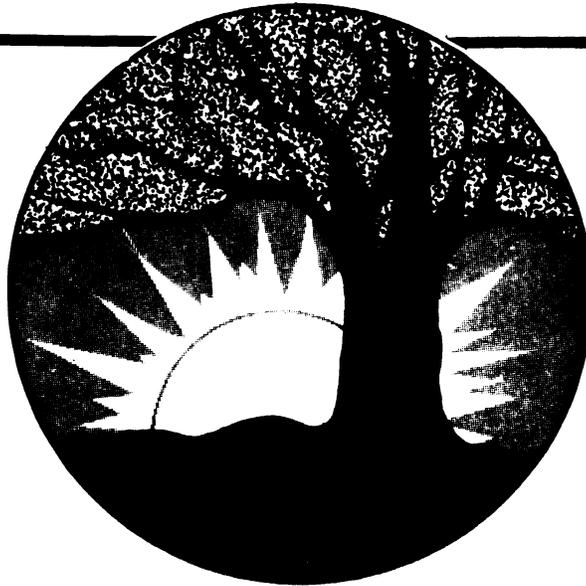


PERFORMANCE AUDIT

Tennessee Wildlife Resources Agency
Tennessee Wildlife Resources Commission

November 2009



Justin P. Wilson
Comptroller of the Treasury



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November 10, 2009

The Honorable Ron Ramsey
Speaker of the Senate
The Honorable Kent Williams
Speaker of the House of Representatives
The Honorable Bo Watson, Chair
Senate Committee on Government Operations
The Honorable Susan M. Lynn, Chair
House Committee on Government Operations
and
Members of the General Assembly
State Capitol
Nashville, Tennessee 37243

Ladies and Gentlemen:

Transmitted herewith is the performance audit of the Tennessee Wildlife Resources Agency and the Tennessee Wildlife Resources Commission. This audit was conducted pursuant to the requirements of Section 4-29-111, *Tennessee Code Annotated*, the Tennessee Governmental Entity Review Law.

This report is intended to aid the Joint Government Operations Committee in its review to determine whether the commission should be continued, restructured, or terminated.

Sincerely,

Arthur A. Hayes, Jr., CPA
Director, Division of State Audit

AAH/dlj
09-031

State of Tennessee

Audit Highlights

Comptroller of the Treasury

Division of State Audit

Performance Audit

Tennessee Wildlife Resources Agency
Tennessee Wildlife Resources Commission
November 2009

AUDIT OBJECTIVES

The objectives of the audit were to review TWRA's efforts to track and assess the revenues and expenditures of the agency's various programs and agency actions to address funding issues/identify additional revenue sources; assess TWRA's controls over agency equipment and processes for securing/accounting for weapons; determine whether TWRA addressed the previous performance audit's finding on the internal auditor's organizational reporting structure; assess TWRA's policies and procedures for monitoring the reliability of data on the Remote Easy Access Licensing (REAL) system; determine the current status of siltation problems at Reelfoot Lake and any actions taken or planned to address threats to the lake's viability; determine whether TWRA has the necessary equipment to meet its Homeland Security responsibilities; to review agency actions to comply with Title VI requirements; to review commission decisions to determine consistency with commission powers, agency purpose and mission, agency staff recommendations, and any federal/international requirements; to determine whether the agency is maintaining all required information on cooperative farming contracts; and to determine whether the commission's composition meets statutory requirements, whether the agency has developed and implemented a conflict of interest policy for commission members, whether there are systemic problems with commission member attendance, and whether the audit committee has an established written code of conduct.

FINDINGS

Since the Tennessee Wildlife Resources Commission Has Taken Actions That Have Led to the U.S. Fish and Wildlife Service's Denial of Export Permits for Paddlefish and Its Products (e.g., roe/caviar) From Kentucky Lake, and That Could Have Additional Negative Consequences for Wildlife, Commercial Fishermen, and the State, the Commission Should Reexamine Whether Its Decisions Have Produced Results That Are Inconsistent With the Objectives of Its Programs and the Mandate of the TWRA, Are in Compliance With the Accountability of the Commission to Provide for the Protection of

State Resources Subject to Its Oversight and Whether the Commission Has Adequate Management Controls to Provide Reasonable Assurance That the Commission Receives and Properly Considers Appropriate Information Concerning the Future Impact of Its Decisions on the Wildlife of the State, Including Ensuring That the Commission Has Adequately and Transparently Documented the Basis for the Decisions in Question and Its Plans Going Forward to Address the Adverse Outcomes of Its Actions

During the period from September 2007 through December 2008, auditors identified at least two instances where the Tennessee Wildlife Resources Commission (TWRC) did not adopt recommendations supported by substantial scientific and technical information from the Tennessee Wildlife Resources Agency (TWRA) and federal agency representatives. In both instances, the commission decisions concerned fish—the shovelnose sturgeon and paddlefish—that are commercially harvested for their roe. The paddlefish and the pallid sturgeon (which is similar in appearance to the shovelnose sturgeon and caught during the shovelnose harvest) are listed as Greatest Need for Conservation species in TWRA’s 2005 Comprehensive Wildlife Conservation Strategy (a document required to receive federal funding for state non-game wildlife conservation). The commission’s actions have already led to one protective action by the federal government and could lead to additional federal action, as well as having potential negative consequences on endangered and “likely to become endangered” wildlife, and on the state’s commercial fishermen (page 7).

Although Several Weapons Have Been Lost, TWRA’s Executive Director Has Not Established Agency-wide Standardized Policies and Procedures for Maintaining and Securing Weapons Used for Hunter Education

The agency has not taken sufficient steps to minimize the potential for loss or theft of weapons used for hunter-education classes. TWRA provides hunter-education classes to individuals who wish to receive instruction in hunter responsibility, firearms, and archery relating to nomenclature, marksmanship, care of equipment, and safe use or handling in both the field and the home. The agency uses volunteers to teach these courses. Based on lost property reports, in fiscal year 2008 the agency lost two weapons (a rifle and a shotgun) used for hunter-education classes. Further, according to interviews with regional managers, the agency has lost additional weapons since 2000. However, despite these occurrences, TWRA has not established agency-wide standardized policies and procedures for hunter-education weapons. Each regional manager is given the authority to determine how that region will track, issue, and maintain weapons used for hunter-education classes (page 14).

TWRA’s Oversight and Controls Over Cooperative Farming Contracts Still Need Improvement

TWRA contracts with farmers to raise crops on agency properties, thereby benefiting the farmers, the agency, wildlife, and hunters. In some instances, the farmers pay, at least in part, through in-kind services such as leaving crops for wildlife or building roads, culverts, or drainage ditches. In the 2005 and 2000 performance audits, we reported that the central office staff did not maintain copies of all cooperative farming contracts and bid paperwork. Management concurred, stating in 2005 that they would strive to improve their central office record keeping. However, TWRA’s Central Office staff still does not maintain copies of all cooperative farming contracts and bid paperwork as required by the State Building Commission (page 16).

TWRA Should Maintain Documentation Demonstrating That It Performs Procedures to Ensure the Data Reliability of Its REAL Computer System

Although TWRA has written procedures for monitoring data reliability of the Remote Easy Access Licensing (REAL) system, the agency has not kept documentation that the monitoring has been performed. In addition, the agency has not thoroughly documented testing of enhancements to the REAL system and verification of sales to revenue amounts. REAL is TWRA's license and boat registration system. It integrates a Point-of-Sale system and a customer database for the sales and tracking of most of the agency's hunting and fishing licenses and boat registrations. According to TWRA administrative staff, the agency has collected approximately \$40 million through REAL each year during fiscal years 2006 through 2009. An estimated 800 license agents use REAL to sell licenses and registrations (page 18).

FUNDING-RELATED ISSUES AND RESULTS OF OTHER AUDIT WORK

The audit also discusses two funding-related issues that were also noted in previous audits: the lack of an adequate, reliable funding source for non-game and endangered species programs, and sportsmen's dollars continuing to subsidize TWRA's regulation and management of commercial fishing and musseling (page 19). In addition, the audit discusses several issues related to commission operations; the reporting structure for the agency's internal auditor; the agency's Homeland Security responsibilities; and the status of Reelfoot Lake (page 25).

Performance Audit
Tennessee Wildlife Resources Agency
Tennessee Wildlife Resources Commission

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**Performance Audit
Tennessee Wildlife Resources Agency
Tennessee Wildlife Resources Commission**

INTRODUCTION

PURPOSE AND AUTHORITY FOR THE AUDIT

This performance audit of the Tennessee Wildlife Resources Agency (TWRA) and the Tennessee Wildlife Resources Commission was conducted pursuant to the Tennessee Governmental Entity Review Law, *Tennessee Code Annotated*, Title 4, Chapter 29. Under Section 4-29-231, the Tennessee Wildlife Resources Commission is scheduled to terminate June 30, 2010. The Comptroller of the Treasury is authorized under Section 4-29-111 to conduct a limited program review audit of the commission and the agency and to report to the Joint Government Operations Committee of the General Assembly. The audit is intended to aid the committee in determining whether the commission should be continued, restructured, or terminated.

OBJECTIVES OF THE AUDIT

The objectives of the audit were

1. to review TWRA's efforts to track and assess the revenues and expenditures of the agency's various programs and agency actions to address funding issues/identify additional revenue sources;
2. to assess TWRA's controls over agency equipment and processes for securing/accounting for weapons;
3. to determine whether TWRA addressed the previous performance audit's finding on the internal auditor's organizational reporting structure;
4. to assess TWRA's policies and procedures for monitoring the reliability of data on the Remote Easy Access Licensing (REAL) system;
5. to determine the current status of siltation problems at Reelfoot Lake and any actions taken or planned to address threats to the lake's viability;
6. to determine whether TWRA has the necessary equipment to meet its Homeland Security responsibilities;

7. to review agency actions to comply with Title VI requirements;
8. to review commission decisions to determine consistency with commission powers, agency purpose and mission, agency staff recommendations, and any federal/international requirements;
9. to determine whether the agency is maintaining all required information on cooperative farming contracts; and
10. to determine whether the commission's composition meets statutory requirements, whether the agency has developed and implemented a conflict of interest policy for commission members, whether there are systemic problems with commission member attendance, and whether the audit committee has an established written code of conduct.

SCOPE AND METHODOLOGY OF THE AUDIT

The activities of the agency and commission were reviewed for the period August 2005 to April 2009. We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. Methods used included

1. a review of statutes, federal law, and state and federal regulations;
2. examination of the agency's files, documents, and policies and procedures;
3. interviews with agency staff and commission members, U.S. Fish and Wildlife Service staff, and representatives of the Wildlife Management Institute; and
4. observation of commission meetings and review of commission meeting minutes and videotapes.

STATUTORY RESPONSIBILITIES AND ORGANIZATION

The Tennessee Wildlife Resources Agency (TWRA) was created by Chapter 481 of the 1974 Public Acts, codified as Section 70-1-301 et seq., *Tennessee Code Annotated*. The agency was given "full and exclusive jurisdiction of the duties and functions relating to wildlife formerly held by the game and fish commission or of any other law relating to the management, protection, propagation, and conservation of wildlife, including hunting and fishing, except those powers and duties conferred upon the wildlife resources commission." The agency is also

responsible for the acquisition of wetlands and bottomland hardwood forests and for the enforcement of the Boating Safety Act, codified as Section 69-9-201 et seq.

The Tennessee Wildlife Resources Commission is, according to Section 70-1-201, *Tennessee Code Annotated*, an independent and separate administrative board, consisting of 13 members: the Commissioner of Environment and Conservation, the Commissioner of Agriculture, nine members (three from each grand division of the state) appointed by the Governor, one member appointed by the Speaker of the House, and one member appointed by the Speaker of the Senate. All appointed members of the commission serve six-year terms. This statute also states that the Governor should strive to ensure that at least one person serving on the commission is 60 years of age or older and at least one person is a member of a racial minority. At least two people serving on the commission are to be female. As of June 2009, the commission met requirements for one person being 60 years of age or older, having at least two females as well as having at least one minority member. Pursuant to Section 70-1-203, the Governor serves as an ex officio member of the commission. The commission is directed, and authorized, to (1) appoint and dismiss the executive director of the agency; (2) approve the TWRA budget pursuant to Section 70-1-306, *Tennessee Code Annotated*; (3) promulgate necessary rules, regulations, and proclamations as required by law; (4) establish the salary of the TWRA executive director; and (5) establish objectives within the state policy that will enable TWRA to develop, manage, and maintain sound programs of hunting, fishing, trapping, and other wildlife-related outdoor recreational activities. The commission is required by statute to meet at least six times each year, and may meet up to 12 times per year. The commission met this requirement for 2008.

The Tennessee Wildlife Resources Agency is organized into two primary areas—Staff Operations and Field Operations—each of which reports to an assistant director. An organization chart of the agency is on page 4.

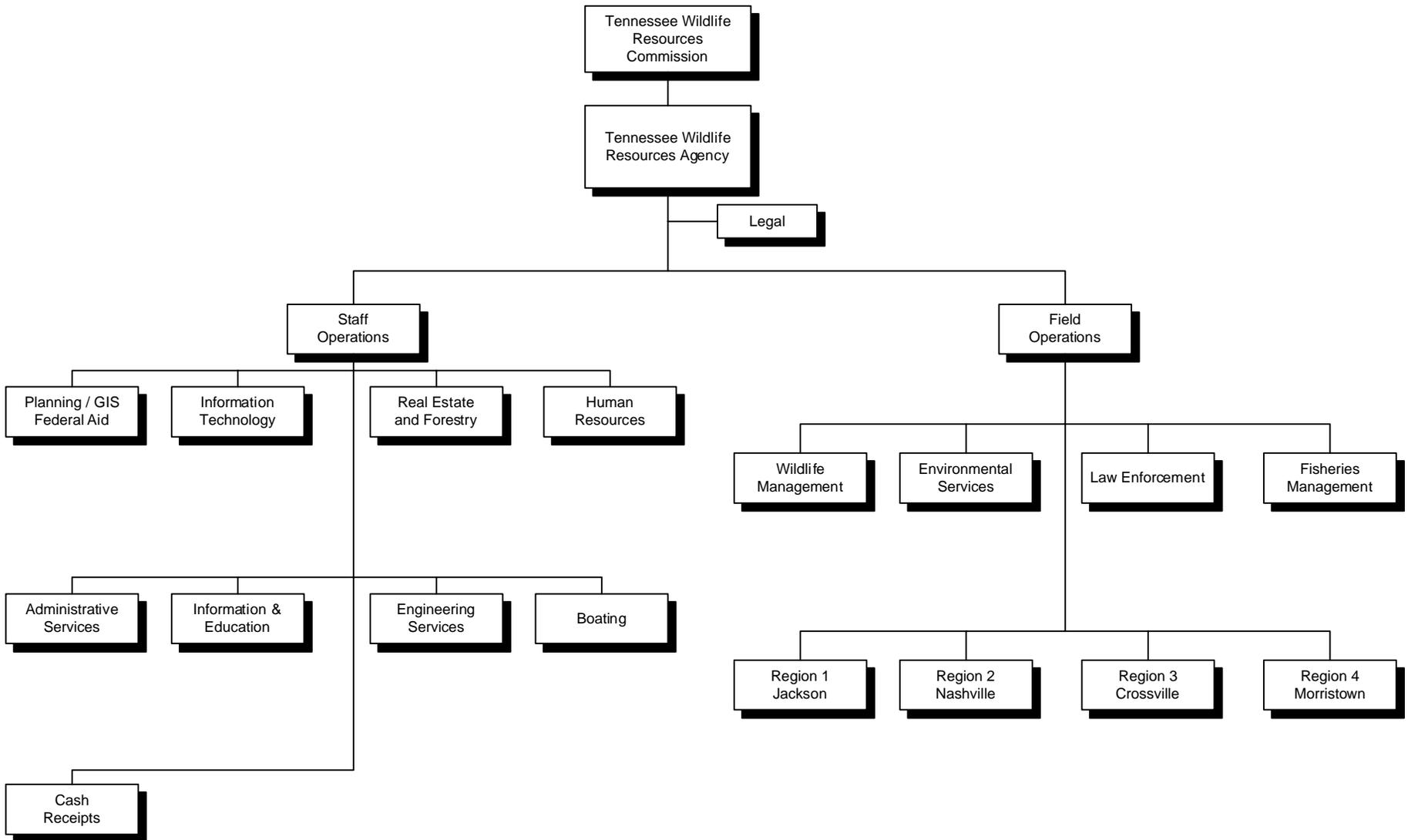
Staff Operations

The Staff Operations areas provide administrative and staff support to the agency through nine sections: Planning/Geographic Information System/Federal Aid, Information Technology, Real Estate and Forestry, Human Resources, Administrative Services, Information and Education, Engineering Services, Boating, and Cash Receipts.

The Planning/Geographic Information System/Federal Aid Division oversees the agency's Comprehensive Management Plan, the Federal Aid program, the Geographic Information System, and Internal Audit.

Within the Information Technology Division, there are five sections: network administration, print operations, data processing/uniform ordering and management, asset management, and programming/analysis. The Programming/Analysis section is responsible for the Remote Easy Access Licensing system (REAL), which is a comprehensive system allowing the purchase of hunting and fishing licenses from license agents, on the telephone, and on the Internet. This section also oversees all development of new programming, as well as maintenance of legacy programs. The Print Operations section produces printed reports,

Tennessee Wildlife Resources Agency 2009



permits, and forms; the Network Administration group maintains the TWRA LAN and desktop support; the supervisor of the Data Processing section oversees the data entry applications and uniform orders; and the Asset Management group oversees the purchase of computer hardware and software for the agency, as well as monitoring inventory of agency equipment.

The Real Estate and Forestry Division is responsible for the acquisition of land for TWRA and has wildlife-forest management responsibility for 390,000 acres of forestland in TWRA's wildlife management areas in the state.

The Human Resources Division is responsible for employee recruitment, benefits, payroll, and training as related to sexual harassment, supervisory skills, the Americans with Disabilities Act program, and new employee orientation. The Administrative Services Division is responsible for the budget and procurement. The Cash Receipts Division is responsible for processing boat registrations and license sales.

The Information and Education Division is responsible for distributing information through agency publications and presentations and educating the public through many programs like the Hunter Education Program, Single Mothers as Reel Teachers (SMART), and Becoming an Outdoors Woman (BOW). The Information and Education Section is also responsible for the Tennessee Wildlife Magazine and the agency's website. This section's mission is to provide quality programs and information to all hunters, anglers, and wildlife enthusiasts. The Engineering Services Division provides engineering services and maintains over 218 access areas across the state.

The Boating Division is responsible for enforcing the provisions of the Tennessee Boating Safety Act of 1965. The division includes programs such as boat registration; boater education and awareness; boating enforcement, including accident investigation, search and rescue, and boat theft; and waterway facilities (e.g., boat ramps, courtesy docks, and mooring facilities). Homeland Security has also become a major responsibility of this division, as TWRA is the only state agency equipped to respond in mass to a water-related event. TWRA is the primary agency tasked by the Tennessee Emergency Management Agency with responding to water-related natural or man-made catastrophes.

Field Operations

The agency's Field Operations are administered through the four regional offices located in Jackson, Nashville, Crossville, and Morristown. Field Operations consists of the following major divisions: Law Enforcement, Wildlife Management, Fisheries Management, and Environmental Services.

Law Enforcement coordinates statewide license enforcement activities, recommends law enforcement policy, and maintains law enforcement statistics. In addition, this division maintains all TWRA communications equipment statewide including mobile radios, vehicle and boat blue-lights and sirens, and electronic equipment used in covert operations.

Wildlife Management coordinates statewide wildlife, non-game, and endangered species management. Personnel conduct research and work to preserve the state's wildlife resources and to provide hunting, trapping, and other recreational opportunities.

Fisheries Management coordinates statewide fish management (both sport and commercial), aquatic endangered species, and water pollution programs. Technical assistance is also provided for owners of farm ponds and small lakes.

Environmental Services is responsible for environmental areas that affect fisheries and the loss or destruction of wildlife. Responsibilities include projects associated with reservoirs, streams, trout waters, and wetlands; Tennessee Aquatic Database System, which is used for policy decisions, mitigation, and national projects like the Aquatic Gap Analysis Program; and the Fish Kill Database, which is used to collect fish mortality information regarding incident location and date, number of fish killed, estimated value of fish lost, and cause of fish mortality.

See Appendix 1 for a breakdown of agency staff by job title, gender, and ethnicity. Women and minorities are under-represented among agency staff—approximately 1.4% of the staff are African American and 17% are women. Historically, TWRA has found it difficult to recruit minority and female applicants. According to TWRA's Human Resources Director, this is mainly because of a lack of minority and female participation in wildlife-related programs at the college and university level. In addition, when minority and female applicants do appear in the pool of qualified candidates (i.e., on the state's register for wildlife-related positions), they are often not among those ranked highest on the register. (State law requires state agencies to hire career service employees from among the top five interested candidates on the register.) Although the minority and female applicants may have the necessary academic credentials, they often do not have any relevant work experience, which results in a score that is not sufficient to rank them in the top five interested candidates on the register.

The Human Resources Director stated that the Human Resources Division communicates all new job vacancies to the state colleges and universities that have wildlife-specific degree programs, in an effort to increase minority hiring opportunities.

REVENUES AND EXPENDITURES

The Tennessee Wildlife Resources Agency had revenues and expenditures of over \$83 million during fiscal year 2008. Sixty percent of the agency's revenues were state appropriations (the vast majority from dedicated state sources such as hunting and fishing license fees and real estate transfer taxes supporting the Wetlands Acquisition Fund); 27% were from federal sources; and 13% were from other revenue sources. Estimated revenues and expenditures for fiscal year 2009 are \$90.3 million. TWRA administers the Wetland Acquisition Fund for the purpose of acquiring and preserving certain wetlands and bottomland hardwood forests. The fund had a balance of approximately \$3.5 million as of February 2009. The agency administers separate funds for the wildlife and boating programs. The balances are carried forward each year in the reserve account and do not revert to the general fund. As of June 30, 2008, the Wildlife Fund had an unobligated balance of \$24,832,162 and the Boating Fund had an unobligated balance of \$7,407,026.

FINDINGS AND RECOMMENDATIONS

- 1. Since the Tennessee Wildlife Resources Commission has taken actions that have led to the U.S. Fish and Wildlife Service’s denial of export permits for paddlefish and its products (e.g., roe/caviar) from Kentucky Lake, and that could have additional negative consequences for wildlife, commercial fishermen, and the state, the commission should reexamine whether its decisions have produced results that are inconsistent with the objectives of its programs and the mandate of the TWRA, are in compliance with the accountability of the commission to provide for the protection of state resources subject to its oversight and whether the commission has adequate management controls to provide reasonable assurance that the commission receives and properly considers appropriate information concerning the future impact of its decisions on the wildlife of the state, including ensuring that the commission has adequately and transparently documented the basis for the decisions in question and its plans going forward to address the adverse outcomes of its actions**

Finding

During the period from September 2007 through December 2008, auditors identified at least two instances where the Tennessee Wildlife Resources Commission (TWRC) did not adopt recommendations supported by substantial scientific and technical information from the Tennessee Wildlife Resources Agency (TWRA) and federal agency representatives. In both instances, the commission decisions concerned fish—the shovelnose sturgeon and paddlefish—that are commercially harvested for their roe. The paddlefish and the pallid sturgeon (which is similar in appearance to the shovelnose sturgeon and caught during the shovelnose harvest) are listed as Greatest Need for Conservation species in TWRA’s 2005 Comprehensive Wildlife Conservation Strategy (a document required to receive federal funding for state non-game wildlife conservation). The commission’s actions have already led to one protective action by the federal government and could lead to additional federal action, as well as having potential negative consequences on endangered and “likely to become endangered” wildlife, and on the state’s commercial fishermen.

TWRC Decisions Regarding Harvesting of Shovelnose Sturgeon

The first instance auditors reviewed involved TWRA recommendations in September 2007 and January 2008 that the commission close the commercial harvest of shovelnose sturgeon, in order to protect the pallid sturgeon, a federally endangered species protected under the U.S. Endangered Species Act (ESA) of 1973. The shovelnose sturgeon harvest represents a very small portion, an estimated 7% to 9%, of the state’s total roe harvest. TWRA staff presented research showing that pallid sturgeon are being captured in Tennessee waters during the commercial harvest of shovelnose sturgeon—in violation of the ESA. Research estimates that at least 2% of the commercial shovelnose sturgeon harvest is actually pallid sturgeon.

(According to wildlife biologists, throughout most of its development the shovelnose sturgeon is virtually indistinguishable from developing pallid sturgeon.) (See Appendix 3.)

Among the information presented to the commission was the fact that in 2006, the U.S. Army Corps of Engineers (USACE) estimated that it had spent \$43 million in federal funds on recovery efforts for the pallid sturgeon. According to the USACE, pallid sturgeon mortality rates are much higher in areas of the Mississippi River that are open to shovelnose sturgeon harvest, compared to areas that are closed. Because of the effect the commercial harvest is having on pallid sturgeon recovery efforts, the USACE petitioned the U.S. Fish and Wildlife Service (USFWS) to close shovelnose sturgeon harvesting in all areas in which the two species overlap.

There was no scientific evidence presented to contradict or call into question the above research. However, in January 2008, the commission did not adopt the agency's recommendations to close the commercial harvest of shovelnose sturgeon, and did not provide a clear basis for disregarding the scientific and technical evidence presented, other than a general dismissal of the value of the evidence.

On September 22, 2009, the USFWS published in the Federal Register a proposed rule that would grant the shovelnose sturgeon the same protections as an endangered species based on the "Similarity of Appearance" provision of the ESA. This action would make it illegal to harvest shovelnose sturgeon in protected areas (i.e., in areas, such as Tennessee, where the shovelnose sturgeon's and pallid sturgeon's ranges overlap).

TWRC Decisions Regarding Paddlefish

The second instance involves decisions regarding the harvesting of paddlefish. In 2005, TWRA staff presented a management plan designed to protect the paddlefish from overharvesting and ensure the species' survivability. The TWRC initially adopted the management plan in 2005, then made a series of decisions that in effect delayed implementation of the plan or eased the restrictions called for in the plan. Finally, in October 2008, the commission revoked the plan, in effect removing all regulation of paddlefish. One month later, the commission reestablished the catch size limits at the 2006 lengths. Although the November 2008 action at least reinstated some regulation over catch sizes for the paddlefish, these limits are less than those established in the 2005 management plan and, therefore, are a rejection of the plan designed to protect the fish from overharvesting and ensure the species' survivability.

Research presented to the commission at these meetings had found that Tennessee paddlefish are in danger of being overfished; that harvest rates are unsustainable, particularly during periods of little rainfall; and that raising the catch size limits (i.e., the Eye to Fork Length [EFL]—the length from the front of the eye to the fork of the tail) is necessary to protect more females from harvest to ensure proper spawning ratios to replenish the population. (See Appendix 4 for additional information and details.) The management plan would have increased the catch-size limit to 38 inches for Kentucky Lake and 36 inches for the Mississippi River, and shortened the harvesting season to ensure optimum water temperature for by-catch recovery (i.e., if male or immature female paddlefish are caught by mistake and then released, they have a much better chance of surviving if water temperatures are cooler).

TWRC proclamations governing paddlefish include

- Proclamation Number 05-22 (September 2005) – TWRC approved a five-year plan to gradually increase the EFL catch-size limit from 34 inches in 2005 to 38 inches by November 2008. This plan would have fulfilled the agency’s recommendations for preserving the viability of the species for Kentucky Lake.
- Proclamation Number 06-22 (October 2006) – TWRC upheld Proclamation Number 05-22.
- Proclamation Number 07-11 (November 2007) – TWRC postponed the implementation of the 2007-2008 season increases in catch-size limits called for in the plan adopted in September 2005.
- Proclamation Number 08-01 (March 2008) – TWRC revised the plan to set the EFL catch-size limit to 38 inches for Kentucky Lake starting November 15, 2009.
- Proclamation Number 08-16 (October 2008) – TWRC removed all regulation of paddlefish essentially allowing the harvesting of all sizes.
- Proclamation Number 08-18 (November 2008) – TWRC reestablished the paddlefish EFL catch-size limit at the 2006 season limit (36 inches on Kentucky Lake and 34 inches on the Mississippi River).

Review of Commission Meeting Documentation

Auditors reviewed the minutes and DVD recordings of past commission meetings in order to assess the information presented to the TWRC, prior to commission members making their decisions. In each instance, as noted above, the TWRA provided the TWRC scientifically supported information, which included expert testimony from professionals in the wildlife biology field, including speakers from the U.S. Geological Survey (USGS) and the U.S. Fish and Wildlife Service (USFWS) in support of the agency’s proposals. The only presentation given in opposition to the TWRA recommendations was made by an attorney who was representing a number of commercial fishermen associations; there were also brief comments by some of the commercial fishermen attending the meetings. Neither the attorney nor the commercial fishermen presented any scientific research or testimony refuting the information provided by the agency or the USGS and USFWS biologists. The attorney did, however, provide proposed regulations that he and his clients felt were appropriate and made statements aimed at discrediting the evidence presented by TWRA staff.

The majority of questions and comments by several members of the TWRC concerned the effect TWRA’s proposed regulations would have on commercial fishing. The meeting recordings showed that TWRA fisheries biologists provided information based on U.S. Army Corps of Engineers research; analysis of TWRA data collected from commercial fish harvests and independent surveys; published research by the U.S. Geological Survey, as presented by the actual research professor; and presentations from three USFWS officials, including the Tennessee Regional Supervisor and the Regional Director for the Southeast. However, without any objective technical or scientific evidence being presented calling into question the

sufficiency or relevance of the substantial amount of scientific and technical evidence that had been presented to the commission, commission members suggested that that evidence was insufficient, inadequate, and not representative of the species populations being considered. (See Appendices 3 and 4 for additional details regarding the information presented to the TWRC by TWRA staff and representatives from the USGS and USFWS, supporting the need for stricter regulations to protect the pallid sturgeon and the paddlefish. The appendices also provide additional detail regarding the analysis and research methodologies used by TWRA and the federal agencies in developing that information.)

Actual and Potential Negative Consequences of the TWRC's Actions

Based on information from state and federal biologists, the decisions of the Tennessee Wildlife Resources Commission (TWRC) regarding harvesting of shovelnose sturgeon and paddlefish conflict with federal and state laws requiring the protection of endangered and threatened wildlife and with the Tennessee Wildlife Resources Agency's mandate to "place first and foremost the welfare of the wildlife and its environment." (See Appendix 2 for additional details regarding federal and state laws governing TWRA's and the state's responsibilities for protection of wildlife.) In addition, the TWRC's decision to disregard the recommendations made by technical staff of the TWRA, the USGS, and the USFWS recently resulted in one negative economic consequence for the state, and could have additional negative consequences for the Tennessee Wildlife Resources Agency, the wildlife the agency is mandated to protect, and the state's commercial fishermen.

Paddlefish-Related Consequences

On June 18, 2009, the U.S. Fish and Wildlife Service announced in a news release that it will deny the issuance of export permits for paddlefish and products (caviar/roe) harvested from Kentucky Lake in Tennessee during the recently completed 2008-2009 fishing season. This action will not impact the sale of the caviar in the U.S., but will prevent its export to other countries. The announcement states that the USFWS has determined that the paddlefish harvest level is not sustainable and thus does not meet the Convention on International Trade for Endangered Species (CITES) requirements for survivability of the species. The USFWS further stated that this decision was a result of the TWRC's 2008 decision not to follow TWRA's recommendations. This action by the USFWS could have major economic implications for Tennessee commercial fishermen because a majority of Tennessee's paddlefish harvest comes from Kentucky Lake. In 2006-2007, according to TWRA information, Tennessee commercially harvested over 26,000 pounds of roe, and a little over half of Tennessee's roe harvest was exported. TWRA estimated that about \$1.6 million was paid to Tennessee dealers for exported caviar.

The European Union has decided to require that any CITES listed product must be approved for an import permit into Europe, and the European Scientific Review Group has requested that the USFWS send a report documenting the status of paddlefish and management plans for U.S. fisheries. The U.S. Fish and Wildlife Service (USFWS) stated in its March 2009 report to the European Union that paddlefish in Tennessee are being overfished. The USFWS also detailed the TWRC's recent decisions regarding harvest regulations and stated that "being

aware of the disparity between these regulations and science-based recommendations of TWRA biologists,” the USFWS’ Division of Scientific Authority will need to review and reassess Tennessee’s export status for the 2009-2010 season.

Shovelnose Sturgeon-Related Consequences

The federal government, through the USFWS, could potentially initiate the closure of the Tennessee shovelnose sturgeon harvest if the TWRC does not take regulatory action to prevent illegal harvesting of the pallid sturgeon. Three representatives from the USFWS, including the Southeast Regional Director, informed the TWRC that it would be in the state’s (and local commercial fishermen’s) best interest to self-regulate rather than wait for the federal government to do so. Under Section 70-8-112, *Tennessee Code Annotated*, the executive director of the TWRA may, by regulation, treat any species as endangered or threatened, if the species so closely resembles an endangered species under the ESA that the difficulty in determining the differences is an additional threat to the endangered species, and the treatment will substantially facilitate the perpetuation of the endangered species. In this case, the TWRC was again provided scientific evidence and expert testimony from research biologists that the shovelnose sturgeon is, through most of its development, indistinguishable from developing pallid sturgeon; thus, according to the USFWS, a case can be made to list the shovelnose sturgeon as endangered and protected. On September 22, 2009, the USFWS published in the Federal Register a proposed rule that would grant the shovelnose sturgeon the same protections as an endangered species based on the “Similarity of Appearance” provision of the ESA.

Federal Funding Consequences

The TWRC’s decisions appear not to comply with an agreement between the USFWS and TWRA, under which the state receives grant funds to support conservation programs of endangered and threatened species. According to TWRA annual reports, the agency received \$1,293,903 in federal assistance under this agreement for fiscal years 2005 through 2007. In 2005, the Tennessee Comprehensive Wildlife Conservation Strategy was developed as a requirement to receive funds; and pallid sturgeon and paddlefish (among other species) are designated as species that are “Greatest in Need for Conservation” (GNC). According to this agreement, the state should adopt and protect all endangered and threatened species within the state. Not taking steps to protect designated GNC species could potentially cost the agency needed grant money.

Commission Responsibilities

State boards and commissions are established to review facts, circumstances, laws, policies, and regulations regarding their respective areas of jurisdiction and to render decisions that often involve complex issues and competing interests. The frame of reference for the body is its statutory mandate. As part of the process, these bodies usually have staff who provide them with recommendations on issues before the body. The regulatory bodies are not bound by the recommendations of their staffs, since it is the individual members of the body who are vested with the ultimate authority and responsibility to carry out the powers and duties of the body. The members of any board or commission are selected for their expertise and experience in the area

subject to regulation. However, the staff are also often comprised of individuals who are technically trained and experienced in the matters before the body. In those cases, the body should give appropriate weight to the recommendations of staff.

When a state board or commission is faced with an issue that involves technical and specialized issues, the body should seek input from reputable and reliable technical sources. Often this information is developed and presented through the body's staff.

Boards and commissions should carefully consider the work and recommendations of their staff. When a body does not accept the recommendations of its staff in making a decision, particularly on a highly technical issue, it is important for the board to ensure that its decision results from an open, public discussion by the board of all the factors entering into its decision and the basis of the decision should be clearly set out in the minutes of the meeting. The discussion and conclusion should specifically include what other information overcame the scientific and technical information presented to the body.

It is also the right of any citizens who feel that the actions of the body may affect them to present their concerns to the body, along with any related technical information that will assist the body in its determinations.

In every situation in which there is a dispute as to the consequences of the body's decision, the board or commission should carefully weigh all information presented to it, as well as taking the experiences and training of the individual members of the board or commission into consideration.

The relative weight of the information presented will depend on many factors, but that information should also be viewed in light of the consequences of the body's actions on the state as a whole. When the state faces negative consequences for such decisions, the body should be particularly careful to assure that its decision is based on objective information which is as free as possible from any undue influence from an affected party. This is particularly true when there is consistent, scientific evidence presented, from numerous sources supporting one side in the issue. Such information would appear to be even more convincing when it supports a decision that avoids negative consequences for the state.

In this case, the statutory mandate of the Tennessee Wildlife Resources Agency is to "place first and foremost the welfare of the wildlife and its environment." The matters before the Tennessee Wildlife Resources Commission involve substantial negative consequences for the state as a whole and for the very people whose actions are regulated by the commission. There are significant short-term and long-term financial consequences for all parties affected by the decisions in question. The commission's consideration of these matters has been spread out over several years. There have been many meetings about the matters, and the commission has received scientific and non-scientific information about the issues. The commission initially agreed to a plan developed by staff in consultation with scientific and technical experts, in one matter, that would have avoided sanctions against the fishing industry by the federal government and potentially adverse actions by international officials. However, the TWRC reversed its support of the plan. In June 2009, as a result of the commission's decision to not follow the

management plan, the U.S. Fish and Wildlife Service made a decision to deny the issuance of export permits for paddlefish and products (caviar/roe) harvested from Kentucky Lake in Tennessee during the recently completed 2008-2009 fishing season.

Recommendation

We recommend that the commission ensures that in all situations in which it is asked to consider complex issues, particularly those involving potential negative consequences to the state, the members carefully consider any scientific and technical information presented to it in reaching its decision. When there is little or no scientific or technical information presented for the other side, or when the commission does not adopt the technical recommendation of its staff, the commission members should ensure that they fully discuss and state in the public meeting and in the written minutes of the meeting the basis for their decision, including specific reasons for disregarding scientific and technical information presented to it.

The commission should document the specific reasons why it took the actions it did in these cases, particularly with regard to changing its support for the earlier plan to ensure the sustainability of paddlefish, and its reasons for not following or accepting the scientific and technical information that was provided to it on numerous occasions, including how its decisions further the statutory mandates of the Tennessee Wildlife Resources Commission and the Tennessee Wildlife Resources Agency.

In order to avoid the negative consequences of their decision, the commissioners should carefully consider reexamining the matters and taking the actions recommended by staff and by the federal government and the international community.

If the commission does not reverse its decision, it should develop and implement a plan to mitigate the consequences of federal action including sanctions and loss of funds. Also, the commission should document how the alternative actions will meet the statutory mandate of TWRA and the state.

If the commission members feel that the negative actions of the federal government in these cases are improper, the commission should consult with the state attorney general's office and determine what legal recourse is available to the commission and to the state to respond to those actions by the federal government to avoid further damage to the citizens of the state.

Management's Comment

We do not concur. The commission has made substantial effort to study commercial fishing issues, including hearing testimony from commercial fishermen, TWRA staff, independent researchers, and representatives of the U.S. Fish and Wildlife Service. We feel that the fully documented discussion and voting by the commission in a public meeting, plus written minutes and video of the proceedings, provide sufficient record of the commission's actions including the consideration of the scientific, technical, financial, and other information.

As it does periodically with all such issues, the commission will continue to review commercial fishing regulations and give consideration to recent actions by the U.S. Fish and Wildlife Service regarding both the paddlefish and sturgeon, neither of which was in place during the commission discussions. Finally, the commission is concerned that auditors have improperly focused on complex resource management issues, second guessed the commission, and, in effect, proclaimed that the commission's decision was incorrect. The commission does not believe that auditors have sufficient expertise to single out portions of this complex issue and criticize the commission's decision. On this issue the commission has made decisions that it believes are in the best interest of the resource, the sportsmen, and the citizens of Tennessee with due consideration for those who would benefit financially from the resource.

Division of State Audit Rebuttal

As auditors, we are fully aware that we are not experts on this complex, technical issue and our purpose is not to second-guess the decision of the commission.

In its comments, management notes that it will continue to review commercial fishing regulations and give consideration to recent actions by the U. S. Fish and Wildlife Service regarding both the paddlefish and sturgeon, neither of which was in place during the commission discussions.

That is the gist of the finding. Given state and federal statutes regarding the protection of endangered and threatened species, and the implications of the commission's decisions, the commission should review the negative consequences or potential negative consequences of its decisions and develop a formal, written plan to effectively mitigate these consequences.

2. Although several weapons have been lost, TWRA's Executive Director has not established agency-wide standardized policies and procedures for maintaining and securing weapons used for hunter education

Finding

The agency has not taken sufficient steps to minimize the potential for loss or theft of weapons used for hunter-education classes. Based on lost property reports, in fiscal year 2008 the agency lost two weapons (a rifle and a shotgun) used for hunter-education classes. Further, according to interviews with regional managers, the agency has lost additional weapons since 2000. However, despite these occurrences, TWRA has not established agency-wide standardized policies and procedures for hunter-education weapons. Each regional manager is given the authority to determine how that region will track, issue, and maintain weapons used for hunter-education classes.

TWRA provides hunter-education classes to individuals who wish to receive instruction in hunter responsibility, firearms, and archery relating to nomenclature, marksmanship, care of equipment, and safe use or handling in both the field and the home. The program is available free of charge to all residents of Tennessee, with each student receiving a minimum of 11 hours of instruction (10 classroom hours and one hour of field exercise which involves a live firing session). The agency uses volunteers to teach these courses. Each volunteer undergoes a background investigation, receives extensive training in weapons safety, and must be at least 21 years of age. TWRA has approximately 1,000 hunter-education volunteers throughout the state.

The missing weapons were identified during routine semi-annual inventories conducted by TWRA's internal auditor. According to agency officials and records, for the weapons lost in 2008, one weapon should still have been secured in the region's arms room and the other weapon was misplaced after being checked out by either an agency staff member or a hunter-education volunteer. A recent semi-annual inventory also identified a weapon that was not state-owned, but was being stored, inappropriately, in an agency gun safe.

Despite the periodic loss of weapons over a number of years, the agency has not taken certain steps that might help minimize the potential for loss of weapons. Specifically, TWRA does not have standardized written policies and procedures detailing how weapons for hunter-education classes are to be secured, issued, or signed back in; or what steps to take when a weapon is lost. Further, the agency does not have policies detailing who is authorized to sign out weapons. While some regions require weapons to be signed out by agency staff, other regions allow hunter-education volunteers as well as TWRA staff to sign out the weapons.

When questioned about the loss of weapons, TWRA officials expressed minimum concern, stating that they were sure the missing weapons would reappear someday. However, one agency official stated that several years ago one of TWRA's missing weapons was found in a pawn shop.

Recommendation

The Executive Director should establish agency-wide written policies and procedures detailing how weapons used for hunter-education classes are to be secured, steps to be taken when weapons are issued and returned or when weapons are lost, as well as who is authorized to sign out weapons.

Management's Comment

We concur. We have regional policies and procedures and will merge these into an agency-wide policy. It is impossible to eliminate all risks in this area given that human intervention is involved. We do not want to implement policies that are so restrictive as to greatly hamper delivery of this program, but we will take reasonable steps to minimize the risk of loss.

3. TWRA's oversight and controls over cooperative farming contracts still need improvement

In the 2005 and 2000 TWRA performance audits, we reported that the Central Office staff did not maintain copies of all cooperative farming contracts and bid paperwork. Management concurred, stating in 2005 that they would strive to improve their central office record keeping. However, TWRA's Central Office staff still do not maintain copies of all cooperative farming contracts and bid paperwork as required by the State Building Commission.

TWRA contracts with farmers to raise crops on agency properties, thereby benefiting the farmers, the agency, wildlife, and hunters. In some instances, the farmers pay, at least in part, through in-kind services such as leaving crops for wildlife or building roads, culverts, or drainage ditches.

Regional and area wildlife managers decide the terms of multi-year cooperative farming contracts and conduct the bid process based on Department of Finance and Administration and State Building Commission (SBC) procedures, included as Attachment 4 to the SBC Bylaws. (Instead of requiring each contract to be submitted to the SBC for approval, the SBC sets out procedures in Attachment 4 that TWRA must follow for crop leasing.) Wildlife managers are also responsible for contract monitoring and enforcement. The regional offices also number the contracts according to TWRA field orders. The SBC procedures for TWRA crop leases require that the TWRA Wildlife Management Area staff and TWRA Central Office staff maintain written records showing a minimum of

1. an affidavit that the advertising of the availability of the land for lease was published,
2. identification of the successful bidder,
3. listings of the amounts of various bids in like units (percentage of crop/dollars),
4. how much crop and dollars were received by the lessee at harvest,
5. records of any personal injury or property damage incidents,
6. a list of lease property showing all leases broken down into all categories,
7. the lease is for a term not exceeding five years, and
8. the lease was signed by the lessee and Executive Director and notarized.

We requested from the Central Office staff a listing of all cooperative farming contracts in effect during calendar year 2008. We also requested listings from each of the four regions and matched those listings to the Central Office listing. We found that 4 of the 163 contracts listed in the regions were not listed on the Central Office listing. (All contracts are to be reviewed by the Central Office before being signed by TWRA's Executive Director.) Copies of the contracts are then kept in the Central Office. The field order form also states that the regional office should submit a listing of contracts every October to the Central Office. This process, which became effective in 2006, would provide an additional check to ensure the Central Office had information on all contracts. According to the Central Office staff who maintain the contracts, however, these listings of contracts have never been submitted by the regions.

We requested, and received, these 4 files along with 21 other files (a total of 25 files) in order to determine whether the files contained the information required by the SBC. The results of our testwork are described below:

- Of the 25 contracts, one was not required to be bid since it was landlocked. Of the remaining 24 contracts, 2 (8%) lack an affidavit that the advertising of the availability of the land was published.
- Of the 25 contracts, 4 were not required to have successful bidder information. Ten of the 21 (48%) remaining files lacked the successful bidder information.
- Eleven of the 21 remaining files (52%) did not contain information on the various bids submitted.
- Six of 25 files (24%) did not contain information on how much crop and/or dollars were received at harvest.
- One of 25 (4%) was a lease that exceeded a five-year period.
- All 25 contracts were signed by the lessee and Executive Director and notarized.

Without complete information on all contracts, TWRA's Central Office cannot effectively oversee the process and ensure that contract provisions are reasonable and in compliance with State Building Commission requirements regarding the contracts and the paperwork maintained.

Recommendation

TWRA's Central Office should take measures to ensure that all cooperative farming contract information is maintained in the Central Office, and that the regional offices submit listings of contracts annually to the Central Office (as an additional check to ensure the Central Office has information on all contracts). Additionally, the Central Office should take measures to ensure TWRA meets all State Building Commission requirements, including having the agency's internal auditor monitor compliance and report the results to management and the State Building Commission.

Management's Comment

We concur. While we have made considerable improvements in this area, we still have some contracts without all required support documents. We will take measures to ensure that all farming contract information is maintained in the central office.

4. TWRA should maintain documentation demonstrating that it performs procedures to ensure the data reliability of its REAL computer system

Finding

Although TWRA has written procedures for monitoring data reliability of the Remote Easy Access Licensing (REAL) system, the agency has not kept documentation that the monitoring has been performed. In addition, the agency has not thoroughly documented testing of enhancements to the REAL system and verification of sales to revenue amounts. REAL is TWRA's license and boat registration system. It integrates a Point-of-Sale system and a customer database for the sales and tracking of most of the agency's hunting and fishing licenses and boat registrations. According to TWRA administrative staff, the agency has collected approximately \$40 million through REAL each year during fiscal years 2006 through 2009. An estimated 800 license agents use REAL to sell licenses and registrations.

We interviewed the Chief of Information Technology and the Director of Administrative Services to determine how TWRA ensures data reliability of the REAL system. We determined that although there are procedures for monitoring reliability, there was not adequate documentation showing that it was actually performed. Also the Chief of Information Technology stated that testing is conducted when new modules, such as adding a new license type, come on-line. She provided auditors with a procedure for data reliability testing and a "test conditions" form used to document the testing. We received some documentation from testing performed in March 2009. When we asked to see documentation of testing performed prior to March 2009, however, the auditor was informed that TWRA did not always complete the "test conditions" forms and staff just run the test until they receive positive results. The Revenue Division's role in ensuring data reliability centers on ensuring that the sales reported by individual agents match the revenues collected and received by TWRA. We requested documentation to ensure that the tests were being performed, but were told that there was no documentation.

Recommendation

TWRA management should ensure that staff (a) perform procedures to ensure the data reliability of the REAL computer system and (b) retain documentation of all testing and monitoring of data reliability for three years.

Management's Comment

We concur. TWRA has always routinely tested REAL data but has not consistently kept documentation of the testing. The IT and Revenue divisions will now keep documentation of testing.

FUNDING-RELATED ISSUES

As Noted in Previous Audits, TWRA Still Does Not Have an Adequate, Reliable Funding Source for Non-game and Endangered Species Programs

Revenues derived from the sale of hunting and fishing licenses continue to subsidize TWRA's non-game and endangered species programs. This issue was also discussed in the August 2005 and March 2000 Performance Audits of the Tennessee Wildlife Resources Agency (TWRA) and the Tennessee Wildlife Resources Commission (TWRC). In the 2005 audit, we recommended that TWRA should study the economic benefits of non-consumptive wildlife activities (i.e., activities other than hunting, fishing, and trapping, such as wildlife-watching activities) and present those studies to the General Assembly with a plan for allocating to the agency some portion of the revenues the state receives from those activities. Although the agency concurred with our recommendations, TWRA officials report that current economic conditions have hindered their efforts to make requests for funding from other sources.

Funding Sources

As was noted in the 2000 and 2005 performance audits, non-game and endangered species programs are disproportionately funded by the sale of hunting and fishing licenses. However, as Table 1 shows, the extent of the reliance on the sale of hunting and fishing licenses as a funding source for these programs has decreased in recent years as the agency has received increased federal funding for non-game and endangered species programs. (It is important to note that only a small percentage of total hunting and fishing revenues are used to fund non-game and endangered species programs. For fiscal years 2005 through 2008, the percent of hunting and fishing revenues used to fund these programs ranged from just under 2% to just over 3%.)

In an effort to identify additional sources of funding not just for the non-game and endangered species programs but for the agency overall, TWRA presented the TWRC with various revenue generating options in October 2008. According to agency officials, the option that appeared to generate the most interest was the possibility of receiving a portion of the sales tax associated with the sale of hunting/fishing/wildlife-watching equipment. However, agency officials concede that the current economic environment limits the possibility of this option being pursued in the near future.

During our audit, we obtained information from several southeastern states to determine how they fund their respective non-game and endangered species programs. We found that funding sources for each state varied, often with states incorporating multiple funding sources including general fund appropriations, revenue from day permits for wildlife management areas for hiking and sightseeing, and the appropriation of some portion of the state's sales tax revenues (or specifically, a portion of sales tax on hunting, fishing, and wildlife-related equipment) to the state's wildlife management agency.

The current economic environment presents a challenge to TWRA and its efforts to identify alternative funding options for non-game and endangered-species programs and additional funding sources for the agency. When the economic climate is more favorable, however, the agency and commission should consider pursuing several options (identified through information obtained from other southeastern states and discussions with TWRA officials) including:

- Establishing a fee for individuals using wildlife management areas for activities other than hunting or fishing. For example, creating a day permit so that individuals can hike or bird-watch in those management areas. TWRA officials report that such types of activities (i.e., non-hunting or fishing related outdoor activities) are the areas of greatest growth for the agency. However, they also noted that TWRA had offered a non-game license in the past, but it was not successful at the time. Three of the states that we contacted (Florida, Mississippi, and Louisiana) sell permits to individuals using those states' wildlife management areas for activities other than hunting and fishing.
- Assessing the economic benefits of wildlife-related activities to the state and presenting that information to the General Assembly with a plan (including proposed legislation) for allocating to the agency some portion of the revenues the state receives from those activities. Virginia allocates a portion of sales taxes collected on outdoor-related goods and equipment to its wildlife management agency. The amount allocated is based on a calculation of the expenditures in Virginia associated with hunting, fishing, and other wildlife-associated recreation (wildlife watching, wildlife photography, etc.) North Carolina and Arkansas also allocate a portion of their sales tax revenues to their state's wildlife management agencies.
- Investigating the possibility of accessing natural resources located on wildlife management areas. TWRA officials report that there currently are locations where natural gas is being harvested on wildlife management areas. These officials stated that further efforts could be performed without significant disruption to wildlife management areas. Louisiana staff reported that their wildlife agency receives royalties from the sale of natural resources (oil) extracted from their wildlife management areas.

Absent the creation of additional sources of revenue for the non-game endangered-species programs (as well as other non-self-sufficient programs), TWRA may have to consider prioritizing agency programs and determine which programs they are statutorily responsible for providing. TWRA may have to identify which programs the agency could eliminate in order to be able to fund priority/statutorily required programs.

Table 1
Non-Game and Endangered Species Programs
Funding Sources for Fiscal Years 2005 Through 2008

Funding	2005 Funding	Percent	2006 Funding	Percent	2007 Funding	Percent	2008 Funding	Percent
Hunting and Fishing Revenues	\$905,521	19%	\$1,046,979	32%	\$765,664	22%	\$684,768	21%
Federal Funding	\$3,745,710	79%	\$2,035,052	61%	\$2,470,408	72%	\$2,377,844	72%
Other Funding	\$77,055	2%	\$228,989	7%	\$216,996	6%	\$225,807	7%
Total	\$4,728,286	100%	\$3,311,020	100%	\$3,453,068	100%	\$3,288,419	100%

	Fiscal Year 2005	Fiscal Year 2006	Fiscal Year 2007	Fiscal Year 2008
Total Hunting and Fishing License-Related Revenues	\$32,803,288	\$32,918,775	\$36,219,987	\$34,559,756
Percent of Those Revenues Spent on Non-Game and Endangered-Species Programs	2.76%	3.18%	2.11%	1.98%

Source: Tennessee Wildlife Resources Agency.

As Noted in Previous Audits, Sportsmen’s Dollars Continue to Subsidize TWRA’s Regulation and Management of Commercial Fishing and Musseling

Revenues derived from the sale of hunting and fishing licenses continue to subsidize TWRA’s regulation and management of commercial fishing and musseling. In the August 2005 performance audit, we recommended that the agency analyze the commercial fishing and musseling programs to determine what other measures can be taken to reduce costs. We also recommended that TWRA monitor commercial license revenues to determine whether fee increases cause dramatic changes in the population of commercial fishers and musselers licensed in the state. The agency concurred and stated that although it had increased its fees for most commercial licenses, it did not believe that the increased revenues would be sufficient to equal the agency’s expenditures for management of its commercial fishing and musseling programs. The agency also stated it would continue to seek ways to reduce expenditures and increase revenues.

Commercial Fishing

TWRA’s Fisheries office manages the commercial fishing program, develops regulations (subject to adoption by the commission) designed to protect commercial stock from over-fishing and to prevent harm to non-commercial species, and enforces those regulations. Commercial fishermen report the amount and species of fish harvested, and TWRA staff analyze harvest trends and monitor fish populations with the goal of ensuring the sustainability of Tennessee’s fisheries.

As Table 2 shows, agency expenditures for program activities exceeded revenues from commercial fishing licenses in fiscal years 2007 and 2008. (According to TWRA staff and expenditure data from years prior to 2005, program expenditures were unusually low during 2005 and 2006. During that time, a fish study was in process and program staff were not performing many of their normal program activities.) In addition, commercial fishing license sales have decreased over the last few years. (See Table 3.) Department officials report that steps are being taken, such as decreasing enforcement activities, to reduce program costs.

**Table 2
Commercial Fishing Program
Revenues and Expenditures
Fiscal Years 2005 Through 2008**

	Fiscal Year 2005	Fiscal Year 2006	Fiscal Year 2007	Fiscal Year 2008
Revenues	\$89,405	\$196,250	\$180,400	\$186,200
Expenditures	\$83,348	\$97,247	\$249,086	\$278,604
Excess of Revenues Over Expenditures	\$6,057	\$99,003	(\$68,686)	(\$92,404)

Table 3
Commercial Fishing Licenses Sold by Type
Fiscal Years 2005 Through 2008

License Type	2005	2006	2007	2008
Residential Commercial Fisher, Senior	50	0	0	0
Residential Commercial Fisher	375	241	253	238
Residential Commercial Fisher, Helper	133	106	109	98
Non-Resident Commercial Fisher	9	4	3	5
Non-Resident Commercial Fisher, Helper	2	0	1	0
Resident Commercial Roe Fisher Permit	*	77	81	88
Non-Resident Roe Fisher Permit	*	2	1	3
Resident Wholesale Roe Dealer	*	11	14	12
Non-Resident Wholesale Roe Dealer	*	1	1	1
Wholesale Fish Dealer	30	25	27	29
Non-Resident Fish Dealer	15	14	10**	11**
Resident Fish Dealer	268	327	280**	267**
Total	882	808	780	752

* Licenses were established in 2006.

**In 2007 TWRA began classifying this type of license as fish farming & bait.

Commercial Musseling

Commercial Musseling program staff formulate commercial harvest regulations (subject to adoption by the commission), with the goal of allowing mussels to be harvested without adversely affecting the population. Staff enforce the regulations, conduct field studies, analyze data, and compile an annual report on which regulation recommendations are based. Program staff also oversee the printing and issuing of regulation summaries and harvest receipt forms to wholesale shell dealers, and facilitate information exchange with the dealers and harvesters.

TWRA's expenditures for operating the commercial musseling program have exceeded license-related revenues in recent years. (See Table 4.) Because program costs exceed program revenues, TWRA has used revenues derived from the sale of recreational hunting and fishing licenses, fees, and permits to subsidize the agency's administration of commercial, for-profit operations. Federal law prohibits the use of federal funds to support commercial purposes.

Table 4
Commercial Musseling Program
Revenues and Expenditures
Fiscal Years 2005 Through 2008

	Fiscal Year 2005	Fiscal Year 2006	Fiscal Year 2007	Fiscal Year 2008
Revenues	\$75,143	\$91,845	\$107,058	\$112,994
Expenditures	\$275,324	\$277,048	\$259,038	\$237,975
Excess of Revenues Over Expenditures	(\$200,181)	(\$185,203)	(\$151,980)	(\$124,981)

An apparent issue in TWRA's efforts to help the commercial musseling program become economically self-sufficient is that the amount per pound that the agency receives for the sale of mussel shells has not been increased since 1991, when the rate was first established. TWRA receives a little over 1 cent for each pound of mussel shells sold. However, agency costs far exceed revenues. An analysis conducted by TWRA officials for fiscal years 2004 through 2007 found that increasing the rate to 10 cents a pound would have resulted in the commercial musseling program becoming self-sufficient. Increasing the rate to only 5 cents a pound would, however, not have been sufficient to meet the annual program expenditures and would still have produced deficits.

According to the Director of Fisheries Management, TWRA has taken steps to reduce costs within the commercial musseling program, by reducing enforcement efforts by program staff and redirecting staff's effort to projects funded from other sources, such as Section 6, Endangered Species Act and State Wildlife Grant funds.

See Table 5 for the type and number of musseling-related licenses sold by TWRA for each fiscal year from 2005 through 2008.

Table 5
Commercial Musseling Licenses Sold by Type
Fiscal Years 2005 Through 2008

Name	2005	2006	2007	2008
Commercial Musseling License	246	238	250	270
Commercial Musseling Helper*	0	license no longer required	license no longer required	license no longer required
Non-Resident Commercial Musseling License	3	3	20	15
Non-Resident Commercial Musseling Helper*	0	license no longer required	license no longer required	license no longer required
Cultured Pearl License	3	1	2	3
Wholesale Mussel Dealer	14	13	13	15
Total	266	255	285	303

* TWRA stopped offering these licenses in fiscal year 2005.

Despite TWRA's efforts to decrease expenditures for the commercial fishing and musseling programs, the steps have not been sufficient to allow the programs to break even. In addition, it is unclear what long-term effect the agency's decrease in enforcement activities might have on agency goals of ensuring the sustainability of Tennessee's fish and mussel populations. TWRA management should continue to identify areas where expenditures can be lowered, without negatively impacting the populations being managed. Further, the agency and commission should consider increasing the fee assessed for the sale of mussel shells to help generate additional revenues and thereby help the commercial musseling program become self-sufficient.

RESULTS OF OTHER AUDIT WORK

Commission Issues

In addition to reviewing the Tennessee Wildlife Resources Commission's compliance with statutory composition requirements (see page 3), auditors also reviewed commission member attendance at meetings, the audit committee's activities, and the commission's implementation of a conflict of interest policy.

Membership. We reviewed commission attendance for three years and found that no appointed commissioners were consistently absent during that time, and that there were no instances in which the commission was unable to vote or conduct other commission business because of the lack of a quorum. (However, the non-appointed members—the Commissioner of Environment and Conservation and the Commissioner of Agriculture, who are members by virtue of their positions, and the Governor, who is an *ex officio* member—seldom attended.)

Audit Committee. In the July 2007 Financial and Compliance audit report of the Tennessee Wildlife Resources Agency (TWRA), a finding noted that the Tennessee Wildlife Resources Commission did not have an approved audit committee charter. (On November 23, 2005, the Comptroller's Office had submitted letters to all state agencies regarding the audit committees required by Section 4-35-101 et seq., *Tennessee Code Annotated*. Included in this letter was Attachment B: *Overview of the Key Responsibilities of the Board, the Audit Committee, and Top Management*.) The agency and commission corrected the deficiencies cited in that audit, resubmitted the charter to the Comptroller's Office, and received approval. In the current performance audit, we reviewed audit committee minutes to determine if the responsibilities outlined in Attachment B and the charter had been met. Our initial review raised some concerns regarding whether the audit committee had addressed all of the key responsibilities outlined in Attachment B and the committee charter. However, the audit committee addressed those concerns at its June 17, 2009, meeting.

Conflict of Interest. We also reviewed the commission members' signed conflict of interest forms and found that, as of January 2009, one member had not signed a conflict of interest form. (As of June 2009, this person was no longer a commission member.)

Reporting Structure for TWRA's Internal Auditor

In the 2005 performance audit of the agency and commission, we recommended that TWRA should change the reporting structure of the internal auditor so that the auditor reports to the Executive Director in order to minimize the threat of a conflict of interest. Management concurred in part, stating that reporting directly to the Director would be an ideal situation if the Director were able to dedicate a sufficient portion of his time to the daily supervision of the auditor.

According to TWRA's internal auditor, her job duties include the following:

- monitoring guns and ammunitions perpetual inventory for the Hunter Education Program;
- working with TWRA Revenue staff to count cash collected in the TWRA regional offices;
- reviewing the REAL system RFP and REAL design documents;
- compiling information on the numbers of anglers and fishers from the REAL system;
- compiling indirect costs and preparing the federal grants schedule for the Chief of Planning and Federal Aid;
- reviewing equipment inventory and transfer timeliness;
- reviewing ammunition and gun inventory agency-wide at year end;
- working on payroll reallocation, budget reports, and timekeeping for federal budget reports;
- visiting lakes to review how concessionaires operate;
- conducting properties reviews (crop leases);
- reviewing the report on specialty license plates from TWRA Revenue staff; and
- receiving a listing of every payment TWRA should receive through the U.S. Department of Agriculture.

The Institute of Internal Auditors' *Standards for Professional Practice of Internal Auditing*, standard 1110, states that "the chief audit executive must report to a level within the organization that allows the internal audit activity to fulfill its responsibilities." Although the internal auditor currently reports to the Chief of Planning and Federal Aid for administrative purposes (e.g., approval of leave, travel, and supply requests), she submits all audit reports to the Executive Director and the Chairman of the commission's Audit Committee.

Homeland Security Responsibilities

Homeland Security has become a major responsibility for TWRA's Boating Division, because of TWRA's ability to respond to water-related events. TWRA is the primary agency tasked by the Tennessee Emergency Management Agency with responding to water-related natural or man-made catastrophes. At the beginning of our audit, we obtained information that raised concerns about whether TWRA staff had the necessary equipment to meet the agency's Homeland Security responsibilities. Upon further review, however, we received evidence from both TWRA and the Tennessee Emergency Management Agency that TWRA staff received the necessary equipment (e.g., personal protective equipment and communications equipment) to fulfill their Homeland Security responsibilities.

Reelfoot Lake

In the March 2000 and August 2005 performance audits of the Tennessee Wildlife Resources Agency and Commission, we discussed concerns regarding the long-term effects of siltation (i.e., soil and small rock particles suspended in the water and eventually accumulating on the lake bottom) on the water quality and the fish and wildlife populations at Reelfoot Lake. Management plans developed by TWRA and the U.S. Army Corps of Engineers proposed several actions, including a water-level management plan (with periodic drawdowns of the lake's water levels) and construction of an alternative spillway (a structure through which excess water is released to manage water levels). According to TWRA staff, the drawdowns would allow the sediment in the lake to decompose fully and allow the soil on the bottom of the lake to become compacted, stabilizing the oxygen levels in the lake. The current spillway is deteriorating and considered inadequate to manage water levels at Reelfoot Lake. As of May 2005 (during our last performance audit) actions had been delayed because of pending lawsuits and concerns about property flooding and the impact of drawdowns on local businesses. As part of the current audit, our objective was to determine the status of the lake and any actions taken. According to TWRA officials, despite the presence of sediment in the lake and the unstable oxygen environment, fish in the lake are thriving. The agency has been able to help the situation somewhat by removing invasive plants from the water and fluctuating water levels to some extent; however, no major drawdowns have occurred, and none are anticipated. The Tennessee Department of Transportation was given responsibility for replacing the spillway as part of a road project and, as of June 18, 2009, the department had received the needed state and federal permits for the project and had accepted a bid for construction of the Reelfoot Spillway and Bridge Project. The estimated completion time for the project is on or before September 30, 2011.

RECOMMENDATIONS

Administrative

The Tennessee Wildlife Resources Agency and the Tennessee Wildlife Resources Commission should address the following areas to improve the efficiency and effectiveness of their operations.

1. We recommend that the commission ensure that in all situations in which it is asked to consider complex issues, particularly those involving potential negative consequences to the state, the members carefully consider any scientific and technical information presented to them in reaching their decision. When there is little or no scientific or technical information presented for the other side, or when the commission does not adopt the technical recommendation of its staff, the commission members should ensure that they fully discuss and state in the public meeting and in the written minutes of the meeting the basis for their decision, including specific reasons for disregarding scientific and technical information presented to them.
2. The commission members should document the specific reasons why they took the actions they did in these cases, particularly with regard to changing their support for the earlier plan to ensure the sustainability of paddlefish, and their reasons for not following or accepting the scientific and technical information that was provided to them on numerous occasions, including how their decisions further the statutory mandates of the Tennessee Wildlife Resources Commission and the Tennessee Wildlife Resources Agency.
3. In order to avoid the negative consequences of their decision, the commissioners should carefully consider reexamining the matters and taking the actions recommended by staff and by the federal government and the international community.
4. If the commission does not reverse its decision, it should develop and implement a plan to mitigate the consequences of federal action including sanctions and loss of funds. Also, the commission should document how the alternative actions will meet the statutory mandate of TWRA and the state.
5. If the commission members feel that the negative actions of the federal government in these cases are improper, the commission should consult with the state attorney general's office and determine what legal recourse is available to the commission and to the state to respond to those actions by the federal government to avoid further damage to the citizens of the state.

6. The Executive Director should establish agency-wide written policies and procedures detailing how weapons used for hunter-education classes are to be secured, steps to be taken when weapons are issued and returned or when weapons are lost, as well as who is authorized to sign out weapons.
7. TWRA's Central Office should take measures to ensure that all cooperative farming contract information is maintained in the Central Office, and that the regional offices submit listings of contracts annually to the Central Office (as an additional check to ensure the Central Office has information on all contracts). Additionally, the Central Office should take measures to ensure TWRA meets all State Building Commission requirements, including having the agency's internal auditor monitor compliance and report the results to management and the State Building Commission.
8. TWRA management should ensure that staff (a) perform procedures to ensure the data reliability of the REAL computer system and (b) retain documentation of all testing and monitoring of data reliability for three years.

**Appendix 1
Title VI and Title VII Information**

Title VI

All programs or activities receiving federal financial assistance are prohibited by Title VI of the Civil Rights Act of 1964 from discriminating against participants or clients on the basis of race, color, or national origin. In response to a request from members of the Government Operations Committee, we compiled information concerning federal financial assistance received by the Tennessee Wildlife Resources Agency (TWRA) and the agency's efforts to comply with Title VI requirements. The results of the information gathered are summarized below.

TWRA received \$22,340,200 in federal financial assistance during fiscal year 2008. According to the agency's fiscal year 2009 Title VI Implementation Plan, TWRA was scheduled to receive the following amounts of federal assistance during 2009:

Federal Grant Program	Amount
Wildlife Restoration	\$7,800,000
Sport Fish Restoration	\$7,500,000
Wallop-Breaux Motorboat Access	\$1,433,470
Hunter Education	\$1,780,925
Endangered Species	\$170,000
Non-Game Programs	\$1,000,000
U.S. Coast Guard	<u>\$2,259,082</u>
Total Federal Funds	\$21,943,477

In addition, for fiscal year 2009, TWRA passed through federal funding for the following projects:

**TWRA Federal Pass-Through Funds
Fiscal Year 2009**

Organization	Federal Program	Federal Funds	Project
U.S. Geological Survey	National Park Service	\$24,400	Gauging Station at Obed Scenic River National Park
U.S. Geological Survey	National Park Service	\$19,500	Gauging Station at Big South Fork National Park

TWRA's Chief of Planning and Federal Aid acts as the agency's Title VI Coordinator and is ultimately responsible for implementing the agency's Title VI policies. The agency's Director of Human Resources is responsible for the implementation of Title VI requirements. As part of his responsibilities, he conducts investigations of Title VI violations, as well as monitors and tracks activities within the agency associated with Title VI. TWRA submitted the 2008 and 2009 Title VI Civil Rights Implementation Plans timely to the Office of the Comptroller of the Treasury. According to the Title VI Coordinator, TWRA submits the same plan to the federal government.

Communication

TWRA provides notification of the agency's nondiscrimination policy on (1) signs displayed in prominent locations at all agency facilities and offices and (2) a nondiscrimination clause that appears in all publications and notices distributed to the general public. The name and address for filing complaints is included on all signs and publications. The following is an example of a notification clause:

Equal opportunity to participate in and benefit from programs of the Tennessee Wildlife Resources Agency is available to all persons without regard to their race, color, national origin, sex, age, disability, or military service. TWRA is also an equal opportunity/equal access employer. Questions should be directed to TWRA, Human Resources Office, P.O. Box 40747, Nashville, TN 37204, (615)781-6594 (TDD 781-6691), or to the U.S. Fish and Wildlife Service, Office for Human Resources, 4401 N. Fairfax Dr., Arlington, VA 22203.

According to the Title VI plan and the Title VI Coordinator, although TWRA does not have full-time Title VI staff, Title VI is a part of every administration, wildlife office, and federal program coordinator's responsibilities. Training is provided annually at staff meetings.

Complaint Process

We reviewed TWRA's 2009 Title VI Civil Rights Implementation Plan to determine the agency's complaint process. TWRA's Title VI Plan requires that all complaints received by regional offices, or by grant recipients, should be forwarded to the Federal Aid coordinator within 10 working days. A complaint will be accepted for processing provided it is within the purview of the civil rights legislation, submitted in writing, signed by the complainant or a representative, and is filed within 180 days of the alleged discriminatory act. The 180-day time frame may be waived by the Federal Aid coordinator when it can be substantiated that the complainant was not at fault in the delayed filing of the complaint. Upon receipt of the complaint in the Central Office, it will be reviewed, logged in the complaints tracking system, and acknowledged within 10 calendar days. In accordance with applicable covered acts, a complaint will be processed in its entirety within 180 calendar days of receipt.

According to the Title VI Plan, upon receipt and acceptance for processing, complaints should be categorized into one of six groups: (1) Title VI (race, color, national origin), (2) Section 504 and ADA (disability), (3) Age Discrimination Act, (4) Multiple, (5) Program, and (6) Inquiry. Complaints filed alleging sex discrimination will be processed under the program category. The Title VI Coordinator determines the jurisdiction and appropriate categorization of all complaints. All complaints received and not under the agency's jurisdiction will be forwarded to the appropriate agency within five working days of receipt.

The Title VI Coordinator will determine complaints to be investigated and ensure investigation within 60 calendar days of receipt. The investigation should consist of an in-depth interview with the complainant, the respondent, and any other officials as deemed appropriate by the investigator. According to the coordinator, one Title VI complaint concerning TWRA was filed with the Tennessee Human Rights Commission in fiscal year 2009. Based upon a review by the Human Rights Commission, the complaint was found to be without merit. According to the coordinator, TWRA has not had any other Title VI complaints.

Contracts

For fiscal year 2009, TWRA had 257 contracts in place, totaling \$24,805,657. Of these contracts, 42 were for \$100,000 or more and accounted for \$20,043,168, or 81% of the total amount of the contracts. Information provided by TWRA does not detail the ethnicity of vendors.

TWRA Contracts \$100,000 or More As of April 30, 2009

Contractor	Description	Amount
Brandon Suggs	Litter Removal and Mowing	\$142,500
NCP Solutions	Boat Renewal Printing and Mailing	\$202,500
Eagle Group	Uniforms	\$147,750
Mountaintop Marketing	Uniforms	\$206,733
Boat Education	Manuals and Testing	\$206,500
Gall's	Uniforms	\$127,451
Progress Printing	Wildlife Magazine Printing	\$1,076,265
Melick Aquafeed	Fish Food	\$213,551
Ray O'Herron Co. Inc.	Boots	\$114,000
Select Air	HVAC Temperature Control Maintenance	\$138,525
Eastern Federal Lands Highway Administration	Catoosa Bridges	\$370,000
Delegated Purchase Authority	Land Survey Services/ Maintenance/Marking	\$130,000
Delegated Purchase Authority	Cost Share Program LIP	\$1,176,149
Delegated Purchase Authority	Dove Field Lease Program	\$100,000
Delegated Purchase Authority	Farm Wildlife Habitat Program	\$130,000
University of Tennessee	4-H Program	\$250,000
Tennessee Tech University	Physiological Resp./Large Mouth Bass	\$143,400
University of Tennessee	Native Grassland Management	\$250,000
University of Tennessee	2 User Surveys Annually	\$550,000
Tennessee Tech University	Fishery Research Unit	\$150,000
Central Trust Bank	Administer REAL System	\$8,000,000
Edward F. Poolos	Clean Vessel Management	\$120,125
The Renaissance Center	Educational Programming	\$750,000
Georgia Forestry Commission	Produce Hardwood Tree Seedlings	\$333,359
U.S. Fish & Wildlife Service	Trout Stock Tennessee Waters	\$500,000
USDA Forest Service	Wildlife Habitat-Cherokee National Forest	\$320,000
Quail Unlimited	Wildlife Habitat Development and Education	\$100,000
Virginia Tech	Propagation Fresh Water Mussels	\$105,000
The Nature Conservancy	Pollution Loading Assessment	\$128,831
The Nature Conservancy	Administration Support	\$203,646

Contractor	Description	Amount
The Nature Conservancy	Landowner Incentive Program	\$120,624
Tennessee Association of Conservation Districts	Incentives USDA Conservation Program	\$525,000
The Nature Conservancy	Northern Cumberland Region	\$962,663
Ducks Unlimited	Prairie Habitat Joint Venture	\$308,000
Mississippi Flyway Council	Council Project	\$100,000
SE Association Fish & Wildlife	SE Instream Flow Network	\$445,500
Tennessee Wildlife Federation	Scholastic Clay Target Program	\$190,000
Conservation Fisheries	Rare Fishes	\$300,000
US Dept of Interior USGS	Regional Geomorphic Chart/Tennessee Streams	\$220,000
US Dept of Interior USGS	Clinch River	\$120,000
US Dept of Interior USGS	Ecological Flow Metrics	\$160,000
Sustainable Forests/ GMO Threshold Timber	Land Lease	<u>\$205,096</u>
TOTAL		\$20,043,168

Title VII

All programs or activities receiving federal assistance must comply with Title VII of the Civil Rights Act of 1964 that prohibits employment discrimination based on race, color, religion, sex, or national origin. The tables below detail the breakdown of commission members and agency staff by gender and ethnicity.

Tennessee Wildlife Resources Commission* Gender and Ethnicity Summary As of June 2009

Commissioner	Gender	Ethnicity
William Brown–Governor Appointee	Male	White
Mike Chase–Governor Appointee	Male	White
Johnny Coleman–Governor Appointee	Male	White
Jim Fyke–Commissioner of Environment and Conservation	Male	White
Ken Givens–Commissioner of Agriculture	Male	White
Jeffrey Griggs–Governor Appointee	Male	White
Mike Hayes–Governor Appointee	Male	White
Dr. Jeff McMillin–Speaker of Senate Appointee	Male	White
Mitchell Parks–Governor Appointee	Male	Black
Julie Schuster–Governor Appointee	Female	White
Todd Shelton–Governor Appointee	Male	White
Danya Welch–Governor Appointee	Female	White
Eric Wright–Speaker of House Appointee	Male	White

*Pursuant to Section 70-1-203, *Tennessee Code Annotated*, the Governor serves as ex officio member of commission.

**Tennessee Wildlife Resources Agency Staff
By Job Title, Gender, and Ethnicity
As of March 27, 2009**

Title	Gender		Ethnicity				
	Male	Female	Asian	Black	Indian	White	Other
Account Clerk	2	9	0	2	0	9	0
Accounting Technician 1	0	8	0	0	0	8	0
Accounting Technician 2	1	2				3	
Administrative Assistant	1	2	0	0	0	3	0
Administrative Secretary	1	20	0	0	0	21	0
Administrative Services Assistant 2	0	2	0	0	0	2	0
Administrative Services Assistant 3	1	0	0	0	0	1	0
Administrative Services Director 1	0	1	0	0	0	1	0
Aircraft Lead Pilot	0	1	0	0	0	1	0
Attorney 3	0	1	0	0	0	1	0
Auditor 3	0	1	0	0	0	1	0
Bindery worker 1	0	2	0	0	0	2	0
Building Maintenance Worker 2	1	0	0	0	0	1	0
Building Maintenance Worker 3	1	0	0	1	0	0	0
Computer-Assisted Design and Drawing Technician 3	1	0	0	0	0	1	0
Clerk 1	0	1	0	0	0	1	0
Clerk 2	0	1	0	0	0	1	0
Clerk 3	1	1	0	0	0	2	0
Communications Dispatcher 1	1	1	0	0	0	2	0
Communications Dispatcher 2	8	4	0	1	0	11	0
Computer Operations Supervisor	0	1	0	0	0	1	0
Custodial Worker 1	1	2	0	0	0	3	0
Data Processing Operator 1	1	2	1	1	0	1	0
Distributed Computer Operator 2	1	0	0	0	0	1	0
Executive Administrative Assistant 1	0	1	0	0	0	1	0
Executive Administrative Assistant 3	1	0	0	0	0	1	0
Facilities Manager 1	1	0	0	0	0	1	0
General Counsel 2	0	1	0	0	0	1	0
GIS Technician 2	0	1	0	0	0	1	0
GIS Technician Manager 1	0	1	0	0	0	1	0

Title	Gender		Ethnicity				
	Male	Female	Asian	Black	Indian	White	Other
Graphics Designer 1	1	0	0	0	0	1	0
Human Resources Analyst 2	0	2	0	0	0	2	0
Human Resources Manager 1	0	1	0	0	0	1	0
Human Resources Technician 3	0	1	0	0	0	1	0
Information Resource Support Specialist 3	3	2	0	1	0	4	0
Information Resource Support Specialist 4	2	0	0	0	0	2	0
Information Resource Support Specialist 5	1	0	1	0	0	0	0
Information Systems Assistant	1	0	0	0	0	1	0
Information Systems Consultant	1	1	0	0	0	2	0
Information Systems Manager 1	1	0	0	0	0	1	0
Legal Assistant	0	1	0	0	0	1	0
Mail Clerk	1	0	0	0	0	1	0
Mail Technician 1	1	0	0	1	0	0	0
Media Producer/Director	1	0	0	0	0	0	1
Offset Press Operator 1	2	0	0	0	0	2	0
Offset Press Operator 2	1	0	0	0	0	1	0
Operations Specialist 2	1	0	0	0	0	1	0
Printing Services Administration Manager	1	0	0	0	0	1	0
Procurement Officer 1	0	5	0	0	0	5	0
Programmer/Analyst 2	0	1	0	1	0	0	0
Programmer/Analyst 3	1	1	0	0	0	2	0
Programmer/Analyst 4	0	2	1	1	0	0	0
Programmer/Analyst Supervisor	0	1	0	1	0	0	0
Property Officer 1	1	0	0	0	0	1	0
Property Officer 2	1	0	0	0	0	1	0
Publications Editor 2	0	1	0	0	0	1	0
Radio Communications Technician 3	4	0	0	0	0	4	0
Radio Systems Analyst	1	0	0	0	0	1	0
Real Property Agent 4	1	0	0	0	0	1	0
Secretary	0	11	0	0	0	11	0
Transportation Technician 1	1	0	0	0	0	1	0
Transportation Technician 2	1	0	0	0	0	1	0
Transportation Technician 3	1	0	0	0	0	1	0
Website Developer 1	0	1	0	0	0	1	0
Wildlife Biologist 2	17	2	0	0	0	19	0

Title	Gender		Ethnicity				
	Male	Female	Asian	Black	Indian	White	Other
Wildlife Biologist 3	11	3	0	0	0	14	0
Wildlife Criminal Investigator	2	0	0	0	0	2	0
Wildlife Educational Program Coordinator	1	2	0	0	0	3	0
Wildlife Enforcement Assistant Manager	2	0	0	0	0	2	0
Wildlife Equipment Operator Supervisor	6	0	0	0	0	6	0
Wildlife Equipment Operator	24	0	0	0	0	24	0
Wildlife Information and Education Assistant Director	1	0	0	0	0	1	0
Wildlife Information and Education Director	1	0	0	0	0	1	0
Wildlife Information Specialist	6	0	0	0	0	6	0
Wildlife Manager 1	28	0	0	0	0	28	0
Wildlife Manager 2	45	0	0	0	0	45	0
Wildlife Manager 3	21	1	0	0	0	22	0
Wildlife Manager 4	11	0	0	0	0	11	0
Wildlife Manager 5	13	1	0	0	0	14	0
Wildlife Officer 1	182	6	1	0	1	186	0
Wildlife Officer 2	12	0	0	0	0	12	0
Wildlife Officer Supervisor	21	0	0	0	0	21	0
Wildlife Operations Specialist	1	0	0	0	0	1	0
Wildlife Resources Assistant Director	2	0	0	0	0	2	0
Wildlife Resources Director	1	0	0	0	0	1	0
Wildlife Safety Officer 1	1	0	0	0	0	1	0
Wildlife Safety Officer 2	1	0	0	0	1	0	0
Wildlife Technician 1	73	3	0	0	0	76	0
Wildlife Technician 2	39	1	0	0	0	40	0
Totals	576	116	4	10	2	675	1
Percentages	83%	17%	<1%	1.4%	<.5%	97.5%	<.5%

We recognize that the agency's ethnic composition is a significant problem. Therefore, we pursued the matter further to determine why TWRA's staff is less than 3% minority and only 1.4% African American. TWRA officials stated that the agency has had some success in hiring minorities and females for other than wildlife officer positions. However, the agency historically has found it difficult to recruit minority and female applicants for wildlife officer positions, mainly because of the lack of minority and female participation in wildlife-related programs at the college and university level. In addition, when minority and female applicants do appear in

the pool of qualified candidates (i.e., on the state's register for wildlife-related positions), they are often not among those ranked highest on the register. (State law requires state agencies to hire career service employees from among the top five interested candidates on the register.) Although the minority and female applicants may have the necessary academic credentials, they often do not have any relevant work experience, which results in a score that is not sufficient to rank them in the top five interested candidates on the register.

The Human Resources Director stated that the Human Resources staff communicate all new job vacancies to state colleges and universities that have wildlife-specific degree programs, in an effort to increase minority hiring. The director also stated that in 2004 he conducted a survey of colleges and universities state-wide to determine the number of minority and female students enrolled in a program at each of the schools that could lead to a career at TWRA, as well as how many of these students would be likely to pursue a job with TWRA. He plans to conduct another such survey this year. In an effort to communicate information about TWRA, agency staff annually conduct educational outreach programs at schools across the state, according to the director.

Appendix 2

Laws Addressing TWRA's and the State's Responsibilities for Protection of Wildlife

Tennessee has an obligation to protect endangered and threatened species and adopt and protect species listed under the Federal Endangered Species Act (ESA Section 6) of 1973. The ESA protects imperiled species and the ecosystems upon which they depend. It also makes it unlawful to “take” listed animals without a permit. “Take” is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct.” The goal of the ESA is “to recover species so they no longer need protection under the ESA.”

Section 70-8-103(3), *Tennessee Code Annotated*, defines an endangered species to mean:

(A) Any species or subspecies of wildlife whose prospects of survival or recruitment within the state are in jeopardy or are likely within the foreseeable future to become so due to any of the following factors:

- (i) The destruction, drastic modification, or severe curtailment of its habitat;
- (ii) Its overutilization for scientific, commercial or sporting purposes;
- (iii) The effect on it of disease, pollution, or predation;
- (iv) Other natural or man-made factors affecting its prospects of survival or recruitment within the state; or

(B) Any species or subspecies of fish or wildlife appearing on the United States' List of Endangered Native Fish and Wildlife as it appears on April 5, 1974 (Part 17 of Title 50, Code of Federal Regulations, Appendix D), as well as any species or subspecies of fish and wildlife appearing on the United States' List of Endangered Foreign Fish and Wildlife (Part 17 of Title 50 of the Code of Federal Regulations, Appendix A), as such list may be modified hereafter.

The Tennessee Wildlife Resources Agency (TWRA) and Tennessee Wildlife Resources Commission (TWRC) are charged with being the state entities to provide the conservation and protection for the wildlife of the state. According to Section 70-1-201(a), *Tennessee Code Annotated*, the TWRC is an independent administrative board of conservation for game, fish, and wildlife of the state. Section 70-1-206(a)(4) focuses on wildlife recreation activities, stating that the TWRC is to “establish objectives within state policy that will enable the wildlife resources agency to develop, manage, and maintain sound programs of hunting, fishing, trapping, and other wildlife related outdoor recreational activities.” Regarding the TWRA, Section 70-1-301(b) stipulates that:

It is the policy of the state that the agency shall be nonpartisan and shall place first and foremost the welfare of the wildlife and its environment in the agency's planning and decisions, and to encourage, by every appropriate means, the full development of the state's natural resources to the benefit of all the citizens of Tennessee, including, but not limited to, the creation of a comprehensive long-

range management plan to integrate the wildlife resource agency's efforts and to implement and encourage full utilization of Tennessee's wildlife resources consistent with realistic conservation principles.

According to Section 70-1-302(a)(2), the TWRA is to "protect, propagate, increase, preserve and conserve the wildlife of this state." The agency's mission, as defined in its strategic plan, is to preserve, conserve, manage, protect, and enhance the fish and wildlife of the state and habitats for the use, benefit, and enjoyment of the citizens of Tennessee and its visitors. Its vision is that the Tennessee Wildlife Resources Agency will use scientific principles in the management of fish and wildlife.

According to Section 70-8-101 et seq., Tennessee Nongame and Endangered or Threatened Wildlife Species Conservation Act of 1974:

Species or subspecies of wildlife indigenous to this state that may be found to be endangered or threatened within the state should be accorded protection in order to maintain and, to the extent possible, enhance their numbers.

The state should assist in the protection of species or subspecies of wildlife that are deemed to be endangered or threatened elsewhere by prohibiting the taking, possession, transportation, exportation, processing, sale or offer for sale or shipment within this state of species or subspecies of wildlife listed on the United States' List of Endangered Fish and Wildlife as set forth in this part, unless such actions will assist in preserving or propagating the species or subspecies.

Appendix 3

Pallid Sturgeon and the Closing of the Shovelnose Sturgeon Harvest

The pallid sturgeon is listed as an endangered species and is protected by the Federal Endangered Species Act (ESA) of 1973. Under this Act, it is illegal to “take” a species listed under the ESA. “Take” is defined by the ESA as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct.”

Research has shown that during the commercial harvest of shovelnose sturgeon, pallid sturgeon are being captured and harvested, which is illegal and a violation of the ESA. (Research reviewed includes a June 2007 U.S. Fish and Wildlife Service report and December 2008 report funded by the USFWS, TWRA, and Tennessee Technological University and prepared by a team of researchers from the U.S. Geological Survey [USGS], TWRA, Tennessee Technological University and Southern Illinois University.) The December 2008 report estimates that, at minimum, 2% of the commercial shovelnose sturgeon harvest is actually pallid sturgeon. Based on this estimate, an average of 46 pallid sturgeon a year were harvested between 2001 and 2007. This is a substantial number, particularly because according to TWRA staff, all of the pallid sturgeon produced for this year’s agency restocking efforts came from only five females.

Commercial harvest of shovelnose sturgeon appears to be hampering federal pallid sturgeon recovery efforts. In 2006, the U.S. Army Corps of Engineers (USACE) estimated spending \$43 million in federal funds on recovery efforts for the pallid sturgeon. According to the USACE, pallid sturgeon mortality rates are much higher in areas of the Mississippi River that are open to shovelnose sturgeon harvest, compared to areas that are closed. As can be seen in the chart below, fewer older fish are found in the “Open Harvest Area,” and mortality rates of pallid sturgeon are significantly higher.

Pallid Sturgeon Mortality Rate in Areas of Mississippi River	
Open Harvest Area	Closed Harvest Area
37%	13%
*Max age: 14 yrs. Over age 12: 6%	Max age: 21 yrs. Over age 12: 39%

*According to fish biology, a heavily harvested fishery will produce catch data that show a significantly lowered amount of older-aged fish when compared to a normal, healthy population.

Source: U.S. Army Corps of Engineers.

Because of the effect the commercial harvest is having on pallid sturgeon recovery efforts, the USACE petitioned the U.S. Fish and Wildlife Service (USFWS) to close shovelnose sturgeon harvesting in all areas in which the two species overlap. Representatives of the USFWS informed the TWRC that it will be able to take such action by federalizing Tennessee’s waters

under the similarity of appearance clause of the ESA. USFWS representatives provided the TWRC with examples of other situations in which the USFWS has taken similar action in the past.

The states listed below have closed their commercial harvests of shovelnose sturgeon, and many of them closed that harvest in 1990, the same year the pallid sturgeon was listed as a federally endangered species.

States Reported as Being Closed to Shovelnose Harvest	
Arkansas	Montana
Louisiana	North Dakota
Mississippi	South Dakota
Minnesota	Wisconsin
Nebraska	

According to the agency, only a small percentage (7% to 9%) of Tennessee’s roe harvest is from shovelnose sturgeon. Minutes from a 2007 meeting of the national Pallid Sturgeon Recovery Team stated the following concerning commercial fishing of shovelnose sturgeon:

The illegal harvest of pallid sturgeon by commercial sturgeon fishermen continues to be a significant threat to the species. The recovery team reviewed the interpretation of recent preliminary sturgeon harvest data collected by the State of Tennessee and concurs with rationale used by the State of Tennessee’s Wildlife Resource Agency in proposing regulation changes to their shovelnose sturgeon season. We would encourage other states still allowing commercial shovelnose harvest, where pallid and shovelnose sturgeons are sympatric, to consider the actions taken by the State of Tennessee, and consider a similar course. The recovery team believes that only through closing commercial harvest of *Scaphirhynchus* can the threat of overutilization of pallid sturgeon be fully and completely addressed.

In addition, according to the minutes of the Pallid Sturgeon Recovery Team meeting, the following recommendations were made:

Develop position letter to the Office of Scientific Authority indicating that harvest of shovelnose, within the range of pallid sturgeon, is a documented threat to pallid sturgeon conservation, and they should consider that threat in their permitting process.

Recovery team recommends that commercial harvest of shovelnose sturgeon be eliminated, where pallid and shovelnose sturgeon are sympatric, due to incidental, accidental, or intentional take of pallid sturgeon. This recommendation is based on documented evidence of take, unsustainable take of pallid sturgeon, and

difficulties with enforcement of current regulations due to the similarity of appearance between pallid and shovelnose sturgeon.

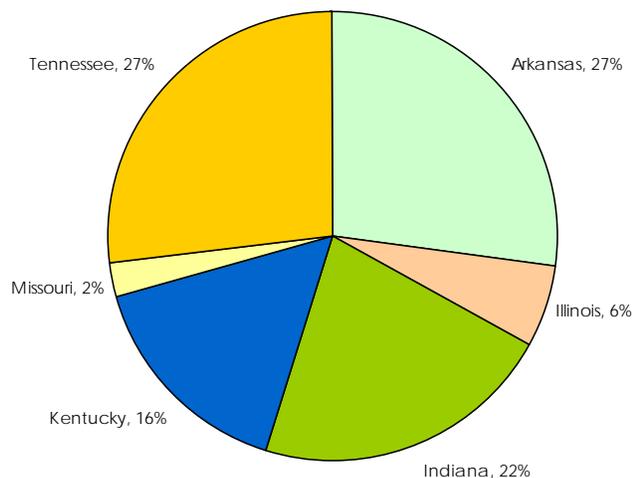
On September 22, 2009, the USFWS published in the Federal Register a proposed rule that would grant the shovelnose sturgeon the same protections as an endangered species based on the “Similarity of Appearance” provision of the ESA. This action would make it illegal to harvest shovelnose sturgeon in protected areas (i.e., in areas, such as Tennessee, where the shovelnose sturgeon’s and pallid sturgeon’s ranges overlap).

Appendix 4

Paddlefish: Increasing Size Limits and Shortening the Harvest Season to Ensure Survivability of the Species

As can be seen in the chart below, based on USFWS data, Tennessee is one of the leading producers of paddlefish roe among six states open to commercial paddlefish harvest (Tennessee's average harvest is 17,952 lbs).

Average Percent Roe Produced 2003-2007

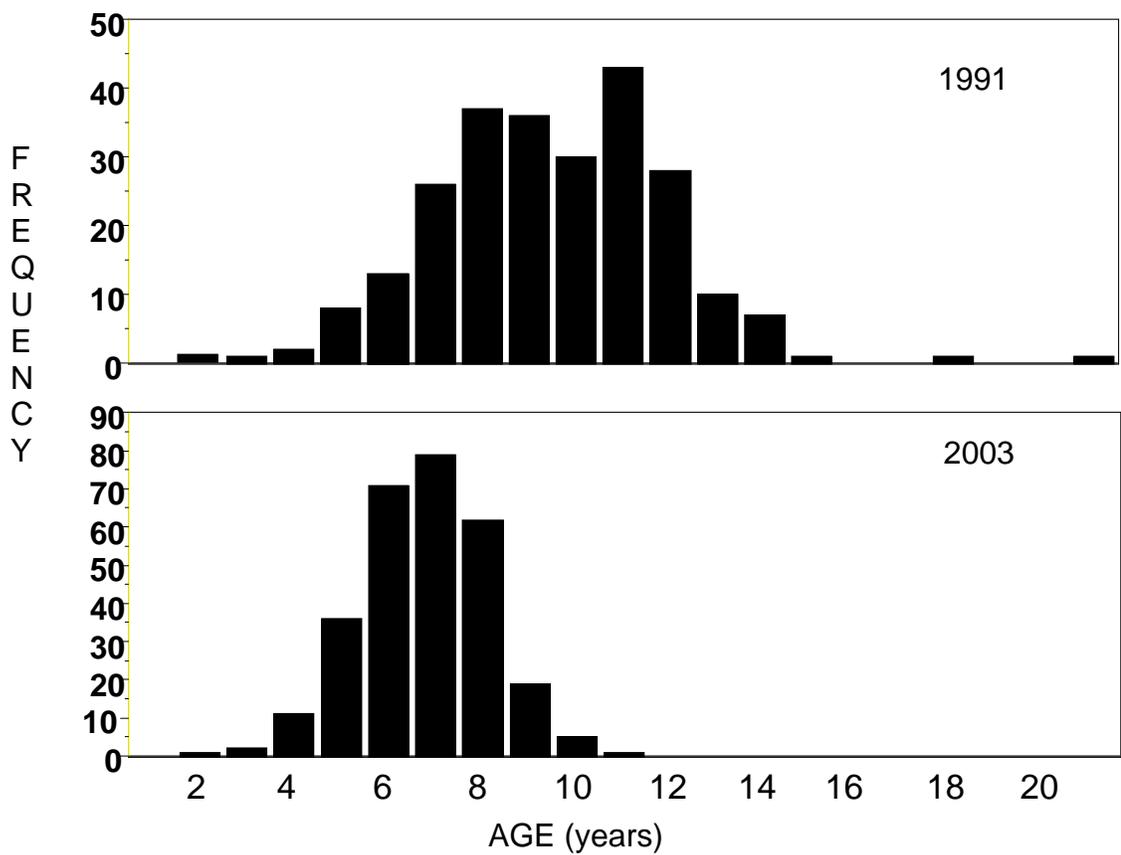


Research indicates that the paddlefish is in danger of being overfished; that harvest rates are unsustainable, particularly during periods of little rainfall; and that raising the catch-size limits (EFLs) is necessary to protect more females from harvest to ensure proper spawning ratios to replenish the population. In addition, research indicates the season should be shortened to ensure the average water temperature is optimum for by-catch to survive release. The research was based on fisheries independent data and reported commercial catch information. Analyses used standard calculated biological indices, which include the examination of size and age structures, mortality rates, and properly identified linear relationships between indexed variables.

According to TWRA staff, information pertaining to harvests is calculated based on data from the most recently completed season. Catch information is required of commercial fishermen and is turned in to TWRA monthly. In addition to analyses based on reported harvest data, TWRA staff periodically do more in-depth evaluations based on fish jawbones collected from commercial fishermen or directly by TWRA staff during ride-alongs with the commercial fishermen. By accompanying commercial fishermen, TWRA staff are also able to assess harvest by-catch and mortality. Analyses used standard calculated biological indices, which include the examination of size and age structures, mortality rates, identifiable trends across harvest data,

and properly identified linear relationships between indexed variables. The auditors note that the principles used by TWRA appear similar to documented and scientifically accepted stock assessment methods.

As was mentioned with the pallid sturgeon, normal fish populations have a natural distribution of older-aged, lengthier fish. According to stock assessment principles, when an age structure shows reduced amounts of older-aged, lengthier fish, in addition to lowered numbers of fish, it is a clear indicator of an over-fished population. The charts below were presented to the Tennessee Wildlife Resources Commission (TWRC) by Tennessee Wildlife Resources Agency (TWRA) staff and a representative of the U.S. Geological Survey. Each chart shows that over the course of time, the age structure analysis is revealing that fewer and fewer older-aged, lengthier fish are being caught in the fishery.



Source: Figure taken from Dr. Phil Bettoli's January 2008 presentation to the TWRC concerning findings of paddlefish overharvesting in Kentucky Lake.

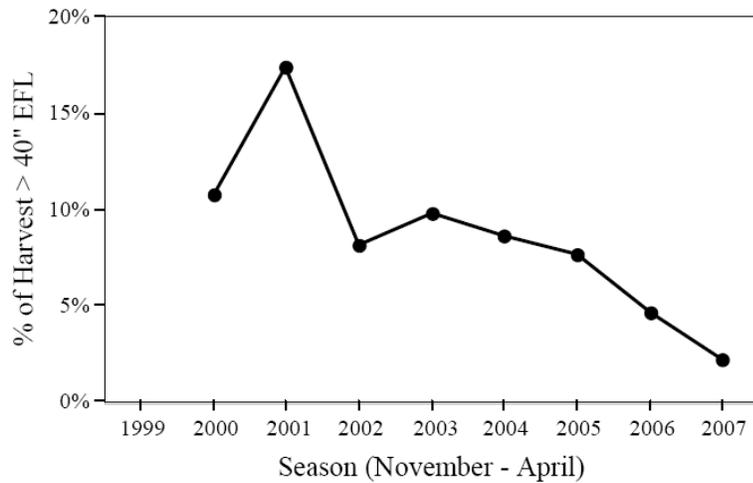


Figure 17. Proportion of the paddlefish harvested by Tennessee commercial fishers from the Mississippi River that were greater than 40" EFL each season.

Source: Chart taken from the Management Plan for the Lower Mississippi River Commercial Paddlefish Fisheries 2008-2012 ; Mississippi Fish and Wildlife, Arkansas Fish and Wildlife, and TWRA.

Currently the paddlefish EFL catch-size limit is being held at 36 inches for Kentucky Lake (34 inches for the Mississippi River), despite prior approved proclamations 05-22, 06-22, and 08-01 which show, initially, TWRC's approval of the agency's plan (i.e., to stair-step a size increase from 34" to 38" over several seasons). The chart below was presented to the TWRC as justification for implementing the 38-inch Kentucky Lake (36-inch Mississippi River) EFL catch-size limits. In essence, analysis of frequency distributions of catch information and a relationship to indices of paddlefish maturation rates indicates that with the current 36-inch EFL for Kentucky Lake (34-inch EFL for the Mississippi River), only 11% (9%) of the mature spawning females are being protected from harvest. Accepted fish research indicates that for a fisheries population to be able to replenish and survive commercial harvesting, approximately 30% of the mature, spawning females should survive to spawn. Thus, to meet this index level, based on the population growth characteristics and maturity rates, the agency found that a 38-inch EFL catch-size limit is necessary for Kentucky Lake and a 36-inch EFL catch-size limit is necessary for the Mississippi River.

Percent of Spawning Females Protected by Size Limit*		
Size Limit	Kentucky Lake	Mississippi River
34"	2%	9%
35"	6%	20%
36"	11%	<u>30%**</u>
37"	20%	46%
38"	<u>30%**</u>	58%

* Percentages are based on a statistically sound linear relationship between EFL and Maturity as established by Scholten and Bettoli (2005).

** Research reports that for species similar to Paddlefish, roughly 30% or more of the population's mature females must survive after a harvest season for survivability.

Source: Data from the Commercial Fishing Report (a continuously updated database of catch information submitted monthly by commercial fishermen).

The following table shows the mortality rates for the 2006-2007 season (at the time of the presentation, the most current completed season). These rates are clearly high when compared to accepted natural mortality rate of 10% or less.

Paddlefish Mortality Rates* (2006-2007 Season)	
Kentucky Lake	Mississippi River**
58%	46%

*Research indicates that natural mortality rates for Paddlefish are 10% or less.

**Rates for Mississippi River were established by TWRA using the methodology established by Scholten and Bettoli (2005).

The paddlefish is viewed by the international community as a species likely to become endangered and is listed as an Appendix II species by the Convention on International Trade for Endangered Species (CITES). Appendix II species are listed when CITES is convinced there is reason to believe a species will most likely become threatened or endangered if proper regulations are not adopted. Because of this, the international community has expressed that unless a scientifically developed management plan which ensures the survivability of the species is developed and implemented, export/import permits will not be granted. Furthermore, the European Union (EU) has requested, as a result of increased trade in paddlefish caviar, that the U.S. Fish and Wildlife Service provide the most recent information on the "conservation status" and "management measures" in place. The EU explained that it is requiring an additional import permit to any species listed with CITES and found to have high import levels into Europe. Before import permits will be granted, the Scientific Review Group of the EU will examine any management plans and determine if the plans meet their requirements for sustainability.

A tri-state plan (*Management Plan for the Lower Mississippi River Commercial Paddlefish Fisheries 2008-2012*) has been developed by TWRA fisheries biologists and biologists from the Mississippi Fish and Wildlife and Arkansas Fish and Wildlife departments. This plan is based on the U.S. Geological Survey (USGS) research completed at Kentucky Lake. The plan applied the methods and analyses used for the USGS Kentucky Lake study to develop minimum EFLs (catch-size limits) for the Mississippi River. These methods were applied to a combination of independently sampled and commercially caught data. Using the same statistically sound and substantiated linear relationship between size and maturity, the agency determined that an EFL of 36 inches was necessary to ensure that a proper percentage of mature females are protected. According to the agency, the differences in the EFLs in the Mississippi River and Kentucky Lake result from differing growth rates between the two separate populations. Paddlefish in Kentucky Lake appear to grow at a faster rate than those in the Mississippi River.

Data show that since EFLs have been implemented, commercial fishermen's harvests have not suffered. According to TWRA staff, egg harvest has increased by 50% over five years ago, and the egg yield per fish has increased by 25%. TWRA indicates that the EFLs are working; however, they are still not at a sustainable level.

The U.S. Fish and Wildlife Service (USFWS) stated in its March 2009 report to the European Union that paddlefish in Tennessee are being overfished. The USFWS also mentioned in its report that the cause of the paddlefish decline is attributed to the recent actions by the TWRC, and "the disparity between these regulations and science-based recommendations of TWRA biologists." The USFWS' Division of Scientific Authority decided that it will need to review and reassess Tennessee's export status for the 2009-2010 season as a result of this situation. (Because of an increase in exports of paddlefish roe from Tennessee and caviar harvests coming from Kentucky Lake, the USGS and USFWS approved and funded a three-year study of paddlefish in Kentucky Lake. This research [Scholten and Bettoli (2005) and Bettoli and Scholten (2006)] has been cited by the USFWS as an important study for creating proper paddlefish management plans and has been used by a number of sources other than TWRA. The USFWS further stated it will be referring to these studies when making its determinations regarding export status.)

On June 18, 2009, the U.S. Fish and Wildlife Service announced in a news release that it will deny the issuance of export permits for paddlefish and products (caviar) harvested from Tennessee's Kentucky Lake during the recently completed 2008-2009 fishing season. This action will not impact the domestic sale of the caviar but will prevent its export. The announcement states that the USFWS has determined that the harvest level is not sustainable and thus does not meet the Convention on International Trade for Endangered Species (CITES) requirements for survivability of the species. The USFWS further stated that this decision was a result of the TWRC's 2008 decision to not follow TWRA's recommendations.