

FINAL ENVIRONMENTAL ASSESSMENT

SHIELDS CREEK CRAPPIE IMPOUNDMENT

Proposed license agreement and Section 26a Approval to
Tennessee Wildlife Resources Agency (TWRA)
for a portion of Shields Creek Embayment
TVA Tract XCK-337R
Opposite Holston River Mile 70.1, Right Bank
Cherokee Reservoir
Grainger County, Tennessee

TENNESSEE VALLEY AUTHORITY

Cooperating Agencies
U.S. ARMY CORPS OF ENGINEERS
TENNESSEE WILDLIFE RESOURCES AGENCY

JANUARY 2003

For more information, please contact:

Stanford E. Davis
Environmental Policy and Planning
Tennessee Valley Authority
400 West Summit Hill Drive (WT 8C)
Knoxville, Tennessee 37902
Phone: (865) 632-2915
E-mail: sedavis2@tva.gov

Marty G. Tyree
U.S. Army Corps of Engineers
Regulatory Branch
3701 Bell Road
Nashville, Tennessee 37214
Phone: (615) 369-7514
E-mail: Marty.G.Tyree@
usace.army.mil

Doug Peterson
Tennessee Wildlife Resources Agency
Region IV
3030 Wildlife Way
Morristown, Tennessee 37814
Phone: (423) 587-7037 (ext. 114)
E-mail: dpeterson@mail.state.tn.us

CHAPTER 1

1.0 PURPOSE OF AND NEED FOR ACTION

For a couple of years, the Tennessee Wildlife Resources Agency (TWRA) and Cherokee Lake Users Association (CLUA) have discussed with TVA and U.S. Army Corps of Engineers a proposal for a crappie nursery impoundment on Shields Creek. After discussing several configurations of the dam for the project, revised plans were submitted in August 2002 to move the proposed dam away from an existing water line and off the state highway right-of-way. TWRA requests a license to construct the small dam to hold water in Shields Creek at a constant level for about 6 to 8 months during the spring and summer each year. The earth-filled structure would be located about 175 feet north of U.S. Highway 11W in Bean Station, Grainger County, Tennessee (see Vicinity and Exhibit maps). The dam would require 9948 cubic yards of material and would be approximately 750 feet long, 100 feet wide, and 21 feet high (from elevation 1050 to 1071 msl). It would capture drainage from a 2280-acre watershed and normal pool would be at elevation 1067 msl. At this elevation, the dam would impound 45 surface-acres of water. The emergency spillway would be at elevation 1069 msl. The project, including the proposed TVA licensed-area, would involve use of approximately 62 acres of public land and 8574 feet (at elevation 1075 msl) of TVA shoreline. The project would also involve construction of an access road and gravel boat ramp above the dam on the west side of the embayment. Except for the existing road right-of-way, access would require crossing adjoining private farmland. See the attached TWRA design plans, i.e., Shields Creek Nursery, Cherokee Reservoir (Sheets S1 thru S4) for the crappie impoundment.

The purpose of the project is to provide optimum spawning conditions in the Shields Creek embayment even when the reservoir has low water levels during the spring. High and relatively constant water levels during the spring spawning season typically result in good crappie reproduction in Cherokee Reservoir. Alternatively, during periods of drought, crappie spawning success rates drop markedly. Multiple years of drought during the 1980's and late 1990 have resulted in low crappie populations in both Cherokee and Douglas Reservoirs. A popular game fish, crappie fishing provides economically valuable recreation opportunities for many thousands of sportspersons from the area and across the region. This project would allow TWRA to more consistently and successfully raise fingerling crappie in the nursery impoundment for release into the reservoir and ultimately improve the population of this species. CLUA would contribute \$170,000 for dam construction. No state or federal money is allocated for construction of the project.

TWRA would operate and maintain the facility (i.e., dam, access road, and gravel ramp) after construction. To allow time for the impoundment to fill even during dry spring weather, the gate valve in the dam would be closed on March 1 each year. This closure date may be subject to minor change, if TWRA's monitoring suggests that weather conditions might make the impoundment difficult to fill. The gate valve is proposed to remain closed until September 15. The Shields Creek impoundment would provide a stable pool beginning about the end of March; and, unless the main reservoir overtops the dam, provide a summer-long growing season for the young crappie.

Regardless of Cherokee Reservoir's pool elevation, when stable pool is established in Shields Creek impoundment, brood fish would be released into it. Following the spring spawn and a summer of growth, on September 15, the gate valve would be opened and young crappie would be released into the main reservoir. During the late summer, fall and most of the winter (September 15 through March 1), the gate valve would remain open and Shields Creek impoundment would be operated like the main reservoir. TWRA would stock the nursery impoundment with crappie brood fish, monitor the spawn and water quality, and then release the fingerlings into the main reservoir at the appropriate time. TWRA would also be responsible for long-term operation and maintenance of the dam and gravel boat ramp, including any liability associated with dam failure, vegetation control, and structural refurbishment needs. TWRA would also be responsible for dam removal and site restoration in the future in the event it was ever needed.

1.1 Other Pertinent Environmental Reviews or Documentation

In 1990, TVA completed an Environmental Impact Statement (EIS), *Tennessee River and Reservoir System Operation and Planning Review (TVA, 1990)* addressing changes to the operation of its reservoir system, with emphasis on water quality and reservoir levels. In this EIS, TVA also addressed the environmental and socioeconomic consequences of changes in reservoir operations on land and shoreline development and then began delaying the late summer drawdown of tributary reservoirs until August 1. It also began a system-wide program to improve water quality below dams. During the summer of 2001, TVA began its *River Operations Study and EIS* (completion expected in December 2003) to look at alternative water management strategies system-wide. These strategies would not affect the water level operations regime within the proposed Shields Creek Crappie Impoundment. The primary purpose of the proposed impoundment would be to stabilize water levels in the pool independent of water levels in Cherokee Reservoir or TVA's water management decisions on a system-side basis.

In 1999, TVA initiated the *Shoreline Management Initiative (SMI): An Assessment of Residential Shoreline Development Impacts in the Tennessee Valley (TVA, 1998)* on residential shoreline development impacts throughout the Tennessee Valley. The Record of Decision (ROD) for SMI was signed on May 24, 1999. Under the Blended Alternative adopted in the ROD, sensitive natural and cultural resource values of reservoir shorelines would be conserved and retained. TVA property in the Shields Creek embayment is not open for residential development.

In 2001, TVA completed an *Environmental Assessment and Cherokee Reservoir Land Management Plan — Jefferson, Hawkins, Hamblen and Grainger Counties (TVA, 2001)*. In this EA, TVA evaluated alternative plans for the future use of 8,187 acres (297 shoreline miles) of public land above summer pool elevation 1075 msl of Cherokee Reservoir. Under the adopted Alternative B, the Allocation Alternative, an updated plan for Cherokee Reservoir Land Management Plan (Cherokee Plan) was approved by the TVA Board of Directors. The land management plan identifies the most suitable uses for 149 parcels of land and allocates 542 acres to Zone 2, Project Operations; 1,020 acres to Zone 3, Sensitive Resource Management; 5,590 acres to Zone 4, Natural Resource Conservation; 0 (zero) acres to Zone 5, Industrial/Commercial; 760 acres to Zone 6, Recreation, and 275 acres to Zone 7, Residential Access. On Cherokee Reservoir, over 80 percent of land would be managed with an emphasis on sensitive resource protection and natural resource conservation. No land would be allocated to Zone 5 -

Industrial/Commercial Development. Only 19 percent of the planned land could be subjected to more intensive development. The LMP also expands the Berry Island Ecological Study Area, designates three new Habitat Protection Areas, and commits to consider adding three other TVA Natural Areas during the resource management unit planning process. This plan aligns with TVA's Shoreline Management Policy implemented on November 1, 1999. TVA land in Shields Creek embayment was allocated to Zone 4, Natural Resources Conservation, in the Cherokee Plan.

1.2 Scoping and Issue Identification

During the initial public and internal scoping for this project, several issues were raised that are being addressed at the site specific (i.e., Shields Creek embayment), area (reservoir-wide), or regional level. There would be insignificant, yet beneficial affects on the aquatic environmental, crappie fishery, recreation, and the economy. The project would likely enhance moist site vegetation as well as emergent and scrub-shrub wetlands and associated wildlife habitat around the reservoir shoreline and along the streambanks of Shields Creek.

In regards to public involvement, TVA published a public notice on May 9, 2001 and a TVA /USACE Joint Public Notice No. 01-43 was published on June 6, 2001 notifying the public of TWRA's request for the original project, i.e., 200-foot long and 18-foot high dam and a slightly different location on Shields Creek. Comment period on the joint public notice ended on July 5, 2001. The TVA public notice of proposed land action appeared in the *Morristown Citizens Tribune*. This public notice was available on a TVA external web site which lists current land actions involving TVA public land under consideration. TVA also placed a sign on the property along Highway 11W to inform passersby of the proposed land action. The TVA comment period on this proposed land license ended on June 30, 2001. TVA received one written comment from Bean Station Utility District (BSUD) on the proposal and received one telephone call from a private citizen who was complimentary of the proposal. BSUD informed TVA of its waterline which could likely be affected by the project at the originally proposed location. As a result of BSUD's comment, the applicant decided to shift the Shields Creek dam location slightly north (about 175 feet upstream of U.S. Highway 11W) to avoid the water main.

In response to the joint public notice, USACE received one letter each from a federal and state agency, and two emails from Tennessee Department of Transportation (TDOT), another state agency. In letters dated August 4, 2000 and July 5, 2001, U.S. Fish and Wildlife Service (FWS) indicated that based on endangered species collection records available to it, no federally listed or proposed endangered or threatened species occur within the impact area of the project. No significant adverse impact to fish and wildlife and the human uses thereof are expected to result from the proposal. Therefore, FWS has no objection to the issuance of the permit to conduct the work originally described in the subject notice (see Appendix A).

In its letter of June 8, 2001, Tennessee Historical Commission (THC) indicated that in its opinion there are no properties listed or eligible for the National Register of Historic Places affected by this undertaking. However, TVA archaeologists are aware of 2 sites in the embayment area upstream of the project and impacts to these sites were considered in this review. Because of these 2 sites, TVA initiated further consultation, as described in Section 3.5 (also see THC letter of December 9, 2002 in Appendix A).

Final Environmental Assessment

By emails dated July 20 and August 14, 2001, TDOT asked that TWRA submit plans for the project to ensure conflicts in future road, bridge, and right-of-way issues could be avoided. TDOT was forwarded the project plans on December 4, 2002.

Because Tennessee Department of Environment and Conservation (TDEC), Division of Water Pollution Control, inadvertently reviewed and referenced the original project in its initial October 21, 2002 approval of the project, it agreed to review the revised plans at TVA's request. By letter to TWRA, dated January 3, 2003, TDEC conditionally approved and reissued its water quality certification for the project (see Appendix A). TWRA will adhere to these special conditions in implementing the project.

Based on its review of the draft EA, in a letter dated December 11, 2002, TWRA indicated that the crappie impoundment should go a long way in improving sport fishing on Cherokee Reservoir. It further indicated that TWRA supports the findings of the draft EA and feels confident it will be able to abide by the directives stipulated by the various permitting agencies.

The East Tennessee Development District found no conflicts with regional plans or programs of the District or other agencies in the region.

TVA conducted a preliminary review and evaluation of the proposed project subsequent to the receipt of detailed plans. As a result of this review, TVA documented in the attached Categorical Exclusion Checklist (see Appendix B) its determination that the following resource media required no further evaluation.

- Visual
- Land-based transportation
- Socioeconomics including environmental justice
- Prime or unique farmland
- Groundwater
- Air Quality
- Special, radioactive, or hazardous wastes or toxic substances
- Noise

Based on the public response and TVA staff review, the following areas for impact analysis were identified for further evaluation in this EA related to the proposed Shields Creek impoundment decision:

- Terrestrial Environment (including wetlands)
- Aquatic Environment
- Water Quality
- Floodplains
- Cultural Resources
- Recreation
- Endangered Species

Public Notice Supplement. The basic precept of the USACE's public notice process is to include sufficient information to give recipients of the notice a clear understanding of the nature and magnitude of the activity; thus generating meaningful comment. Under Corps' regulations, supplemental, revised, or corrected public notices are required to be

issued if, in its view, there is a change in the applicants' project that would affect the public's review of the proposal. The modification that has taken place during the public interest review process was in response to concerns expressed and would not result in increased impacts. Based on these considerations, issuance of a revised public notice to advertise the change is not warranted.

1.3 Alternative Project Locations Considered

Two other locations on Cherokee Reservoir were considered for this project. Poor Valley Creek (opposite Holston River Mile 89.3R) was evaluated as a potential project location but rejected because of the size of the project and potential public opposition. A similar project on Poor Valley Creek would need to be considerably larger than on Shields Creek because of the watershed size and the inflow volume. TWRA and CLUA were both unwilling to commit to a larger project in this watershed without knowing if it would work. The public did not want to lose the existing fishing, hunting, and recreation opportunities provided by the area.

Another site on private property in the vicinity of the Sequoyah Council Boy Scout Reservation was evaluated but became unavailable after the landowner withdrew support for the project. At this site, TWRA and CLUA would have had to rely on groundwater (i.e., well) as a source for the nursery pond. This would be less desirable and probably more expensive to management.

Also, as previously discussed, a Shields Creek alternative site closer to Highway 11W was evaluated and dismissed when agreement could not be reached with BSUD regarding re-routing of its main waterline. The currently proposed site, shifted slightly upstream of this originally evaluated site and the subject of this review, is preferred by both TWRA and CLUA. It is anticipated that the revised Shields Creek plans also would lessen the potential for conflicts with future TDOT plans for widening of US 11W.

1.4 Necessary Federal Permits or Licenses

The construction of the impoundment structure and associated facilities on Shields Creek on XCK-337R would require a permit from the USACE pursuant to Section 10 of the River and Harbors Act and Section 404 of the Clean Water Act (CWA), as well as a land use license and permit from TVA under Section 26a of the TVA Act. Additionally, Section 401 of the CWA requires water quality certification (WQC) from the TDEC before a Section 26a or Section 404 permit could be issued. TDEC issued a WQC to TWRA for the original project on October 21, 2002 and, after further review, subsequently rescinded and re-issued it on January 3, 2003.