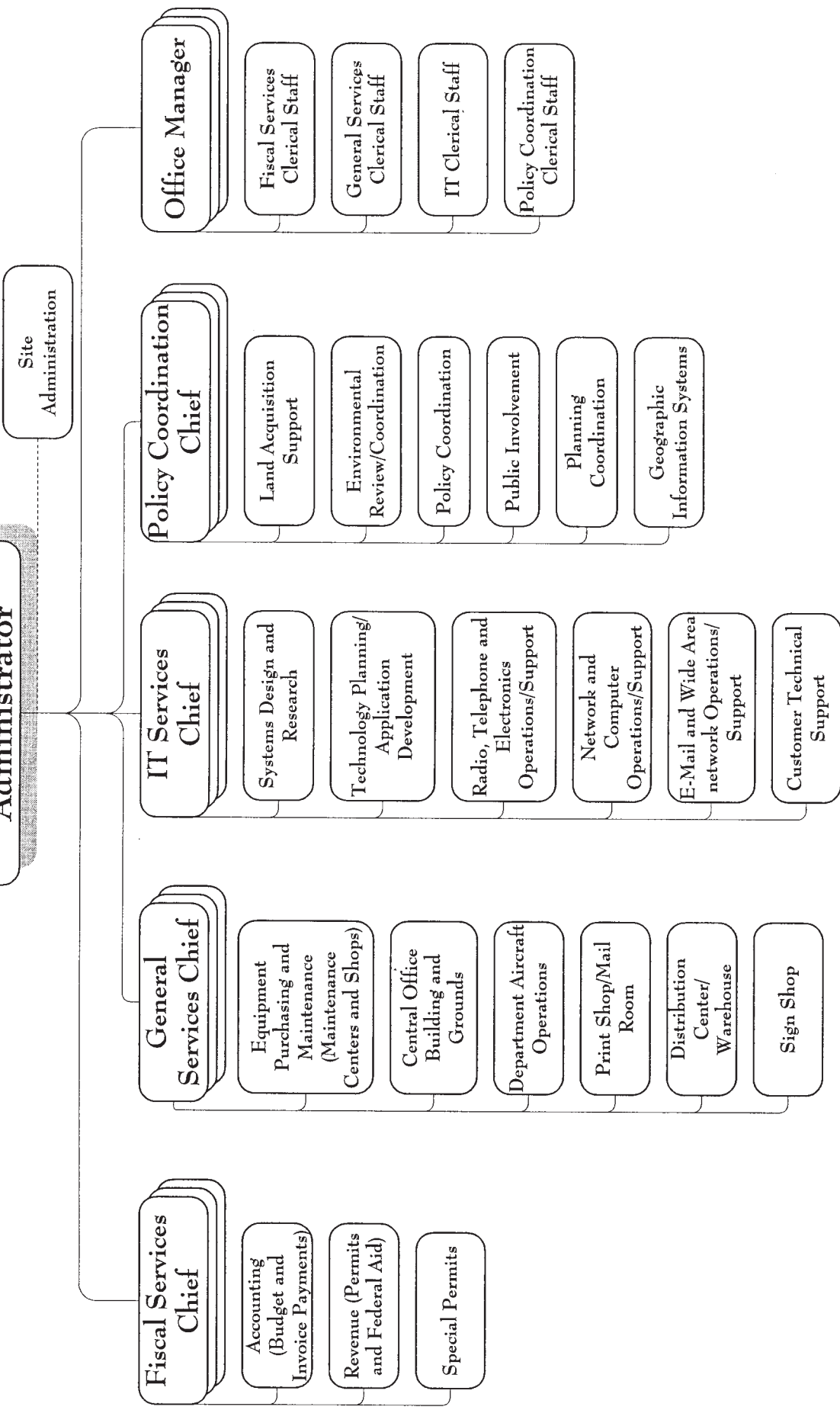
## **INTERNAL AUDITOR**

It is the policy of the Commission to provide an internal audit function as a means of supplying the Director and top management with information to better control the operations for which they are responsible.

This function is performed through an internal auditor and a secretary. It is the internal auditors responsibility to review operations within the Department at appropriate intervals to determine whether they are effectively carrying out their functions of planning, accounting, custody and control in accordance with management instructions, policies and procedures and in a manner consistent with the Departments objectives. This is accomplished by:

1. Reviewing plans, procedures and records for their adequacy to accomplish intended objectives and appraising policies and plans relating to the activity or functions under audit review.
2. Reporting on the results of audit examinations, including recommendations for improvement.
3. Recommending improvement of management controls designed to safeguard Department resources and ensure compliance with laws and regulations.
4. Conducting special examinations at the request of the Commission or the Director.

# Administrative Services Division Administrator



# ADMINISTRATIVE SERVICES DIVISION

## Fiscal Services Section

### Responsibilities and Activities:

- ▶ Coordinate and administer budget and finance functions.
- ▶ Process revenue collections.
- ▶ Provide models of future receipts and disbursements for planning and budgeting purposes.
- ▶ Coordinate federal aid reimbursement.
- ▶ Develop fiscal and economic policies for Department agricultural operations.
- ▶ Administer and maintain the automated point-of-sale (POS) permit distribution system.
- ▶ Process expenditures for the Department, including payroll.
- ▶ Process fixed asset transactions.
- ▶ Review legislative proposals for possible impact on the Department.
- ▶ Coordinate lease and rental agreements.
- ▶ Prepare Internal and Executive Budget requests, financial reports, and cash flow projections.
- ▶ Coordinate Integrated Management System support and operations.
- ▶ Provide support service to divisions and field staff.
- ▶ Develop pay plan models for budgeting and salary administration purposes.
- ▶ Administer title and license/registration records on Department vehicles, boats, motors, and trailers.
- ▶ Review purchasing documents for compliance with state and agency rules and regulations.
- ▶ Develop and implement fiscal related policies and procedures.
- ▶ Prepare financial and management reports and information.
- ▶ Administer the commercial permit distribution system.
- ▶ Administer the landowner deer permit system.
- ▶ Present Financial Management section of Leadership Academy

### Accomplishments:

- ✓ Continued to develop and define procedures for including service components in cropping contacts.
- ✓ Coordinate development of a new accomplishments monitoring system (RAPTOR).
- ✓ Coordinated implementation of a new internal budget system.
- ✓ Coordinated administrative and collection activities at two surplus auctions.
- ✓ Administered the POS permit sales system, accounting for 2 million sport hunting and fishing permits sold (2001 permit year).
- ✓ Sold a total of 2,922 permits through the Central Office permit sales account (2001 permit year).
- ✓ Issued 28 lifetime hunting and fishing permits.
- ✓ Administered operation of the special permits program including:
  - Landowner permits—over 33,000 applications processed and over 95,000 permits issued in 2001.
  - Managed hunt permits—over 7,000 applications processed for over 24,000 individual hunters in 2001.
- ✓ Responded to an average of 2,000 calls each month coming in on the toll free permit vendor hot line. Calls typically require looking up conservation numbers, explaining regulations, helping vendors with equipment problems, etc.
- ✓ Reviewed and responded daily to e-mails forwarded from the Outreach and Education Divisions Ombudsman regarding hunting and fishing permit issues.
- ✓ Issued over 125,000 commercial permits, tags and bands.
- ✓ Issued approximately 400 collector permits and approximately 40 rehabilitation permits.
- ✓ Produced an annual report detailing sales of merchandise and cost of sales at field locations.

- ✓ Maintained perpetual inventory records for 28 field locations selling merchandise and reconciled these to physical inventory counts.
- ✓ Purchased a new sales and inventory system for the consignment areas and completed Phase I of the implementation process.
- ✓ Completed approximately 400 Fiscal Notes.
- ✓ Processed over 3,363 durable property inventory transactions, real property inventory transactions, and lease transactions.
- ✓ Assisted IT Section with the development of RAPTOR.
- ✓ Completed Contracting and Procurement Participation Plan for Minority and Women-Owned Business Enterprise Programs.
- ✓ Developed initial reconciliation procedures between RAPTOR data and SAM II data.
- ✓ Served as Department liaison, and security administrator for SAM II project.
- ✓ Updated the Business Policy Manual and incorporated several new procedures related to agency provided food and the new statewide travel requirements.
- ✓ Coordinated a SAM II pilot project for field offices.
- ✓ Processed 31,501 cash receipt documents. It should be noted that this is higher than last year because in the past we only reported what was from Central Office and this encompasses transactions from the field offices that are entering cash receipt documents at their office.
- ✓ Processed 28 receivable documents.
- ✓ Processed 1 receivable credit memo document.
- ✓ Processed 833 journal voucher documents.
- ✓ Processed 92 requisition documents.
- ✓ Processed 4,222 price agreement documents.
- ✓ Processed 26 purchase order documents.
- ✓ Processed 762 service contract documents.
- ✓ Processed approximately 80,078 payment voucher documents.
- ✓ Processed approximately 4,571 receiver documents.
- ✓ Processed approximately 5,716 vendor invoice documents.
- ✓ Processed 44,889 payroll checks: (35736 salaried and 9153 hourly employees.
- ✓ Continued development of new POS system for selling hunting and fishing permits.
- ✓ Presented Financial Training in the Leadership Academy August 16, September 21, October 5 and February 4, statewide.

# MISSOURI DEPARTMENT OF CONSERVATION

## Actual Funds Available and Disbursements

For Fiscal Year 2002

### RECEIPTS

Sales Tax .....	\$ 90,545,178
Hunting, Fishing & Commercial Permit Sales .....	27,584,018
Federal Reimbursements .....	14,563,424
Agricultural Sales .....	1,544,945
Timber Sales .....	889,369
Other Miscellaneous Receipts .....	1,811,610
Miscellaneous Fees & Tags .....	1,332,789
Surplus Property .....	1,261,273
Interest .....	913,468
Publication Sales .....	1,031,082
Nursery Stock Sales .....	1,320,064
Grants, Gifts, Bequests & Donations .....	241,861
Contractual Services .....	856,123
Rentals .....	55,691
Miscellaneous Sales .....	125,489
Land Sales .....	2,339,488
Yield Tax .....	37,353
Refunds .....	300,356
Damage Reimbursements .....	30,427
Concession Income .....	15,603
<b>TOTAL RECEIPTS .....</b>	<b><u>\$146,799,613</u></b>

### DISBURSEMENTS

Construction & Development .....	\$ 13,329,929
Wildlife .....	13,322,731
Forestry .....	14,779,428
Protection .....	14,781,070
Administrative Services .....	25,750,071
Fisheries .....	13,939,371
Outreach & Education .....	13,050,891
Private Land Services .....	5,371,201
Land Acquisition/Landowner Assistance/In-Lieu Taxes .....	4,838,696
Design & Development .....	8,903,709
Administration .....	6,664,129
Natural History .....	2,084,402
Human Resources .....	2,749,551
<b>TOTAL DISBURSEMENTS .....</b>	<b><u>\$139,565,180</u></b>

## Information Technology Services (IT)

### Responsibilities and Activities:

- ▶ Technology Planning
- ▶ Technology Budgeting
- ▶ Computer Center Operations
- ▶ Desktop Technology
- ▶ Local Area / Wide Area Network Support
- ▶ Intranet Services and Support
- ▶ Application Software Development
- ▶ Data Base Administration
- ▶ Two-Way Radio Services and Support
- ▶ Telephone Services and Support

### Accomplishments:

#### General

- ✓ Prepared 497 purchase orders and processed invoices worth almost \$1,726,625 in new computer hardware and software.
- ✓ Supported numerous organizational moves in the Central Office and field offices by relocating telephone, cables, PCs, printers, etc.
- ✓ Supported the State Chief Information Officer (CIO) and State Information Technology function by participating in both the Information Technology Advisory Board (ITAB) and the Information Technology Policy Board (ITPB).
- ✓ Supported the State Executive Telecommunications Advisory Council (SETAC) which prepared FY 02 telecommunications cost allocation plan for OA DP&T.
- ✓ Supported a total of 237 days of student training for MDC employees.

#### Technical—Application Development Unit

- ✓ Maintained and supported 19 Clipper applications, 17 Access applications, and 14 Visual Basic (VB) applications on the PC platform, 9 COBOL applications on the AS/400, 3 Interactive Voice Response (IVR) applications on the PC platform, and 3 Intranet applications.
- ✓ Provided technical assistance, formatting, and posting of 1,730 pages on the MDC Intranet including HTML pages, Active Server pages, and PDF pages.
- ✓ Responded to 4,810 requests for programming technical assistance and 234 programming modifications in response to bug reports and enhancement requests.
- ✓ Processed 598 data requests requiring database modification or custom report development.
- ✓ Supported installation of a new Oracle server.
- ✓ Installed and integrated a new IVR development toolkit.
- ✓ Purchased, installed, and integrated a new HR system to replace the old AS/400 system and several Clipper applications and converted necessary data to populate the HR database.
- ✓ Integrated an Optical Character Reader (OCR) interface into the Hunter Ed system to process student data forms and export a table to update the Central Bank POS system.
- ✓ Developed a Forest Inventory application in VB for Forestry and the US Forest Service that replaced an old Clipper system that interfaces with handheld data collectors to compile forest inventory data.
- ✓ Developed a CMT data collector interface for the Vegetation Monitoring system and supported statewide implementation of the system update.
- ✓ Completed the budget module for the Resource Activity Planning, Tracking, Organizing, and Reporting (Raptor) system to replace the IMS Clipper system for budget development.
- ✓ Developed a new IVR system to process *Conservationist* magazine subscription renewals.



## **Technical—Operations Unit**

- ✓ Installed 6 servers in Central Office.
- ✓ Upgraded 2 Wide Area Network (WAN) circuits to field offices.
- ✓ Installed 2 new local area networks (LAN) one at Rockwoods and one at KC Discovery Center.
- ✓ Replaced 468 PCs with new Windows 2000 computers.
- ✓ Added 6 new servers to the central office increasing support requirements.
- ✓ Processed 10,146 trouble calls through the Help Desk.
- ✓ Completed 2,691 maintenance trouble tickets on PCs across the state.
- ✓ Supported an AS/400 print load of 33,121,344 lines.
- ✓ Supported an AS/400 work load of 321,502 jobs.
- ✓ Supported over 1,480 PCs, 33 LANs and 34 WAN locations across the state.
- ✓ Supported 1,430 e-mail users across four post offices statewide.
- ✓ Maintained an average 99.5% network availability throughout the year.
- ✓ Replaced 38 network printers.
- ✓ Added 8 new network printers

## **Technical—Telecommunications Unit**

- ✓ Replaced seven telephone systems: Bennett Springs hatchery, California, Jackson, Lake Paho CA, Perryville, Roaring River Hatchery, and Ted Shanks CA.
- ✓ Installed new telephone systems at new MDC facilities, including the Kansas City Discovery Center and the Parma Woods Shooting Range.
- ✓ Replaced 35 mobile radios, 235 portable radios, and 15 base stations throughout the state.
- ✓ Replaced 22 fixed repeaters in the Ozark region. The equipment replacement has resulted in significantly improved mobile and portable radio coverage in areas served by the tower site.
- ✓ Established a new standard portable radio for Department staff. After a field trial, members of a Quality Action Team selected the Icom F30-GS as our standard issue portable radio.
- ✓ Began the FCC licensing process to acquire four new tactical radio frequencies for interoperability uses within and external to the agency for wildfire control. Two frequencies are intended to be shared solely with U.S. Forest Service, Mark Twain National Forest.
- ✓ Issued 6 requests for new FCC radio station licenses, and 17 requests for license modifications.
- ✓ Maintained over (1,628) telephones, 1 PBX, 68 electronic Key Systems, numerous FAX machines, audio visual and public address equipment at 117 locations across Missouri.
- ✓ Issued 202 purchase Orders for radio equipment, service parts and tower maintenance.
- ✓ Issued 17 purchase orders for telephone equipment and facsimile machines, and 35 service orders for voice and wide area network services.
- ✓ Contracted a two day on-site training course on Norstar telecommunications systems for eight electronic technicians.
- ✓ Completed a major telecommunications voice and data network wiring project during the remodeling of the Southeast Regional office.
- ✓ Assisted with the installation of local area network wiring (consisting of copper and/or fiber optic cabling) at the Brookfield, Burr Oak Woods, Central Region office, and Rockwoods facilities.
- ✓ Completed the removal of a 140 foot self-supporting radio tower at Six Flags forestry and placed the tower in storage for future use at the Columbia Bottom maintenance facility.
- ✓ Completed a cooperative agreement with the Missouri Department of Transportation to share the new Columbia Bottom radio tower when the tower is built on the new site.
- ✓ Completed construction of small, free-standing towers for base stations at the Warrenton and Ava Forestry offices.
- ✓ Completed the installation of new Protection repeater at Bennett Springs and a new Protection and common network repeater at Novelty.



- ✓ Identified two sites for mobile radio network expansion (Jamerson C. McCormack CA and Price Bridge access) and issued frequency coordination and FCC license requests for each of these ADD sites.
- ✓ Acquired 6 new equipment shelters for radio tower sites. These were installed at Hurley, Hunter, Guthrie, Novelty, Homeland, and Strafford.
- ✓ We now maintain 83 tower sites, 93 base stations, 152 radio relays, 1,162 mobile radios and 1,024 portable radios.

## **Policy Coordination Section**

### **Responsibilities and Activities:**

- ▶ Policy/Environmental Review and Coordination and Resource Liaison.
- ▶ Geographic Information System (GIS).
  - Coordination
  - Hardware/Software
  - Database Development and Access
  - Projects
  - Education
- ▶ Real Estate Services
- ▶ Strategic and Resource Planning.
- ▶ Public Involvement, Social and Economic Survey Analysis.
- ▶ Papers, Publications and Awards

### **Accomplishments:**

#### ***Policy/Environmental Review and Coordination and Resource Liaison.***

- ✓ Reviewed and coordinated issues and projects with U.S. Army Corps of Engineers (COE Districts: St. Louis, Kansas City, Little Rock, Memphis, Rock Island, Omaha) including: L-15 Levee, L-142 Levee, Turkey Creek Flood Control Project, Missouri River Mitigation Project; Upper Mississippi River Navigation Study; leasing and management agreements on COE lands; numerous Section 404 (Clean Water Act) permits; St. John's Bayou/New Madrid Flood way Project and St. Francis River projects,
- ✓ Coordinated Department input to Rock Island and St. Louis Corps District's dredging program along the upper Mississippi River.
- ✓ Served on the Board of Directors of the Lower Mississippi River Conservation Committee and as Chairman, Upper Mississippi River Conservation Committee.
- ✓ Represented the Department on River Resources Coordination Team in Rock Island District and the River Resources Action Team in St. Louis District, Missouri River Fish and Wildlife Mitigation Task Force.
- ✓ Provided technical and policy support to the Director and Deputy Director on the national issue of the Missouri River Master Flow Manual revision.
- ✓ Represented Missouri on the Upper Mississippi River Environmental Management Program Coordinating Committee to implement \$198 million environmental management program.
- ✓ Coordinated responses to requests for information regarding Missouri's sensitive species and communities.
- ✓ Administered the Atlas database which contains information about Department owned, leased and managed areas.
- ✓ Obtained permits for Department development projects.
- ✓ Worked with the COE to develop habitat projects in the open Mississippi River and the lower six navigation pools.
- ✓ Served as liaison to Missouri Conservation Heritage Foundation regarding mitigation banking; in-lieu-fee program development and regulatory issues.
- ✓ Coordinated MDC response to the National Wildlife Refuge Draft Planning Policy development.
- ✓ Represented the Department on the Public Commission's Water Policy Task Force.

- ✓ Represented Policy Coordination on the Department's Common Ground Forum Steering Committee.
- ✓ Represented the Department on the Governor's Drought Assessment Committee.
- ✓ Represented the Department on the Governor's Farm Crisis Rules and Regulations Committee.
- ✓ Coordinated preparation of the Executive Budget with Fiscal Services and other divisions.
- ✓ Developed SAM II—MDC performance measures.
- ✓ Coordinated development of the Department's strategic plan.
- ✓ Facilitated the Department's Compensation Task Force.
- ✓ Facilitated area planning for the Central Region lands owned or managed by the Department that are adjacent to the Missouri River.
- ✓ Chaired and facilitated a public use committee.
- ✓ Coordinated Department funds and activities related to North American Wetland Conservation Act grants (completed Settles Ford CA, new grant for B.K. Leach CA, on-going administration).
- ✓ Coordinated the review and revising of the Area Resource Management Policy and Procedures Manual.
- ✓ Chaired committee responsible for reviewing dog field trials on Department areas.
- ✓ MDC coordination of DUs Matching Assistance to Restore State Habitat.
- ✓ Lead development and implementation of National Wetlands Inventory Classification system workshops that trained 100 staff on the newly adopted system inventory process.
- ✓ Engaged the equine community in a discussion of horse trail issues.
- ✓ Participated on the regulations committee.
- ✓ Engaged the public in the otter reintroduction program issue.
- ✓ Coordinated the State report of annual wetland accomplishments for the upper Mississippi River/Great Lakes Joint Venture Project.
- ✓ Taught 5 Seven Habits of Highly Effective People courses for the Leadership Academy.

### **Geographic Information System (GIS): Coordination**

- ✓ Participated in coordination and oversight of the following committees: MidAmerica GIS Consortium, NSGIC Conference Committee, NSGIC Standards Committee, US EPA Data Standards Committee, MoRAP Technical Committee, MoRAP Standards Subcommittee, and the MoRAP Projects Leader Committee.
- ✓ Represented the State of Missouri and MDC as a member of the Board of Directors of the NSGIC.
- ✓ Represented the Department and served as the Chair of the Missouri GIS Advisory Committee.
- ✓ Represented the Missouri GIS User Community by serving as the Symposium Chair of the Mid America GIS Consortium and serving on 2002 Consortium Planning Committee.
- ✓ Represented the State of Missouri and its GIS interests at the United States Geological Surveys National Mapping Division Workshop and the National States Geographic Information Councils annual meeting.
- ✓ Facilitated the Departments GIS Users group that promotes GIS coordination and hosted monthly meetings.
- ✓ Educated and monitored employee development and use of map serving software
- ✓ Served on the Governors Missouri River Technical Committee.

### **Hardware/Software**

- ✓ Upgraded the GIS labs computing capability
- ✓ Maintained a Policy Coordination intranet web site that provides Department employees access to Policy Coordination information.
- ✓ Updated the ArcView GIS program and extensions in all regional Department offices as well as most other Department offices.
- ✓ Maintained GIS software in over 47 offices and home locations.
- ✓ Provided technical support to GIS users throughout the state of Missouri.
- ✓ Acquired five Trimble GPS units for NWI effort and future MDC uses.
- ✓ Installed and configured Department map serving software on external and internal servers.

## **GIS: Database Development and Access**

- ✓ Maintained a shared GIS data directory that provide quick and efficient access for Central Office and Columbia Research GIS staff.
- ✓ Developed and maintained a new standardized data directory structure, database list and attribution for distribution to field staff.
- ✓ Continued to update and support the electronic version of the Area Resource Management manual including an intranet page to make the document available to all users with intranet access.
- ✓ Completed the conversion and distribution of approximately 5,600 DOQQs to project partners and MDC regional offices.
- ✓ Maintained a digital database using GIS technology to maintain Real Estate Services land record database.
- ✓ Created coverage of Dam locations and characteristics for state of Missouri
- ✓ Updated COE property boundary coverage and verified boundaries in question with COE Real Estate Divisions.
- ✓ Acquired and assembled COE Missouri River data.

## **GIS: Projects**

- ✓ Maintained a customized ArcView application for the Private Land Services Division's Regional supervisors to track budget funds and landowner requests for assistance.
- ✓ Provided analysis on sandbar presence at variant river stages for use in Missouri River Master Manual deliberations.
- ✓ Completed a mapping of the hydrologic units of the Osage River Basin of Missouri and Kansas.
- ✓ Organized the collection and mapping of Class I Wildlife Breeder Permit holder addresses.
- ✓ Developed and managed printing of Atlas and Dispatch map of Fire towers of the Ozark Region
- ✓ Continued support for a project to determine watershed health based on impervious surfaces. It will be used as a planning tool by St. Louis Staff with the local planning and zoning boards.
- ✓ Provided GIS/GPS support and training for MDC NWI effort
- ✓ Created customized ArcView Project for entering spatial data and attribution in support of NWI effort.
- ✓ Provided GIS support and cartography for Central Region Riverlands Plan
- ✓ Provided miscellaneous analysis and cartographic output for Department staff.
- ✓ Developed and produced the concept of a Point of Sale Geographic Analysis.
- ✓ Maintained an intranet web site that provided access to Natural History spatial data for Department employees.
- ✓ Maintained public internet web sites that provided access to Department spatial data.
- ✓ Participated in the multi-agency development of a Species of Concern web site.
- ✓ Taught six Introduction to ArcView classes to approximately 80 Department employees.
- ✓ Taught two Introduction to the Spatial Analyst classes to 18 Department Employees.
- ✓ Taught two Advanced ArcView training class for 100 GIS professionals.
- ✓ Obtained certification to teach a class for the MDC Leadership Academy.
- ✓ Maintained the ESRI certification necessary to teach the Introduction to ArcView class and Introduction to the Spatial Analyst class.
- ✓ Participated in the GIS Day event at the State Capitol.
- ✓ Presented a demonstration on GIS technology to the Missouri Information Technology Advisory Board.
- ✓ Participated in conferences including the International ESRI User Conference, the Missouri Natural Resources Conference, and the Mid America GIS Consortium.
- ✓ Assisted with Conservation Focus Workshop logistics
- ✓ Participated in Model School program—providing maps, internet sites, and introductory GIS software, data, and shapefiles of Missouri.

## Real Estate Services

### *In-Lieu-of Tax Program*

In FY2002 in lieu of tax payments, which included levee and drainage district taxes, totaled \$646,842.62 to 114 counties. The four largest payments were to St. Louis (\$47,769.28), Holt (\$34,287.53), Shannon (\$28,305.26) and Mississippi (\$23,701.66) counties. Since 1980 more than 9.3 million has been returned to Missouri counties under the in lieu of tax program.

### **Lands purchased or received in trade July 1, 2001 through June 30, 2002:**

<b><u>County</u></b>	<b><u>Area</u></b>	<b><u>Acres</u></b>
Adair	Montgomery Woods C. A.	26.00
Bollinger	Castor River C. A.	180.00
Boone	Three Creeks C. A.	5.00
Dade	Stony Point C. A.	320.00
Lewis	Sunnyside School Access	6.00
Livingston	Poosey C. A.	100.00
Livingston	Poosey C. A.	159.25
Lincoln	B. K. Leach C. A.	1,959.00
Macon	Atlanta C. A.	163.00
Newton	Walter Woods C. A.	40.50
Shannon	Angeline C. A.	15.00
Shannon	Angeline C. A.	95.00

### **Land donations from July 1, 2001 through June 30, 2002:**

<b><u>County</u></b>	<b><u>Area</u></b>	<b><u>Acres</u></b>
Jefferson	Conservation Area	13.55
St. Charles	August A. Busch Mem. C. A.	15.26
St. Charles	Weldon Spring C. A.	218.00

### **Lands traded or sold between July 1, 2001 and June 30, 2002:**

<b><u>County</u></b>	<b><u>Area</u></b>	<b><u>Acres</u></b>
Bollinger	Duck Creek C. A.	0.19
Jackson	Lipton C. A.	0.64
Laclede	Lebanon Towersite	0.68
Miller	Boeckman Bridge Access	2.44
St. Charles	August A. Busch Mem. C. A.	46.01
Shannon	Angeline C. A.	14.00
Shannon	Rocky Creek C. A.	80.00
Wayne	Coldwater C. A.	26.11

The purchase of the 1,959 acre addition to B. K. Leach C. A. in Lincoln County was a significant acquisition for the Department. Realty staff was successful in securing several funding partners to help offset the total cost of the project to the Department. The addition will increase wetland habitat along the Mississippi River. Staff also negotiated, facilitated and filed several easements and agreements granting access across Department lands for roads, utilities or special uses. Also staff continues to work on a computerized land inventory record system that will include real estate transactions beginning with the formation of the Missouri Department of Conservation in 1937. Permanent land records were transferred to the archives section of the Secretary of States office for filming and permanent storage.

### ***Strategic and Resource Planning***

- ✓ Delivered a presentation to Unit Coordination Teams on issues surrounding horseback riding use of Department areas.
- ✓ Conducted training of Department staff on environmental reviews during the recovery leader training course in endangered species recovery.
- ✓ Represented the Department on MoDOT's I-70 retrofit study.
- ✓ Conducted and participated in two workshops on regulatory affairs for regional office staff.
- ✓ Represented the Department in FERC license of Bagnel Dam.
- ✓ Participated in the state Interagency Planning Council and various related task forces, teams, and committees.
- ✓ Completed the first draft of an atlas of Missouri ecoregions. Continued to apply the Ecological Classification System (ECS) in resource assessment and planning toward the Rocky Creek Conservation Area plan, Missouri Natural Areas Committee, the revision of the Missouri Terrestrial Natural Communities and Department land acquisition.
- ✓ Presented numerous demonstrations of GIS and ECS applications to resource assessment and planning, including state and national meetings.
- ✓ Participated on steering committee, technical, and project leaders' committee, and numerous project teams, in support of development of comprehensive spatial information for Missouri's natural resources.

### ***Public Involvement, Social and Economic Survey Analysis***

- ✓ Assisted in the formation of Missouri Watershed Coalition.
- ✓ Participated in the St. Charles County Dardene Creek Alliance study.
- ✓ Represented Policy Coordination on the Manitou Bluff Project Steering Committee.
- ✓ Served as coordinator for the Scenic Rivers Watershed Partnership.
- ✓ Conducted surveys of Teacher-Leaders for Outreach and Education Division.
- ✓ Analyzed and reported results from the 2000 Conservation Monitor Survey.
- ✓ Cooperated with University of Missouri faculty to conduct a survey of Missourians awareness of the Department.
- ✓ Contributed case studies of human dimensions efforts in Missouri to *Human Dimensions of Wildlife Management in North America*.
- ✓ Developed marketing plan for anglers in cooperation with Recreational Boating and Fishing Foundation.
- ✓ Analyzed and reported results from a survey of Non-resident Deer Permit purchasers.
- ✓ Assisted in development of a survey to assess recreational and economic benefit of the Missouri River.
- ✓ Assisted Department staff with a variety of policy facilitation tasks and public involvement information requests.

### ***Papers, Publications and Awards***

- ✓ Received a "2001 Globe Award for Environmental Excellence" for the relocation of the federal threatened Geocarpon from the American Road and Transportation Builders Association.
- ✓ Gardner, James E. and Elizabeth A. Cook. 2001. *Distribution of Myotis sodalis (Indiana Bat) Summer Habitat in the Eastern United States Including GIS Techniques to quantify Range-Wide Potential Summer Habitat*. In Al Kurta, ed. Proceedings of a Symposium on the Indiana Bat: Biology and Management of an Endangered Species, Lexington KY, March, 2001. Bat Conservation International, Austin, TX (in press).
- ✓ Seng, P., D. Case, M. Conover, D. Decker, J. Enck, S. Nicole Frey, M. Stange, B. Staton, R. Stedman, C. Thomas and D. Thorne. 2001. *Contributions of Hunting to North American Society and Culture*. Transactions of the 66th North American Natural Resources Conference 66:202-231.
- ✓ Missouri Department of Conservation. 2001. Nonresident deer permit survey. Missouri Department of Conservation Public Profile 1-2001, Jefferson City, MO. 458 pp.
- ✓ Received year "2000 Conservationist of the Year" Award, Missouri Conservation Federation.



- ✓ Missouri Department of Conservation. 2002. Point of Sale Geographic Analysis: Permit Type Geographic Analysis by Zipcode. Public Profile 1–2002. Missouri Department of Conservation, Jefferson City, Missouri. 28pp.
- ✓ Presented Missouri River Depth Analysis results to numerous groups nationwide to elucidate MDCs position on Master Manual revisions
- ✓ Awarded Outstanding Symposium Presentation at the 2002 Mid America GIS Consortium Conference.

## **Federal Aid Coordination**

### **Responsibilities and Activities:**

The Department regularly participates in a number of federal aid granting opportunities. Federal grants, which usually require a state match, allow the Department to stretch precious state funds.

### **Accomplishments:**

For fiscal year 2001–2002, the Department managed 68 federal grants totaling \$14,231,990, including the traditional Wildlife Restoration grant (\$5,545,167) and Sport Fish Restoration grant (\$4,448,009).

## **General Services Section**

General Services Section manages a broad range of functions that support a variety of Department operations. Its mission is to provide good service to our fellow employees as well as careful management of Department assets. General Services functions include management of the vehicle and equipment fleet; operation of the aviation services unit; operation of the Department Sign Shop; maintenance of a distribution center and warehouse for publications, products and media loan service; operation of offset printing, mailing and sign production services; building and grounds maintenance services; coordination of the Department's earthquake/emergency preparedness plans; and administration of the Department uniform/clothing policy.

General Services responsibilities include procurement, repair and disposition of the vehicle fleet, marine and other mechanical equipment; operation of 15 maintenance centers statewide; annual vehicle inspections, and administration of surplus property auctions that yielded \$1,609,411 in FY2002. The Department's \$38 million vehicle fleet includes 1,647 wheel and track vehicles distributed throughout the state; marine assets include 1,092 boats and 923 trailers. In addition to equipment maintenance and inspections, equipment processing and maintenance facilities at Salem, Brookfield and Springfield receive new equipment for preparation and assignment and prepare surplus equipment for disposal. Each new vehicle has to be prepared for specialized uses including law enforcement, fire suppression, agricultural work, fisheries management and research activities, and other field applications.

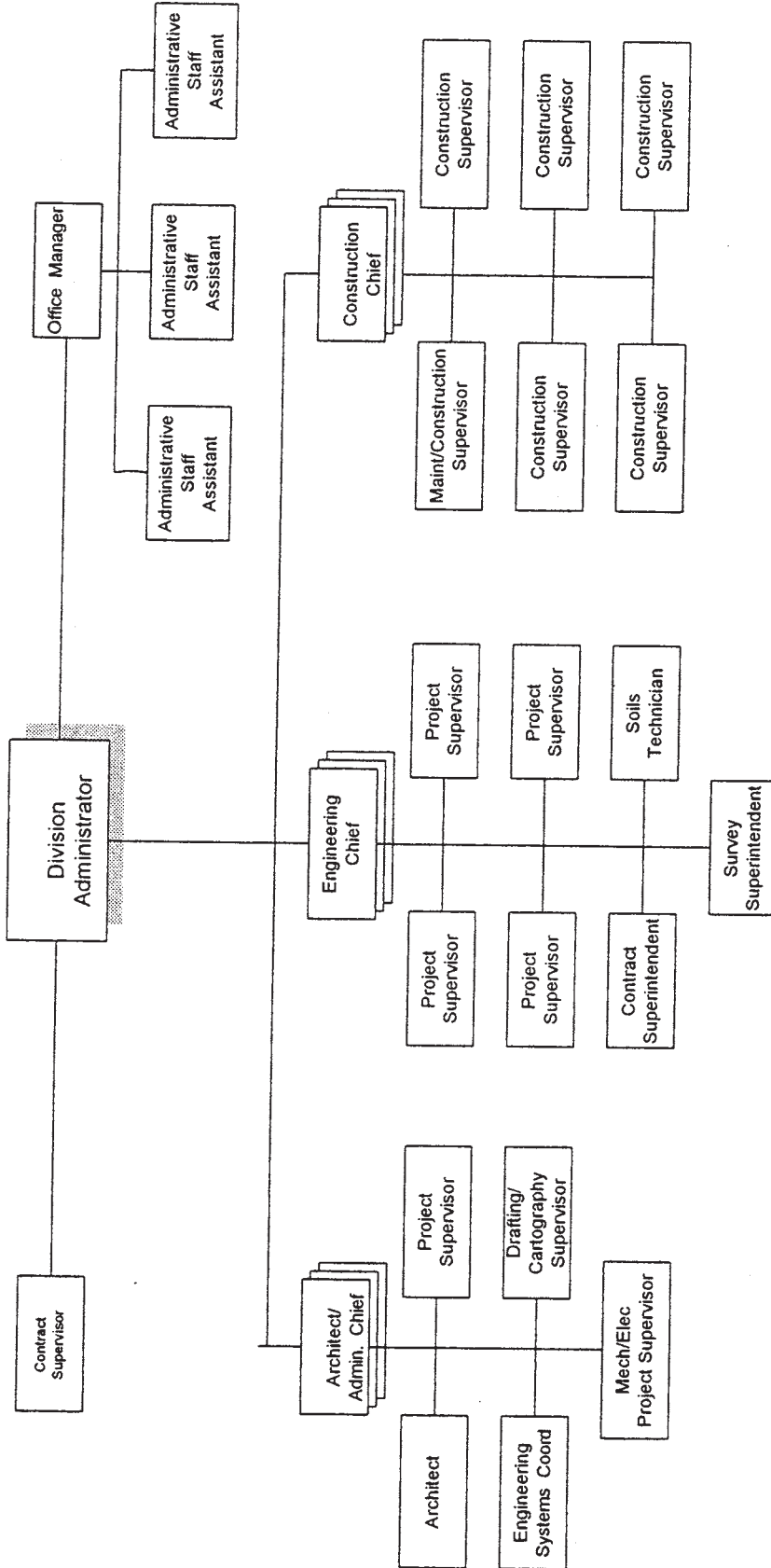
Department aircraft are used in support of the official Department mission. Aviation services are utilized for a variety of purposes including resource management, personnel transport, law enforcement, fire protection, photography, and wildlife transport. Missions include wildlife census counts, aerial radio telemetry studies for fish and wildlife, water pollution investigation, surveys for land acquisition, and other activities associated with management of the state's fish, forest and wildlife resources. Total flying time has grown from 250 hours in 1946, the first year of aviation operations, to 1,696 hours in FY 2002. This figure is 140 flight hours, or 9%, more than the 1,556 flight hours for the previous year. Full time Department pilots flew an average of 406 hours in FY 2002. The aviation services staff includes a professional aviation technician with inspector's authorization, two full time, professional pilots and the Chief Pilot. The Department owns a hanger located at Memorial Airport, Jefferson City, Missouri. The present hanger was built in FY96 at a cost of \$623,300. It has 6210 square feet for aircraft and 2168 square feet for offices and waiting area. As in the past, our aviation fleet includes a single-engine Cessna 210, a twin-engine Cessna 402, and a Bell Jet Ranger helicopter. MoDOT and the Department jointly purchased a used King Air 200 airplane in May 2000 . Each agency paid 50% of the aircraft purchase cost, and the cost of operation is proportional to each agency's use of the airplane. The King Air is kept in the Department of Conservation hangar and is maintained by our aircraft mechanic. Benefits of this partnership

include shared flight resources and improved efficiency of both agencies' aircraft operation.

The Distribution Center provides a wide variety of services to the general public, teachers, youth leaders, and Department staff. Distribution Center responsibilities include managing 2 warehouses that consist of approximately 15,000 sq. ft., overseeing the inventory of all MDC free and for sale publications, and insuring that orders and requests for these materials are processed. In FY 2002 the Center processed more than 9500 sales orders, responded to over 5000 requests for free publications to teachers, youth leaders and home schoolers, shipped 6355 packages to vendors of hunting and fishing permits, shipped 930 packages to Stream Teams volunteers and 575 packages to MDC nature shops, and provided over 3600 packages to the general public and MDC field employees for fairs and special events. Additionally, each month the Center mails approximately 350 *Missouri Conservationist* cassette tapes to libraries to make the *Conservationist* magazine available to the blind

The Print Shop filled more than 1,900 print job requests, and the Mail Room handled more than 1.4 million parcels. The Sign Shop manufactured 32,875 signs during FY02. General Services Building and Grounds staff is responsible for managing facilities at the 66,000 square-foot central office facility in Jefferson City, along with the Runge Conservation Nature Center and 160 acres of developed grounds and trails at the central office complex.

# DESIGN & DEVELOPMENT DIVISION





## DESIGN AND DEVELOPMENT DIVISION

Design and Development Division provides professional engineering, architectural and construction services to the Department in support of the Department's capital improvement program. Design & Development is also responsible for the maintenance and repair and renovation of the Department's extensive statewide infrastructure on lands owned or leased by the Department. All work is highly specialized in direct relation to the Department's resource programs. Typical capital improvements projects are the development of wetlands, fishing lakes, fish hatcheries, nature centers, disabled user access trails, river and lake public use access areas, stream stabilization and corridor improvements and hunter safety training facilities, including shooting ranges. In FY2002, \$13.1 million was expended on construction/development projects in the Department's capital improvement program.

Three sections: Engineering, Architecture/Administration and Construction make up the Design & Development Division team.

The Engineering and Architecture/Administration Sections handle all aspects of design and development on each project which includes: completing development investigations, feasibility studies and environmental assessments; preparing design drawings and contract specifications; setting up professional service agreements; and administering construction contracts. Boundary, construction and topographic surveys of all department lands and development projects are done under the direction of the Division's registered surveyor. Support staff provides technical assistance in the areas of: clerical, soils/geotechnical, state of the art AutoCADD drafting applications, quality control through contract supervision, and the Department's County Aid Road Trust (CART) program. The CART program provides a mechanism to share the cost of road rock placement on County/Township roads leading to Department areas. The cartography unit archives all department land and produces department maps.

The Construction Section handles the maintenance and repair and renovation of the Department's extensive statewide infrastructure on lands owned or leased by the Department including the area maintenance responsibility in north Missouri. Construction Section also has the responsibility for construction of numerous new capital improvements projects each year.

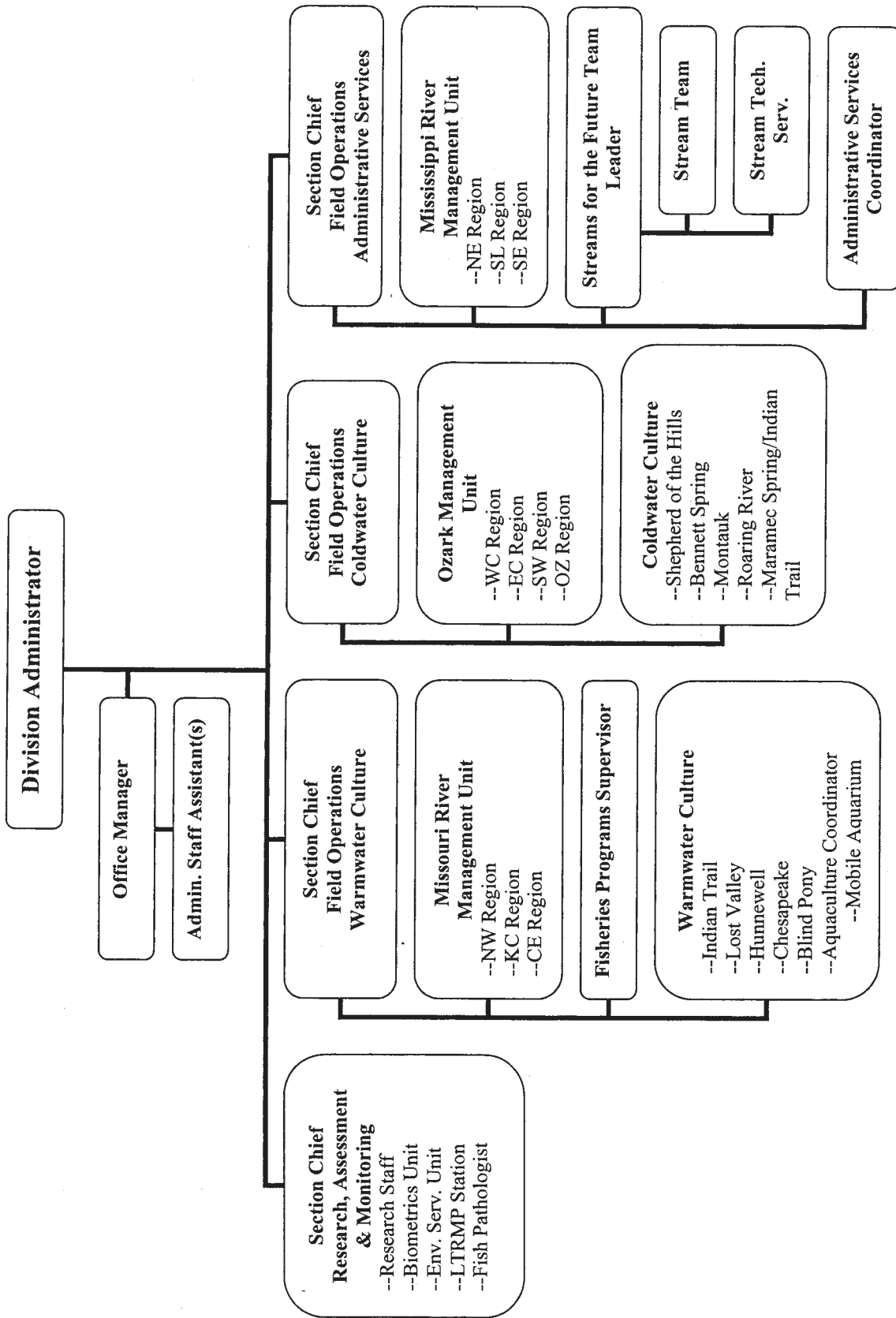
Construction staff completed approximately 1000 renovation and repair and small construction projects which included pond, parking area, entrance road, terrace and waterway construction, pond repair, old field renovation, clearing for fence lines, fire lines and tree plantings. Many miles of road and levee were trimmed of brush by use of long reach mowers. Several large stream renovation projects were accomplished. Other projects included building repairs, heating and cooling system installation and repair, construction of low water crossings, sidewalk construction, and other miscellaneous projects. Area maintenance crews performed routine maintenance including mowing, litter pickup and sign replacement on 285 conservation areas in north Missouri. Routine road maintenance was completed on more than 1200 miles of road. Design & Development personnel have expertise in the surveying, soil mechanics, hydrology, river hydraulics, structural, architectural, mechanical, electrical, environmental, computer, CAD, drafting, building and major earthwork construction, quality control, and maintenance fields. Like the rest of the Conservation Department, the Design & Development staff has a proven track record of being the best in the nation. Design & Development Division received the top award of the Association of Conservation Engineers, the Award of Excellence, for the Lost Valley Fish Hatchery Project in Warsaw. The project was a total in-house design and was recognized first in its class for innovation in the application of conservation engineering principles as applied to an aquaculture facility.

Design & Development engineers take pride in being conservation engineers utilizing a combination of engineering expertise and biological understanding. It is the goal of the designer to blend Department facilities into the surrounding environment while enhancing the natural resource habitat. Design & Development personnel communicate and team with resource managers, biologists, and other fellow professionals in the field of conservation to transform the biological requirements of wildlife and fisheries management into naturally operating facilities. Design & Development personnel design and construct projects to provide for both environmental benefits and increased public use opportunities.

**A sampling of the capital improvement and repair and renovation projects handled by Design & Development in FY 2002 is listed below:**

Roaring River—Bridge repair and bank fishing development  
Parma Woods—New shooting range and training center  
Southeast Regional Office—Renovation and addition  
Columbia Bottom CA—River access, wetlands, trails, confluence viewing  
Kansas City Discovery Center  
Rudolf Bennitt CA—Lake access development  
August A. Busch CA—Asphalt overlay on entrance road  
Springfield Nature Center—Air conditioning condensing unit replacement  
Forest Park—Jefferson Lake Renovation  
Powder Valley Nature Center—Audio/Visual Lighting Controls  
Rockwoods Reservation—Bridge replacement  
Magnolia Hollow CA—Disabled user trail, parking area, viewing platform  
Nodaway Valley CA—Wetland development  
Bellefontaine Neighbors CA—Ponds and facilities development  
Otter Slough CA—Cypress Lake aeration system  
Settle's Ford CA—Wetland development

# FISHERIES DIVISION



## FISHERIES DIVISION

The Division's mission is *"to professionally manage the fish and associated aquatic plants and animals of Missouri for the use and enjoyment of the people."*

Missouri has about 1,163,000 surface acres of water comprised of nearly 900 public lakes (24% of the total surface acres), 486 miles of Mississippi River and 553 miles of Missouri River (22% combined), almost 16,000 miles of other permanent streams (8%), over 39,000 miles of intermittent streams (3%) and about 500,000 private lakes (43%). These waters support rich and diverse aquatic communities that are used, enjoyed and appreciated by millions of people each year. Fishing is one of the most popular and economically important uses of these waters. Each year, Missouri's 1.2 million sport anglers (16 years of age and older) make about 11.8 million fishing trips and spend almost a billion dollars on related goods and services. During 2001, the Department of Conservation sold 1,439,804 resident and nonresident fishing permits and tags of all types to 888,376 people.

To carry out its mission, the Division had fisheries management staff deployed in 10 regions during FY 2002. Management efforts were supported by five coldwater fish hatcheries, five warmwater fish hatcheries, the Research, Assessment and Monitoring Section, the Streams For The Future Team and central office staff. The Division had 204 permanent and term positions and varying numbers of temporary employees.

During FY 2002, the ten Department regions were staffed with 75 Fisheries Division employees. Most were stationed in the regional offices, but some staff worked out of the California, Camdenton, Chillicothe, El Dorado Springs, Hannibal, Lebanon, Liberty, Neosho and Sedalia offices. Fisheries management personnel are responsible for monitoring and maintaining the quality of the aquatic resources, managing the public fisheries resources for quality fishing, providing technical guidance in stream and lake management to private landowners and other public agencies, providing and assisting with public information and education programs, assisting with other Department programs and representing the Division and Department on matters pertaining to the aquatic resources in their region.

The five warmwater hatcheries (Blind Pony, Chesapeake, Hunnewell, Indian Trail and Lost Valley) have 34 employees and are responsible for rearing the fish needed to stock public waters, suitable private lakes, and waters used for special fishing events and aquatic resource education. Their staffs also develop methods of rearing endangered species. The five coldwater hatcheries (Bennett Spring, Maramec Spring, Montauk, Roaring River and Shepherd of the Hills) are staffed by 37 employees and they rear the trout needed to stock public waters. Their staffs are also responsible for stocking and managing the popular Bennett Spring, Maramec Spring, Montauk and Roaring River trout parks.

During FY 2002, the Research, Assessment and Monitoring Section (Columbia), which includes the Biometrics Unit, Environmental Services Unit and Long Term Resource Monitoring Program station (Jackson), had 38 employees. The Research staff conducts studies and surveys that produce new techniques and information needed for effective aquatic resource management. The Biometrics Unit provides data processing and statistical support for Division projects. The Environmental Services Unit investigates fish kills and water pollution complaints (working in cooperation with the Department of Natural Resources), monitors fish flesh contaminants (working in cooperation with the Department of Health) and coordinates a variety of intra- and interagency projects. The Open River Field Station of the Long Term Resource Monitoring Program monitors the water quality, habitat, land use/land cover, invertebrates and fish communities of the middle Mississippi River under contract with the Biological Resources Division of the U.S. Geological Survey (USGS) and conducts studies supported by grants from the USGS, U.S. Army Corps of Engineers and other agencies. The fish pathologist diagnoses and, when appropriate, assists in the treatment of disease and parasite problems in public and private waters and for private, state and federal fish hatcheries.

The Streams For The Future Team (staff in Jefferson City, Sedalia and Kirksville) has 11 employees and is responsible for administering the STREAM TEAM program, working with the Missouri Department of Natural Resources on the Volunteer Water Quality Monitoring Program, providing stream technical services to regional Division and Department staff and coordinating the Department's Streams For The Future Program.

The Division's central office staff directs and administers Division programs, develops and refines regulation proposals, works on the acquisition and development of public fishing and boat access areas, administers the Community Assistance Program and Corporate and Agency Partnership Program, administers Federal Aid grants, coordinates angler recognition programs, develops and revises technical and popular written materials, and provides administrative support for Division and Department staff and programs.

**Five broad goals guide the Division. We are striving to:**

- Maintain aquatic ecosystem integrity and protect aquatic biodiversity;
- Provide fair, responsive service to our customers;
- Provide quality fishing;
- Increase the number of people engaged in the use and enjoyment of the state's aquatic resources; and
- Enhance teamwork within the Fisheries Division and Department.

The Division's FY 2002 activities and accomplishments are summarized below by Department program area.

## Public Resources Management

### Streams

- Completed three watershed inventory and assessment reports. These have been or will be posted on the Department's internet home page (click on "Missouri's Rivers and Their Watersheds").
- Made progress on five other watershed inventory and assessment reports.
- Conducted fish community surveys at 20 sites in two watersheds as part of a watershed or area inventory.
- Conducted fish flesh or mussel contaminant sampling at 43 sites in 10 watersheds.
- Conducted fish community surveys at 37 sites in 10 watersheds as part of watershed management plan implementation or a resource assessment and monitoring program.
- Conducted stream/riparian habitat surveys at 35 sites in nine watersheds as part of watershed management plan implementation or a resource assessment and monitoring program.
- Performed management evaluations on stream areas, involving
  - Fish population surveys of 49 areas,
  - Angler use surveys of five areas, and
  - Habitat surveys of six areas.
- Installed habitat improvement projects at five stream areas.
- Maintained habitat improvement projects at three stream areas.
- Managed the fisheries of Missouri's four trout parks, stocking 1,051,883 rainbow and brown trout to provide quality fishing for 397,390 fishing trips from March 2001 through February 2002.
- Managed 35 stream special management areas for quality trout, smallmouth bass, largemouth bass, rock bass and walleye fishing through the use of special harvest regulations, fish stocking and habitat improvement.

**Produced fish for the stocking of 17 stream areas (totals below).**

<u>SPECIES</u>	<u>NUMBER</u>
Brown trout	15,620
Lake sturgeon	39,980
Rainbow trout	48,368
Walleye	<u>39,769</u>
<b>TOTAL</b>	<b>143,737</b>

- Continued recovery efforts for the lake sturgeon, pallid sturgeon, Niangua darter, Topeka shiner and Ozark cavefish. The staff was also involved in studies of, or population sampling for, Arkansas darter, spring cavefish, Tumbling Creek cave snail and seven mussel species (Neosho mucket, pink mucket, fat pocketbook, scaleshell, black sandshell, snuffbox, Higgin's eye pearly).

- Worked with other Department staff to acquire a 31-acre public fishing access on the Osage Fork of the Gasconade River in Laclede County and a 6-acre addition to Sunnyside School Access on the Wyaconda River in Lewis County that eliminated an in-holding and provided a preferred site for facility development.
- Supported disposal of New Frankfort Access (1.5 acres) on the Missouri River in Saline County, disposal of Wooldridge Access (30 acres) on Petite Saline Creek in Cooper County and a trade eliminating Cheerful Hill Access (61 acres) on Beaver Creek in Wright County. These areas were not providing public use opportunities as intended.
- Negotiated Community Assistance Program (CAP) agreements with Jackson County Parks and Recreation to renovate Fort Osage Access, with Kansas City Parks and Recreation to renovate Riverfront Park Access and with the City of Sugar Creek to renovate La Benite Park Access; all on the Missouri River.
- Improved angler access at Roaring River Trout Park thanks to the outstanding cooperative efforts of staff from the Fisheries Division and Design & Development Division and the Missouri Department of Natural Resources. The Missouri Department of Natural Resources paid for 70% of the \$540,000 project while the Department of Conservation designed the project, supervised construction and picked up the rest of the tab.

## Lakes

- Managed 880 public lakes totaling 277,334 acres of water to provide quality fishing and other compatible outdoor recreational activities (includes Department lakes and ponds; U.S. Army Corps of Engineers impoundments; public fishing lakes administered by the Missouri Department of Natural Resources, U.S. Fish and Wildlife Service, U.S. Army, Mark Twain National Forest and several utility companies; and other public lakes under CAP or Corporate and Agency Partnership Program agreements).
- Developed one new lake management plan.
- Performed management evaluations on public lakes, involving
  - Fish population surveys of 30 areas,
  - Angler use surveys of six areas, and
  - Habitat surveys of 44 areas.
- Conducted standard fish population sampling at 159 public lakes.
- Conducted fish flesh contaminant sampling at 22 public lakes.
- Installed habitat improvement projects at 58 public lakes.
- Maintained habitat improvement projects at 76 public lakes.
- Stocked 289 public lakes with the following fish:

### Produced by Department hatcheries:

<b>SPECIES</b>	<b>NUMBER</b>
Black crappie	7,500
Bluegill	35,805
Bullheads	11,000
Brown trout	10,926
Channel catfish	227,775
Fathead minnow	54,000
Golden shiner	25,900
Hybrid striped bass	16,051
Hybrid sunfish	1,398
Lake sturgeon	9,504
Largemouth bass	119,580
Muskellunge	4,183
Paddlefish	145,394
Rainbow trout	572,925
Redear sunfish	11,402
Walleye	5,516,116
<b>TOTAL</b>	<b>6,761,959</b>



**Purchased from commercial sources:**

<u>SPECIES</u>	<u>NUMBER</u>
Carp	6,400
Channel catfish	<u>45,850</u>
<b>TOTAL</b>	<b>52,250</b>

**Obtained from other state and federal hatcheries:**

<u>SPECIES</u>	<u>NUMBER</u>
Hybrid striped bass	90,000
Rainbow trout	192,184
Walleye	<u>450,800</u>
<b>TOTAL</b>	<b>732,984</b>

- Opened Rudolf Bennitt Lake (48 acres) on Rudolf Bennitt Conservation Area in Howard County to fishing.
- Worked with other Department staff to acquire additions at Poosey Conservation Area (100 acres) and Blind Pony Conservation Area (40 acres) for lake watershed protection.
- Entered into a Community Assistance Agreement (CAP) with St. Charles County to provide fisheries management for two fishing lakes (1 acre and 5 acres) in Quail Ridge Park.

**Technical Guidance to Other Public Agencies**

- Provided 985 environmental reviews of project proposals and permit applications by federal, state and private entities, and provided input on environmental regulations and enforcement policies as requested.
- Investigated 168 fish kill and pollution incidents on public waters, and provided the results to the Missouri Department of Natural Resources.
- Reported 96 apparent violations of state and federal environmental regulations to the appropriate agencies.
- Responded to 619 requests for technical information and guidance to federal, state and local entities that manage public lands, waters and facilities that involve aquatic resources and public fishing.

**General**

- Worked with Kansas Department of Wildlife & Parks staff to negotiate expanded reciprocal fishing privileges for both states' anglers on the Missouri River. The revised reciprocal agreement becomes effective on January 1, 2003.
- Drafted a "trout plan" to guide trout management in Missouri into the next decade and beyond.

**Landowner Services**

**Streams**

- Responded to 1,138 requests for watershed, floodplain, riparian corridor and stream management information and technical assistance.
- Conducted 513 on-site stream visits.
- Prepared 266 detailed recommendation letters or stream management plans.
- Installed seven Landowner Cooperative Projects.
- Worked with other landowner service agencies on 50 stream or watershed restoration projects (EARTH, SALT, 319, PL566, RC&D and other projects focused on private landowners and communities).
- Developed 23 new stream demonstration areas on private property and performed maintenance on 31 existing areas.
- Conducted 23 stream management workshops with a total attendance of 631 private landowners.

- In nearly every region, fisheries biologists participated in a variety of agriculture field days, farm tours and watershed conferences sponsored by state and federal landowner service agencies or agricultural organizations. During these events, biologists worked with cooperating landowners to demonstrate watershed and stream management practices, such as: riparian area fencing (cattle exclusion), alternative watering systems (alternatives to having cattle in the stream), riparian area tree planting, Conservation Reserve Program incentives, stream bank stabilization, rotational grazing systems, stream crossing construction and grade control structures. Biologists also attended many county Soil & Water Conservation District (SWCD) board meetings, annual banquets and watershed project kick-off dinners.
- Field staff from several regions provided training and field tours to staff from other state and federal landowner service agencies. In February 2002, Dave Mayers (Ozark Region), John Fantz (Streams Unit) and other Department staff conducted a stream workshop for the Shannon County road maintenance crew. In March 2002, Brad Pobst (Southeast Region) gave a presentation on streambank stabilization, permits and regulatory agencies to St. Francois County land improvement contractors.
- Field staff from several regions received training in EQIP planning (provided by the Natural Resources Conservation Service), plant identification (Department staff) and riparian area planting (Department staff).
- St. Louis Region Fisheries staff actively participated in Peruque Creek Watershed Alliance meetings and assisted the group in its efforts to develop watershed and land use plans.
- Rob Pulliam and Kenda Flores, East Central Region fisheries biologists, hosted a September 2001 brainstorming meeting of Department, USFWS and Meramec Regional Planning Commission staff on the theme of marketing our stream-related management efforts to private landowners in priority watersheds. The group discussed the issues that make stream-related private lands work so challenging, the positive messages that we hope to convey, who the audience is, and how to reach that audience. At follow-up meetings in November, December and January, target audiences and messages to be conveyed were identified, a time line for working with private landowners in high priority watersheds was developed and plans for spring landowner tours were developed.
- St. Louis Region Fisheries Division staff worked with Private Land Services Division staff to develop the Conservation Growth Program. The purpose of this voluntary program is to encourage more conservation-friendly building practices, improve stream conservation in priority watersheds, and educate builders and buyers about conservation development. The program will be piloted in St. Charles County in partnership with the St. Charles County Land Trust.

## Private Lakes

- Responded to 7,138 requests for lake management information and technical assistance.
- Conducted 983 on-site private lake visits, which included:
  - 240 fish population surveys,
  - 364 stocking inspections, and
  - 61 fish kill investigations.
- Prepared 288 recommendation letters or lake management plans.
- Conducted 27 pond management workshops with a total attendance of 695 private landowners.
- Stocked 812 private impoundments (1,478 acres) with fingerling largemouth bass, bluegill and channel catfish.
- Revised and distributed the “Fish Dealers Directory”, “Frogs for Fun and Profit” and “Private Ponds Stocking Application”.
- Developed and distributed:
  - “Clearing Ponds that have Turbid Water”
  - “Stocking Options for Your New Pond”
- Appropriate biologists and hatchery employees received training and were certified or recertified as pesticide applicators.
- Field staff in six regions investigated the potential of bringing the lakes of 11 different local governments into the Community Assistance Program (CAP).



## General

- Assisted private aquaculturalists with fish disease diagnosis and treatment.
- The Department's INTERNET home page [www.conservation.state.mo.us](http://www.conservation.state.mo.us) was periodically updated to include an ever-increasing number of our technical publications. Currently, 30 impoundment management publications and 10 stream and riparian corridor management publications are available on-line.
- Seventeen Fisheries Division field staff with private land and water responsibilities met in Rolla in mid-August 2001. The purpose of the meeting was to foster communication on subjects of mutual interest in order to produce better products and services for landowners. Some of the topics covered were: *Aquaguide* updates, herbicide news, stream project funding opportunities and the use of rock for fish habitat and bank stabilization in streams.

## Regulation and Enforcement

- Assisted with enforcement activities by riding with Conservation Agents, operating radios and working at check stations during firearms deer season.

## Information and Education

- Administered the popular and growing STREAM TEAM program, which now has 2,032 teams with approximately 40,820 members.
- Worked closely with the Missouri Department of Natural Resources in the administration of the Volunteer Water Quality Monitoring Program and conducted training for 444 volunteers.
- Distributed 236,000 *Stash Your Trash* bags.
- Provided information and education about fishing, fisheries management, stream and watershed management aquatic ecology and a wide variety of related topics through presentations, demonstrations or manned displays for at least 137 meetings, field days, open houses or other conservation-focused special events attended by 25,246 people.
- Made at least 325 classroom presentations, assembly presentations and field day demonstrations on a wide variety of aquatic topics to 33,237 students.
- Staffed booths and provided displays or demonstrations for at least 73 fairs, sports shows, festivals and other special events attended by the public.
- Conducted or participated in at least seven courses, workshops or classes attended by 189 teachers.
- Located ponds for school class fishing field trips coordinated by the Outreach & Education Division and, if needed, stocked them with hybrid sunfish and channel catfish purchased from commercial sources.
- Managed ponds for the St. Louis, Springfield and Kansas City urban angling clinics conducted by Outreach & Education Division staff.
- Sponsored, co-sponsored or otherwise assisted with at least 199 kids fishing clinics, family fishing fairs and other special fishing events attended by 10,444 people.
- Produced and stocked 15,291 hybrid sunfish, 5,217 channel catfish, 144 largemouth bass and 400 rainbow trout in water areas used for school class fishing field trips, urban angling clinics, kids fishing clinics and other special fishing events.
- Initiated or responded to at least 426 media contacts.
- Maintained an inventory of about 135 printed brochures and leaflets concerning fish, places to fish, fishing techniques, pond and stream management techniques, regulations and Division programs, and distributed copies to the public and Department staff as requested.
- Produced and distributed over 35,000 copies of "Missouri Fishing Prospects", a 36-page report based on the latest professional fisheries information for some of our more popular lakes and streams.
- Compiled the *Weekly Fishing Report* from April through September and distributed it electronically to 4,106 media outlets, reporters and individuals.
- Administered the Master Angler Program and awarded 700 certificates to anglers for their outstanding catches.
- Administered the State Record Fish Program and recognized eight new state records.

- Initiated the First Fish Program and recognized 930 anglers for catching their first fish.
- The Show-Me Missouri Fish-Mobile Aquarium Program reached an estimated 753,000 Missourians in nine of our ten regions. The mobile aquarium was taken to 18 events and was displayed for a total of 101 days. Over 300 demonstrations were given on topics ranging from basic fishing to targeting specific species. Additional educational seminars were given on topics ranging from endangered species to habitat loss. The mobile aquarium was displayed at various sport shows, fairs, festivals, scouting conventions, educational events, Conservation Nature Centers and in association with other Department events. It was featured in the *Missouri Conservationist*, on “Missouri Outdoors” and on several local television and radio stations.

## Research, Surveys and Monitoring

Our Research, Assessment and Monitoring Section conducts short-term and long-term studies or projects that answer specific questions, develop new management techniques and develop a better understanding of our aquatic resources. The Section also assists other Department units with studies and administers contracts for studies conducted by colleges and universities.

### The following studies or projects were completed:

- Fish hosts and culture of mussel species of special concern.* (Sue Bruenderman—contract) Objective: Determine the fish hosts which support the development of mussel larvae, produce juvenile mussels by lab host infections, and describe the survival and growth of early juveniles in lab rearing studies.
- White bass management in Missouri reservoirs.* (Mike Colvin—Study I-31) Objective: Develop methods to sample and assess the quality of white bass populations, and develop techniques for managers to achieve optimum sizes and numbers of white bass.
- Quantifying relations among stream shading, water temperatures and the bioenergetics of smallmouth bass and crayfish.* (Bob DiStefano—contract) Objective: Evaluate the influence of temperature on growth of smallmouth bass and crayfish, and determine the amount of riparian shading needed to provide summer temperature regimes necessary to produce desired growth of smallmouth bass and crayfish in Ozark streams. Final report completed and two technical papers published.
- St. Francis River drainage imperiled crayfish.* (Bob DiStefano) Objective: Determine effects of the introduced woodland crayfish on the endemic and imperiled St. Francis River and Big Creek crayfishes in St. Francis River drainage. Two final reports and two technical papers published.
- An evaluation of a deep-water trap net to capture young-of-the-year and small benthic fishes.* (Bob Hrabik) Objective: Develop a method to capture small benthic fishes and learn more about their habitat requirements. Manuscript published in MO Academy of Sciences.
- Genetic evaluation of flathead chub populations.* (Jeff Koppelman) Objective: Assess the level of genetic variation among flathead chub populations from the Missouri River in Missouri to the Peace River in Alberta. Complete; manuscript in press.
- Catfish Angler Survey.* (Ron Reitz, Martha Tomlin-McCrary) Objective: Assess the attitudes and opinions of Missouri catfish anglers regarding the Department’s management of channel, flathead and blue catfish.
- Sediment transport and retention in a small forested stream system in northern Missouri.* (Mike Roell—contract) Objective: Describe the hydrologic and sediment retention characteristics of a forested riparian zone along Long Branch Creek in Macon County as an aid in interpreting the findings of other studies within the multi-disciplinary Riparian Ecosystem Assessment and Management Project being conducted by the Department and other agencies.
- Missouri dragonflies.* (Linden Trial) Objective: Prepare a field guide for the public to recognize and appreciate the adult dragonflies in Missouri.

## **The following studies or projects were continued:**

- Five-year (1995–1999) Missouri fish contaminant report.* (Karen Bataille) Objective: Write a report summarizing contaminant levels and trends in Missouri fish for 1995–1999.
- Statewide survey of freshwater mussels.* (Sue Bruenderman) Objective: Assess status and trends of Missouri's freshwater mussel populations to guide future management efforts.
- Culture and restoration of special concern mussel species.* (Sue Bruenderman—contract) Objective: Culture and stock juvenile mussels to augment existing and establish new populations of three federally-imperiled mussel species.
- Survey of endangered and special concern mussels in St. Francis and Black rivers.* (Sue Bruenderman) Objective: Assess population status of endangered and special concern mussels in St. Francis and Black rivers.
- Freshwater mussel holding experiment at the Kansas City Zoo.* (Sue Bruenderman) Objective: Determine if ponds and waterways at the Kansas City Zoo can serve as temporary refugia for endangered mussels threatened by zebra mussels.
- Missouri's freshwater mussel conservation plan.* (Alan Buchanan) Objective: Describe strategies to protect and preserve freshwater mussels in Missouri.
- Crayfish management in Missouri Ozark streams.* (Bob DiStefano—Study S-41) Objective: Develop methods to assess crayfish populations, evaluate effects on crayfish of new sport fishing regulations for smallmouth bass and rock bass, and provide habitat information for future management of crayfish.
- An ecological study of Brush Creek.* (Bob DiStefano; contract) Objective: Evaluate the relative influence of the Humansville sewage treatment plant and nonpoint agricultural practices on water quality and aquatic life in Brush Creek, and document changes related to improved land management practices.
- Resource and Assessment Monitoring Program.* (Steve Fischer) Objective: Monitor status and trends of fish, benthic invertebrates, water quality and physical habitat in 100 wadeable stream sites throughout Missouri.
- Biological and chemical control of snails in aquaculture production ponds.* (Steve Fischer) Objective: Assess the efficiency of redear sunfish, green x redear sunfish, triploid black carp and copper sulfate treatments in controlling snails in catfish and hybrid striped bass production ponds.
- Rainbow trout feeding experiments (Roaring River Hatchery).* (Steve Fischer, Jerry Dean) Objective: Determine growth, feed conversion and cost of raising rainbow trout on three feed types.
- Channel catfish feeding experiments (Chesapeake Hatchery).* (Steve Fischer, Tom Whelan) Objective: Determine growth and feed conversion of channel catfish using three feeding treatments.
- Long Term Resource Monitoring Program (LTRMP).* (Bob Hrabik) Objective: Monitor long-term trends in fish, invertebrates, habitat and water quality within the Mississippi River near Cape Girardeau.
- Temporal and spacial variation in water quality of a side channel in the Mississippi River.* (Bob Hrabik) Objective: Determine factors affecting the timing of thermal and oxygen stratification in Santa Fe Chute, and its impacts on aquatic organisms. Expanded and funded by USGS to examine water quality trends in side and main channels.
- An evaluation of macroinvertebrate sampling methods for use in the middle and lower Mississippi River.* (Bob Hrabik) Objective: Compare effectiveness and ease of use of various sampling methods, and develop a species list of invertebrates sampled.
- A natural history of the middle Mississippi River.* (Bob Hrabik) Objective: Describe physical and biological changes in the middle Mississippi River from European settlement to present.
- Genetic inventory of rainbow trout.* (Jeff Koppelman) Objective: Describe the genetic diversity within wild and hatchery populations of rainbow trout in Missouri.
- Identification of walleye stocks and development of DNA markers.* (Jeff Koppelman) Objective: Determine distribution of DNA variation in Missouri walleyes and correlate unique genetic stocks with geography and stocking history.
- Niangua darter population survey.* (Jeff Koppelman) Objective: Document geographic patterns of genetic variability in a state-endangered species that may be cultured for population restoration.

*Comparisons of largemouth bass from different sources.* (Jeff Koppelman) Objective: Determine whether there is heritable variability in performance of largemouth bass from Missouri sources that could be used to improve the quality of hatchery fish stocked in ponds and lakes throughout the state.

*Evaluation of Crane Creek/McCloud strain rainbow trout in the Eleven Point River wild trout management area.* (Jeff Koppelman) Objective: Determine success of introductions of McCloud-strain rainbow trout in the wild trout management area of Eleven Point River.

*Black bass population genetics and evaluation of hybridization.* (Jeff Koppelman) Objective: Determine the extent of black bass stock differentiation between geographic regions of Missouri, and document the extent of interspecific hybridization.

*Black bass phylogenetics.* (Jeff Koppelman) Objective: Determine the phylogenetic relationships of the seven black bass species and three subspecies from across their native range.

*Phylogenetic relationships of bluestripe darters from Missouri.* (Jeff Koppelman) Objective: Determine the relatedness of bluestripe darters from the Osage and Gasconade rivers.

*Gilt darter population genetics survey.* (Jeff Koppelman) Objective: Survey genetic variation among populations of gilt darters in Missouri and outside Missouri in order to protect native biodiversity.

*Management of Lake Taneycomo, Missouri.* (Mike Kruse—Study I-35) Objective: Develop methods to increase productivity for trout and provide a greater diversity of angling experiences.

*Smallmouth bass in streams: strategies for high-quality management.* (Mike Kruse—Study S-39) Objective: Recommend strategies for managing high-quality smallmouth bass fisheries in streams.

*Assessment of hydrodynamics, temperature and dissolved oxygen in Table Rock Lake.* (Del Lobb—contract) Objective: Evaluate the effects of lake level management regimes on water temperature and dissolved oxygen in Table Rock Lake and in water released into Table Rock Dam tailwaters and upper Lake Taneycomo.

*Assessing the effects of land-management practices on fish assemblages.* (Del Lobb—contract) Objective: Identify the influence of land use and associated management practices on stream habitats and fish community structure in Ozarks streams.

*Evaluating the role of shallow habitats to the spawning success of fish species in the Marais des Cygnes River.* (Del Lobb). Objectives: Determine the importance of shallow water habitats to fishes of the Marais des Cygnes River.

*Channel catfish management in small impoundments.* (Paul Michaletz—Study I-36) Objective: Provide managers with methods to sample and assess catfish populations, and provide a better understanding of appropriate stocking rates to avoid adverse impacts on other fish species and make more efficient use of hatchery-reared channel catfish.

*Factors affecting survival of stocked walleye fingerlings.* (Paul Michaletz—Study I-37) Objective: Provide information about factors affecting survival of stocked walleye and relative contribution of stocked walleye to the population, so managers can optimize stocking strategies for walleye fingerlings.

*Trophic effects on gizzard shad recruitment.* (Paul Michaletz) Objective: Determine the relationships among reservoir productivity, first-year growth, overwinter survival and recruitment of gizzard shad.

*Develop and implement a long-term monitoring plan for Topeka shiners in Missouri.* (Doug Novinger) Objective: Determine status and monitor long-term trends in Topeka shiner populations in Missouri.

*Develop and implement a long-term monitoring plan for Niangua darters in Missouri.* (Doug Novinger) Objective: Determine status and monitor long-term trends in Niangua darter populations in Missouri.

*Volunteer water quality monitoring.* (Tim Rielly) Objective: Establish a monitoring network to assess and determine baseline water quality conditions for Missouri streams, and to inform and educate citizens about the health of Missouri stream resources.

*Extent, character and physical effects of instream sand and gravel mining in Missouri Ozarks streams and associated wetlands.* (Mike Roell—contract) Objective: Estimate and characterize the number and distribution of active sand and gravel mines in Ozarks region streams, and identify and document changes in channel morphology and associated stream and wetland habitats near instream mining sites.

*Riparian forest structure and stream habitat in northern Missouri.* (Mike Roell) Objective: Determine the importance of woody debris as a habitat component of northern Missouri prairie streams.



*Evaluation of strategies for managing rock bass populations in Ozark streams.* (Mike Roell—Study-40) Objective: Develop effective sampling methods for rock bass, describe population attributes of a quality rock bass fishery and evaluate strategies for managing quality rock bass fisheries.

*Transport of nitrogen and phosphorus in a remnant riparian wetland in western Missouri.* (Mike Roell—contract) Objective: Increase understanding of the functions and values of wetlands in riparian areas by determining the changes in nitrogen and phosphorus in agricultural runoff as it passes through a remnant riparian wetland.

*Floodplain-riparian-stream interactions in relation to the associated fish communities of Little Piney Creek.* (Mike Roell—contract) Objective: Evaluate how various functions of the floodplain and riparian zone affect stream characteristics, such as channel morphology, hydraulics, fish habitat and aquatic communities.

*Hydrologic effects on riparian vegetation along Missouri streams.* (Mike Roell—contract) Objective: Identify the relative importance of various hydraulic processes on soil saturation in riparian areas and their effects on riparian vegetation.

*Missouri aquatic resources project.* (John Stanovick; contract) Objective: Coordinate the aquatic projects within the Missouri Resources Assessment Partnership (MoRAP) to achieve a shared aquatic resource database that encompasses the breadth of existing and future data needs of the partner agencies.

*River otter food habits in Missouri.* (John Stanovick, Mike Roell) Objective: Develop criteria to identify fish eaten by otters based upon scales and bones found in otter stomachs and scat.

*Missouri River post-flood evaluation—fisheries.* (Vince Travnichek). Objective: Assess the value of scour holes in the Missouri River floodplain for larval, juvenile and adult fishes.

*Commercial fisheries harvest statistics.* (Vince Travnichek) Objective: Prepare an annual summary of commercial catches and monitor trends in harvest of commercial fishes.

*Important habitat characteristics for flathead catfish in streams.* (Vince Travnichek—contract) Objective: Determine the importance of various habitats and quantify habitat use by flathead catfish in streams.

*Missouri River sand island habitat conditions.* (Vince Travnichek—contract) Objective: Describe habitat conditions associated with sand islands and determine use of those conditions by select fish species.

*Influence of environmental variables on flathead catfish electrofishing catch from the Missouri River.* (Vince Travnichek) Objective: Determine how temporal and environmental factors, such as time of sampling, water temperature, water depth and habitat type, affect sampling efficiency and observed size structure of flathead catfish populations in the Missouri River.

*Statewide resurvey of Missouri fishes.* (Matt Winston) Objective: Describe status and trends of Missouri fish populations by resurveying sites that were sampled 20 years ago, and identify and prioritize problems to guide management efforts.

*Five-year (1995–1999) Missouri fish kill and pollution report.* (Leanna Zweig) Objective: Write a report summarizing fish kill and pollution investigations by the Missouri Department of Conservation for 1995–1999.

### **The following studies or projects were initiated:**

*Habitat use of fish communities of the middle Mississippi River.* (Valerie Barko). Objective: Use canonical community ordination to better understand the influence of environmental gradients on fish communities in the middle Mississippi River.

*Asian carp in the middle Mississippi River.* (Valerie Barko). Objective: Determine habitat preferences of both juvenile and adult asian carp in the middle Mississippi River and model possible routes of dispersion.

*Riverine turtle communities in the upper Mississippi River (UMR) system.* (Valerie Barko). Objective: Analyze incidental turtle capture from LTRMP hoop net data for the entire UMR system to better understand their distribution and use of habitats.

*Environmental factors associated with fish communities in wing dike and main channel border habitats of the unimpounded Mississippi River.* (Valerie Barko). Objective: Determine the use of wing dikes by fish compared to naturally occurring main channel border aquatic areas.

*Side channels: diverse aquatic areas of the unimpounded upper Mississippi River.* (Valerie Barko & David Herzog). Objective: Determine the use of these offshore areas by juvenile and adult fish inhabiting the UMR.

*Ohio shrimp of the UMR.* (Valerie Barko & Robert Hrabik). Objective: Analyze incidental Ohio and glass shrimp captures from LTRMP fishing gear to better understand habitat use and requirements.

*An examination of aspects of the crayfish bait industry in Missouri.* (Bob DiStefano). Objective: Determine the species of crayfish being sold by Missouri bait shops and the potential for that industry to contribute to introduced crayfish species problems in Missouri streams.

*A statewide crayfish monitoring, assessment and information program.* (Bob DiStefano). Objective: Monitor and/or document the status of Missouri crayfishes of conservation concern and perceived threats to those species, manage the Department's statewide crayfish database, and produce and provide information and informational products and data to Department staff, citizens of Missouri and professionals from other agencies.

*The distribution and status of the crayfish Orconectes williamsi in the upper White River drainage of Missouri.* (Bob DiStefano; USFWS contract). Objective: Determine the distribution of this globally-imperiled crayfish in the upper White River drainage of Missouri, and determine associations between its occurrence and "reach-scale" habitat attributes.

*Assessing levels of genetic variability within and among populations of Orconectes williamsi, a critically imperiled crayfish from the upper White River drainage of Missouri.* (Bob DiStefano; USFWS contract). Objective: To assess the levels of genetic variability both within and among populations of this crayfish from throughout its range in Missouri to determine whether sub-populations exist and warrant conservation.

*Stormwater control practices: monitoring the influence on Missouri's urban streams.* (Steve Fischer & Sarah Oakes). Objective: Measure the impacts of currently employed stormwater best management practices in a watershed experiencing a rapid transition from predominately agricultural to urban-dominated.

*Community-based monitoring and assessment of the Fishing River watershed.* (Steve Fischer & Todd Gemeinhardt). Objective: Assess the biological, chemical and physical attributes of the wadeable stream segments of the Fishing River watershed.

*Schenimann Chute pre-construction evaluation* (Bob Hrabik, et al.). Objective: Pre-construction evaluation of aquatic community and water quality in Schenimann Chute (HREP project). COE funded.

*Pre-construction evaluation of island establishment in the middle Mississippi River* (Bob Hrabik, et al.). Objectives: Pre-construction evaluation of aquatic communities prior to large-scale river regulation project. COE funded.

*Survey of aquatic communities at Donaldson Point in the middle Mississippi River.* (Bob Hrabik, et al.). Objectives: Survey status of aquatic communities in the proposed Donaldson Point Natural Area.

*Study of pallid sturgeon demography and habitat preferences.* (Bob Hrabik, et al.). Objective: Determine the demographics, habitat preferences, and life history attributes of pallid sturgeon in the middle Mississippi River; Evaluate sampling gear efficiencies for pallid sturgeon. Funded by COE. Cooperative study with Southern Illinois University and the U.S. Army COE.

*Dike alteration study.* (Bob Hrabik, et al.). Objectives: Determine the biological effects of large scale dike alterations on aquatic communities in the middle Mississippi River. COE funded.

*Gravel bar mining study.* (Bob Hrabik, et al.). Objectives: Determine the effects of gravel mining on pallid sturgeon in the middle Mississippi River. COE funded.

*Arkansas darter population genetics.* (Jeff Koppelman). Objectives: Survey genetic variation among four drainages inhabited by Arkansas darters to determine relatedness.

*Fantail darter taxonomic genetic study.* (Jeff Koppelman). Objectives: Survey genetic variation among various morphs of fantail darters to evaluate taxonomic revision.

*Paddlefish and sturgeon genetic marker development.* (Jeff Koppelman). Objectives: Develop quick, accurate genetic markers to distinguish among species and populations of paddlefish and sturgeon.

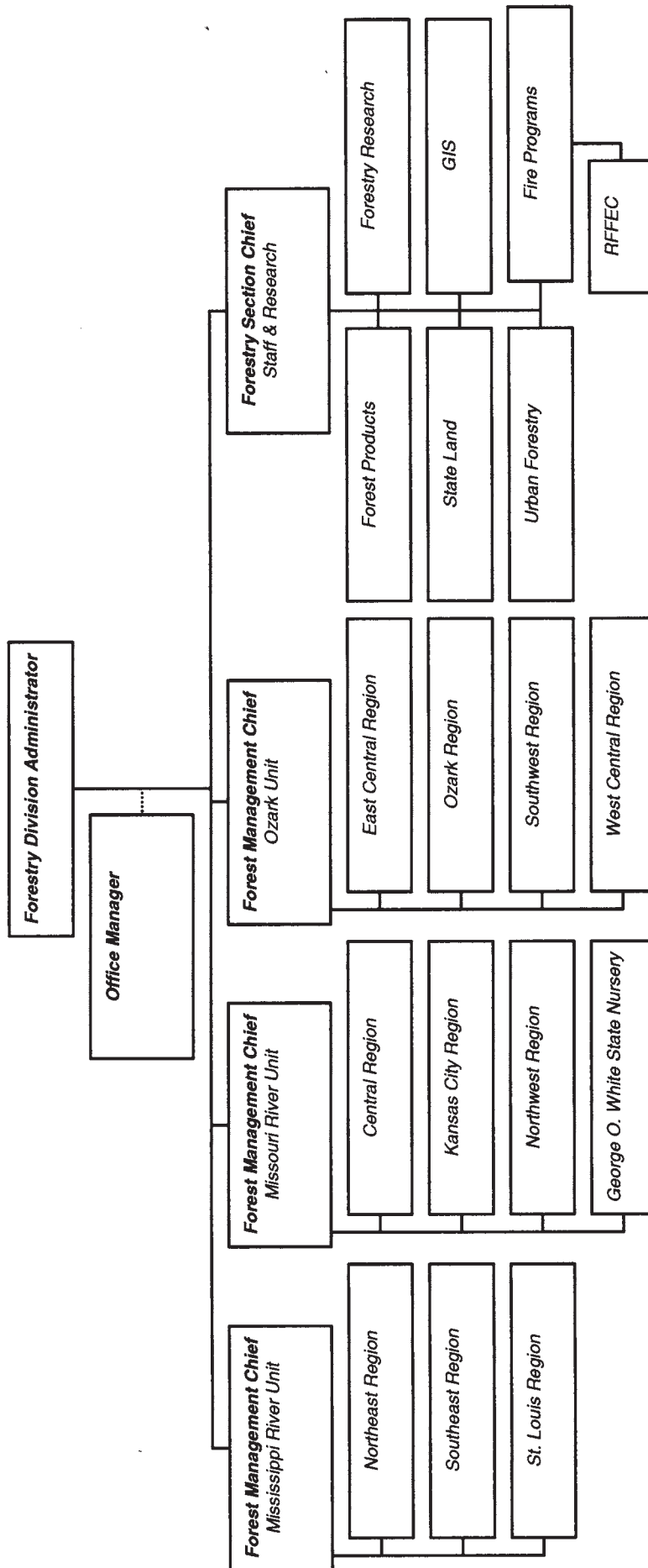
*Missouri trout stream assessment project.* (Mike Kruse). Objectives: Measure water temperatures in current or potential trout management areas, assess physical habitat quantity within coldwater streams, and assess fishery potential within coldwater streams to guide allocation of habitat and Department resources among a diversity of trout fisheries.

*Black bass dynamics in small Missouri streams.* (Gary Novinger). Objectives: Verify perceptions that black bass in selected small streams have declined and look for clues about the factors responsible; gather pilot information in preparation for a possible future project to assess habitat suitability for smallmouth bass.

### **General Agency Operations**

- Prepared the annual grant agreements, annual performance reports and other project documentation needed to obtain Federal Aid reimbursement (~\$6.5 million annually from the Sport Fish Restoration Program) for a broad range of fisheries management, research, fishing and motorboat access acquisition and development, and motor boat access maintenance activities.

# Forestry Division Organizational Chart





## FORESTRY DIVISION

**Forestry Division's Mission: To ensure the well-being of the forest resource and address what people need from that resource.**

Forests cover approximately 14 million acres of Missouri's total land area of 44 million acres. Well managed forests are a valuable asset to any state and Missouri is no exception. The Forestry Division is responsible for the management and protection of the forest resource of the state.

The forests of Missouri produce a wide range of benefits. Forests provide protection for watersheds and prevent soil erosion, provide scenic beauty, vital wildlife habitat, and opportunities for outdoor recreation. Much of the state's tourism is centered around the forests of the Ozarks. Wood products is one important benefit of the forest. In some parts of the state, wood industries are a key element in the local economy.

Managing and protecting the forest resources for all these nonmarketable benefits as well as for a continued flow of materials to our wood industries is the primary objective of the Forestry Division. The following report outlines our efforts over the past year to produce the most public good from Missouri's forest resources.

### Private Landowner Assistance Program

Forestry Division regional field staff throughout the state provides technical advice and assistance to private landowners that includes monitoring of forest health, tree planting recommendations, advice and recommendations for forest improvement, forest products marketing and utilization, and overall management of the total forest related resources for its many benefits. In addition to assisting landowners, forest products operators and industries, foresters also give educational and informational presentations to various groups, organizations, and institutions. They conduct field trips, and provide demonstration tours for a wide variety of interest groups and organizations. Forestry Division also provides technical forestry guidance for related agencies: Resource Conservation and Development projects, small watersheds (Natural Resources Conservation Service), forestry conservation practices (Farm Service Agency), industrial development (Missouri Division of Commerce and Industrial Development) and tree farms (American Forest Foundation).

*The following is a brief summary of our private landowner assistance accomplishments for FY02 (July 1, 2001–June 30, 2002):*

1. Private Landowner Contacts		3,615
2. Forest Stewardship plans prepared	<b>Number</b>	99
	<b>Acres</b>	16,550
3. Timber stand improvement-acres		2,435
4. Tree planting & seeding-acres		1090
5. Forestry tours & workshops		28

### Federal Cost-Share Assistance Programs

Forestry Division provides assistance to landowners by working closely with the federal government in delivery of a wide variety of cooperative forest management programs. Federal cost-share programs such as Environmental Quality Incentive Program (EQIP), Wildlife Habitat Incentive Program (WHIP), and the Forest Landowner Enhancement Program (FLEP) that are a result of the 2002 Farm Bill offer great opportunities for forest landowners. Field foresters work closely with federal natural resource professionals to implement these programs. Private land conservationists and farm bill programs provide private landowners with the opportunity to defray certain costs associated with practices such as tree planting and tree planting, timber stand improvement, wildlife and fish habitat enhancement, agroforestry, critical area protection, and riparian habitat improvement and protection.

## Forest Stewardship Program

Because of its emphasis on the management of all naturally occurring resources, the Forest Stewardship Program has become the standard for the management of private nonindustrial forest land. Implementation of this program and the stewardship philosophy of land management has insured that landowners are receiving comprehensive resource management assistance which is consistent with their individual goals and objectives. The Forest Stewardship Program requires that natural resource managers focus their attention on all naturally occurring resources. Management recommendations must take into consideration each of these naturally occurring resources as well as what the landowners goals are for their property. This insures that all resources are considered equally and one is not emphasized at the detriment of another. The Missouri Forest Stewardship Committee, which consists of representatives from private landowner organizations, forest industry, consulting forester groups, public agencies and other interested citizens guides and directs the activities of the Forest Stewardship Program. The program has enabled Forestry Division to form partnerships with a wide range of resource professionals. Wildlife biologists, fisheries biologists, natural history specialists, Natural Resource Conservation Service personnel, and a variety of professional resource management consultants all participate in delivery of the Forest Stewardship Program. The number of acres brought under stewardship management has steadily increased since its inception in 1990. This past year a total of **99** Landowner Forest Stewardship Plans were developed bringing an additional **16,550** acres under total resource management.

## Forest Crop Land

The State Forestry Law as passed by the Missouri Legislature in 1946 and amended in 1981 provides that privately owned land may be classified as Forest Crop Land for a period of 25 years. The assessed valuation for tax purposes is \$1.00 per acre for land classified prior to 1974, and \$3.00 per acre for land classified subsequently. The land must be supporting a growth of timber at least 20 acres in size, and cannot be valued at more the \$400 per acre in order to be eligible. To make up for a counties loss of revenue, the Conservation Department makes annual reimbursement to the counties in the form of a grant in lieu of taxes at the rate of \$0.50 for each acre classified as privately owner Forest Crop Land, and counties are paid \$0.75 per acre each year for state owned lands acquired prior to July 1, 1977.

Although not as popular as it once was applications continue to be received from landowners who are interested in having their land classified, particularly since land that was previously classified and has expired may be considered again for classification.

In the fall of 1980, a Constitutional Amendment was approved by the voters of Missouri to give the Department of Conservation the authority to make in lieu of real estate tax payments to counties for all land that was purchased after July 1977. The amendment also provided authority for the Department of Conservation to make the Forest Crop Land grants in lieu of taxes to counties from the Conservation Fund. The following table reflects January 2001 acreage for privately owned and state owned Forest Crop Land for which the grant in lieu of taxes was made in October 2000. The state owned acreage is land owned by the Department prior to July 1977, or land on which the previous owner was paying no tax.

## Privately and State Owned Forest Crop Land

<b>County</b>	<b>Acres Privately Owned</b>	<b>Acres State Owned</b>	<b>Total Acres</b>	<b>Total Amount Paid</b>
Adair		2,607.61	2,607.61	1,955.70
Andrew		1,506.99	1,506.99	1,130.24
Atchison	120.90	1,500.99	1,621.89	1,186.19
Audrain		559.58	559.58	419.70
Barry		350.14	350.14	262.60
Barton		85.00	85.00	63.75
Bates		298.60	298.60	223.95
Benton		2,038.00	2,038.00	1,528.50
Bollinger	5,718.01	2,349.36	8,067.37	4621.02
Boone		568.58	568.58	426.43
Buchanan	155.00	2,567.20	2,722.20	2,002.90
Butler	69.01	5,536.44	5,605.45	4,186.83
Caldwell		1,024.00	1,024.00	768.00
Callaway	487.50	5,627.35	6,114.85	4,464.27
Camden	427.28	193.00	620.28	358.39
Cape Girardeau	77.49	599.66	677.15	488.50
Carroll		248.00	248.00	186.00
Carter	7,948.01	22,904.38	30,852.39	21,152.28
Cedar	74.00	160.00	234.00	157.00
Chariton		92.60	92.60	69.45
Christian		20.00	20.00	15.00
Clark	246.50	356.34	602.84	390.50
Cole		468.51	468.51	351.40
Cooper		989.14	989.14	741.86
Crawford	602.85	9,779.79	10,382.64	7,636.27
Dallas		1,461.35	1,461.35	1,096.00
Daviess		865.97	865.97	649.47
DeKalb		1,861.56	1,861.56	1,396.17
Dent	6,967.79	14,467.79	21,435.02	14,334.31
Douglas	3,260.00	296.66	3,556.66	1,852.49
Dunklin		982.35	982.35	736.76
Franklin	1,007.98	4,081.27	5,089.25	3,564.94
Gasconade	287.00	21.87	308.87	159.90
Gentry		70.18	70.18	52.65
Greene		7.50	7.50	5.65
Harrison	20.00	1,463.00	1,483.00	1,107.25
Henry		1,692.58	1,692.58	1,269.44
Hickory		1.70	1.70	1.30
Holt		433.41	433.41	325.06
Howard	500.28	1,542.69	2,042.97	1,407.16
Howell	2,255.69	321.05	2,576.74	1,368.64
Iron	3,979.98	4,057.61	8,037.59	5,033.19
Jackson		2,156.38	2,156.38	1,617.30
Jasper		9.29	9.29	6.96
Jefferson	1,516.00	200.75	1,716.75	908.56
Johnson		3,370.00	3,370.00	2,527.50
Knox	58.00	748.00	806.00	590.00
Laclede		1,471.75	1,471.75	1,103.81
Lawrence		118.89	118.89	89.18

<b>County</b>	<b>Acres Privately Owned</b>	<b>Acres State Owned</b>	<b>Total Acres</b>	<b>Total Amount Paid</b>
Lewis		4,416.16	4,416.16	3,312.12
Lincoln		2,158.19	2,158.19	1,618.65
Linn	38.00	3,403.08	3,441.08	2,571.32
Livingston	65.30	2,440.10	2,505.40	1,862.72
McDonald		2,109.90	2,109.90	1,582.43
Macon	42.00	2,266.15	2,308.15	1,720.62
Madison	7,538.11	4.00	7,542.11	3,772.05
Maries	1,232.90	305.39	1,538.29	845.50
Marion		295.60	295.60	221.70
Mercer		946.65	946.65	709.98
Miller	154.00	127.37	281.37	172.53
Mississippi		163.88	163.88	122.91
Moniteau		157.00	157.00	117.75
Monroe		70.00	70.00	52.50
Montgomery		1,636.00	1,636.00	1,227.00
Morgan	2,202.26	517.38	2,719.64	1,489.18
New Madrid		8.19	8.19	6.15
Newton		2,205.86	2,205.86	1,654.40
Nodaway		326.36	326.36	244.77
Oregon	643.34	8.00	651.34	327.67
Osage	188.74	50.84	239.58	132.52
Ozark	2,936.74	6,739.64	9,676.38	6,523.10
Pemiscot		268.18	268.18	201.15
Perry	920.00	350.02	1,270.02	722.52
Pettis		967.96	967.96	725.97
Phelps	5,020.26	2,438.65	7,458.91	4,339.11
Pike	1,225.00	6,962.03	8,187.03	5,834.02
Platte	185.00	54.64	239.64	133.48
Polk		1,444.94	1,444.94	1,083.70
Pulaski		140.94	140.94	105.70
Putnam	113.00		113.00	56.50
Ralls		726.47	726.47	544.85
Randolph	45.00	2,125.85	2,170.85	1,616.90
Ray		49.85	49.85	37.40
Reynolds	4,385.47	36,448.34	40,833.81	29,528.98
Ripley	359.00	5,730.85	6,089.85	4,477.63
St. Charles		14,637.24	14,637.24	10,977.93
St. Clair		5,573.52	5,573.52	4,180.14
St. Francois	1,441.06	228.58	1,669.64	891.96
Ste. Genevieve	4,455.54		4,455.54	2,227.77
St. Louis		3,241.37	3,241.37	2,431.02
Saline		1,981.68	1,981.68	1,486.26
Scotland		60.00	60.00	45.00
Scott		183.90	183.90	137.92
Shannon	8,108.29	59,000.27	45,250.20	49,304.34
Shelby		1,344.98	1,344.98	1,008.75
Stoddard		2,754.33	2,754.33	2,065.75
Stone		166.55	166.55	124.92
Sullivan		87.00	87.00	65.25
Taney		184.38	184.38	138.28

<b>County</b>	<b>Acres Privately Owned</b>	<b>Acres State Owned</b>	<b>Total Acres</b>	<b>Total Amount Paid</b>
Texas	21,948.90	1,210.44	23,159.34	11,882.28
Vernon		6,245.58	6,245.58	4,684.19
Warren		4,380.52	4,380.52	3,285.40
Washington	9,132.04	2,727.50	11,859.54	6,611.64
Wayne	9,837.40	17,223.88	27,061.28	17,836.61
Webster	80.00	1,081.76	1,161.76	851.32
Worth		58.61	58.61	43.95
Wright	411.00	5.30	416.30	209.48
<b>TOTALS</b>	<b>118,487.62</b>	<b>314,576.15</b>	<b>433,063.77</b>	<b>\$296,175.56</b>

## Logger Training Activities

The Department provided a grant to the Missouri Forest Products Association in the amount of \$80,000 to continue the Missouri Professional Timber Harvester program. This program provides training to Missouri loggers in best management practices, forest and wildlife management, tree felling techniques and safety. Approximately 320 loggers have been trained. A new session started in 2000 that was developed specifically for logging crew supervisors. Participants receive training in first aid/CPR, advanced forest and wildlife management techniques, business management and best management practices. To date, approximately 100 logging crew supervisors have been certified. This training is required for companies harvesting timber on Missouri Department of Conservation owned lands.

## Rural Development Through Forestry Activities

Rural Development Through Forestry (RDTF) is a U.S. Forest Service, State and Private Forestry program that provides funds to the states for implementing projects to benefit wood industry dependent communities. Funds coming to Missouri are currently being used to assist in the implementation and monitoring of Best Management Practice use in Missouri.

## State Forest Land Management

The Forestry Division is responsible for management of approximately 438,700 acres, including 6,900 acres of leased land. Forest habitat management is accomplished through sale of products to companies who have harvested approximately 2,533 acres, resulting in revenue of \$886,747 from the sale of an estimated 6,348,000 boardfeet of sawtimber.

### Forest habitat work accomplished by the 10 forestry regions includes:

Inventory for management	19,722 acres
Tree planting	397 acres
Plantation management	601 acres
Regeneration harvests	747 acres
Shelterwood harvests	434 acres
Unevenage management	94 acres
Intermediate harvest	1,258 acres
Pre-commercial thinning	1,026 acres
Firewood harvest	120 acres
Site preparation for natural or artificial regeneration	1,152 acres
Hazard tree removal	72 acres

**Forestry region personnel assisted Wildlife and Research Divisions with implementing the following practices:**

Glade management	3,210 acres
Old field management	9,804 acres
Savanna management	6,754 acres
Insect and disease surveys	545 acres
Public use management projects	165 projects
Shooting range management	7 projects

**Working with other resource conservation team members area plans were completed on the following areas:**

Compton hollow CA	840 acres
Mill Stream Garden CA	614 acres
Rocky Creek CA	<u>38,298 acres</u>
<b>TOTAL</b>	<b>39,752 acres</b>

## **Geographic Information Systems (GIS)**

Forestry Division's GIS efforts continue to be aimed at integrating GIS and related technologies into the Division's management, research, and planning efforts. All of the Division's professional foresters have ready access to GIS on their local PCs. Training Division staff in the application of GIS to their daily activities is a continuing priority. The stateland inventory database continues to be built as field inventories are completed.

Over the past year, low cost GPS units were purchased, distributed to field offices and training sessions were held to familiarize field staff with the operation of the units and how to integrate GPS data with existing spatial data.

Field staff are using GIS and related technologies to help in their management activities. Examples include mapping fire occurrence, analyzing private land assistance programs, and mapping horse trails on state lands.

Forestry Research activities that continue to receive GIS support include MOFEP, gypsy moth monitoring, Forest Health Protection Program (FHP), Forest Health Monitoring (FHM), forest ecology and fire ecology. The use of GIS in Forestry research continues to increase as staff becomes more informed about GIS and its application to their individual research projects or programs. Satellite imagery was used to assess the extent of oak decline syndrome across an 8,000,000 acre area of the lower Ozarks.

## **George O. White State Forest Nursery**

During the 2001–2002 tree ordering season, just over 6.97 million seedlings were distributed for planting to approximately 13,730 individual landowners. The tree seedlings and shrubs were offered for reforestation, wildlife food and cover, riparian corridor restoration, windbreaks, and many other uses. The number of seedlings distributed was an increase of over 1,170,000 seedlings from 2000–2001. This was an increase of 20 percent more seedlings distributed. There was an increase of about 1 percent in the number of seedling orders over last year.

Income generated by tree sales was \$1,428,408.81 This was a 37 percent increase in income over the 2000–2001 season. The total income generated was discounted by \$27,040.74 from the Heritage Card discount. This amounted to an increase of \$3,851.83 over last year.

During the 2001–2002 season we added another special bundle called the Quail Cover Bundle. This bundle contained 10 trees each of aromatic sumac, wild plum, galse indigo, roughleaf dogwood and silky dogwood. The bundle was very popular with over 1000 distributed and orders for nearly 200 more that we were unable to fill.

We continued to offer extra large northern red oak seedlings and the extra large nut tree bundle. The northern red oak was 36" and above in height. We had 23,300 available and sold all of those and rejected orders on 16,500 more. The extra large nut tree bundle was 36" and up walnut and 24" and up pecan. We had 1500 available and sold all of those and rejected orders on more than 200 more. We also added three new species in 2001–2002. They were Norway spruce, false indigo, and round headed bush clover. All were very popular and all three sold out.



***Free seedlings were distributed at no cost for the following uses:***

- A. Missouri Department of Conservation (MDC) land plantings for Forestry, Wildlife and erosion control.
- B. MDC sponsored demonstration plantings on both public and private lands.
- C. Youth groups, which included Scouts, FFA, 4H, schools and others.
- D. Arbor Day activities where all Missouri 4th graders receive a free seedling.
- E. Missouri Department of Transportation roadside plantings.

All Missouri landowners and residents are eligible to purchase seedlings from the State Forest Nursery. Order forms are available by mid-November and can be obtained from the Nursery, all MDC offices, and University of Missouri Extension offices. Our seedling order form is also now available via the Internet. The order form can be downloaded and printed or customers can place their order directly over the Internet. Orders are accepted from the public until May 1 of each year. Seedlings are shipped from February through May by the US Post Office or United Parcel Service.

## **Forest Inventory and Analysis (FIA)**

The U.S. Forest Service (USFS) and the Missouri Department of Conservation continued statewide inventory of Missouri's forests. Crews of foresters are measuring plots on private, state and federal land each year to determine changes in the forest. To get an accurate picture of what is happening in the state, the crews sample all ownership and forest types. Permission is always obtained before entering private land. The crews inventory tree species, volume, growth, mortality and health on each of the plots. From this information, statewide estimates of forest area, timber volume and growth, and change in forest cover and attributes will be developed.

From October 2001 to October 2002 foresters will measure approximately 20% of the 3,500 plots in Missouri, completing the third "cycle" of the periodic inventory. They will measure a new 20% of the plots each subsequent year until all are completed. The inventory will then be repeated. The Missouri Department of Conservation contributes seven employees working half-time directly with the Federal crews inventorying plots. The other half of their time is spent working on MDC projects. A summary of the inventory data is compiled each year and a final report for Missouri will be produced every five years. MDC has also assisted the USFS in developing an internet based system for displaying and querying FIA data from across the country. This system can be accessed at: [www.ncrs.fs.fed.us/4801/FIADB/index.htm](http://www.ncrs.fs.fed.us/4801/FIADB/index.htm).

In 2001, MDC foresters completed fieldwork on a census of all primary wood products producers in the state, including saw mills, log exporters and others. Information gathered included data on the amount and source of wood used by species, the type of mill, and the use of wood residues. In 2002 this data was analyzed and MDC and USFS will be publishing a report in December 2002. This information will give us a clearer picture of how much wood is being harvested from Missouri's forests, how it is being used, and the economic benefits of well managed forests to Missouri's overall economy. This census is repeated every three years.

Forest inventory and harvest information is important to the Missouri Department of Conservation foresters who manage Missouri's constantly changing forest land. It provides the data they need for planning, protection and program development. It is also used to advise private landowners and forest industries. Missouri's forests provide many benefits such as recreation, wildlife habitat, clean air and water and forest products. The forest inventory gives land managers another tool to help insure we will always have healthy, productive forests.

## **Missouri Ozark Forest Ecosystem Project (MOFEP)**

MOFEP is a long-term cooperative effort of the Missouri Department of Conservation, U.S. Forest Service, various Missouri universities, and universities from other states. The project's purpose is to qualify and experimentally quantify the effects of even-age, uneven-age and no harvest management on the flora and fauna in Missouri Ozark forests. Research efforts during July 2001—June 2002 were focused on collecting the fifth season of post-treatment data following timber harvests that occurred in 1996. Data collected during July 2001—June 2002 included tree and woody vegetation species density and basal area; ground flora species presence and coverage; canopy coverage; soft mast species abundance and production; hard mast production;



neotropical migrant bird territories and nesting success; tree cavity census; and diversity and abundance of reptiles, amphibians, small mammals, canopy invertebrates, litter invertebrates, and *Armillaria* fungus. Many of the studies will scale back sampling efforts after the 2001 summer or fall season until pre-treatment data collections begin prior to the next scheduled timber harvest in 2011 on MOFEP forest sites.

## **Fire Ecology**

Fire ecology research projects document the role of fire in wildland settings, whether uncontrolled wildfires or fires prescribed to accomplish specific management objectives. Fuels management and fire behavior in Missouri's natural cover types is also being studied as an aid to determining the impact or effectiveness of natural cover fires. Studies underway during this year include:

1. Cooperative effort with USFS and USGS to evaluate fuels management through timber harvest and prescribed burning in a replicated study in Reynolds County, Missouri.
2. Cooperative effort with TNC to document the effects of landscape level prescribed fire on a 2,500-acre parcel of Ozark woodland.
3. Evaluating the effectiveness of prescribed fires in controlling maple competition and stimulating oak regeneration on mesic sites in central Missouri.

### **Completed studies which have resulted in presentations and pending publications are:**

1. Union Ridge study of using fire to restore a prairie, savannah, woodland complex in Sullivan and Putnam counties in Missouri. Presented at the 18th North American Prairie Conference and to be published in the Proceedings.
2. Results of a differential mortality of small stems following prescribed fires on the Chilton Creek Preserve. Presented at the Upland Oak Symposium in Fayetteville, Arkansas. Paper to be published in the Proceedings.

Training of Department personnel in fire management continues to be a high priority. Entry level (Level 1) and Incident Commander/Burn Boss training (Level 2) are complete. Level 3 training to write and approve burn plans will be completed during FY 2003. Cross training of prescribed burning and suppression staff, along with cooperative efforts on both types of fires is rapidly increasing our staffs' understanding and experience in fire management.

## **Forest Health Protection**

The Department of Conservation has the lead responsibility for forest health protection in Missouri. The Forest Health Protection program was initiated in 1962 and annually monitors and evaluates forest health through numerous aerial, ground, and laboratory techniques. These activities are accomplished with the cooperation of the Missouri Department of Agriculture, the University of Missouri, the Missouri Department of Natural Resources and the USDA Forest Service. The Missouri Department of Agriculture has the lead responsibility in carrying out some facets of forest health protection, such as gypsy moth detection and nursery and wood production inspections. The gypsy moth program is carried out as a joint effort, and a brief description is included here.

## **Forest Health Surveying**

To monitor the health of Missouri's forest resources, Forestry Division foresters and forest health specialists monitor forest stand conditions, forest damage due to weather events and pest outbreaks, and new introductions of exotic pests with the potential to impact native species. Both public and private lands are monitored, as well as urban and rural resources. Aerial surveys have been used since 1992 to evaluate the extent of major damage events that have been detected through field and laboratory observations.

Oak decline continues to be the primary forest health concern in much of southern Missouri. This phenomenon, which results in declining and dying red oaks, is caused by several biotic (insects, diseases, advanced tree age) and abiotic (drought, thin soils, topography) factors. Older red oak stands that are growing

on thin soils and have been stressed in recent years by drought are at great risk for increased attacks by various fungi and wood-boring insects.

Oak decline concerns occupied much of forest health staff time as many new patches of mortality were reported throughout the Ozark highlands. Unprecedented numbers of attacks by wood borers such as the red oak borer (*Enaphalodes rufulus*) became apparent in many southern Missouri locations by the summer of 2001.

Forestry Division personnel are cooperating with the USDA Forest Service, other state agencies, and universities in developing improved methods for monitoring and managing oak decline and providing management recommendations to private landowners. Satellite imagery, forest stand survey techniques, wood borer trapping techniques, and other approaches are being investigated for their usefulness in monitoring and evaluating oak decline.

In addition to oak decline, the most significant forest damage events that occurred this year were caused by abiotic factors. A severe ice storm caused damage across much of west central and north central Missouri in January. Tornadoes and hail storms caused serious damage in southeastern Missouri in April. Insect defoliation was greatly reduced in Spring 2002 compared to recent years and was not a significant factor.

## **National Forest Health Monitoring Program**

The Forest Health Monitoring (FHM) program is a national effort funded by the USDA Forest Service and managed cooperatively in Missouri by the Forest Service and the Missouri Department of Conservation. The purpose of the program is to measure changes in forest health over time and evaluate those forest health issues that impact on the sustainability of our forests. Missouri began participation in the program in 1999.

The FHM program consists of a forest inventory plot network and an ozone evaluation plot network. Forest health data are collected annually during June to September as an integral part of plot measurements made in the Forest Inventory and Analysis (FIA) program. Details of the FIA program are given elsewhere in this report. Ozone effects on plant foliage are evaluated in August of each year as an additional indicator of forest health. A statewide network of ozone evaluation plots was established and the first ozone damage measurements were made in August 2000.

## **Forest Health Education and Consulting Services**

Forest health information is provided to landowners and resource managers in Missouri through various training sessions and workshops, publications, and diagnostic and consulting services. Workshops on tree care and pest management were given to arborists in Kansas City, St. Louis, Springfield and Joplin, and to the Missouri Christmas Tree Producers Association. Forest health materials and activities were presented at numerous other conferences, field days, community meetings, and local fairs. Forest health training sessions were provided to Conservation Department foresters in Cape Girardeau, West Plains, Salem, Springfield, and Joplin.

Information on increasing oak decline concerns was distributed through several means. An article titled, "Oak Decline and the Future of Missouri's Forests" was published in the July 2002 issue of the *Missouri Conservationist* magazine. A color brochure titled, "Oak Decline—Why It's Happening and What We Can Do About It", was developed for distribution to landowners. Information was also distributed through many interviews with radio and newspaper outlets.

Forest health specialists operate a diagnostic laboratory to provide diagnostic and consulting services to Department of Conservation staff, arborists, and private landowners. Forest health specialists provided consulting services with approximately 1,200 contacts through phone calls, e-mail, letters, site visits, and laboratory reports. Regional Forestry personnel provided over 900 forest health assists to landowners primarily through site visits, phone calls, and office consultations.

Among the samples and information requests submitted to the diagnostic laboratory in the past year were the following forest health issues. With the return of above normal moisture in Spring 2002, Dutch elm disease was more frequently reported than in 2001. Fire blight also was commonly reported in May, with Bradford pears being hit especially hard, and most damage occurring on peripheral branches. Decline-like signs and symptoms

were observed for the first time on 95-year-old pin oaks in an urban landscape setting. Additional samples tested positive for oak wilt on many of the same trees from that area. The number of oak wilt positives on average for the state was about the same as last year. Finally, a sample exhibiting 'bleeding' sap symptoms on a mature white oak did not test positive for the Sudden Oak Death (SOD) *Phytophthora* when isolated in the lab. Rhododendrons (another potential SOD host) were sampled in nurseries by the Missouri Department of Agriculture, and also failed to produce positive results for the SOD *Phytophthora*.

## Gypsy Moth Surveying

The Forestry Division participates as a major partner in the Missouri Cooperative Gypsy Moth Program that includes representatives from several public and private organizations. The goal of the program is detection and management of gypsy moth populations within Missouri. Decision-making is guided by The Cooperative Gypsy Moth Strategic Plan, written by the Missouri Gypsy Moth Steering Committee.

As part of this program, a statewide survey to detect introductions of the gypsy moth is conducted annually through cooperative efforts of the Missouri Department of Conservation, Missouri Department of Agriculture, University of Missouri Integrated Pest Management Unit, and USDA Animal and Plant Health Inspection Service. Approximately 11,000 traps are placed and monitored each year across approximately 90% of Missouri counties.

A total of only 6 moths were caught during the 2001 trapping season, including four moths in St. Louis County, one in Callaway County, and one in Stone County. The 2002 survey began successfully with traps being placed across the state during May and June. Monitoring and examination of traps occurs during July and August.

### **The Forestry Division provides resources and personnel for all phases of the annual gypsy moth survey.**

1. Forestry Division personnel place and monitor approximately 2400 traps in 10 counties, including the St. Louis metropolitan area.
2. Trap locations and moth capture data for the entire state are recorded in a GIS (geographical information system) database maintained by the Forestry Division. Maps of trapping results produced from this system allow more efficient planning of future survey activities.
3. Gridded survey maps, based on a gypsy moth risk rating system implemented in 1997, are produced and distributed to trappers in all participating agencies.
4. A quality control technician provided by the Forestry Division works with gypsy moth trappers in all parts of the state in an effort to ensure consistency in trap setting and data recording methods.

## Forest Ecology

The Forest Ecology program is focused on developing and disseminating information about how forest composition and dynamics are related to environment and how forests respond to disturbances and management. The goal of this research is to more closely link a science-based understanding of ecological processes with forest management activities in Missouri. Key to this research are studies of interactions between the physical environment (e.g., geological parent material, landform position/aspect, soils, and hydrology) and forest vegetation; nutrient cycling/forest management interactions; responses of upland forest systems to even-age, uneven-age, and no-harvest management; and natural and artificial regeneration of bottomland forests.

Specific, on-going activities include: (1) Quantifying woody species dynamics in response to even-age, uneven-age, and no-harvest management in Ozark forests; (2) Providing training on the use and application of Ecological Landtypes and Phases of the Current River Hills subsection; (3) Investigating the effects of geology, landforms, and aspect on soil properties and on woody vegetation in Ozark forests; (4) Evaluating reforestation methods and stock types in bottomland forests; (5) Evaluating techniques for regenerating and perpetuating mature bottomland forests; and (6) Assessing management affects on forest nutrients in upland forests.

This past year, I worked with several Department managers on both research projects and monitoring and evaluation projects. Some examples include working with Mike Anderson on a research project comparing

different techniques for establishing oak advance regeneration in bottomland forests at Duck Creek CA; working with Kristen Goodrich and Keith Jackson to develop a study evaluating effects of hydrology, soil mounding, stock types, and browse protection on tree seedling establishment at Ted Shanks CA; working with Josh Cussimano on a monitoring study evaluating the survival and growth of tree seedlings planted at Four Rivers CA; and working with Doreen Mengel on two studies—one evaluating sedimentation rates in different pools and another evaluating survival and growth of tree seedlings planted in difference soils at Fountain Grove CA. I also gave a presentation to the Southeast Region RCT about all of the research and monitoring projects that are currently being done in the state.

Bringing research findings to Department field staff is the highest priority. In addition to interacting with staff about research findings, I have presented research findings at the Missouri Natural Resources Conference as well as developed outreach publications and other articles including:

1. Kabrick, J.M., S.R. Shifley, R.G. Jensen, D.R. Larsen, and J.K. Grabner. Oak forest composition, site index patterns, and dynamics in relation to site factors in the southeastern Missouri Ozarks. Symposium Proceedings, Upland Oak Ecology: The history, current conditions, and sustainability, Oct 7–10, 2002, Fayetteville, AR (in review).
2. Kabrick, J.M., D. Meinert, and D.C. Dey. Does soil mounding enhance tree seedling survival and growth in bottomlands? In *Agronomy Abstracts*, ASA, Madison, WI (in press).
3. Dey D., J. Kabrick, J. Grabner, and M. Gold. Restoring oaks in the Missouri River floodplain. Proceedings of the 29th Annual Hardwood Symposium on hardwood silviculture and sustainability: 2001 and beyond. 2001 May 17–19; French Lick, IN. National Hardwood Lumber Assoc. (In press.)
4. Shaw, G.W., D.C. Dey, J.M. Kabrick, J.K. Grabner, and R.M. Muzika. Comparison of site preparation methods and stock types for artificial regeneration of oaks in bottomlands. Proceedings of the 13th Central Hardwood Forest Conference; April 1–3, 2002, Urbana-Champaign, IL. (In press.)
5. Soil-landscape information needed for understanding the ecology and management of forest vegetation in the Missouri Ozarks. Invited speaker. Presented at the Missouri Natural Resources Conference, Lake of the Ozarks, MO, February 1, 2002.

## **Silviculture**

The purpose of the silviculture research program is to design, budget, conduct/direct, and report silviculture research projects on a statewide basis; develop and direct components of long-term ecosystem-level silviculture-related research projects such as Missouri Ozark Forest Ecosystem Project (MOFEP) and the Riparian Ecosystem Assessment and Management (REAM) project in north Missouri.

## **Research**

Silviculture Research conducted a pilot study of mid-slope clearcuts in the Current River region of the Missouri Ozarks. In cooperation with the Department of Natural Resources, we looked at species mix, size and soil composition on clearcut stands ranging in age from 4 years old to 20 years old. The data is being analyzed and will provide us some insight into the dynamics of these young clearcuts.

Silviculture Research and several colleagues in MDC, DNR and the University of Missouri received approval for a project on harvesting and water quality. This study will look at the impact of small harvests on the sedimentation and chemistry of small ephemeral streams in the Missouri Ozarks. Field work is expected to commence during the summer of 2003.

We also are collaborating with the REAM project leaders in documenting ice damage from the January 2002 storm and developing possible management and research recommendations.

We have also proposed a study on the spatial arrangement of multi-aged stands in the Pioneer Forest, trying to understanding the spatial relationships in uneven-aged forest management.



## Policy and Guidelines

Silviculture Research collaborated with other colleagues in writing a narrative on bottomland hardwood management for the strategic plan. We are also working with other MDC personnel on revising the silvicultural technical specifications of the forest management guidelines, which should be finished by the summer of 2003. We hope to provide suggestions about a silvicultural decision model, even-aged management, uneven-aged management, and application of cultural practices.

## Literature Research

Silviculture Research also has an information search (“librarian”) function, where we can search for answers in our files and in the literature to questions from field personnel. This past year, we have tracked down information on management of switchcane and the state of the black walnut research on Department lands.

## Knowledge synthesis and transfer of knowledge

The major focus of Silviculture Research this year was in working with the Forest Health program in understanding, evaluating and providing information and management recommendations on oak decline. We are in the process of designing a pilot study to evaluate which forest tree characteristics are good predictors of the presence of oak decline. We have already contributed to three documents dealing with oak decline and are currently working on a draft of a MDC management note on the subject. Management recommendations are simple and focus on reducing density, aggressive species management and encouraging diversity in species mix and/or age classes.

Silviculture Research is also involved in facilitating tech transfer from MOFEP research to field managers. Two researchers, John Dwyer and Johann Bruhn, are finishing up management notes on different aspects of *Armillaria*, logging damage and forest management.

## Publications

Silviculture Research collaborated on the following publications:

Lawrence R, Moltzan B, Moser WK. 2002. Oak decline and the future of Missouri's Forests. *Missouri Conservationist*. p. 11–18.

Moltzan B, Lawrence R, Moser WK. 2002. Oak Decline: Why it's happening and what we can do about it. Missouri Department of Conservation pamphlet.

Moser WK, Jackson SM, Podrázsky V, Larsen D. 2002. Examination of Stand Structure on Quail Plantations in the Red Hills Region of Georgia and Florida Managed by the Stoddard-Neel System: An Example for Forest Managers. *Forestry*. 75(4): 443–449.

Moser WK, Melick R. 2002. Management recommendations for oak decline. Unpublished Missouri Department of Conservation memo to all field personnel outlining suggested silvicultural strategies for managing Missouri oak forests in the face of oak decline complex. 3 p.

Moser WK. 2001. The Forest Service : A Vision ? A Future ? Book Review in *Ecology*. Vol. 82, No. 7. p. 2086–2087.

Podrázsky V, Moser WK. 2002. *Pinus echinata*. Chapter for the Enzyklopädie der Holzgewächse (Encyclopedia of Woody Plants). Landsberg, Germany: Ecomed Gesellschaft. 6 p.

## Wildfire Prevention and Control

Forestry Division of the Missouri Department of Conservation is responsible for protecting privately-owned and state-owned forests and grasslands from the destructive effects of wildfires. To accomplish this task, 10 forest regions have been established in the state. One of the duties of the forest regions is to actively suppress wildfires. The following list is the number of fires and the total acreage burned within the state over the past 10 years and their causes for the current year.

## 2002 STATE WIDE FIRES BY CAUSE

<u>Cause</u>	<u>Number</u>	<u>Acres</u>	<u>% Number</u>	<u>% Acres</u>
Lightning	15	52	0.6%	0.1%
Campfire	15	113	0.6%	0.2%
Smoking	94	2181	4.0%	4.0%
Debris	1446	22801	60.9%	41.9%
Arson	349	20096	14.7%	36.9%
Equip	78	688	3.3%	1.3%
Railroad	9	26	0.4%	0.0%
Children	19	203	0.8%	0.4%
Misc	237	3191	10.0%	5.9%
No Report	114	5046	4.8%	9.3%
<b>TOTAL</b>	<b>2,376</b>	<b>54,397</b>	<b>100%</b>	<b>100%</b>

<u>Year</u>	<u>Number of Fires</u>	<u>Total Acres Burned</u>
1993	2,994	31,952
1994	2,748	51,896
1995	2,910	48,907
1996	3,793	88,933
1997	2,487	29,557
1998	1,112	10,415
1999	1,348	18,270
2000	4,910	132,718
2001	2,972	41,092
2002	2,376	54,397

Forestry Division works very closely with Volunteer Fire Departments (VFD) and Federal partners to assist with fire suppression activities. Currently, more than 900 rural fire departments have mutual aid agreements with Forestry Division to provide assistance in wildfire protection and a Cooperative Agreement with the Mark Twain National Forest is renewed annually.

Forestry personnel presented Natural Cover Fire Training at 49 training sessions involving 1,219 fire fighters. In addition 7 classes were taught to 165 Federal, State and Volunteer Firemen. These classes meet national training standards and meet part of the qualification for personnel to respond to fire emergencies such as those in the Western states. Forestry Division partnered with the USDA Forest Service and the Big Rivers Forest Fire Compact to present the first annual Mid-West Wild Fire Academy in Jefferson City.

The Federal Excess Personal Property Program had another successful year in Missouri. Due to aggressive screening a large number of trucks, generators, tanks, pumps and numerous other small items were obtained and distributed to VFDs'. The total acquisition cost of these items was in excess of \$6.9 million dollars, with a total value of all assigned property topping \$52 million.

The Volunteer Fire Assistance Program (VFA) provides matching funds to volunteer rural fire departments to assist them in becoming an efficient initial attack fire suppression force. A total of \$374,743 in State and Federal funds was granted to a total of 178 Fire Departments to purchase equipment. The Fire Departments, in turn, expended a total of \$510,360 to match the State and Federal dollars, bringing the total value of equipment purchased to \$885,103. Priority was placed on Personal Protective Equipment, wildland fire fighting equipment and decreasing the ISO ratings of the Departments as per County Master Fire Plans. Additional items purchased with both funding sources included slip-on water units, ventilation fans, hoses, nozzles, valves, gas detectors, bunker gear and portable pumps.

Forest and grassland fires can and have occurred on any day throughout the year. The majority of the fires, however, and the greatest acreage loss will occur during the spring fire season, which is normally between February 15 and May 10. The length and severity of this burning period depends on the weather conditions. The

second most critical period of the year is in the late fall. Depending on the weather conditions, there is a possibility of a sizeable number of fires occurring between mid-October and late November.

Debris burning (fires resulting from land clearing, burning trash, range, stubble, right-of-way, logging slash, etc.) is the major cause of woods and grass fires in Missouri. Incendiary fires (fires willfully set by anyone on property not owned by him, and without the consent of the owner) continues to rank second in the number of wildfires that occur each year.

Missouri had above average wildfire activity during FY 2002 . A total of 2,376 wildfires burned about 54,397 acres of Missouri’s fields and forests. The Department has a cooperative Agreement with the Forest Service to provide trained firefighters to assist with wildfire suppression throughout the nation. A Missouri-Iowa Interagency Coordination Center (MOCC) was dedicated in June to assist with the deployment and return of personnel and resources to wildfires and other national emergencies. The Department provides some financial and personnel support for running the center. In addition to mobilizing Missouri crews, the MOCC and mobilization center at Forest 44 support the mobilization of fire crews from the eastern United States.

## Community Forestry

Community forestry assistance is provided throughout the year to individuals, community groups, municipal governments, tree boards, commercial arborists, and nursery personnel, urban developers and volunteers. In FY02 there were eleven field people specifically dedicated to urban forestry. A summary of the urban assistance accomplishments of these eleven along with all other foresters is provided below.

*Annual accomplishments are:*

Local government contacts and assists	5,297
Commercial and Industrial assists	437
Residential contacts and assists	2,417
Volunteer groups assisted	1,421

***Detailed community forestry tree plans were developed for several communities and groups across the state. This in depth service was provided to:***

- Hillcrest Elementary School, Lebanon
- McCalment Park, Unionville
- City of Annapolis
- Iron Co. High School, Annapolis
- Howell Co. Courthouse, West Plains
- Marshfield High School
- Pike Co. Courthouse, Bowling Green
- Moberly Park, Trenton
- Vaile Mansion, Independence
- Russellville High School

***Tree Resource Improvement and Maintenance (T.R.I.M.) II***

In Fiscal Year 02 the Branch Out Missouri tree planting cost share program was combined with the T.R.I.M. program to create a program called TRIM II. TRIM II provided grants for tree maintenance, planting, planning and educational activities. Grant amounts ranged from \$1,000 to \$10,000. This program provides 60% or 75% of the total costs with the applicant providing the remaining funds for the project

***TRIM II Project Summary:***

Applications received	67
Projects Funded	46
Grants Awarded	\$ 282,610.00
Local Match Dollars	\$ 233,797.00



The grant recipients were:

<b>REGION</b>	<b>APPLICANT</b>	<b>TOTAL COST</b>	<b>GRANT REQUEST</b>	<b>LOCAL COST</b>
C	City of Vandalia	1,700	1,020	680
SL	St. Louis County Highways	6,065	3,639	2,426
SL	City of Northwoods	34,805	10,000	24,805
WC	City of Nevada	2,503	1,502	1,001
SE	Three Rivers Community College	43,278	10,000	33,278
SL	City of Ballwin	10,650	7,988	2,662
SL	City of Clayton Public Works	32,590	10,000	22,590
SW	Harry S. Truman Elementary School	1,839	1,103	736
SL	Florissant Parks & Rec.	22,000	10,000	12,000
KC	City of Parkville	12,820	9,615	3,205
SL	City of St. Louis Forestry Div	7,680	5,760	1,920
WC	Versailles City Park Board	12,814	7,688	5,096
SE	City of Scott City	2,545	1,527	1,018
WC	City of Plattsburg	12,984	9,738	3,246
SL	City of Webster Groves	6,300	4,725	1,575
KC	Kansas City Parks & Rec.	2,000	1,500	500
NW	City of Savannah	10,565	7,924	2,641
NW	Neighborhood Partnership	11,462	8,596	2,866
KC	Kansas City Parks & Rec.	6,916	5,187	1,729
SL	St. Louis County Parks & Rec.	16,684	10,000	6,684
OZ	City of Mountain View	5,349	4,011	1,338
SE	Mineral Area College	14,853	8,912	5,941
SW	Nixa Parks & Recreation	20,619	10,000	10,619
OZ	Willow Springs R-IV School	15,915	9,549	6,366
SE	Wappapello Lake ACOE	7,724	4,635	3,089
SW	Carthage Parks & Recreation	6,948	5,211	1,737
SL	Lake St. Louis Tree Board	6,000	3,600	2,400
NW	City of Maryville	9,837	7,378	2,459
C	Mill Creek Elementary PTA	6,300	4,725	1,575
SL	Tower Grove Park	20,000	10,000	10,000
SW	City of Cassville	6,275	3,765	2,510
SL	City of Chesterfield	1,368	1,026	342
C	Columbia Parks & Recreation	15,705	10,000	5,705
SL	Jefferson College	10,500	6,300	4,200
SW	Clever R-V School District	10,654	6,393	4,260
SE	City of Caruthersville	8,702	5,221	3,481
SE	West County Public School RIV	3,580	2,148	1,432
SW	Fair Grove R-X Schools	8,684	5,211	3,473
SW	Marshfield R-1 School	15,371	9,223	6,148
SL	City of Brentwood	17,804	10,000	7,804
SL	Maplewood Parks & Recreation	12,600	9,450	3,150
C	Jefferson City Parks & Rec.	19,550	10,000	9,550
SL	City of Pasadena Hills	13,900	8,340	5,560

## Missouri Treescape Awards:

The Missouri Treescape Award continues to be a successful method of recognizing and gaining publicity for outstanding tree planting projects. Award winners received a large framed certificate of recognition which was presented by MDC Director Jerry Conley and MDC Deputy Director John Smith.

### CATEGORY

Institutional/Governmental  
Schools  
Volunteer Groups  
Municipal, Under 5,000 Population  
Municipal, 5,000–20,000 Population  
Municipal Over 20,000 Population

### WINNER

MO Dept of Transportation District 4  
Worth County R3  
Ozark Greenways  
City of Fayette  
City of Richmond Heights  
Raytown Parks & Recreation Dept

A Citation of Merit was given to seven non winning but outstanding projects. Citation of Merit recipients include:

- St. Charles County Parks & Recreation Dept.
- City of Cuba
- City of Savannah
- City of St. Louis Forestry Division
- City of Chesterfield

## Missouri Community Forestry Council:

The *Missouri Community Forestry Council* (MCFC) continued in an active role of support for community forestry programs. The Council is organized with nine regional and independent councils, each with two representatives on the state council. Forestry Division personnel are permanent members of the regional and state councils. During this tenth year of operation, the Council:

- Continued support of a public service campaign designed to educate the public that tree topping is not a desirable practice and to provide some alternatives to topping. To augment efforts Forest ReLeaf of Missouri secured funding through the Midwestern Chapter of the International Society of Arboriculture and the Society of American Foresters.
- Sponsored a statewide Arbor Day Poster Contest for fifth grade students in the state. This year's winner was from Ripley County R3—Gatewood School. This was the first year that the student and teacher participated in the Governor's signing of the Arbor Day Proclamation.
- Assisted Forest ReLeaf of Missouri with expansion of their activities to other communities
- Sponsored the 9th annual Missouri Urban Forestry Conference, held in Branson
- Assisted with five exhibits at meetings and conferences along with MDC personnel. Examples include the Missouri Municipal League and the Missouri Parks and Recreation Association
- Assisted in judging of the *Missouri Treescape Awards* and Tree Resource Improvement and Maintenance II applications.
- Publication of a quarterly newsletter entitled *Cityscape* which covers activities of the Council, recognizes individuals and communities with outstanding urban forestry programs, provides technical tree care information, and a calendar of upcoming events.
- Sponsored the annual CommuniTree Awards, a program designed to recognize communities, not for profit groups or individuals, who have accomplished outstanding urban and community forestry projects within the past year.
- Cosponsored a workshop with Forest ReLeaf of Missouri called *Community Forestry Leadership Workshop Keeping Your Hometown Green*.
- Directly assisted 10 communities with community forestry projects such as volunteer urban tree inventories, development of a municipal tree ordinance, training for developing a tree board, developing a tree ordinance, urban forestry workshops, etc.

- Continued to advise the State Forester concerning urban forestry issues, program development and implementation

## Tree City USA

The Forestry Division cooperates with the National Arbor Day Foundation and the National Association of State Foresters in the promotion of *Tree City USA*. Certified cities have an active tree care program supported by at least \$2 per capita, a municipal tree ordinance, a designated tree board or forestry department and celebrate Arbor Day. Another program of recognition called “Growth Award” is available to communities that have been a *Tree City USA* for the previous two years, and showed an increase in forestry activities in specific areas.

<b>CITY</b>	<b>NO YEARS</b>	<b>GROWTH AWARD</b>
Ballwin	10	N
Blue Springs	11	N
Branson	6	Y
Brentwood	13	Y
Brunswick	3	N
Cape Girardeau	3	N
Carthage	2	N
Centralia	11	N
Chesterfield	4	N
Clayton	9	N
Columbia	4	N
Crestwood	6	Y
Creve Coeur	4	N
Des Peres	18	N
Dexter	8	N
Ellisville	20	N
Exeter	5	N
Fayette	1	N
Fenton	18	Y
Ferguson	12	N
Florissant	12	Y
Fort Leonard Wood	4	N
Grandview	6	N
Hannibal	2	Y
Independence	1	N
Jackson	6	N
Jefferson City	3	N
Kahoka	5	Y
Kansas City	13	N
Kirksville	5*	N
Kirkwood	11	N
Lake St. Louis	1	N
Maplewood	2	N
Maryland Heights	1	N
Maryville	3	Y
Memphis	8	N
Mexico	22	N
Mountain View	2	N
North Kansas City	4	N
Oakland	3	N
Parkville	11	N

<b>CITY</b>	<b>NO YEARS</b>	<b>GROWTH AWARD</b>
Plattsburg	1	N
Richmond Heights	5	N
Rock Hill	15	N
Salem	1	N
Savannah	4	N
Springfield	16	N
St. Joseph	8	N
St. Louis	18	N
St. Peters	3	Y
Stanberry	10	N
Sturgeon	5	N
Town & Country	1	N
Trenton	2	N
University City	19	Y
Warson Woods	11	Y
Webster Groves	18	N
Whiteman Air Force Base	6	N
Willard	3	N

\* Rejoined after missing 2000

### **Tree City USA Summary**

Number Cities Certified	59
Number of Growth Awards	11
Population in certified cities	1,955,712
Expenses for tree programs	\$18,140,723
Average tree expenses	\$9.28
% Population covered	38%

### **Tree Line USA**

The Forestry Division cooperates with the National Arbor Day Foundation and the National Association of State Foresters in the promotion of *Tree Line USA*. To qualify for certification a utility service provider must promote quality tree care by formally adopting pruning standards in compliance with ANSI A300, recommend work practices for trenching and tunneling near trees similar to methods described in a publication by Dr. James Fazio, provide annual worker training, have an ongoing community tree planting program, sponsor an annual Arbor Day event, and make at least one mailing to all customers to provide educational information on trees.

Missouri continues to be the leader in participation in this program with more utilities participating than in any other state.

#### **Tree Line USA certified utility service providers:**

<b>Name</b>	<b>City</b>	<b>Number Years of Participation</b>	<b>Number of Households Served</b>
Springfield City Utilities	Springfield	7	90,341
St. Joseph Power & Light	St. Joseph	4	55,848
Columbia Water & Light Dept.	Columbia	4	36,037
Ameren UE	St. Louis	2	1,500,000
Independence Power & Light	Independence	2	48,675
Cuivre River Electric Cooperative	Troy	1	44,000

## Other Urban Forestry Activities

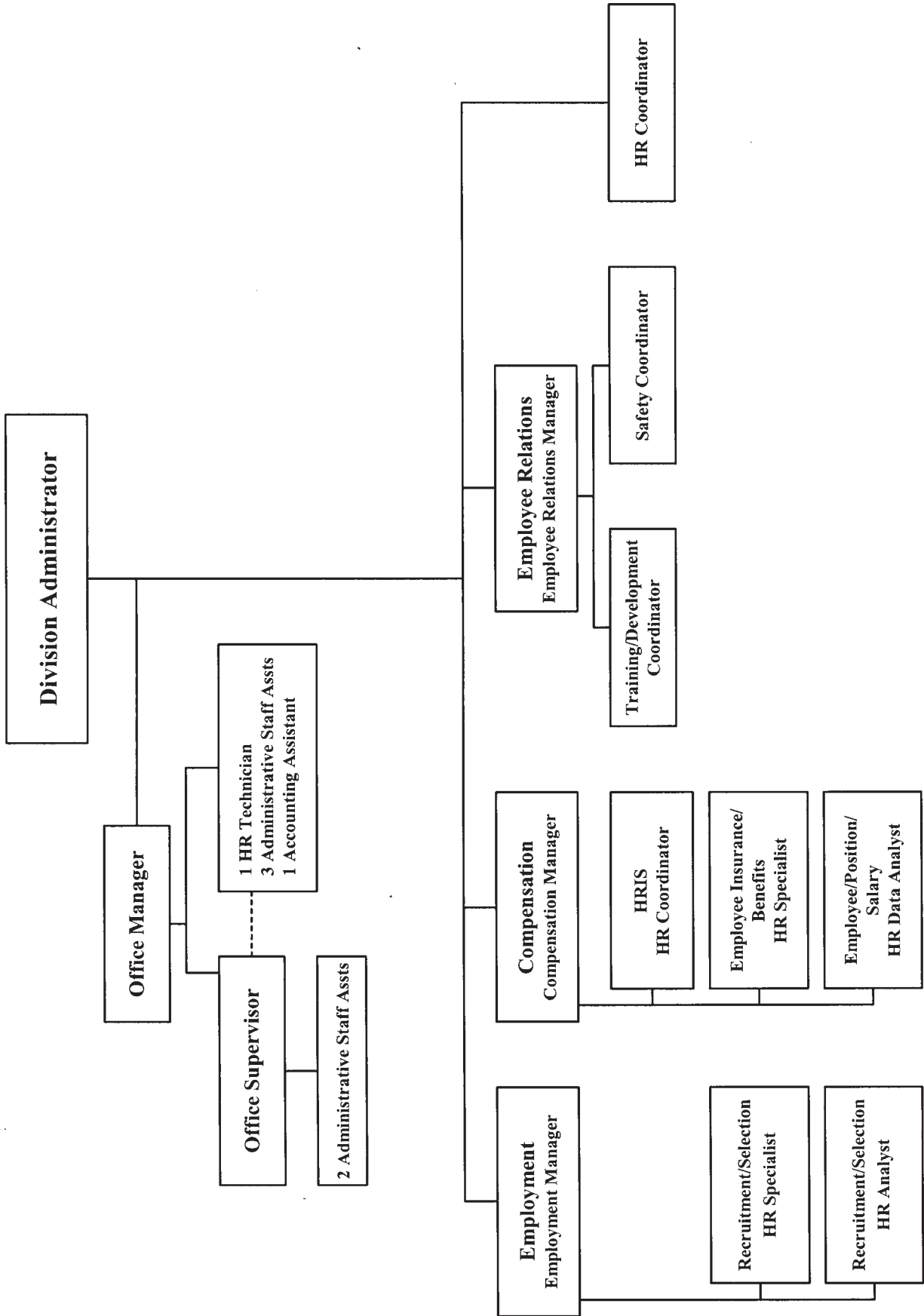
- Assisted with *International Society of Arboriculture* arborists certification and meetings of professional associations
- Provided a grant to *Forest ReLeaf of Missouri* to support statewide expansion of their activities involving recruitment and organization of volunteers to carry out community tree planting and tree maintenance

## Volunteer Forest Health Monitoring

The Missouri Forestkeepers Network, a volunteer forest health monitoring organization, was established in 1996 as a cooperative effort between the Department of Conservation's Forestry Division and Forest ReLeaf of Missouri. The goal of the program is to help educate citizens about the care and management of the forest resource and to provide them a means of action. Forestkeepers provides forest health education, a statewide network for forestry, and an early warning system against threats to the health of forest communities, such as infestations of gypsy moths. The program has been extremely successful with members branching out into traditional forest management activities as well as community forestry management. Administration of this program has been contracted to the Forestry Division's coordinator for volunteer programs.

Forest Health staff members remain as technical advisors to the Forestkeepers program, and participated during FY02 in the development of addition cards in our pocket series of common forest insects and diseases.

# HUMAN RESOURCES DIVISION



## HUMAN RESOURCES DIVISION

Human Resources Division provides services that help the Department to attract and retain qualified employees who accomplish its goals and objectives. Activities are divided into seven major functions: Recruitment and Selection, including Equal Employment Opportunity and Affirmative Action; Compensation and Classification Administration; Policy Administration, including law and regulation compliance; Training and Development; Employee Benefits Administration, including; Administration of the Department's insurance program and Employee Relations and Services; and Employee Safety, including Workers' Compensation. The Human Resources Division Administrator supervises Division assignments and reports to the Deputy Director. Specific details on Human Resources Division's activities follow:

### Recruitment and Selection

During FY02, Human Resources Division maintained more than 10,000 applications for employment and assisted with the recruitment and selection for 138 salaried positions for which we received 5,328 new applications/resumes. A variety of recruitment methods are used to alert applicants to these job opportunities, including:

1. **Advertising**—A Job Opportunities Announcement describing duties and responsibilities, educational requirements, core competencies and special abilities was prepared for each vacancy and distributed to various recruitment sources. Recruitment sources include universities, newspapers, magazines, and professional groups and organizations.
2. **Internet Job Listing**—A listing of position openings was updated weekly on the Department's web site and an Application for Employment was available to download.
3. **Office Contacts**—Walk-in applicants were informed of job opportunities by visiting with Division staff. During FY02, approximately 1,200 individuals were assisted.
4. **Special Recruitment and Career Activities**—Activities to help stimulate an awareness of and exposure to the field of natural resources management and conservation among minority students were coordinated. These included participation in a Natural Resources Career Camp (in partnership with other state and federal agencies, universities and private entities) to provide students the opportunity to learn about natural resources and associated career opportunities (10 students graduated in FY02), and the Minorities in Natural Resources Committee (MINRC) of the Southeastern Association of Fish & Wildlife (SEAFWA) agencies which works to increase workforce diversity in their agencies (Division staff assisted with the organizing of 20 students to attend the SEAFWA Conference in FY02).

Monitoring the Department's affirmative action efforts is another part of the Division's responsibilities of which recruitment and selection plays a major role. The Department affirms its commitment to affirmative action through strategies outlined in its Affirmative Action Plan (AAP).

### Compensation and Classification Administration

Human Resources staff performs compensation and classification activities affecting all Department positions. These positions are placed into groups called "job classes" and during FY02, over 282 different job classes were maintained.

Internally, Division staff conducts position audits to understand the nature of jobs, their internal equity, and the corresponding wages which should be paid. In FY02, 44 positions were reviewed and classified. Externally, Human Resources staff maintains contact with public and private sector employers on a local and national level.

The Department continues to promote the implementation of performance management and performance pay concepts for top management. The concept joins goal setting, performance factors and competency levels with performance pay.



## Policy Administration

Human Resources tracks a variety of state and federal laws, executive orders, and regulations addressing human resources management issues. Annually, staff reviews proposed legislation which may affect the Department and its employees and continuously monitors the Department's compliance with provisions of equal employment opportunity and wage and hour laws.

In addition, Division staff coordinates the Department's compliance with federally-mandated alcohol and drug testing provisions and its own internal alcohol and drug testing policy. Division staff monitors the application of the mandates and acts as liaison between the Department and outside contracted services. Approximately 650 random drug tests, random alcohol tests, pre-employment drug tests and post-accident drug and alcohol tests were conducted.

The Division also maintains the Department's Human Resources Policy Manual which provides supervisors with policies and procedures that comply with employment laws and helps them guide employees uniformly and fairly.

## Training and Development

Continuous quality improvement of the performance of all employees is valued by the Department. The Academy for Leadership Excellence continues to provide learning opportunities for all employees based on employee identified competencies for all 5 levels of employee positions. The Academy for Leadership Excellence supports the vision that all employees are leaders, teachers, and learners, working interdependently to meet the mission of MDC. During FY02, the following nine courses were made available to employees: Financial Management, Effective Supervision, 4 Roles of Leadership™, Policies and Procedures, 7 Habits of Highly Effective People™, Team Building and Problem Solving, Awakening Your Creative Spirit, Effective Communication Skills, and Performance Management. These courses were taught by facilitators from a team of 33 trained employees across divisions and geographic areas. Learning opportunities were provided to 5,020 participants in FY02.

## Employee Benefits

Employee benefits are a major factor in recruiting and retaining a competent workforce; Human Resources Division administers the following services:

1. *Health and Life Insurance Program*—As of June 30, 2002, over 4,245 employees, retirees, surviving spouses, and dependents participated in the Department's group health and life insurance program which includes a self-insured medical plan. Division staff continued to facilitate the Conservation Employee's Insurance Trust Fund Board and worked closely with the insurance consultant to effect several changes to the program.
2. *Missouri State Deferred Compensation and Cafeteria Plans*—As of June 2002, 1,361 employees were enrolled in the Deferred Compensation Plan; as of June 2002, 1,267 employees were enrolled in the Cafeteria Plan. Both plans allow tax savings for employees who redirect a portion of earnings before federal, state or social security taxes are withheld.
3. *Leave System*—Implemented a web-based time and attendance system, conducted state-wide training classes for employees and provided user support.  
Reviewed time and attendance events related to annual leave, sick leave, compensatory time, bereavement, military duty, jury duty, special leave, shared leave, FMLA and workers compensation for accuracy and compliance with Department policies and procedures.
4. *Unemployment Insurance*—Unemployment insurance claims are routinely investigated by Division staff when the employee's termination/resignation was for reasons other than lack of work. In FY02, 88 unemployment insurance claims were reviewed; 9 were protested.
5. *Employee Assistance Program (EAP)*—The Employee Assistance Program provides assistance to employees experiencing job problems which may affect on-the-job performance. The Department's program provides employees and their family members up to five Department-paid visits for professional counseling services per calendar year. Human Resources' staff assisted 106 individuals in FY02 by locating and referring them to appropriate counseling services.

6. *Missouri State Employees' Retirement System (MOSERS)*—Division staff assists Department employees with enrollment procedures and appropriate changes, answers inquires regarding benefit provisions, and processes retirement requests. During FY02, 99 employees were enrolled in MOSERS.

## Employee Resignations and Retirements

	<u>FY00</u>	<u>FY01</u>	<u>FY02</u>
Total Salaried Employees	1,448	1,538	1538
Resignations/Retirements, etc.	108	85	113
Percent	7.5%	5.5%	7.3%

## Employee Relations and Services

Human Resources Division is involved in programs and activities promoting employee relations. Employee recognition is one such area and includes service awards, special achievement awards, and retirement plaques. Tenure is recognized in five-year intervals, beginning with 10 years of service. Human Resources also prepared and distributed 155 other service awards and 47 retirement plaques.

The Department has continued its effort toward creating a healthy and safe environment for employees. During FY02, Human Resources staff coordinated health screenings at several regional locations as well as other selected work sites. These screenings included the following types of tests: colorectal cancer, blood pressure, pulmonary function, glaucoma, flexibility, hearing, vision, health risk appraisal, health counseling, blood chemistry profile, percent of body fat, urinalysis, grip strength, skin cancer and step test. Flu shots and special educational sessions were continued and offered statewide. Over 1000 employees, spouses and retired employees participated in these wellness activities.

## Safety

Loss control programs administered by Human Resources include safety training; hazard identification on conservation areas and public lands; chemical safety; and accident prevention programs. Accident investigations and administration of vehicle accident and personal injury reporting are ongoing programs, along with assistance on the purchase and use of personal protective equipment. In addition, the Safety Coordinator administers self-insured programs for Workers' Compensation, Public, and vehicle/watercraft liability.

In FY02, staff continued to provide assistance to Regional Safety Committees by attending meetings with each committee to help accomplish goals, conduct training and assist in audits. A Safety Liaison meeting was coordinated at the Natural Resources Conference which included a safety presentation by a Division Administrator, exchange of ideas and accomplishments, training workshop, and distribution of pertinent safety training materials. Additionally, "Safety Meeting Repos" were purchased and distributed to all safety liaisons which covers a wide range of safety topics to be used at the Regional/Research level by safety committees and supervisors.

A number of safety training programs were offered or facilitated by Division staff and in FY02, over 205 employees attended Driver Skill Enhancement classes, 109 chainsaw, 73 Bloodborn Pathogens, 76 Back Health, 30 Outdoor Safety and 81 attended ATV training. Additionally, new employee orientation and safety policy and procedures have been well attended.

There were 95 accidents involving Department vehicles during FY02, compared to 108 in the previous fiscal year. Employee injuries requiring doctor care numbered 99 in FY02, compared to 102 in FY01. Injuries with lost work days totaled only 9 as compared to 9 in FY01. Total costs paid out in FY02 for personal injuries totaled \$336,520, down from \$504,485 in FY01. Adding \$108,532 for repairs to Department vehicles due to accidents, and vehicle liability payout of \$59,433, the total payout in FY02 for accident-related costs was \$167,965.

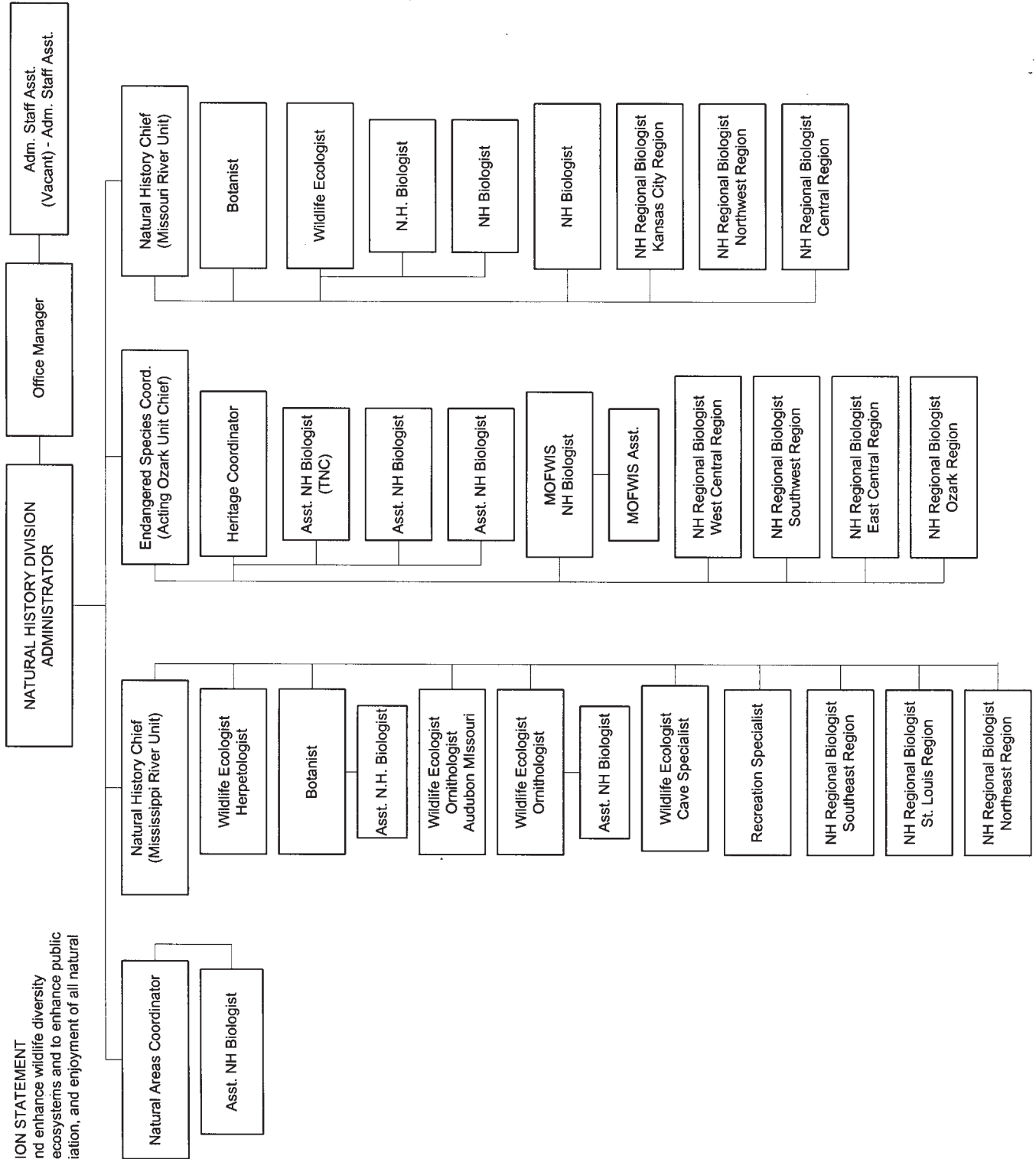
## **General**

In FY02, Human Resources received and processed 27,637 pieces of mail. The mail represents an ongoing relationship with various members of the general public; outside agencies—both private and public; consumer groups and educational organizations and institutions, to name a few. This relationship is an essential service provided by Human Sources in order to represent and accomplish the Mission of the Department.

# NATURAL HISTORY DIVISION

## MISSION STATEMENT

To protect, conserve and enhance wildlife diversity resources and natural ecosystems and to enhance public understanding, appreciation, and enjoyment of all natural resources.



## NATURAL HISTORY DIVISION

Natural History Division coordinates and provides overall direction and specialized services to the Department's natural areas, endangered species programs, wildlife diversity and natural community conservation and management programs, and programs for the public appreciation of natural resources. Division emphasis is on leading Department implementation of Strategic Plan components related to biological diversity and natural community management. Restoration and performance measures for natural community management also are important Division responsibilities. Development and improvement of nature related recreation opportunities and facilities including hiking, wildlife viewing, camping, nature-based tourism, etc. are important Division priorities.

**Goal:** Provide guidance to Department staff in protecting, managing and restoring aquatic and terrestrial plant and animal communities and ecosystems.

**Progress:** Field staff: Regional Biologists provided assistance or consultation on management and restoration projects with an emphasis on natural areas. Advice was given on techniques for controlling exotic plants on natural areas and other public lands. Staff reviewed and provided recommendations for the management of existing natural communities on conservation areas including sites with special features. Major activities, by region, included:

### Northwest Region:

- Coordinated Audubon volunteer day at Mark Youngdahl Conservation Area.
- Collected seed for Missouri Ecotype Project.
- Coordinated native prairie management initiatives of the Pawnee Prairie Focus Grassland Focus Area team.

### Northeast Region:

- Harvested native seed from Morris Prairie for restoration on other public lands.
- Restored through thinning of trees a 40 acre savanna on Big Creek CA.
- Conducted landowners contacts to improve habitat conditions for endangered turtles, wetland wildlife in general, and dove and quail hunting opportunities.
- Planted native forbs along highway right-of-ways.

### Kansas City Region:

- Completed the Kansas City Wildlands book.
- Hired in cooperation with partners a WildLands coordinator.
- Planted native seed in savanna re-creation at Lakeside Nature Center.
- Conducted the first Kansas City WildLands BioBlitz in Swope Park to survey all taxa possible within a given area in a 24-hr period.

### West Central Region:

- Convened the Taberville Grassland Focus Area landowner meeting.
- Contacted landowners in the Taberville Grassland Focus Area about tree-cutting and fencing projects for Greater prairie-chicken habitat improvement.
- Assisted a 320-acre landowner with implementation of a National Wildlife Federation grant for Greater prairie-chicken habitat improvement.
- Trained a crew of Missouri Prairie Foundation employees to identify and spray sericea lespedeza on native prairies.
- Coordinated the Osage Plains Native Seed Cooperative to harvest and plant native grassland seed for prairie restoration.

- Completed construction for a permanent marsh at the Clinton Regional Office to be used as an interpretive area and as a seed/plant source for future marsh restoration efforts in the region.

### **Central Region:**

- Hired new replacement Natural History Regional Biologist for this region.
- Developed a Landowner Incentive Program proposal focusing on known Topeka Shiner, Plains Killifish and Blacknose Shiner locations in the central region.

### **East Central Region:**

- Completed field inventories and removal of 42 acres of cedar slash work at Hughes Mountain NA and Spring Creek Gap CA.
- Completed cave restoration work at Little Scott Cave, Ryden Cave, Money Cave, and Bat Cave #1.
- Assisted with burns at Hughes Mountain Natural Area, Little Indian Creek CA (glade /savanna unit), Indian Trail CA (savanna), Ketcherside Mountain CA, and White River Trace CA.
- Removed 28 acres of cull trees for savanna thinning at Indian Trail Natural Area.
- Completed a cerulean warbler survey.
- Assisted with the discovery of new sites for the Hine's Emerald Dragonfly.
- Collected baseline data on canopy and sapling composition from the experimental plot at the Wood's Area as well as the bottomland hardwood restoration efforts, also at the Wood's Area.
- Completed the summary report for the pine woodland vegetation monitoring project at Indian Trail CA.
- Completed the Shaw NA bottomland forest nomination.

### **Southwest Region:**

- Served as Regional Coordination Team chairperson.
- Burned woody vegetation on Rocky Barrens CA.
- Coordinated the removal of cedar at Rocky Barrens CA with volunteers.
- Planted native forb seed for savanna restoration at Pleasant Hope CA and grass seed for restoration at Capps Creek CA.
- Monitored populations of Missouri bladderpod.

### **Ozark Region:**

- Completed the Tingler Prairie and Spurgeon Hollow Natural Area nominations (Howell County).
- Wrote articles for local papers on sneezeweed and over wintering hawks.
- Planted native forbs at Tingler Prairie CA (Howell County).
- Surveyed scenic riverways in Shannon County for Swainson's warblers.
- Monitored federally threatened Virginia sneezeweed population on private property and collected seed for reintroduction efforts onto public land.
- Treated and monitored results of exotic species control at Hemenway CA and Sandponds CA.

### **Southeast Region:**

- Sprayed Japanese honeysuckle at Holly Ridge Natural Area.
- Developed prototype plant identification cards for rare plants in the region.
- Provided workshops on plant identification, Heritage and other topics for staff in the Southeast Region.
- Searched three natural areas for rare frogs and salamanders.
- Completed the Donaldson Point Natural Area nomination.



## St. Louis Region:

- Burned 125 acres of Weldon Spring Hollow Natural Area.
- Taught several sections of a region-wide Landowner Burn workshop.
- Taught a section on forest ecology at two region-wide Landowner Forest Management workshops.
- Participated with partners to hire a coordinator for the East-West Biodiversity Initiative.

## Central Office Biologists:

- Staff provided seven workshops for Department managers on topics such as plant identification, cave ecology, reptile and amphibian management and forest bird ecology.
- Progress continued on the second volume of the Flora of Missouri with species descriptions written for over 200 plant species.
- Completed the Missouri Cave Life Survey, a survey of 40 caves, in cooperation with the Missouri Caves & Karst Conservancy.
- Continued developing the Missouri Biospeleological Database (MBD) with four partners from various organizations, adding 111 species records (total of 886 species) and 162 new localities (total 962 localities); continued to collect and identify cave species.
- In partnership with MO DNR, provided a grant of \$3,000 to the Cave Research foundation for a study of the pink planarian, *Macrocotyla glandulosa*, and associated stream fauna in devil's Icebox, Boone County.
- Published "Conserving Missouri's caves and Karst" (booklet) and "Missouri's Natural Communities: Karst" (brochure).
- Coordinated surveys and research projects for the Ozark hellbender.

**Goal:** Promote natural community and special species management on private land and land owned or administered by other agencies/organizations.

**Progress:** Natural History biologists consulted or provided management assistance on private land, especially for the restoration of savanna, upland prairie and sand prairie. Assistance also was provided for sites owned by other public agencies or private conservation organizations.

The Grasslands Coalition continued efforts to restore and manage native grasslands on private land to benefit prairie-chickens in west central and north central Missouri. Through a cost-share program with a private landowner in the Northeast Region, prairie seed was harvested and planted on Department land for prairie restoration. In the Southeast Region, a Natural History biologist cooperatively managed a private sand prairie to produce native seeds for restoration of this rare natural community on Department land. In the West Central Region, Natural History staff coordinated an Osage Plains native seed cooperative to harvest and distribute seed for prairie restoration.

**Goal:** Enhance the status of endangered species on public and private lands.

**Progress:** In the fall of 2002, the *Missouri Species of Conservation Concern Checklist* was updated utilizing Global and State Ranking System methodology. The checklist, developed with the cooperation of specialists throughout the state, is a list of plants and animals the Department of Conservation is particularly concerned about due to population declines or apparent vulnerability. The state rank shows the level of concern for each species' continued existence in Missouri. The checklist also indicates for each species information on its global rank (i.e., its relative rarity or endangerment in the world). There are 957 species on the list representing 18 percent of the native vascular plants, 14 percent of the nonvascular plants and 28 percent of the vertebrate animals in Missouri.

Completed the second year of the 5-year endangered species management plan and accomplishments included restored habitat that improved the status of prairie chickens, scaleshell mussels, Topeka shiners, and Niangua darters. We also discovered new populations of Hine's Emerald dragonflies, Hall's bulrush, Indiana bats, and Illinois chorus frogs, as well as augmented populations of declining black sandshell and snuffbox mussels. Greater efforts were made to provide management assistance and financial incentives to private landowners



who voluntarily participated in the recovery of some of our rare species. Purchased equipment for raising rare mussels at the Lost Valley Hatchery for restoration in Missouri streams.

**The following endangered species projects were funded by federal Section 6 funding:**

- “An Assessment of the biological and ecological requirements of *Schoenoplectus hallii* (Hall’s bulrush) population in Scott County, Missouri”
- “Fish Hosts and In-Vitro Culture of Special Concern Mussel Species”
- “Southeastern Mussel Survey for Species of Concern”
- Water quality study for the Tumbling Creek Cave Snail
- Survey and landowner contact for the massasauga rattlesnake

**Goal:** Develop and improve nature related recreation opportunities and facilities including hiking, wildlife viewing, camping, nature-based tourism, etc.

**Progress:** Assisted with recreation issues on the Public Use Committee. Attended horse use management planning meetings and Missouri Public Recreation Forum. Held National Trails Day event at Camdenton office. Responded to numerous requests from the public for information on hiking, bicycling, horseback riding and camping on Department lands. Assisted with area managers on trail renovations.

Revised and updated trail information provided in the Atlas database. Revised and updated Conservation Department information in the Missouri Equestrian Trail Guide.

Informed staff about trail grants, funding, and volunteer opportunities. Tracked Recreational Trails Program grants and WCR grants.

**Goal:** Develop and maintain databases for use in protection and management of our natural heritage.

**Progress:** The Heritage Database contains electronic information on the location and status of Missouri species of conservation concern, natural communities and other natural features such as colonial bird nesting sites and caves on MDC land. More than 1000 new records of endangered resources and natural communities were mapped and entered. Updates and corrections were made on approximately 3,500 existing records. There were more than 1,000 requests for information from the database. Information on the occurrence of species of conservation concern was shared with the U.S. Natural Resources Conservation Service, U.S. National Park Service, U.S. Fish and Wildlife Service, U.S. Forest Service, Missouri Department of Natural Resources, Missouri Department of Transportation, and various universities to assist with their research, management and protection efforts. Heritage information by county may be obtained through MDC’s public website.

Sixty-eight species were added to the Missouri Fish and Wildlife Information System (MOFWIS) including 3 mammals, 8 crayfish, 2 snails, 2 amphipods, 1 isopod, and 55 plants. Runtime copies of the MOFWIS database were sent to the U.S. Forest Service, the U.S. Fish and Wildlife Service, MODOT, the National Park Service, and the Aquatic GAP project. The MOFWIS web page was revised to add searching instructions and improve the speed of online searches. Photographs were added to the online database for approximately 70% of the species. Visitors to the web site can search for species by location, status, or land use association, or find specific information about one of the 895 plant and animal species in the database. The online database has been accessed 2,903 times since April 2001. A link from the Heritage Database allows users to view MOFWIS reports for species in the Heritage Database.

**Goal:** Acquire the best examples of areas with endangered species, natural areas, urban wild acres and other special features.

**Progress:** Acquired 320-acre prairie as an addition to the Stony Point Prairie Conservation Area in Dade County.

**Goal:** Provide administrative support to the Missouri Natural Area System, the goal of which is designation and protection of high quality examples of every extant natural community in each of Missouri’s natural sections.

**Progress:** The Natural Areas System was expanded during 2002 by 1184 acres and now contains 180 areas with 57,214 acres protecting the best examples of Missouri’s terrestrial and aquatic natural communities. Missouri

natural areas are biological communities or geological sites that preserve and are managed to perpetuate the natural character, diversity and ecological processes of Missouri's native landscapes. They are permanently protected and managed for the purpose of preserving their natural qualities. These areas have been designated by the interagency Missouri Natural Areas Committee (MONAC), which consists of representatives of the Department of Conservation, the Department of Natural Resources, the Mark Twain National Forest and the Ozark National Scenic Riverways.

## MISSOURI NATURAL AREA OWNERSHIP

<u>Agency</u>	<u>Number of Natural Areas</u>	<u>Acres</u>
MDC	83	26,816
DNR	38	16,463
USFS	19	6,231
TNC	13	2,030
NPS	9	2,821
LAD	10	1,638
Other	<u>8</u>	<u>1,215</u>
<b>TOTAL number of natural areas</b>	<b>180*</b>	<b>TOTAL acres: 57,214</b>

\*Agency totals are greater than the total number of natural areas due to several natural areas with multiple ownerships.

### Natural Areas designated were:

1. Overcup Fen, a 130 acre portion of Little Black Conservation Area in Ripley County.
2. Pipestem Hollow, a 217-acre karst landscape within the Angeline Conservation Area in Shannon County.
3. A 24-acre USACOE addition to the Ashe Juniper Natural Area in Stone County.
4. Meramec Mosaic, a 813-acre portion of Meramec State Park (DNR) in Franklin and Crawford Counties.

**Goal:** Monitor, survey or inventory the status of individual species, species groups and natural communities and provide management recommendations. Additionally, promote monitoring, surveys and inventories by non-MDC staff through the Natural History Small Grants Program.

**Progress:** The following surveys were conducted or coordinated by Natural History staff.

Audubon Christmas bird counts	North American migration counts
Pondberry restoration plantings	Missouri bladderpod
Geocarpon	Ginseng populations at selected locations
Western prairie fringed orchid	Breeding birds at 52 survey routes
Breeding toad and frog survey	Blanding's turtle
Illinois chorus frog	Gray bats
Timber rattlesnake	Mead's milkweed
Indiana bats	Eastern massasauga
Narrow-leaved coneflower survey	
Amphibians and reptiles at selected natural Areas	

### Small Grants Program

- Conservation of North American tarantulas: habitat fragmentation and the genetic structure of tarantula populations. Grantee: University of Missouri-Columbia (Margaret Janowski-Bell).
- Spring Cavefish (Habitat Analysis). Grantee: Southern Illinois University (Ginny Adams)
- Hawkmoth monitoring: a pollinator of the federally threatened and state endangered western prairie fringed orchid. Grantee: Missouri Western State College (Dr. David C. Ashley)
- Rare insect surveys. Grantee: Webster Groves Nature Society (Entomology Study Group).
- Indiana bat summer habitat in northeast Missouri. Grantee: Southwest Missouri State University (Dr. Lynn Robbins).

- The effect of cave temperature on the hibernation energetics of bats. Grantee: SMSU Biology Department. (Tom Tomasi).
- The effects of pesticides on ground squirrel hibernation, survival and reproduction. Grantee: SMSU Biology Department (Tom Tomasi).
- Small mammal community responses to oak savanna restoration. Grantee: Truman State University. (Burt Scott and Polly Higgins).
- Physiological effects of transmitter attachment on grassland birds for determination of post-breeding habitat use and movement. Grantee: UMC Fish & Wildlife (Josh Millspaugh et al.).
- The effects of prescribed burning on dispersal and population structure of eastern collared lizards on an Ozark glade complex. Grantee: Washington University Department of Biology (Jared Strassburg and Jennifer Brisson).
- Spider community assemblages at Victoria Glade. Grantee: The Nature Conservancy (Beth Churchwell).
- Mammal surveys of Missouri Natural Areas. Grantee: Truman State University (Burt Scott).
- Survey of the beetle families Buprestidae, Cerambycidae, and Cicindelidae in Missouri, with special emphasis on lands managed by MDC. Grantee: Ted MacRae.
- Survey of the beetle families Buprestidae, Cerambycidae and Cicindelidae in Missouri, continued. Grantee: Ted MacRae.

**Goal:** Provide information and support to local, regional and state conservation groups and other agencies.

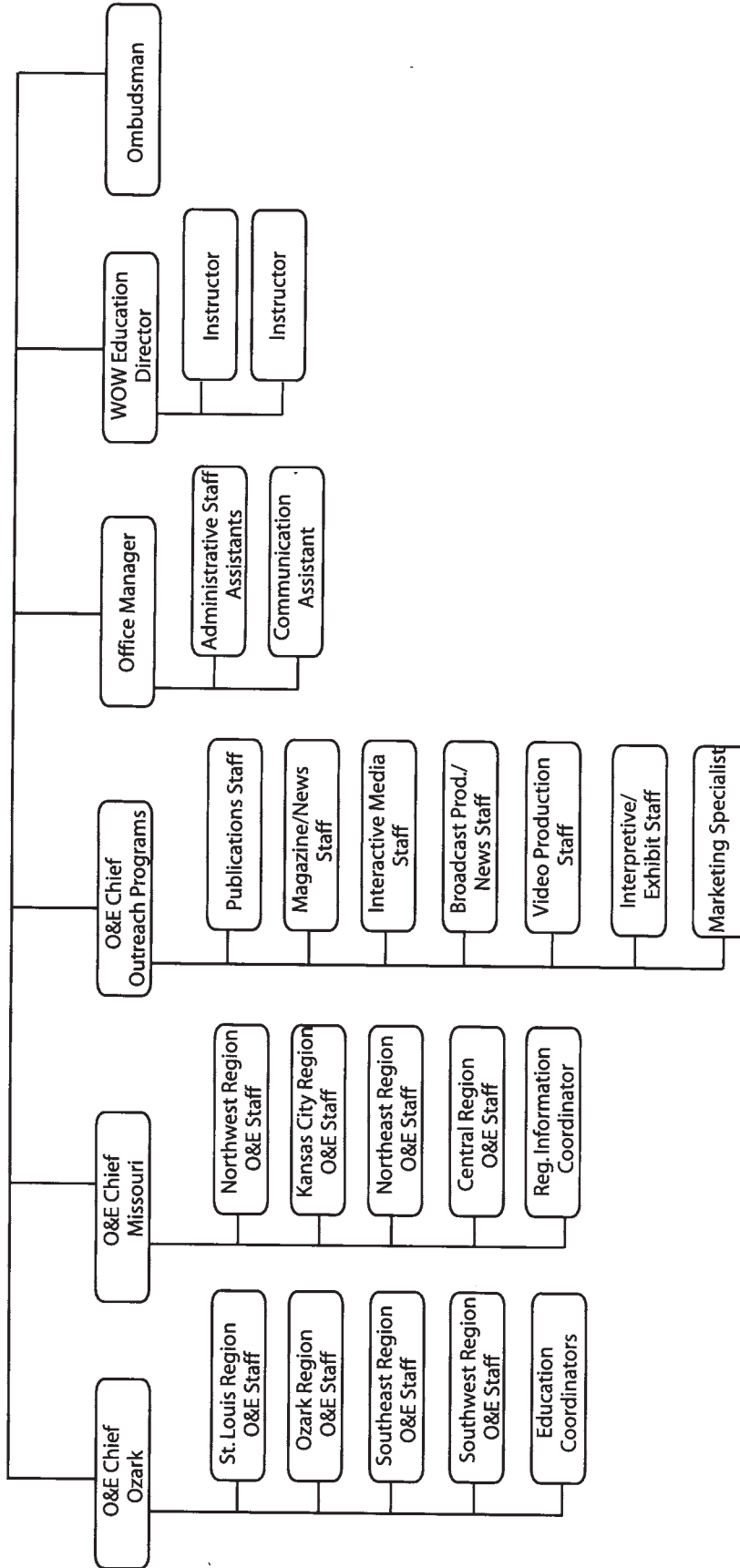
**Progress:** Liaisons with the following agencies and organizations were maintained: Department of Natural Resources, The Nature Conservancy, Missouri Audubon Council, Audubon Society of Missouri (State, Columbia Chapter, River Bluffs Chapter, National Audubon Society), Missouri Herpetological Association, Mid-Missouri Herpetological Society, Missouri Native Plant Society, (State, St. Louis chapters), Missouri Prairie Foundation, St. Louis Herpetological Society, Gateway Trailnet, Association for Biodiversity Information, The Wildlife Society, Webster Groves Nature Study Society, Sierra Club (Trail of Tears Chapter), Missouri Mycological Society, Partners in Flight, National Speleological Survey (Ozark Highlands Grotto, Meramec Valley Grotto), Missouri Speleological Survey, Missouri Cave and Karst Conservancy, Missouri School of Mines Spelunkers, Missouri Parks and Recreation Association, University of Missouri-Columbia Department of Parks, Recreation and Tourism, Ozark Trail Council, Missouri Equine Council, Missouri Botanical Garden and Shaw Arboretum, Conservation Federation of Missouri and the Trumpeter Swan Society.

To promote natural community restoration and management of rare biological resources, Division staff secured the following outside grants from organizations and agencies:

- Grassland bird monitoring for birds in the Grassland focus Areas with the US Fish and wildlife Service Audubon Society.
- Native Prairie Forb Nursery Project to establish a forb seed source for restoration in cooperation with The Nature Conservancy.
- Upgrading of the Heritage Data Base with new software with the US Forest Service and US fish and Wildlife Service.
- Grassland Bird management in the Dunn Ranch/Pawnee Prairie Grassland focus Area in Harrison county with the National Fish and Wildlife Foundation.
- Landowner habitat improvements in the watershed of the federally endangered Tumbling Creek Cave Snail.

Natural History helped coordinate the Department's membership to the Grasslands Coalition. In cooperation with the Missouri Prairie Foundation and other partners, Natural History staff helped raise awareness of grassland wildlife habitat needs. The Division assisted with the 2002 North American Prairie Conference in Kirksville, Missouri. The Division led the Department effort to provide grants to conservation partners for 12 Wildlife Conservation and Restoration Program projects using federal funds available for wildlife diversity management and outdoor recreation facilities.

# Outreach & Education Division



## **OUTREACH AND EDUCATION**

### **Outreach Programs**

#### **No MOre Trash!**

Missouri's first statewide anti-litter campaign sponsored initially by the Conservation Department and MoDOT was launched in April 2002 by Governor Holden. An Anti-litter Advisory Board was formed to enlist grassroots support for this long-term effort.

An ad aimed at 16–22 year olds ran for three months and a new website [www.nomore.trash](http://www.nomore.trash) was also started to help spread the message and make logo materials available throughout the state.

#### ***Missouri Conservationist Magazine and All Outdoors***

During the course of the 2001–2002 fiscal year, the print order for the *Missouri Conservationist* steadily increased from 418,000 in June 2001 to 448,500 in June 2002. The October issue held a special 16-page insert from the Nature Shop. A pullout, 16-page “Outside In,” the children’s section of the magazine, appeared in the August, November, February and May issues. In each of those months, about 68,000 reprints of “Outside In” were mailed to teachers, libraries and home-schoolers across the state. A special edition of the magazine celebrating the anniversary of “Design for Conservation” was printed in February 2002.

The weekly “All Outdoors” news releases appeared in 146 newspapers, with a potential readership of 1.2 million in 98 of Missouri’s 114 counties. Releases also were placed on the public MDC website for easy access on the internet.

#### **Art and Photography**

Art highlights include design and production of the *Missouri Conservationist* and Outside In magazines and numerous pieces of original art in support of these. We continued work on the design and development of the statewide Lewis and Clark Trail signs and the signs to be placed on MDC lands; completed a major Prairie Species poster; completed the landmark red oak borer lifecycle painting now used by a number of states and the federal government as the definitive work on the subject; began research and development of preliminary sketches for a full color children’s book; completed artwork for a variety of Department projects including Eagle Days, Endangered Species Run, holiday and birthday cards and nuisance animal control manuals; gave four talks on the art of conservation at MDC nature centers and assisted exhibits in the refurbishing of several displays.

The photo unit began a transition into digital photography in order to improve the quality of its images and facilitate the transfer of images to Conservation Department staff members who need them for presentations and the production of educational and regulatory publications.

#### **Radio/TV**

“Missouri Outdoors,” the Department’s half-hour, 13-week television series, aired throughout the state on 37 network affiliates, independent and cable stations. Some of the topics of the magazine-style show included a youth turkey hunt, otter management, wildlife regulations, urban deer management, and cleanup efforts on the Missouri River. One of the 13 programs was produced specifically for kids with a fishing theme.

“Conservation on Call,” a weekly radio program, was produced to increase awareness of Missouri’s outdoor resources and provide state residents with access to Director Jerry Conley. The program was hosted by Jerry Conley and Arleasha Mays, who inform listeners of upcoming outdoor events and activities, and interview experts on Missouri’s fish, forestry and wildlife resources. The guests gave information on the latest news affecting the resources, Conservation Department services and policies, and advice to help listeners better enjoy outdoor recreational activities. (The show was ended in early FY 03.)

Radio Public Service Announcements were produced and distributed in quarterly mailings to approximately 220 radio stations throughout the state. There were an average of 4–5 spots per mailing, ranging from :30–:60

seconds in length. Copy for live reading was also provided for most of them. Topics covered included the Department's "Grow Native!" program, Private Lands Services, Hiking Trails, the 25th Anniversary of Design for Conservation, Stream Teams, Forest Keepers Network, The Department website, Hunting Firearm Safety and Operation Game Thief.

The *Conservationist* Audio Magazine was produced monthly. It provides those with visual impairments, the elderly, and anyone desiring an alternative format the opportunity to receive information contained in the magazine. It was distributed on cassette tape to approximately 350 venues statewide, including schools and public libraries. Copies are also circulated each month through the Wolfner Library for the Blind and Physically Handicapped.

## Video Production

New videos produced include Natural Adventures Close to Home: Kansas City, the second program in a series highlighting opportunities on MDC lands near metropolitan areas. These are distributed to libraries and MDC offices throughout the state.

Other videos include a Winter Eagle music video, a Waterfowl Hunting Ethics program, a television public service announcement marking the 25th anniversary of Design for Conservation, and test ads and post-production for a statewide anti-litter campaign, "No MOre Trash." Production began on a wetlands feature as well as a program highlighting the natural areas of Southeast Missouri for a future Nature Center.

## Publications

Throughout the year, the publications staff produces many books, booklets, brochures, pamphlets, posters and logos. Among them were:

- 2002 Natural Events Calendar
- Native Landscaping for Wildlife and People book
- Birds in Missouri book
- Kansas City Wildlands book
- 2002 Hunting and Trapping Summary
- 2002 Fishing Summary
- 2002 Wildlife Code
- 2001–02 Migratory Bird Digest
- 2001 Spring Turkey leaflet
- Large print Wildlife Code and Statute booklets
- 2002 Statutes (regular size)
- 2001 Fall Deer & Turkey Hunting information pamphlet
- Missouri Whitetails reprint
- Nine survey forms for Wildlife and Fisheries Research
- Nuisance Skunk booklet
- Missouri Pond handbook
- Trout map
- Smallmouth Bass map
- Spanish version of the Roaring River Trout Fishing brochure
- Cooperative fishing guidelines for Arkansas/Mo
- Trout Tips brochure
- Muskie pamphlet
- Missouri Mussels booklet
- Why Watershed Conservation? brochure
- Water Resource fact sheet
- Design for Outside In—children's section of *Missouri Conservationist*
- Grant proposals for state wildlife



Operation Game Thief brochure  
 Wildlife citation book  
 Conservation Agent Career booklet  
 Private Lands brochure update  
 Hunter Education logo  
 Operation Forest Arson brochure  
 Defensible Space newspaper insert  
 Basic Pruning Guidelines brochure  
 Oak Decline brochure  
 You Can Help Your City's Trees brochure  
 Seedling order form  
 Lewis and Clark DVD cover  
 Just Kiddin' Around video cover  
 Missouri Quail Academy and Conservation Honors program brochures  
 Elementary newspapers (fall, winter, spring and summer issues)  
 Prairie Habitat Pack for grades 3 and 4, including a student magazine, teacher guide, poster and other instructional pieces  
 Missouri Wildlife Trails booklet  
 Quail cards  
 Eagle postcards  
 Endangered Species poster  
 Animal Autographs leaflet  
 Mountain Lion brochure  
 Ozark Karst booklet  
 Karst Natural Communities brochure

The following reprints: Edible and Poisonous Mushrooms, Butterfly Gardening, Wildflower Favorites, Life on the Forest Floor, Toads and Frogs, Chipmunk Coloring Book, Winter Trout Fishing, Nuisance Aquatic Plants, Marsh Birds, Woodpeckers, Introduction to Fishing, Endangered Fish Benefit Landowners, Plants of Conservation Concern, Animals of Conservation Concern, Woodworking for Wildlife, Snakes of Missouri, Missouri Turtles, Bluebirds in Missouri, Hummingbirds in Missouri, Life in the Water, Wasps and Bees, Bald Eagles

In addition to the above publications, the same staff also produced invitations, entry forms, awards and programs for such special events as the Endangered Species Walk/Run, Junior Duck Stamp Contest and the Hall of Fame ceremony. To keep MDC employees informed, *Conservation Currents* was published bimonthly.

### **Interactive Media/Internet**

Major areas of the public Web site (covering hatcheries, shooting ranges, hunting, regional pages) were restructured in order to allow for easy access to the increased numbers of reports and documents recently placed in these areas.

Increase in Web traffic began to slow in 2001—due possibly in part to the economic downturn and the fact that most Missourians had reached a point of getting online. Traffic increases of 80–120 percent over the previous year slowed to 12–20 percent. In spite of this, however, 2001–2002 was still an amazing year in terms of Web traffic to our site:

- More than 22 million pages were served to over 2 million visitor
- The heaviest month saw over 2 million pages served to the public

MDC's Web staff were key members in the Missouri e-government initiative. This initiative sets the standard for how Missouri state agencies will integrate into the Missouri state portal.



Two weeks of programming was developed in January of 2002 to completely restructure security and validation used in the Conservation Cafe in order to curb abuse of the system. (Continuing misuse of the Café forced us to close it, however, several months later.)

Maps and documents duplicated throughout the site were standardized. This includes maps showing regional boundaries and information on regional offices. This standardization will ease future changes made to the Web to reflect changes in offices or regions.

***New systems on the website include:***

- a) New method of waterfowl harvest reporting. Columbia research developed and deployed an Access application that waterfowl areas can use to help tally harvest numbers. This application generates a report that is uploaded to the public Web site and integrated into a harvest database. Statistics were tracked on the frequency of updates from waterfowl areas. Lessons learned from this year's reporting system will be used to refine the system used for the 2002–2003 season.
- b) Working with Administrative Services' Print Shop, a program was developed that enabled field offices to submit newsletters to be submitted in Acrobat's PDF format. This solved two problems. The Print Shop now can receive newsletters and print them without the problem of missing fonts. Also, field staff can send PDF newsletters to the Web staff for immediate upload on the public Web site. Future plans include adding the ability for field staff to upload these PDF newsletters on their own to the public Web site.
- c) A ticket system enables MDC staff to request new projects for the public Web site. They can then continue to communicate with Web staff as well as track the progress of these projects.
- d) Area brochures and maps were added to the online Conservation Atlas. In addition, a process was developed to track area manager revisions and requests for publications of area brochures using the online Conservation Atlas as the source for the latest version of both map and brochure.

## **Marketing**

Enhanced promotion of Conservation Department books, videos and gift items continues to receive positive response from the public. In the past year, MDC nature shops have worked to provide superior customer service while highlighting native landscaping, Missouri prairies and Lewis and Clark.

The MDC Nature Shop guide appears in the October issue of the *Missouri Conservationist* and features a toll-free number as well as an alternative e-commerce site for online sales.

On-site sales at Missouri Department of Conservation special events and community river festivals, as well as at educator and resource-related conferences have included focus on the "No MOre Trash!" anti-litter campaign. On-site sales continue to help spread the conservation message to targeted groups throughout Missouri at various events.

## **Exhibits, Fairs and Special Events**

The staff for exhibits, which includes four permanent employees and three summer part-time employees, completed the in-house design and construction of the "Critter Corner" children's exhibit at Runge Conservation Nature Center. It includes interactive habitat walls, touch-able items inside drawers, a small puppet theater, a beehive inside a fabricated tree, and five aquaria.

In Kansas City, we contracted production of indoor and outdoor interpretive signs, a mural, and interactive watershed exhibits for the Discovery Center was completed and the facility opened in April of 2002. Technical specifications for the indoor and outdoor exhibits for the Cape Girardeau Conservation Nature Campus were also completed.

Exhibits staff are also responsible for the care and upkeep of permanent display buildings at six fairground facilities statewide, including a major facility at the Missouri State Fairgrounds in Sedalia. Live animals were transported and exhibited at the Ozark Empire, Missouri State and Northwest Missouri Fairs. In addition, the Exhibit Shop placed portable exhibits at about 130 local and regional fairs, sport shows, home shows, and hunting and fishing events, reaching over 1.4 million people.

Eagle Days events were held at Squaw Creek National Wildlife Refuge, Springfield Conservation Nature Center, DOW Pevely, Lake Ozark, Old Chain of Rocks Bridge (St. Louis), Smithville Lake, and Clarksville. Over 20,000 people had the opportunity to view eagles in the wild at these events.

**Education Programs**

Education Programs includes the following positions or programs: curriculum coordinator, forestry education coordinator, aquatic resource education coordinator, outdoor skills coordinator, environmental education coordinator, and the public relations specialist. The staff coordinates the Office of Environmental Education, Project WILD and Project Learning Tree, and Aquatic Resource Education Federal Aid grant administration. In addition, staff develops and distributes conservation education curriculum materials and works in partnership with other agencies and organizations to further the Department’s education and public relations goals. The Public Relations specialist delivered a total of 249 programs to 28,970 people. He appeared in 23 television shows, 48 radio shows and 18 newspapers. He provided an additional 12 programs to audiences in other states.

**Highlights of activities in FY02 include the following:**

***Project Wild and Project Learning Tree***

Project Learning Tree (PLT) and Project WILD are award-winning environmental education programs designed for teachers and other educators working with children from kindergarten through grade 12. They are a source of interdisciplinary instructional activities and provide workshops and in-service programs for teachers, natural resource professionals, nature center staff and youth group leaders. PLT uses trees and forests as a way to learn about the natural world, while Project WILD uses wildlife and wildlife habitat. Educators become involved in either program by attending a six-hour workshop facilitated by trained volunteers. At the workshop, teachers receive activity guides containing hands-on lessons that can be used to supplement existing curricula. These activities are action-oriented, can be used in any order and require little, if anything, in the way of equipment. During FY02, PLT facilitators conducted 20 workshops which were attended by 292 educators. Project WILD facilitators conducted 25 workshops for 305 educators.

***Champion Tree Program***

The champion tree program is a very popular program with the public. The Department maintains records on the largest known tree of each species in the state. The owner and finder of champion trees are recognized with a plaque and certificate. During FY02, the following new state champion trees were found:

<u>Species</u>	<u>Owner</u>	<u>County</u>
Ash, blue .....	City of Boonville .....	Cooper
Serviceberry, downy .....	Charles Bachle .....	Atchison
Oak, southern red .....	Charles Curley .....	Stoddard
Hickory, shellbark .....	U.S. Army Corps of Engineers .....	Wayne
Cucumbertree .....	Ivan Slaughter .....	Jackson
Spicebush .....	Mr. Kim Hindman .....	Cape Girardeau
Buckeye, red .....	City of St. Louis .....	St Louis
Oak, cherrybark .....	William and Mary Bizzell .....	Cape Girardeau

***Conference on Environmental Education***

The 6th Annual Conference on Environmental Education was held November 9–11, 2001 at Tan-Tar-A Resort in Osage Beach, Missouri. The conference was co-coordinated by the Department’s Office of Environmental Education and the Missouri Environmental Education Association (MEEA). Conference sponsors included the Department of Natural Resources, Department of Agriculture, MU School of Natural Resources and the United States Environmental Protection Agency. The conference drew just over 300 attendees, including classroom teachers, naturalists, youth group leaders, community educators and natural resource professionals. Reflecting

the conference theme, “From Awareness to Action @ Renewing Community through Environmental Education”, activities included a keynote presentation, 39 concurrent sessions, 5 pre-conference workshops, 2 field trips, and 22 exhibits. In addition 26 conference participants facilitated interact sessions, consisting of simultaneous, participant led, small group discussions and activities.

### ***Show-Me Environmental Education Model Schools***

The Department’s Office of Environmental Education continued to provide technical and financial assistance to three Model School teams. This assistance enabled the teams to continue refining their environmental and conservation based curricula. Teams participated in off-site field trips where they applied classroom curricula in real life, hands-on learning experiences. The project demonstrates the use of environmental education as an integrating context for addressing the state education standards and improving student achievement.

### ***The Resource***

Four issues of “The Resource”, a statewide environmental education newsletter were produced and sent to nearly 11,000 educators. Each issue of “The Resource” is centered around a chosen theme and includes background information, recommended resources, a calendar of events, Projects connections, and a curriculum insert.

### ***Education Materials Development and Distribution***

The new Prairie Habitat Pack was completed and distributed to approximately 50,000 third and fourth grade students. A new publication, Amphibians and Reptiles, A Teacher’s Activity Guide, by Dr. Janice Greene, was produced and distributed. This publication is geared to the middle school level.

Once again the Kid’s Connection newspapers, Woollyworm, Tadpole and Crawdad, were distributed to approximately 250,000 kindergarten, first and second grade students during the 2000–2001 school year. Over 10,000 environmental educators received The Resource and around 75,000 pre-school students were reached through the Conservation Seeds program for early childhood.

The Missouri Conservation Frontier’s program has shown an increase in participation. This program actively involves around 10,000 kids per year in conservation activities.

The Jr. Duck stamp contest was held with approximately 10,000 students competing at their local schools, and nearly 1,500 competing at the state level. Missouri’s Best of Show placed third in the National Jr. Duck Stamp competition. Beginning in FY03, Missouri’s state contest will be coordinated by the U. S. Fish and Wildlife Service.

### ***Aquatic Resources Education (ARE)***

The Aquatic Resource Education Coordinator coordinates reporting for field staff activities for Federal Aid reimbursement. Staff conducted a total of 279 school programs and contacts reaching a total of 25,305 students. Staff also conducted teacher training reaching 430 teachers/leaders statewide and participated in 114 special events reaching 802,430 participants. Installation of Lost Valley Hatchery exhibits was completed, and staff participated in volunteer training at that facility.

The AREC attended Hooked-On-Fishing/Not-on-Drugs Coordinators’ annual meeting in Orlando, met with state 4H Sportfishing Coordinator, and participated in MU Extension Water Festival Advisory Committee meeting. He also participated in an applied marketing workshop and an angler recruitment task force.

### ***Missouri Environmental Education Association Certification Program***

In partnership with the Missouri Environmental Education Association, the Missouri Department of Natural Resources, and the Association of Missouri Interpreters, the Department’s Office of Environmental Education launched a new Environmental Education Certification program in November 2001. Designed to recognize formal and non-formal educators who have attained a certain level of proficiency in the field of environmental education, this voluntary certification program provides recognition of an individual’s knowledge and skills

related to conservation and environmental education. Certification constitutes acknowledgment that an environmental educator meets certain minimum preparation, professional experience and continuing education. The process of becoming certified and maintaining the designation provides incentives to continue professional development and confirms that educators excel in this discipline.

### ***Outdoor Classroom Grants***

The O & E Division in partnership with the Missouri Conservation Heritage Foundation, awarded grants totaling \$70,148 to 55 schools for development and enhancement of outdoor classrooms. During the year, education consultants work with the schools in developing the outdoor classrooms and in training teachers in their use with students.

### ***Lewis & Clark Bicentennial***

O & E assists the Director to represent MDC on the Missouri Lewis & Clark Bicentennial Commission, chair its Agencies Task Force, and represents conservation thinking through its Education and Events task forces.

We coordinate with other agencies to involve conservation topics in interagency Lewis and Clark products including interpretive signs, maps, educational and public information materials, and work with partners to assure that the 1000+ participants in the 2003 national meeting of the Outdoor Writers of America Association will focus national and positive interest in Missouri's natural resources.

We provide public programs and exhibits, including hand-carved dugout canoes, a scaled-down keelboat replica, and resource professionals in period attire relating conservation perspectives. We emphasize school and public events (e.g. Education conference, IAFWA Directors' meeting, USFWS, DAR chapter meetings, etc.), using these tools to connect interest in the Lewis and Clark expedition with resource management and use issues important today. During FY02 staff exhibited at a dozen public events with more than 100,000 visitors, and presented eight school programs involving over 1000 students.

### ***Outdoor Skills***

Outdoor skills programs reached out to teach new skills to a variety of citizens. HOOT (Hands On Outdoor Training) involved 430 participants in four events; BOW (Becoming an Outdoors Woman) had 196 participants in two events; Beyond BOW included 62 participants in 5 events; and 60 participated at Concerns of Police Survivors Spouses Retreat. In addition, the skills staff participated in the Working Woman's Survival Show and the Black Expo in St. Louis, as well as in the Home and Garden Show in St. Joseph.

### ***Partnerships***

Section staff worked with a number of organizations and agencies including the Missouri Environmental Education Association and the Wonders of Wildlife Museum in Springfield.

## **Ozark Unit**

### **Education**

The Conservation Education Consultants (CEC) and Outdoor Skills Education Specialist (OSES) in the Ozark Unit conducted 124 pre-service, in-service, and accredited workshops reaching nearly 4,000 teachers and youth leaders. Workshops dealt with all facets of Missouri's natural resources including bird ecology, aquatic and stream ecology, cave ecology, and biodiversity. Teachers were also taught how to design and implement an outdoor classroom, how to teach journaling using nature as a context, and how to teach conservation using children's books.

Over 7,000 teachers were contacted in FY02 by CEC's, discussing conservation education opportunities, curriculum development, and other MDC programs. Education staff presented school programs to over 22,000 students during this past fiscal year. Education staff exhibited or presented at 13 conferences where they talked with 2,000 teachers.

Outdoor skills events included 144 urban fishing clinics reaching 1,904 participants. These participants came from nursing homes, group homes, kids-at-risk organizations, and senior citizen groups. Two hundred and fifty young people participated in an outdoor skills camp. This camp taught archery, air rifle, fishing and aquatic ecology.

Staff presented 19 outdoor skills related programs to over 285 people at the Wonders of the Outdoor World (WOW) event.

Staff were involved in many special events including Conservation Field Days at the Clinton office, Water Festivals in West Plains and Rolla, Kids Fishing Days in Springfield and Carthage, and Southwest Region's Great Outdoors Day. Staff in East Central Region coordinated two Youth Conservation Corps crews this year, one in cooperation with Rolla Workforce, and the other in Washington, MO.

### ***Shepherd of the Hills Fish Hatchery Conservation Area***

The hatchery received 234,500 visitors, up 14,000 from FY01. Of those, 26,330 viewed the White River Rainbows video. Two hundred and fifty hatchery tours were given to 5,394 visitors. The Vulture Venture special event drew 400 participants, and the annual Family Fishing Fair in June involved 444 participants. Interpretation at the Henning Conservation Area was well received by the public with a contract naturalist conducting 63 guided hikes and programs.

### ***Springfield Conservation Nature Center (CNC)***

Visitation continues to grow at the CNC with 102,618 building visitors and 305,812 trail users. People receiving programs by CNC staff numbered over 30,300 people. Special events included Outdoor Hazards, Insect-O-Rama, Super Scout Saturday, Naturescaping, Eagle Days, Halloween Happening, Family Fun Night, Earth Day Work Projects, and Primitive Skills Day.

### ***Joplin Public Service Office***

Visitation to the new Joplin Public Service Office continued to increase, with 4,214 walk-in visits and 6,686 phone calls. Permit and gift shop sales increased as well. Staff initiated a series of educational programs for adults in the area.

### ***Wonders of Wildlife Museum Education Program***

The Department entered into an agreement with the American National Fish & Wildlife Museum in Springfield to coordinate the museum's education programs. The Education Director and two instructor staff were hired as MDC employees and began developing programs for implementation in FY03.

### ***Outreach and Media***

Regional Supervisors focus on media contacts and outreach. Staff wrote 694 print articles. They did 153 radio shows or interviews, and were involved in 91 television broadcasts. In addition they coordinated or participated in special events and fairs reaching 230,000 Missourians.

## **Missouri River Unit**

### **Education**

Kansas City's teacher resource center served 920 teachers. Region-wide, 1,218 teachers attended 43 workshops on a wide range of conservation education topics. Many programs were provided, with one CEC reporting 49 programs to 1,881 people and 58 contacts in 14 schools to design and develop outdoor classrooms.

Major events such as the Endangered Species Run, Prairie Day, 20th Anniversary of Design for Conservation, Forest Centennial, Days With Wildlife, Lewis and Clark programs, Two Mile Prairie School Prairie Day, Youth Hunter Education Challenge, National Hunting and Fishing Day Celebration, Hooked on Fishing—Not on Drugs, Eagle Days, Summer Splash, Learning and Retirement Float Trip, Autumn Outdoors, Forest Centennial,



Afternoon with Artists, Holiday Array, Eagle Days, Nature Quilt Show and Scout Day attracted thousands of participants. We also participated with displays or programs at the FFA State Convention, Earth Day, MO River Festival, several Sport Shows, Health Fairs, Envirothon, etc.

92 urban fishing events in Kansas City involved 1,140 people, of which 590 were with the 60 disabled groups served. 50 people attended two Carp Camps.

### ***Runge Conservation Nature Center***

In FY2002, Runge had total building visitation of 80,713, including hosting 225 group meetings with 6,348 people. In addition, the nature center hosted 11 special events with total participation of 8,250. Interpretive staff presented 481 programs to 27,398 people, and volunteers presented an additional 168 programs.

### ***Burr Oak Woods Conservation Nature Center***

Burr Oak Woods' building visitation was 83,473, with estimated grounds visits by 250,000. This includes on-site Program attendance of 26,274 visitors in 623 programs and off-site program attendance of 6,173 people in 38 programs.

### ***St. Joseph Regional Office***

St. Joseph Regional Office provided 142 naturalist programs with 6,265 attendees.

### ***Kansas City Zoo***

At Kansas City Zoo total program attendance was 31,050 @ 235 Programs for General Public (25,000 participants) and 58 School Programs (6,050 participants).

### ***Discovery Center***

The Discovery Center in Urban Kansas City was dedicated in April. From April through June, the Discovery Center held 110 meetings and 63 student education workshops with visitation of 14,024.

### ***Outreach and Media***

Outreach and Education staff in the Missouri River Unit provided a wide range of services to and through the media. These include regular features like 2 weekly columns (19 newspapers), 2 weekly radio shows, a weekly TV feature, a monthly 30-minute educational TV program, a monthly TV show appearance and a monthly radio appearance and special appearances on other programs. Missouri River Unit O&E staff report 50–75 media contacts weekly, initiating or assisting with TV, radio and print coverage of a wide range of topics. These include public interest topics (e.g. fish stocking, regulations changes, returning firefighters and nuisance goose roundups); MDC special events; state and regional issues (e.g. vandalism on areas, elk reintroduction, hunting safety, fish health advisory, stream degradation/development, wildlife disease, prairie restoration); training and educational opportunities; and department areas and facilities.

## **Mississippi River Unit**

### **Education**

Mississippi River Unit O&E staff conducted 1075 in-service, pre-service, and accredited teacher workshops reaching 1,861 teachers and youth leaders. Workshops dealt with all aspects of Missouri natural resources and educational activities including caves, swamp, wetland, forest and prairie ecology, nature journaling, and educational assessment. Training was conducted in Project WET, Project Wild and Project Learning Tree activity use. Additional workshops were conducted for about 128 teachers in the use of conservation education trunks—collections of thematic teaching aids that are available for checkout from staff.

School or off site programs were presented to 8,646 students and youth. Unit staff exhibited or presented at 12 education conferences where approximately 3,000 teachers were contacted.

Urban fishing, therapeutic fishing and outdoor skills camp served 1,470 participants. Staff coordinated or participated in special events reaching 10,000 participants. These included Eagle Days, Prairie Day, Duck Days, Earth Day, Evening with Wildlife, Wetland Discovery Days, Envirothon and others. In addition, Northeast Region hosted a week-long Quail Academy for 20 high school students. Staff also assisted with the North American Prairie Conference held in Kirksville.

### ***Powder Valley Conservation Nature Center***

Powder Valley hosted nearly 100,000 visitors in FY02, and over 18,000 of those visitors received a program. The nature center is a popular meeting site and 4,690 people attended 214 meetings at the site. Clerical staff handled over 25,000 phone calls. A lightning strike early in the year damaged the lights and sound system in the auditorium.

### ***Rockwoods Conservation Area***

The Interpretive staff at Rockwoods conducted programs for over 10,000 area students on a variety of Conservation related topics from Backyard Wildlife for preschoolers to Karst Topography for High Schoolers, along with three special events, Scouting for Badges, A Day In The Forest and Maple Sugar Festival. These diverse programs and special events reflected the unique diversity of the area and the staff. The highly popular and successful Frontiers program honored two of its members with the Conservationist Award, the highest level of achievement in the program, the Rockwoods Chapter has awarded 15 of the 32 Conservationist awarded in the history of the program.

### ***Busch Conservation Area***

Interpretive programs at the Busch Conservation Area focused on aquatic education. Two special events, Wetlands for Kids and Kids Fishing Fair, reflected that focus. Busch Area staff presented 399 programs to over 12,000 participants.

### ***Soulard Office***

The Soulard office provides a Department presence in the heart of St. Louis. Phone calls and walk-in contacts continue to increase at that site. Permit sales were added to the gift shop offerings this year. Forty-two YouthBuild students completed 60 hours of conservation education programs in association with our agreement with that group. Additionally, six neighborhood associations were served by staff from the office. Neighborhood nature walks and a holiday program were held.

### ***Cape Girardeau Nature Center***

Planning continued for the new nature center at Cape Girardeau. Exhibits continue to be planned with appropriate review at each stage of finalization. Landscaping plans will utilize native Missouri plants and blend with the landscape of the county park. A leasing agreement has been established with the Cape Girardeau County Commission.

### ***Outreach and Media***

Media coverage in the St. Louis Region included both regular and special coverage on television and radio. Weekly appearances were scheduled on some television stations ranging from the Winter Trout Program and Gypsy Moths to tree pruning and fire prevention. Other coverage included a breadth of urban wildlife topics, stream and forestry related topics. Special coverage was achieved on items or events of staff concern (the goose roundup) and for at least seven special events being held at Department areas. Paid advertising was utilized for the Big River Festival, a landowner workshop and the Envirothon. The "Making Tracks" newsletter reaches over 6,000 people and includes information on conservation and special events.

Outreach and Education Regional Supervisors in Cape Girardeau and Kirksville coordinate media activities in those regions. Media efforts in the Southeast and Northeast Regions resulted in 96 interviews, stories or press releases relating to conservation activities, concerns, and opportunities as well as nature informational items.

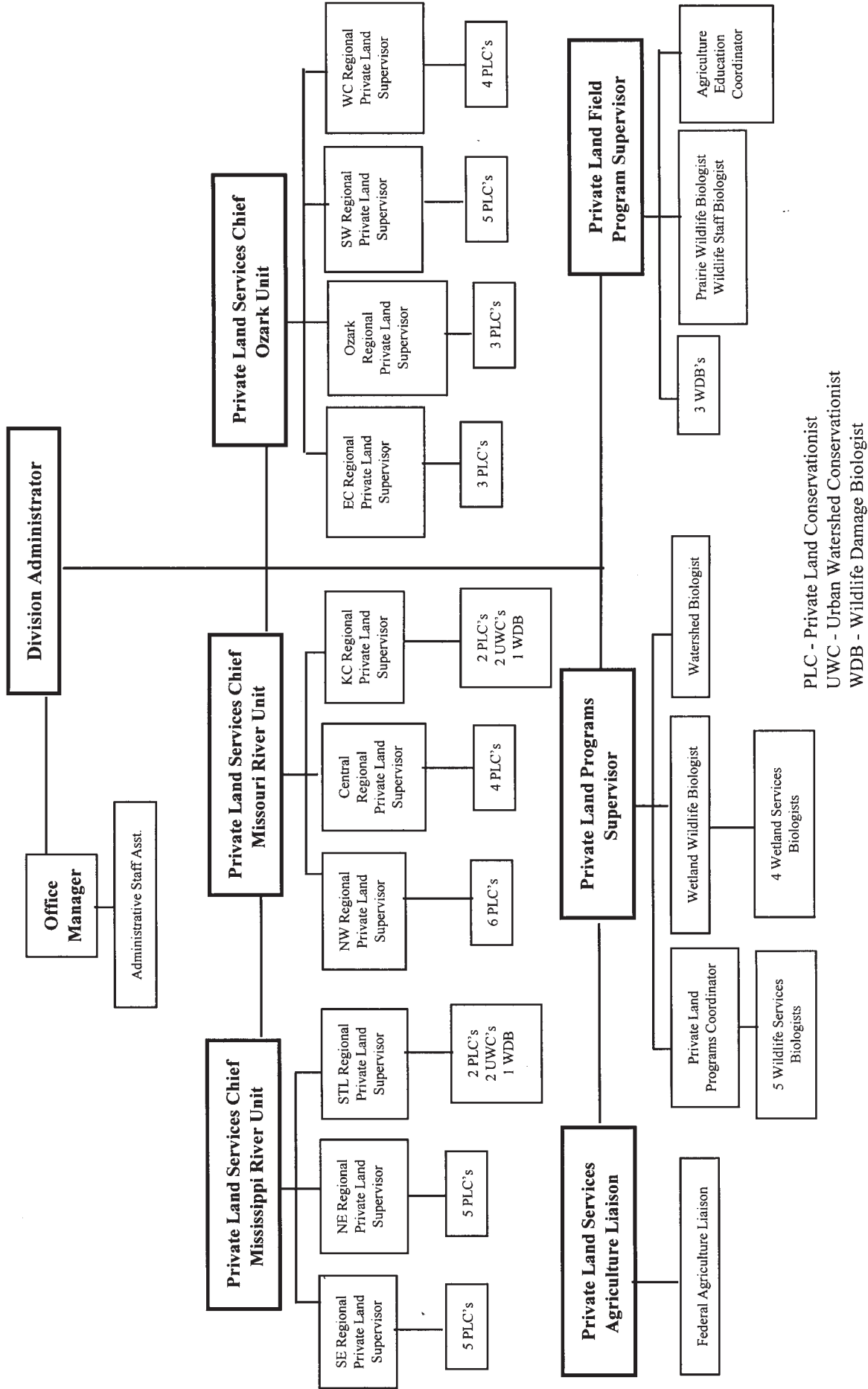


Venues in both regions included television, radio and print media. Additionally, at least one regional television station began airing Missouri Outdoors and regularly using Department news clips as a result of media relations efforts.

### ***Community Relations***

Community relations in the St. Louis Region included working directly with the Confluence Greenway in developing the concept of a Great River Resources Center around the confluence of the Missouri and Mississippi Rivers. This involves a complex private/public partnership that includes several state agencies. Staff were also involved in the development of a community conservation education center, The Green Center, in University City. This renovated historic house and grounds with native landscaping will provide a forum for community-based conservation education and activities. Staff also serve on the Open Space Council, a nonprofit organization dedicated to the protection and enhancement of open space in the greater St. Louis area.

Private Land Services Division Organizational Chart - November 2001



PLC - Private Land Conservationist  
 UWC - Urban Watershed Conservationist  
 WDB - Wildlife Damage Biologist

## PRIVATE LAND SERVICES DIVISION

**Mission: Help landowners achieve their land use objectives in ways that enhance the conservation of Missouri's natural resources.**

The future of many wildlife species and the health of our natural resources depend on private landowners, and their commitment to the implementation and provision of good land stewardship. Often professional technical and financial assistance is needed to successfully provide and manage those resources. The Private Land Services Division completed its first full year of service to Missouri's private landowners in FY01. The Private Land Services Division employs a staff of eighty-two individuals to address landowners' fish, forest, and wildlife concerns in the state. With ninety-three percent of Missouri's landscape in private ownership, providing information and expertise to interested individuals and organizations is critical to long-term sustainability of our natural resources. FY02 proved to be another very successful year for the Private Land Services Division with expanded partnerships, new initiatives, and increased landowner requests for assistance.

### **MDC Strategic Goal #2—Preserve and Restore the State's Biodiversity**

#### **Strategic Issue—Tallgrass Prairie Conservation**

#### **Strategic Issue—Control of Invasive Exotic Species**

**Grow Native:** The mission of Grow Native is to: "Increase diversity of natural urban and rural vegetation communities." Grow Native is working to increase the interest and availability of native plants, including native wildflowers, trees, and shrubs. Grow Native is increasing the number of areas that are appropriately recreated using native grasses and forbs, development of high-visibility native display gardens throughout the state, and encouraging increased participation of private land agricultural enterprises in the use of native plants resulting in increased forage diversity, wildlife habitat, and improved water quality.

**Purple Loosetrife Control Program:** This year, 2002, was the twelfth year of an effort to control purple loosetrife within Missouri. This very invasive plant was introduced from Europe and is causing devastating impacts in many other states. During the 2002 treatment year, 131 private landowners in 38 counties were contacted for treatment of purple loosetrife populations. We are seeing a significant reduction of populations where treatment has been consistently applied, but new sites are becoming evident along the Missouri River. These new infestations are likely due from seed deposited from recent floods. In addition to the traditional treatment of herbicide applications, biological control methods are also being tested. Preliminary results from the biological controls look very promising.

### **MDC Strategic Goal #2—Preserve and Restore the State's Biodiversity**

#### **Strategic Issue—Wetland Diversity**

#### **Strategic Issue—Missouri River Habitat Enhancement Opportunities**

Wetland Wildlife Biologists and Private Land Conservationists (PLC's) provide the primary delivery of wetland technical assistance to landowners. FY 2002 accomplishments include the following:

- PLC's provided 168 wetland related landowner site visits
- Technical assistance was provided on over 32,000 acres of privately owned wetland and riparian habitats and 25 miles of stream habitat
- The Missouri Agricultural Wetland Initiative developed 9 sites to demonstrate the compatibility and benefits of wetlands to agricultural operations. This Initiative is a partnership effort between MDC, National Fish and Wildlife Foundation, and Missouri Corn Growers, including shared funding and technical expertise.

Since 1992, Wetland Services Biologists have partnered with NRCS to restore 89,877 acres on 615 sites in 66 Missouri counties. Wetland and associated habitats restored during the past 10 years through the Wetlands Reserve Program:

- Emergent Wetlands 35,052 acres
- Forested Wetlands 46,736 acres
- Upland 5,393 acres
- Riparian 1,798 acres
- Other 899 acres

**Fiscal year 2002 accomplishments include the following:**

- Administration of 95 WRP tracts
- Restoration of 3,883 acres of seasonally flooded and emergent marsh
- Restoration of 5,177 acres of forested wetlands
- Restoration of 228 wetland acres MDC Cost-Share funds.

**MDC Strategic Goal #2—Preserve and Restore the State’s Biodiversity**

**Strategic Issue—Tallgrass Prairie Conservation**

**Strategic Issue—Prairie Chicken Population Decline**

**Strategic Issue—Decline in Quail and Rabbit Populations**

Private Land Services Division staff made significant contributions in FY 2002 to grassland and prairie habitats and to the management of early successional vegetation and related habitats. Increased partnership efforts with various non-governmental organizations and related agencies greatly expanded the ability to improve these habitats on private land.

- PLS staff provided 775 grassland related landowner site visits
- Technical assistance was provided on 37,956 grassland acres
- Provided \$40,158 for herbaceous vegetation establishment
- Provided \$12,785 for control of invasive grassland plant species
- Provided \$28,853 for prescribed burning
- Provided \$2,489 for woody edge enhancement
- Conducted numerous landowner workshops on grassland management, prescribed burning, and grazing
- Hosted a Grassland Evaluation Contest
- Coordination with Missouri Department of Transportation staff on roadside vegetation management

**MDC Strategic Goal #3—Educate the Public about Fish, Forest, and Wildlife Conservation**

**Strategic Issue—Conservation Education**

**Strategic Issue—Human / Wildlife Conflicts**

A major focus of Private Land Services Division field staff is to provide educational materials and information to landowners and individuals interested in habitat management. In addition, several staff members are devoted solely to assist with educational efforts relating to agriculture education and wildlife damage. Fiscal year 2002 accomplishments include the following:

- Provided prevention training on-site to 492 landowners for nuisance wildlife complaints
- 2,489 contacts (phone, e-mail, mail) to wildlife damage concerns
- 64 wildlife damage workshops conducted—total of 3,393 participants
- Assisted with the revision of three wildlife damage publications
- Coordination of the River Otter Task Force, Nuisance Urban Goose Implementation Team, Feral Hog Task Force, and the Mt. Lion Response Team
- Damage Biologists dealt with 27 black bear situations where bears caused minor damage or were frequenting developed areas

- Provided support for passage of state statutes on feral hogs and coordinated activities to minimize giant canada goose problems in which 4,286 eggs were destroyed and 523 geese were euthanized or relocated
- Assisted with the evaluation of snares and negotiated installation of permanent fencing to demonstrate/evaluate its effectiveness for keeping river otters out of ponds
- Assisted with curriculum design and development for vocational agriculture educators and students
- Developed workshops for FFA Summer Leadership Camp
- Promoted agriculture education and FFA as a means to implement conservation practices on private lands

#### **MDC Strategic Goal #4—Helping Landowners Manage Their Land for Sustainable Resources**

##### **Strategic Issue—Private Land Stewardship**

##### **Strategic Issue—Increasing Use of Missouri’s Forest Resources**

Private landowners across Missouri are eligible to receive technical and financial assistance to implement habitat management activities through MDC’s Landowner Assistance Program. The Private Land Services Division has administrative and fiscal responsibility for the program with implementation at the field level being the responsibility of all divisions. In addition, the Private Land Services Division has staff co-located in NRCS area offices to deliver wildlife planning assistance through various state and federal programs.

- \$816,085 was distributed to landowners completing multiple habitat management practices through the Conservation Department’s Cost Share Assistance program
- Private Land Services Division staff made on-site visits with 2,162 individual landowners
- Conservation planning assistance was provided to private landowners on approximately 119,344 acres of upland habitat
- Wildlife Habitat Improvement Program (WHIP) provided approximately 2,500 landowners with nearly 250,000 pounds of various seed and food plot mixes
- Landowners Assisting Wildlife Survival (LAWS) practice, which provides strips of vegetation and crop around agricultural fields, impacted 696 acres on 315 individual landowners

Fiscal year 2002 provided expanded opportunities for fish, forest, and wildlife benefits through the 2002 Farm Bill. In addition to the Wildlife Services Biologists, the Private Land Services Division provides funding and maintains a cooperative agreement with NRCS to staff Wildlife Conservationist (WC) positions across the state. Due to promotions, transfers, and employees leaving service, the number of WC’s varied from five to seven throughout FY02. Private Land Conservationists also contributed to the following program accomplishments for the Wildlife Habitat Incentives Program (WHIP) and the Environmental Quality Incentives Program (EQIP):

- \$1,270,445 obligated to fish, forest and wildlife resources involving 92 landowners
- 218 acres of prairie, glade, and savannah restoration
- 438 acres of wetland habitat enhancement
- 3,554 acres of early successional habitat managed/developed
- 4,662 acres of forest management applied
- 7,957 of upland habitat management applied
- 71 acres of riparian habitat enhanced
- 145 acres of management benefiting threatened and endangered species

#### **MDC Strategic Goal #6—Integration of Conservation Principals into Urban Lifestyles**

##### **Strategic Issue—Connecting with Urban Constituents**

##### **Strategic Issue—Urban Sprawl and Natural Resources**

The Private Land Services Division has four Urban Watershed Conservationist (UWC) positions, two each in Kansas City and St. Louis metro areas, that deliver natural resource technical services at the municipal, county and regional level. Their mission is to work with communities, urban planners, and developers to make

informed land use decisions that enhance the conservation of Missouri's forest, fish and wildlife resources. Urban Watershed Conservationists act as the key point of contact to address complex environmental issues.

- Urban Watershed Conservationists established and strengthened relationships with state and federal agencies, local and regional governments, private organizations, and citizen groups
- Provided extensive assistance with project development (i.e. conservation subdivisions, prairie restorations and community/regional planning for conservation)

### **MDC Strategic Goal #7—Effective Conservation Partnerships**

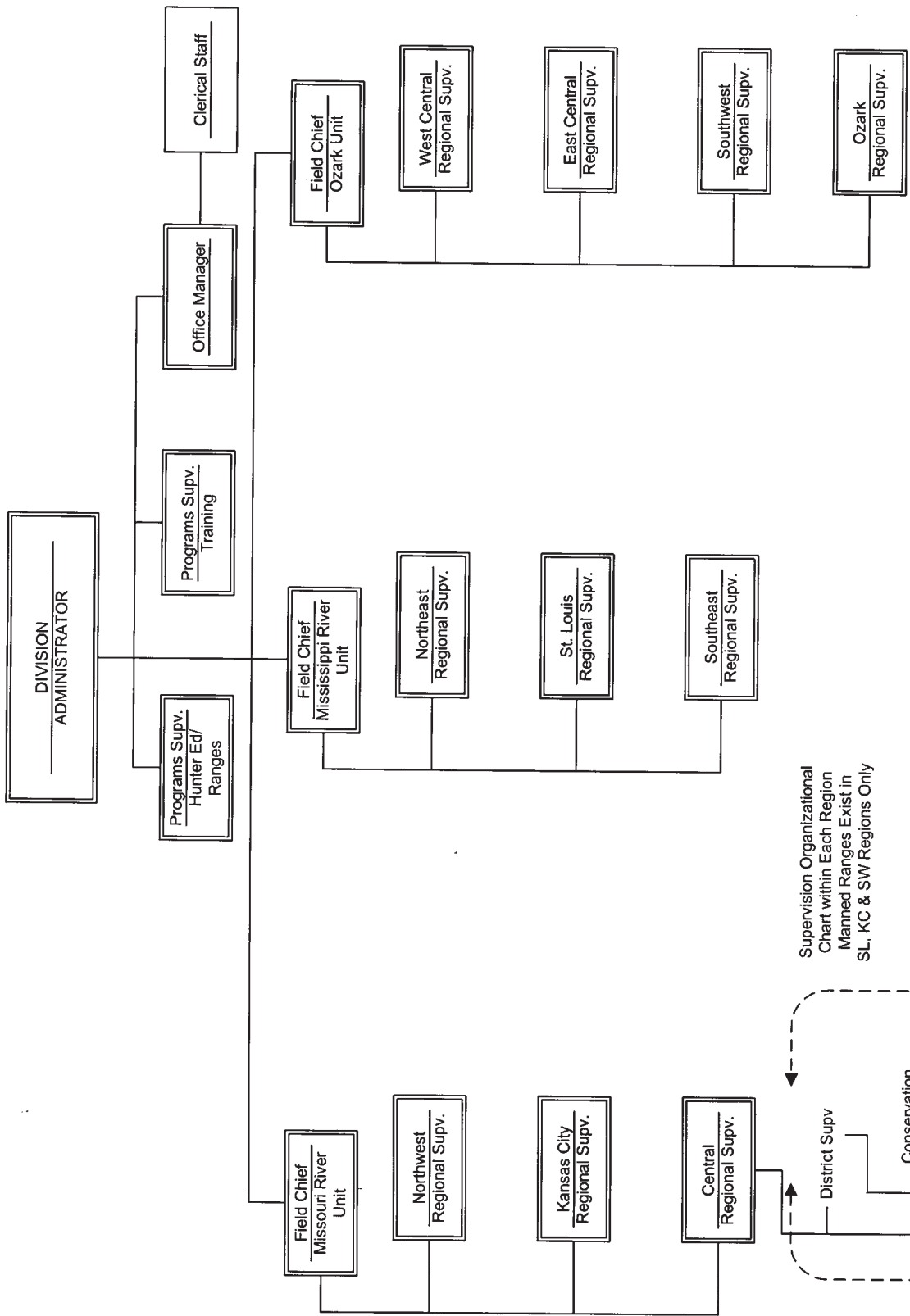
#### **Strategic Issue—Leveraging Department Funds**

#### **Strategic Issue—Information Sharing Among and Between Conservation Interest Groups and Stakeholders**

A primary goal for the Conservation Department is the development of effective conservation partnerships. Private Land Service's staff works to strengthen and improve communications between the Department and state and federal agencies and private organizations involved in agricultural and wildlife habitat management efforts.

- Effective use of non-governmental partners and agency partner financial contributions
- Matched Quail Unlimited on a 1:1 basis for a total of \$100,000 to implement the Missouri Quail Habitat Initiative
- Obtained over \$28,000 from the National Wild Turkey Federation for habitat implementation and equipment purchase
- Agriculture Liaison provides MDC point of contact for statewide agricultural resource user groups
- The Stream Stewardship Grant Program was implemented in cooperation with the Missouri Conservation Heritage Foundation
- Approximately \$159,000 was collected in FY02 through the Stream Stewardship Grant for use in protecting Missouri's stream resources

# Protection Division



Supervision Organizational Chart within Each Region Manned Ranges Exist in SL, KC & SW Regions Only



## PROTECTION DIVISION

Protection Division administers several vital programs within the Department of Conservation. These include wildlife law enforcement, hunter education, shooting ranges, information and education and fish, wildlife, and forest management services for Missouri citizens. Conservation agents are the official representatives for the Conservation Department in their districts. The Mission Statement for Protection Division:

*To serve people through the protection and management of forest, fish and wildlife resources within Missouri by a diversified program of dedicated law enforcement, education and active involvement in other Department programs.*

In 1937, the new Conservation Commission assigned to conservation agents the important role of implementing and carrying out the responsibilities and authority vested in the Commission by the Constitution of Missouri. While Protection Division is charged with the responsibility for resource law enforcement, agents perform many other duties. Protection Division is involved at some level with each of the Department's functional areas.

Because of the nature of their work, conservation agents must have a broad working knowledge of all Department programs and areas of Department responsibilities. New agents are required to have a B.S. degree in law enforcement, forestry, wildlife, fisheries management or related sciences, and must also successfully complete 26 weeks of intensive training before assignment to a district. After completion of training, the Missouri Department of Public Safety issues a Peace Officer Standards and Training Certificate attesting that the agent has completed 1000 hours of POST Certified law enforcement training. In-service training is provided annually in accordance with changing resource conditions and law enforcement standards.

Protection Division consists of 212 commissioned agents with full peace officer certification. There are 25 non-commissioned personnel including office and training center staffs. Administrative planning and research programs provide direction and training to improve the efficiency of Protection Division activities. Also, a special investigation unit conducts major resource violation investigations. Protection Division coordinates the Department's hunter education training program which became mandatory for Missouri hunters in January 1988. Outdoors Skills Supervisors also conduct hunting and trapping seminars, youth hunts and clinics, resource ethics programs, complete hunting accident investigations and inspections of Department shooting ranges. Training center personnel manage manned ranges and conduct a wide variety of classes and programs.

Wildlife law enforcement efforts to maintain compliance with the Code and enforcement of other state laws for the safe public use on Department-owned lands represent a major portion of Protection Division's workload. Nearly equal priorities have also been established for wildlife management and public service programs. Conservation agents are trained to provide technical assistance and advice to landowners interested in improving wildlife populations and habitat to their lands. Balanced programs of community relations are maintained in assigned counties. Agents conduct programs for public information and education through frequent contacts with news media, youth groups, sportsmen's clubs, civic groups and schools.

Conservation agents are actively involved with the W.H.I.P. and L.A.W.S. and other Department habitat improvement programs. They also assist Private Land Conservationists with private landowner habitat work. Conservation agents inspect ponds up to three acres in size for which stocking requests have been received, and agents are frequently the first contact for landowners who wish to stock larger impoundments. Many times fish stocking requests generate other discussions between landowners and conservation agents on wildlife habitat management, wildlife law enforcement cooperation, and other MDC issues.

In addition, conservation agents routinely make contacts with landowners who have wildlife depredation or nuisance problems, poaching or trespass problems, and a host of other needs. Protection Division knows that one-on-one contacts with landowners and other citizens of Missouri are essential in maintaining public support for our programs, improving the image of the Department, and getting the "conservation message" to the public. Protection Division uses these formal programs not only to directly improve wildlife/fish habitat, but also as positive community relations tools.

# CONSERVATION AGENT STATISTICAL ACTIVITY REPORT

July 1, 2001—June 30, 2002

## 1. ENFORCEMENT

A. Resource Contacts	216,311
B. Violations Noted	33,197
C. Written Warnings	<u>3,897</u>
<b>D. TOTAL Arrests</b>	<b>13,715</b>

## 2. INFORMATION & EDUCATION

A. Adults/Youth Meetings	6,193
B. Exhibits	1,761
C. Radio/TV Programs	9,877
D. News Articles	<u>4,882</u>
<b>E. Hunter Safety Students Certified</b>	<b>37,930</b>

Conservation agents' enforcement hours include time spent enforcing littering, trespass laws, and special regulations on conservation areas. Resource contacts occur when a conservation agent makes personal contact with resource users for the purpose of inspecting permits, wildlife, or investigating violations of wildlife regulations. Youth or adult meeting numbers result when conservation agents make a personal presentation to groups. Radio and TV contacts include live programs, taped interviews, and public service announcements. Management hours include both time spent on individual landowner contacts, and on wildlife surveys for other divisions.

Hunter Education certification is required for purchasing any type of firearms hunting permit for persons born on or after January 1, 1967. This creates a big demand for hunter education classes with Missouri having nearly one million hunters.

From July 1, 2001 through June 30, 2002, outdoor skills supervisors coordinated 1,051 hunter education classes. There were a total of 34,088 graduates from these classes which were taught by outdoor skills supervisors and conservation agents, and a cadre of 2,053 volunteer hunter education instructors. The volunteer instructors are coordinated and assisted by the outdoor skills supervisors and conservation agents.

All hunting incidents that occur in Missouri are investigated by Protection Division. Any hunting incident that involves a shooter and a victim is investigated by a certified hunting incident investigator.

From July 1, 2001 through June 30, 2002, investigations were completed on a total of 36 hunting incidents. Of these, 33 were non-fatal and 3 were fatal.

Detailed investigations provide a lot of information that point to the causes of incidents. This allows Protection Division to customize the hunter education program to address recurring causes and this has contributed to the downward trend in hunting incidents.

A hunter who is found to have inflicted injury to someone else through a careless act can have their hunting privileges suspended for up to five years.

Parma Woods Training Center and Range, the Department's fifth training center, has been completed and opened November 7, 2001. The training center and range consists of a 25 firing point baffled rifle range with target distances to 100 yards along with a classroom capable of seating on 150 people. The facility and surrounding land is managed by the Protection Division and includes a series of hiking trails. A fire during the summer of 2002 caused major damage to the range. A joint effort between Design and Development Division and Protection Division rebuilt the firing line portion of the range which allowed the facility to re-open in November just in time for deer hunters to be able to use the range to sight in their rifles.

Operation Game Thief continues to grow in terms of number of calls received and percent of calls resulting in arrests (which is an indicator of both quality of violation information received and quality of information dispatching). Last year, Operation Game Thief (OGT) produced 215 court cases completed from 698 telephone calls.

The Cole County Sheriff's Department has been answering OGT calls after normal working hours, on weekends and on holidays since the fall of 1993. Both the quality of violation information elicited from callers and the speed with which that information is relayed to the field has been much improved. This increase in efficiency seems to be enhancing the entire OGT program. We are finding that trained law enforcement professionals are better able to "pull" more information from callers by knowing what questions to ask.

Missouri is the Chair of the Interstate Wildlife Violator Compact. The Compact is a legal organization of the wildlife agencies of 19 member states that agree to reciprocally honor each other's revocations/suspensions of hunting, fishing and trapping privileges. Currently, Compact member states are: Arizona, California, Colorado, Idaho, Indiana, Iowa, Maryland, Minnesota, Missouri, Montana, Nevada, New Mexico, North Dakota, Oregon, Utah, Washington, Georgia, Illinois, and Wyoming. This compact benefits wildlife resources by being an additional deterrent to violating. It benefits participating states by relieving enforcement personnel from having to bond or incarcerate suspected violators, and it relieves non-residents for the expense and embarrassment of incarceration and bonding.

**Suspensions are based on either single major violations, or an accumulation of several violations such as:**

- 1) Multiple counts of illegal take/possession of big game.
- 2) Illegal take/possession of big game, and other associated violations.
- 3) Use of artificial light to take big game (alone or combined with associated violations).
- 4) Unlawful sale/purchase of wildlife.
- 5) Gross over-bag (2X daily limit) of any wildlife
- 6) Willful destruction/wanton waste of big game.
- 7) Unlawful take or possession of endangered species.
- 8) False statement/license fraud (multiple counts).
- 9) Felony wildlife violations.
- 10) Purchasing or exercising the privileges of a license while under suspension.
- 11) Habitual violator (conviction of wildlife violations in multiple violation incidents, in one or more states participating in the Compact.

On January 1, 2000, a computerized system went on-line to track and quantify severity of multiple wildlife violations. Each wildlife violation conviction that occurs after January 1, 2000 automatically triggers Department computers to "read" the violation history of the violator for the five-year period previous to the conviction date and assign points for each violation. Points are awarded based on severity and timing of accumulated violation convictions. When a total of 16 points are reached, the violator is notified that the Conservation Commission is considering suspending their hunting, fishing, and trapping privileges and is then afforded an opportunity for an informal hearing. Pending results of the informal hearing, a recommendation whether or not to suspend, and for the period of suspension is sent to the Commission.

Privilege suspensions normally range from one to five years, and in extreme cases privileges can be revoked for life. During the 2002 fiscal year, 3,313 privileges have been suspended by the Commission for violations and hunting incidents.

The Missouri Department of Conservation has reason to be proud because of the effort put forth to make Share the Harvest a success. In 1994, seven programs were authorized which involved eleven deer processors and eight charitable organizations. In 1995, when conservation agents began more actively promoting Share the Harvest, 25 different programs involving 44 deer processors and 25 charitable organizations were approved. Two hundred thirty-six successful hunters donated more than 3,200 lbs. of venison in 1994. The program is growing and many needy families are receiving venison from hunters who want to share their successful hunt.

During the 2002 fiscal year, 1,623 hunters donated 76,171 pounds of venison to needy Missourians. Hunters donating venison to the program pay for the processing and tell the processor how many pounds of meat they want to donate. Hunters who wish to donate their entire deer may receive \$25 payback from the Missouri Conservation Federation. The funds for the payback program are derived from a unique partnership between

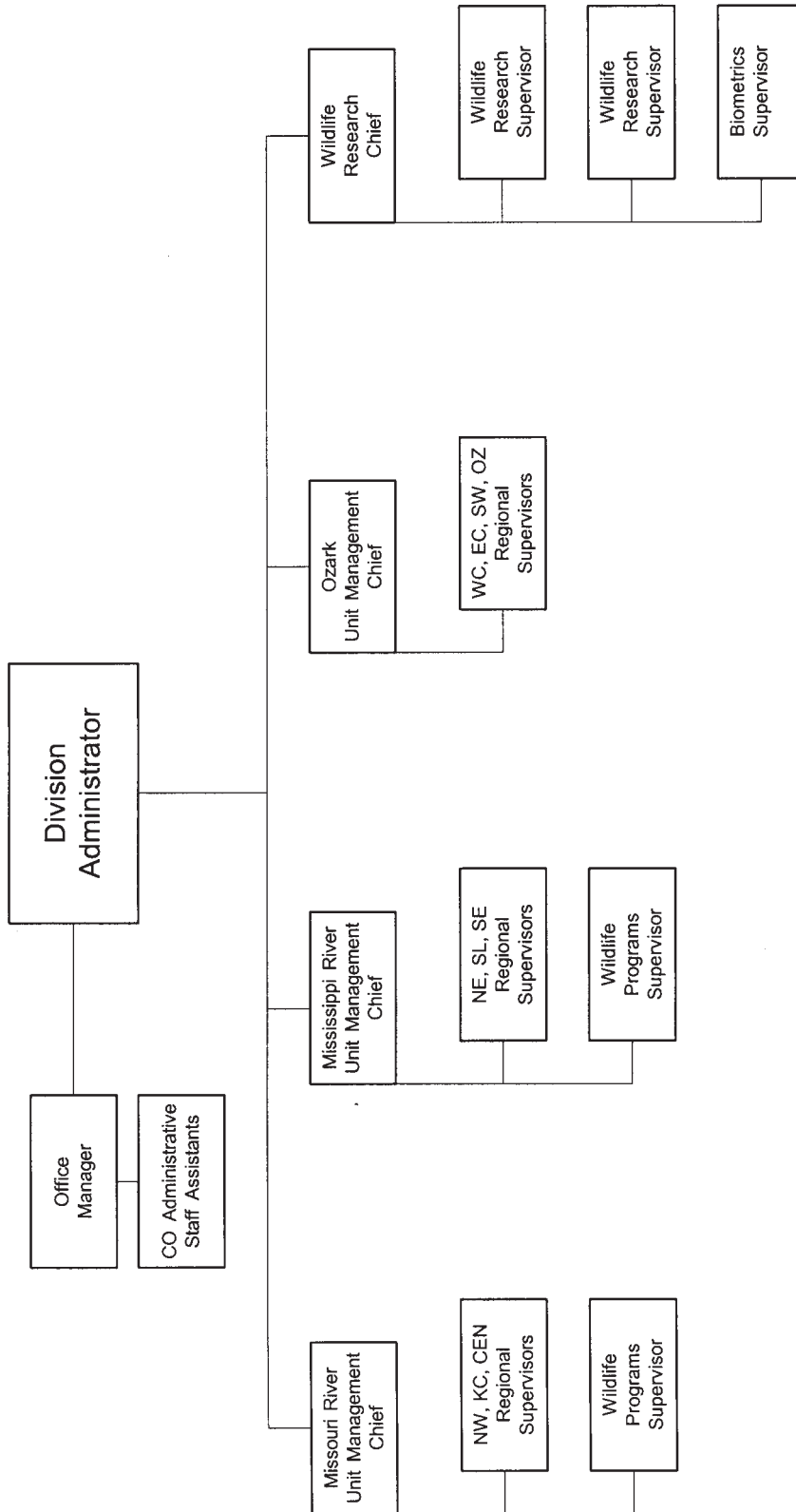
the Missouri Department of Conservation, the Missouri Conservation Federation, Shield of Shelter Insurance, and Bass Pro Shops.

Guidelines for the program require volunteer clubs who wish to sponsor the program to select a charitable organization(s) which will distribute uncooked venison directly to needy families or individuals. The sponsoring club then coordinates with the Department of Conservation licensed meat processor who agrees to participate. The processors must also be subject to inspection by the USDA. The club must then write the Department of Conservation and request authorization to participate. If the local conservation agent approves the volunteer club's choice of meat processors and charitable organizations, the club will receive written authorization, instructions, and forms for recording names of both venison donors and recipients. Participation in the program is authorized for one year and must be renewed annually.

The Missouri Wildlife Code provides for the director to authorize special exemptions to physically disabled persons allowing them to hunt and take wildlife by methods not otherwise legally permitted. This program (Hunting Method Exemption Program) is administered by Protection Division. Through this program, physically disabled people can receive exemption from legal hunting methods as long as their disability prevents them from hunting by using prescribed methods.

Persons who wish to receive a hunting method exemption must apply on a special form, which is reviewed by Protection staff. This is done to insure the request is feasible, and the disability is of such a nature and extent as to make hunting by prescribed methods impossible. In FY02, Protection Division processed 2,577 exemption requests.

# WILDLIFE DIVISION



## WILDLIFE

Wildlife Division is responsible for the management of Missouri's wildlife resources to best serve the long-term interests of the people of the state. Our philosophy is that management means conservation professionals generating knowledge and using the best data, expertise, and values to make informed judgments thereby benefiting wildlife health and ensuring wildlife resources are in better condition tomorrow than they are today.

The roles that Wildlife Division hold in the Department are: (1) balancing wildlife resource needs with public expectations, (2) advocating wildlife conservation, (3) actively seeking ways to inform peers, cooperators and citizens about wildlife stewardship, (4) gathering information to improve management of wildlife, and (5) providing opportunity for all citizens to use, enjoy, and learn about wildlife.

Fulfilling these roles involves a wide range of programs including activities on public and private land and research. Administration of hunting seasons, public use, and maintenance of effective liaison with other agencies help ensure that wildlife and wildlife habitat receive full consideration in all land management activities.

The Division also provides a number of special services designed to aid people in many aspects of wildlife conservation. These include technical advice to individuals and groups interested in wild animals, multi-media events on wildlife topics including web page information, publications and reports, and consultation with other state or federal natural resource agencies.

Activities described on the following pages are directed towards achievement of the Division's primary objectives: (1) maintenance and enhancement of our state's wild animal populations, and (2) adequate provision for optimum public use and enjoyment of these resources.

### Special Programs

Special Programs personnel oversee Wildlife Division planning and administrative activities including fiscal responsibilities; conservation area, species management, and operational planning; coordination with other divisions; and administration of programs such as wildlife restoration, safety, special permits, and land acquisition.

**Goal:** Instill awareness and appreciation of wildlife through public contact, printed materials, and other media.

**Progress:** Coordinated development of *Conservation Currents*, *Conservationist* magazine articles, revision of *Mammals of Missouri*, management leaflets, *Waterfowl Hunting Ethics* video, continued revision of the Wildlife Research, Wildlife Division and MDC public web sites, and Division participation in Missouri Outdoors programs and at the Ozark Empire and Missouri State fairs. Provided input on weekly statewide news releases.

**Goal:** Provide additional hunting opportunities through Special Permits Program.

**Progress:**

1. Issued more than 42,000 no-cost Any-Deer and Bonus Deer permits to qualifying resident landowners to allow them to harvest deer on their property without purchasing a permit.
2. Conducted 65 Managed Deer Hunts in which 5,849 hunters took 2,256 deer.
3. Conducted 4 Youth-Only Managed Deer Hunts in which 141 youths took 53 deer.
4. Conducted first Youth-Only portion of the Firearms Deer season. Approximately 40,000 youths harvested 6,451 deer with no accidents reported.
5. Conducted second Youth-Only Spring Turkey season. Youths harvested 3,102 turkeys with no accidents reported.

**Goal:** Provide a variety of hunting opportunities through a Waterfowl Reservation System.

**Progress:** The Waterfowl Reservation System was re-established during the 1998 season in response to public demand and to provide equal opportunity for all Missouri hunters and to encourage novice hunters. Requests from over 10,000 hunters were processed in FY02 and nearly 8,000 reservation hunting opportunities were provided.



**Goal:** Coordinate planning within Wildlife Division.

**Progress:** Coordinated an ongoing integrated planning, budget, and accomplishment monitoring system. Coordinated Wildlife Division's input into the Department's Leadership Development and Competencies working group. Completed in cooperation with Fisheries and Forestry, a Research Program Review. Participated in MDC Program Review and Legacy Task Force.

**Goal:** Provide training sessions in resource management.

**Progress:** Identified Division-wide job level training program needs and coordinated with Human Resources to implement.

- Conducted wetland reviews on Fountain Grove and Ted Shanks Conservation Areas providing review and training opportunities for wetland managers.
- Conducted several vegetation identification workshops providing training opportunities for management biologists.
- Conducted a grassland review in the Southwest Region and a savanna review in the Ozark Region providing review and training opportunities for management biologists.

## Wildlife Management

Wildlife habitat management is conducted on 372 conservation areas totaling approximately 321,458 acres of Department-owned land and 179,465 acres of leased or licensed land. Management emphasis for each area depends on local conditions and may include projects for upland, wetland, forest or prairie habitat types. Demonstration practices are installed to acquaint landowners, hunters, birders and other citizens with methodologies for resource-sensitive land use practices. Implementation of habitat management is done according to plans developed through an interdisciplinary process. Existing soil, water, vegetative and cultural features are considered in area development. Wildlife resources having greatest potential for response are emphasized in area management. Recreational opportunities compatible with those resources are permitted as appropriate.

Private land management efforts are coordinated with related agricultural agencies, landowners, and Department field personnel. The overall goal is to improve wildlife habitat on all land types—grassland, wetland, cropland, woodland, and idle areas.

**Goal:** Continue land management projects on approximately 500,923 acres of land owned or leased by MDC, with direct habitat management on 174,900 acres.

**Progress:** Management techniques were implemented to improve wildlife habitat on 108,000 acres of open land, 7,300 acres of glades/savannas, 54,000 acres of wetland, and 5,600 acres of forest owned or leased by the Department.

**Goal:** Conduct habitat/farm planning with landowners.

**Progress:** Provided wildlife habitat improvement advice through 1,600 contacts with private landowners. The habitat types include cropland, forest, glade, grassland/prairie, habitat incentive programs, old field, urban/community, wetland, and wildlife damage. Participated in coordination meetings with other Department units to improve wildlife/farm planning involving forest and wildlife resources.

## Wildlife Research

Wildlife Research Section provides the scientific and technical support necessary to manage populations of wildlife, improve wildlife habitat and define levels of acceptable use of wildlife resources in Missouri, through generation of knowledge, so that management and administrative decisions can be made with more certainty.



**Goal:** Wildlife Research Section designs, implements, and reports descriptive and experimental research studies and long-term surveys and monitoring of wildlife populations, plant communities and recreation, for use in wildlife management decisions. These include species-specific studies and those that generate and integrate knowledge of animals and their biotic and abiotic environments. Emphasis is placed on integrated projects that require multi-disciplinary biological, ecological, and sociological expertise. The Section plays a lead role in encouraging and coordinating participation by other Divisions and other agencies in these projects.

**Progress:** Sixty-nine research and survey projects were ongoing in FY02, including studies of: waterfowl populations; ruffed grouse population surveys; small game hunter attitude survey; landowner deer attitude survey; white-tailed deer population modeling; mast yields in Missouri; development of a computerized system for analysis of radio-telemetry data; distribution of black bears and bear habitat in Missouri; population monitoring for the endangered Indiana bat; monitoring for Epizootic Hemorrhagic Disease, orphan fawn survival, influence of spring vs. fall flooding on wetland resources; estimation methods for measuring nest success using small area estimation with harvest survey results; river otter harvest and population monitoring; ecosystem-level, multi-disciplinary studies of riparian forest systems; oak/hickory forest systems; and wetland/riverine systems. Seven research projects were completed in FY02: Study 40, Job 1: Evaluation of vegetation structure and floristic composition on continuous and rotational grazing systems with 4 different stocking rates in north central Missouri; Study 48, Job 1: Missouri landowner attitudes towards deer and deer population management: landowner attitude survey; Study 52, Job 1: Techniques for prairie reconstruction; Study 54, Job 1: Bat call detection distance and *Myotis* species discrimination using anabat; Study 55, Job 1: Tests of covey call count method as an estimator of quail density; Study 76, Job 1: Turkey hunter information survey; and Study 79, Job 1: Development and evaluation of mourning dove population models for optimizing harvest management strategies in the Central Management Unit, Eastern Management Unit, and Western Management Unit.

Efforts continued on 2 interdisciplinary ecological studies: Missouri Ozark Forest Ecosystem Project—measuring landscape level changes in flora and fauna resulting from silvicultural treatments and Riparian Ecosystem Assessment and Management—investigating processes and function in north Missouri riparian systems.

**Goal:** Initiate annual regulation recommendations for webless migratory birds, waterfowl, white-tailed deer, furbearers, wild turkeys, and other species as needs dictate, and guide them through annual regulation processes.

**Progress:** Regulations were developed for appropriate species and the resulting seasons produced harvests and recreational benefits for small game and waterfowl (Table 1), and white-tailed deer and wild turkeys (Table 2). A youth-only spring turkey season was continued in April 2002. A youth-only portion of the firearms deer season was implemented in October 2001.

**Goal:** Assist with Division and Section planning.

**Progress:** Research personnel completed a Research Program Review outlining future direction for the section and budget unit. Research staff continued to provide direction in the implementation of the Openlands Initiative, a major habitat-based private land program and served as the lead in the development of the evaluation and monitoring plan. Staff continued to serve on interagency and national committees, such as the Missouri DNR-SWCD cooperative research program, multi-state National Bobwhite Quail Conservation Initiative, and Waterfowl Adaptive Harvest Management program.

**Goal:** Provide Section involvement in development of new, and implementation of existing, comprehensive species management plans and other special plans.

**Progress:** Staff assisted in the development of a quail plan. Research personnel continue to participate in implementation of species plans for prairie-chicken, Indiana and gray bats, wild turkey, and resident Canada geese. Research staff continued to participate in development of the Bird Conservation Initiative. Research staff

assisted U.S.D.A. agencies in developmental planning for EQIP, CRP, and WHIP programs. Research staff played pivotal roles as chairman of the Whitefront/Snow Goose plan to address population management, continued to advise and consult with the International Association of Fish and Wildlife Agencies' Best Management Practices for Trap Standards and chaired a planning team for the USFWS to develop a recovery plan for the Indiana Bat. Staff continue to assist the USFWS with long-range management plans for waterfowl populations and monitoring populations of the endangered Least Tern on the Mississippi and Missouri Rivers.

**Goal:** Disseminate research findings and other information to professional audiences and the general public.

**Progress:** Research personnel presented research findings in over 150 technical publications or presentations, including presentations to civic groups and conservation organizations. In addition, staff handled hundreds of media and individual contacts on a variety of research topics, participated in local, regional, and national TV and radio programs, provided popular articles for *Missouri Outdoors*, *Conservationist Magazine*, and *Conservation Currents*.

**TABLE 1.** Statewide estimates and their 95% confidence intervals for the Small Game Harvest Survey, 2001–2002. Estimates and confidence intervals were generated using bootstrapping analysis techniques.

Species	Total Hunters	% Of Hunting Pressure	Bag Per Day	Avg. Season Bag	Avg. Days Afield	Total Harvest	Total Days Afield
Rabbit 95% CI	74,745 71,565-77,799	44.3 42.7-45.8	1.2 1.1-1.3	6.4 5.9-6.8	5.3 4.9-5.7	476,995 437,006-515,856	394,412 363,098-429,235
Squirrel 95% CI	91,621 88,520-95,054	54.3 52.8-55.8	1.7 1.6-1.8	12.9 12.0-13.8	7.7 7.1-8.2	1,180,329 1,098,854-1,274,123	701,487 645,580-759,264
Quail 95% CI	41,464 38,984-43,844	24.6 23.2-25.9	1.5 1.3-1.6	8.0 7.1-9.0	5.5 5.1-5.9	333,612 289,763-380,048	227,452 205,309-248,765
Dove 95% CI	40,879 38,265-43,279	24.2 22.8-25.6	4.3 4.0-4.7	17.7 15.9-19.8	4.1 3.8-4.4	722,276 637,513-808,580	167,703 152,881-184,034
Pheasant 95% CI	12,409 11,053-13,875	7.4 6.5-8.2	0.4 0.4-0.5	1.9 1.6-2.2	4.3 3.8-4.8	23,856 19,430-28,658	53,072 44,348-62,808
Woodcock 95% CI	2,003 1,450-2,611	1.2 0.9-1.5	0.9 0.7-1.1	2.1 1.5-2.8	2.4 1.9-2.9	4,148 2,524-5,922	4,696 3,163-6,462
Crow 95% CI	14,038 12,556-15,519	8.3 7.5-9.2	1.7 1.4-2.1	7.8 6.6-9.2	4.5 3.8-5.2	109,020 88,923-132,155	62,892 51,979-74,977
Groundhog 95% CI	4,001 3,185-4,795	2.4 1.9-2.9	0.7 0.6-0.9	3.1 2.4-3.9	4.5 3.4-5.5	12,525 8,585-16,820	17,875 12,805-23,464
Raccoon 95% CI	12,699 11,323-14,142	7.5 6.7-8.4	1.1 1.0-1.3	13.4 11.0-16.2	12.0 10.3-13.6	170,757 135,302-212,040	152,451 126,560-180,573
Gray Fox 95% CI	1,177 726-1,650	0.7 0.4-1.0	0.1 0.03-0.2	1.0 0.4-1.7	12.2 7.0-17.6	1,179 393-2,148	14,416 6,561-23,445
Red Fox 95% CI	1,972 1,411-2,584	1.2 0.8-1.5	0.1 0.04-0.1	0.7 0.4-1.1	9.9 5.9-14.4	1,458 728-2,341	19,551 10,455-30,168
Coyote 95% CI	22,117 20,304-3,959	13.1 12.1-4.2	0.3 0.2-0.3	2.1 1.8-2.5	8.2 7.1-9.5	46,899 39,151-55,587	180,956 154,267-216,102
Bobcat 95% CI	2,548 1,881-3,234	1.5 1.1-1.9	0.1 0.05-0.1	0.8 0.5-1.2	8.8 6.0-12.0	1,969 1,067-3,081	22,409 13,509-32,458
Opossum 95% CI	3,470 2,750-4,292	2.1 1.6-2.5	0.6 0.4-0.7	4.2 3.1-5.5	7.6 5.3-10.3	14,663 9,985-20,931	26,356 17,215-37,344
Ruffed Grouse 95% CI	238 77-451	0.1 0.05-0.3	0.05 0-0.3	0.1 0-0.4	2.1 1.4-2.6	23 0-89	493 116-971
Ducks 95% CI	37,760 35,495-40,234	22.4 21.1-23.7	1.5 1.4-1.6	12.6 11.6-13.7	8.4 7.8-9.0	476,450 427,350-525,516	317,749 289,919-349,820
Canada Geese 95% CI	16,999 15,429-18,697	10.1 9.2-11.1	0.5 0.4-0.6	3.2 2.7-3.7	6.6 5.9-7.4	54,112 44,342-65,155	111,665 95,211-128,343
Snow Geese 95% CI	9,487 8,220-10,896	5.6 4.9-6.4	2.0 1.4-2.6	11.8 8.1-15.7	6.0 5.0-7.0	112,324 76,252-155,092	56,807 44,582-70,236

**TABLE 2.** Missouri white-tailed deer and wild turkey harvests and permit sales, 1944-2001.

Year	DEER				WILD TURKEY			
	Firearms Permits	Firearms Harvest	Archery Permits	Archery Harvest	Spring Permits	Spring Harvest	Fall Firearms Permits	Fall Firearms Harvest
1944	7,557	583						
1945	11,196	882						
1946	15,079	743	73	—				
1947	17,747	1,387	39	—				
1948	20,708	1,432	62	—				
1949	19,103	1,353	54	—				
1950	18,749	1,623	64	1				
1951	30,237	5,519	77	—				
1952	37,791	7,466	214	2				
1953	45,015	7,864	481	5				
1954	45,889	7,648	1,053	22				
1955	48,524	7,988	1,506	37				
1956	49,108	7,864	2,075	33				
1957	49,907	9,986	2,720	58				
1958	59,392	13,610	3,670	71				
1959	68,282	16,306	4,495	90				
1960	85,931	17,418	4,468	263	698	94		
1961	90,346	15,967	5,190	116	1,001	154		
1962	102,785	16,516	6,035	231	1,400	182		
1963	105,501	17,304	7,324	268	1,728	357		
1964	121,713	20,619	9,559	316	2,958	369		
1965	110,093	18,785	10,756	371	3,099	476		
1966	130,642	27,965	11,878	458	4,873	576		
1967	150,105	22,802	13,561	380	6,702	1,191		
1968	159,262	22,090	15,510	559	8,102	1,270		
1969	144,436	23,265	14,709	619	7,577	959		
1970	164,074	28,400	16,950	828	10,072	1,607		
1971	172,299	31,722	17,840	962	12,306	2,864		
1972	186,708	30,084	21,493	1,130	20,077	4,457		
1973	210,770	33,438	25,254	1,285	29,633	5,739		
1974	213,191	29,262	27,871	1,437	26,363	5,286		
1975	234,471	51,823	29,974	1,850	28,621	5,546		
1976	232,765	40,683	31,281	1,973	35,932	7,853		
1977	250,192	36,562	33,239	2,199	36,596	9,974		
1978	246,803	40,261	34,368	2,781	42,244	10,148	16,072	4,374
1979	268,275	53,164	41,115	3,327	46,008	13,741	25,416	9,387
1980	269,710	49,426	46,548	3,661	56,133	16,722	31,606	9,418
1981	267,826	50,183	46,776	3,495	63,914	22,319	32,199	9,293
1982	275,182	55,852	47,931	4,191	67,150	17,744	32,051	8,989
1983	287,669	57,801	52,666	4,626	73,347	19,063	39,160	12,407
1984	296,334	71,569	56,378	5,134	76,053	19,568	34,375	10,230
1985	320,318	80,792	62,731	5,621	69,945	24,770	36,218	12,181
1986	339,323	102,879	69,265	5,832	77,972	30,965	46,688	21,019
1987	375,262	132,500	75,074	8,061	85,733	35,951	54,318	28,026
1988*	408,761	139,726	82,612	10,183	94,301	33,187	50,715	23,080
1989*	425,564	157,415	83,440	10,966	92,914	35,618	46,946	22,131
1990*	446,315	161,832	84,018	11,056	92,093	30,056	37,080	16,015
1991*	446,569	149,145	91,656	14,185	89,077	32,237	37,469	19,788
1992*	451,173	150,873	94,835	15,029	89,803	33,035	36,033	17,061
1993*	460,575	156,704	93,729	14,696	89,899	34,342	34,379	13,569
1994*	462,588	163,468	97,441	17,136	90,810	37,721	38,424	19,869
1995*	476,483	187,406	98,601	20,077	99,579	37,472	33,642	13,866
1996*	505,540	190,770	101,494	23,566	99,879	37,708	34,522	13,207
1997*	546,071	196,283	93,402	20,915	99,933	33,216	33,765	11,866
1998*	514,337	202,679	96,373	21,190	105,552	48,462	32,593	15,343
1999	524,668	192,886	97,351	23,414	109,663	50,338	32,606	14,651
2000	546,754	220,495	96,980	23,558	115,190	56,841	31,968	13,230
2001	568,778	235,474	106,990	21,767	113,660	55,302	30,996	13,554

\*Includes muzzleloading permits and harvest.

