

Norris Reservoir Watershed Survey Report



August 2000

Summary of Norris Reservoir Watershed Survey

From October through November, 1999, TVA sought comments and input from citizens and recreational users of the Norris Reservoir Watershed. Public participation was sought to assist the Clinch-Powell Watershed Team in developing a plan to identify specific future uses for TVA managed land around Norris Reservoir.

Comments were compiled from correspondence, questionnaires, public meetings, and interagency meetings. A total of 322 questionnaires were completed and 104 participants attended the public meetings.

Summary of Questionnaire Results

Recreation.

- The majority of survey respondents indicated participating in water-related activities, including fishing, pleasure boating, and swimming. Wildlife observation was another activity popular with respondents.
- Many expressed the need for more wildlife observation opportunities as well as facilities for picnicking, hiking, and pier fishing.
- The majority of survey respondents think that there are currently enough facilities for water-related activities, such as marina use, boat fishing, and pleasure boating.
- Also, many respondents would like to see less jet-skiing and off-road vehicle use.

Public Land.

- The majority of survey respondents believe that more public land should be allocated for management of natural resources, wildlife, and sensitive resources.
- Many believe that there is that there is the right amount of land allocated for commercial recreation and state parks.

Priority of Issues.

- Houseboat waste issues, trash/litter clean-up, and monitoring water quality conditions were the three issues indicated as most important by survey respondents.

Marina Preferences.

- Most respondents do not want any new marinas. However, there is some disagreement regarding the expansion of existing marinas—some respondents are in favor of current marinas expanding while others are not.

Water Quality.

- Approximately 60% of respondents think that water quality of Norris Reservoir is good, while less than 5% believe it is poor.
- In general, these ratings were based on comparisons with other lakes, the appearance of Norris Reservoir, and the amount of litter and houseboat waste visible on or around the reservoir.

Public Participation for Improving Norris Reservoir Watershed.

- Approximately 40% of respondents indicated interest in participating in litter clean-up activities and planting food plots for wildlife.
- About one-third of respondents expressed interest in erosion control activities, while one-fourth of respondents reported willingness to properly dispose of houseboat waste and involvement in a watershed coalition.

Open-ended Questions.

- Respondents were asked what they value most about the lands and water around Norris Lake. Nearly two-thirds of

responses relate to the natural beauty and scenery, water quality, and lack of development of the area.

- Respondents were asked what they think are the most important issues that would need to be addressed over the next ten years. Nearly two-thirds of responses involve water quality, over-development, erosion, crowding, and over-use.
- Respondents were also asked to comment on what projects and activities they think are needed to provide cleaner water in the Norris Lake area. Nearly two-thirds of responses concern water pollution enforcement, litter removal, boat waste monitoring and clean-up, and pollution and litter prevention/education.

Summary of Comments from Public Meetings & Interagency Meetings

Open-ended Questions.

Public meeting participants were assigned to small discussion groups and asked four open-ended questions.

- What do you value most about the public lands and waters around Norris Lake? Approximately 70% of comments relate to the natural scenery and beauty of the area, clean water, recreation opportunities, and protected, undeveloped land and natural resources.
- How could the management of TVA public lands be improved? Nearly two-thirds of responses include more control of litter, maintaining a stable water level, enforcement and regulations, erosion control, and recreational opportunities and public access.
- Over the next ten years, what will be the major land use, water quality, or other problems and issues that must be addressed within the watershed drained by the Clinch and Powell Rivers, including the Norris Reservoir Watershed? Approximately 70% of comments involve issues regarding pollution, increased and unwanted development, loss of public land, access, and natural resources, and crowding and over-use.
- How do you think water quality of the lake, rivers, and streams will change in the watershed drained by the Clinch and Powell Rivers (including the Norris Reservoir Watershed) over the next five to ten years? Approximately 70% of responses include pollution and development/ industry.

Norris Reservoir Watershed Survey Report

Background and Purpose

TVA develops reservoir land management plans to help manage the public lands around its reservoirs. Plans are developed in accordance with TVA policy and performance standards with active participation by public agencies, officials, private organizations, and individuals.

The Clinch/Powell Watershed Team is developing a plan focusing on TVA managed lands and the watershed around Norris Reservoir. Specific uses for the land will be identified, including resource protection, natural sensitive resource management, industrial/commercial development, recreation, residential access, and TVA operations.

From October 18, 1999 to November 30, 1999, TVA sought comments from citizens and recreational users of the Norris Reservoir Watershed. The solicitation of public comments was sought through news releases to local newspapers announcing public participation opportunities. Individuals could also submit comments by electronic mail (e-mail). Additionally, individuals were invited to complete a questionnaire indicating their preferences and opinions regarding the Norris Reservoir Watershed (see Appendix III). Questionnaires were mailed to individuals whose names were compiled from TVA mailing lists and were distributed during two public meetings. As of November 30, 1999, 319 questionnaires were completed and returned.

Citizens of the Norris Reservoir Watershed were invited to attend a public meeting at Anderson Country High School (ACHS) on October 28, 1999, and/or a public meeting at Lincoln Memorial University (LMU) on November 2, 1999; the two meetings had a total of 104 participants. At each public meeting, all attendees were invited to participate in small discussion groups where they were asked to respond to questions concerning the Norris Reservoir Watershed. Participants were assigned to one of nine discussion groups, with six groups at ACHS and three groups at LMU. The meetings were cosponsored by the Tennessee Department of Environment and Conservation (TDEC).

In addition to the public meetings, TVA met with elected officials in the Norris Reservoir Watershed area, and held two interagency meetings to gather information from agency personnel who have management responsibility or interest in the Norris Reservoir Watershed.

Report Overview

This report provides a summary of the results from the questionnaire as well as the comments recorded during the public meetings. Part I of the report is a summary of the questionnaire responses, including analysis of responses to open-ended questions. Part II of the report consists of comments compiled from the public meetings. Tables listing all comments from the questionnaire and public meetings are in Appendices I and II, respectively.

Part I – Questionnaire Results

Recreation Use. Table 1 displays respondents' recreational activities on and around Norris Reservoir. The majority of respondents indicated water-related activities (fishing, pleasure boating, marina use, swimming, use of public boat ramps, waterskiing). More than half of the respondents also indicated wildlife observation.

<i>Table 1. Recreation Use Around Norris Reservoir</i>		
Recreation Activity	Percentage of Total Respondents	Number of Respondents
Fishing	77%	244
Pleasure Boating	76%	242
Use of Marina	70%	224
Swimming in Undesignated Area	63%	201
Wildlife Observation	59%	188
Use of Public Boat Ramp	58%	184
Picnicking	44%	141
Waterskiing	44%	139
Hiking	40%	127
Hunting	34%	107
Nature Photography	32%	103
Camping in Developed Area	30%	94
Camping in Undeveloped Area	27%	86
Swimming in Designated Area	26%	83
Jet Skiing	22%	71
Off-road Vehicles	15%	48
Bicycle Riding	13%	40
Golfing	12%	38
Mountain Biking	7%	23
Sailing	5%	16
Horseback Riding	4%	12
Total Number of Respondents = 319		

Preferences for Recreation Facilities. Respondents were asked to indicate their preferences regarding facilities for various recreation activities on or around Norris Reservoir. Tables 2 to 5 display the percentages and number of respondents for each preference option: Right amount, need more, need less, and no opinion. The table include only activities for which more than 20% of respondents indicated a facility preference are included.

Table 2. Summary Information for Facility Preferences— Right Amount.		
Recreation Activity	Percentage of Total Respondents	Number of Respondents
Marina	72%	209
Boat Fishing	68%	199
Pleasure Boating	65%	186
Water Skiing	65%	177
Swimming in Non-designated Area	60%	167
Boat Ramp/Boating	56%	164
Bank Fishing	52%	145
Picnicking	49%	129
Swimming in Designated Area	48%	130
Camping in Developed Area	45%	123
Camping in Undeveloped Area	39%	104
Nature Photography	37%	99
Wildlife Observation	35%	98
Hiking	32%	85
Horseback Riding	31%	77
Hunting	29%	79
Mountain Biking	26%	65
Bicycle Riding	22%	57
Total Number of Respondents = 319		

Table 3. Summary Information for Facility Preferences— Need More.		
Recreation Activity	Percentage of Total Respondents	Number of Respondents
Wildlife Observation	46%	129
Picnicking	42%	111
Hiking	42%	110
Pier Fishing	41%	114
Swimming in Designated Area	37%	102
Camping in Developed Area	36%	98
Boat Ramp Boating	32%	93
Bank Fishing	31%	87
Hunting	29%	79
Bicycle Riding	28%	72
Nature Photography	27%	71
Camping in Non-developed Area	24%	65
Total Number of Respondents = 319		

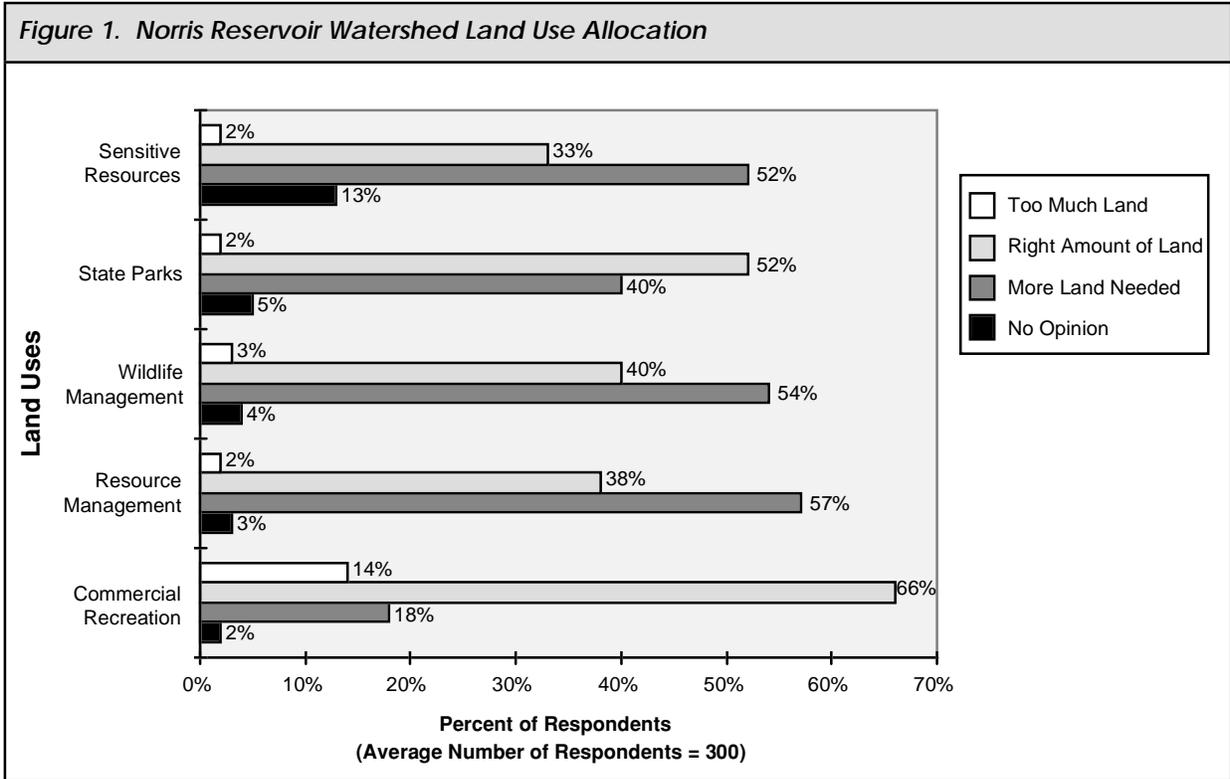
<i>Table 4. Summary Information for Facility Preferences— Need Less.</i>		
Recreation Activity	Percentage of Total Respondents	Number of Respondents
Jet Skiing	75%	202
Off-road Vehicles	56%	151
Hunting	24%	66
Total Number of Respondents = 319		

<i>Table 5. Summary Information for Facility Preferences— No Opinion.</i>		
Recreation Activity	Percentage of Total Respondents	Number of Respondents
Mountain Biking	50%	128
Sailing	46%	112
Bicycle Riding	44%	113
Horseback Riding	44%	110
Golfing	39%	103
Nature Photography	34%	90
Pier Fishing	26%	72
Total Number of Respondents = 319		

Preferences for allocation of public land. Figure 1 displays respondents' preferences regarding the allocation of public land. The majority (over 50%) of respondents expressed that more land was needed for sensitive resource areas (e.g., wetlands, cultural resources, endangered species), state parks, wildlife management areas, and resource management areas (e.g., forests).

The majority (over 50%) of respondents indicated that about the right amount of land was allocated for state parks and commercial recreation areas (e.g., commercially operated marinas, resorts, campgrounds).

In addition, many (40%) respondents indicated that the right amount of land was allocated for resource management and wildlife management areas and that more land was needed for state parks.

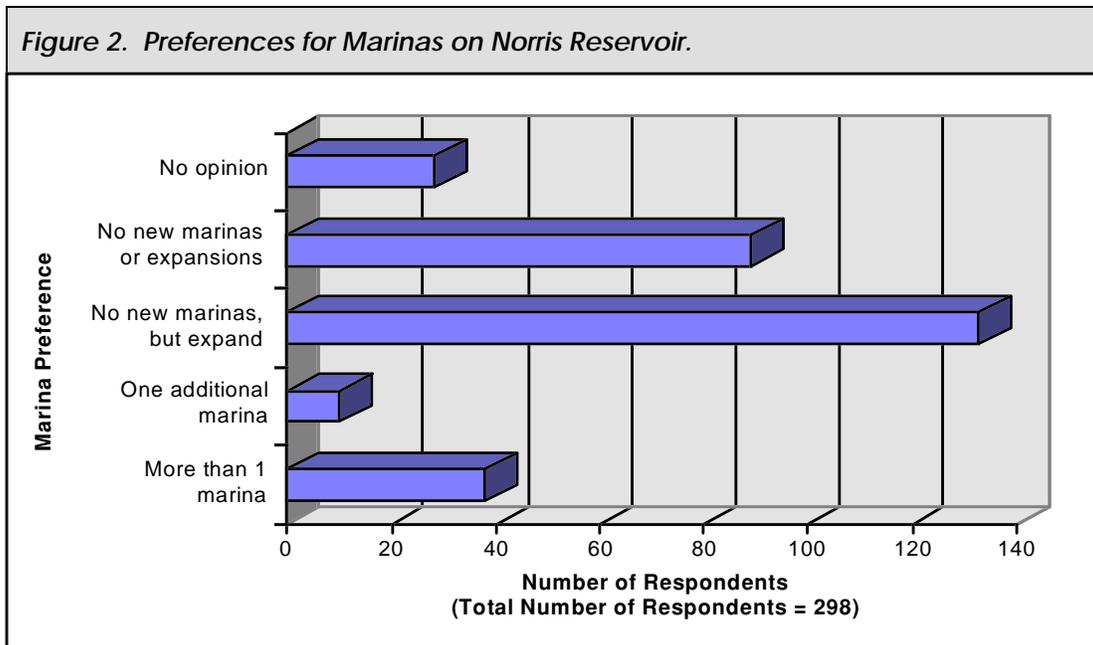


Respondents were asked to prioritize (by allocating \$100 to any or all of) the following issues: improve recreational access and facilities, erosion control, improve wildlife, work with private landowners to clean up/prevent impact to water quality, provide industrial/economic development opportunities, trash/litter clean-up, monitor water quality conditions, address houseboat waste issue, help farmers minimize agricultural impact to water quality, work with private landowners to improve forestry practices.

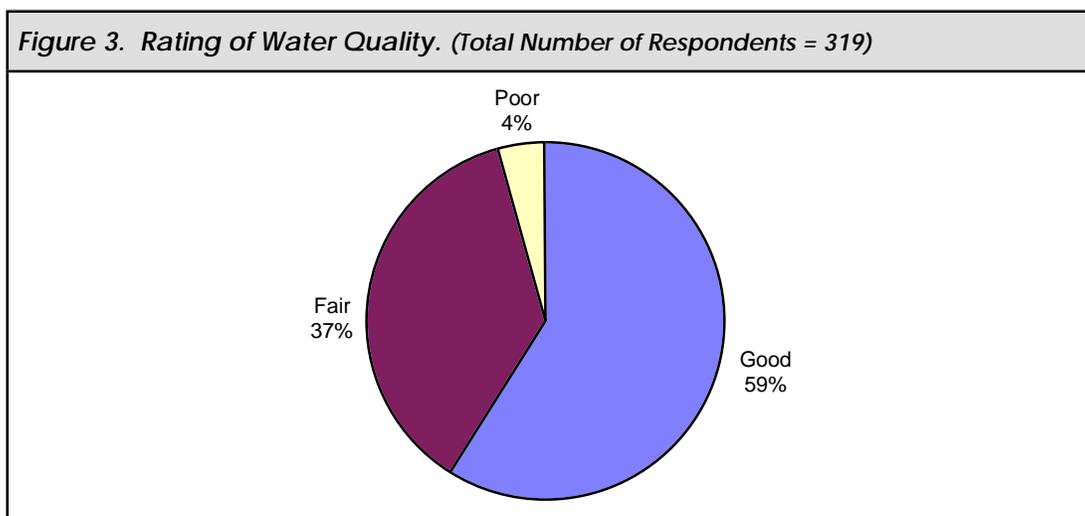
Analysis of respondents' prioritization indicates the following rank-ordering of issues:

- 1) houseboat waste issues
- 2) trash/litter clean-up
- 3) monitor water quality conditions
- 4) improve recreational access and facilities
- 5) work with private landowners to clean up/prevent impact to water quality
- 6) erosion control
- 7) help farmers minimize agricultural impact to water quality
- 8) work with private landowners to improve forestry practices
- 9) provide industrial/economic development opportunities

Preferences regarding marinas. As seen in Figure 2, many respondents (47%) expressed that no new marinas were needed but that some existing marinas should *expand their facilities*. Several respondents (27%) stated that *no new marinas* or expansions were needed, while 3% of respondents stated that *one additional marina* was needed; an additional 12% expressed that *more than one marina* was needed.



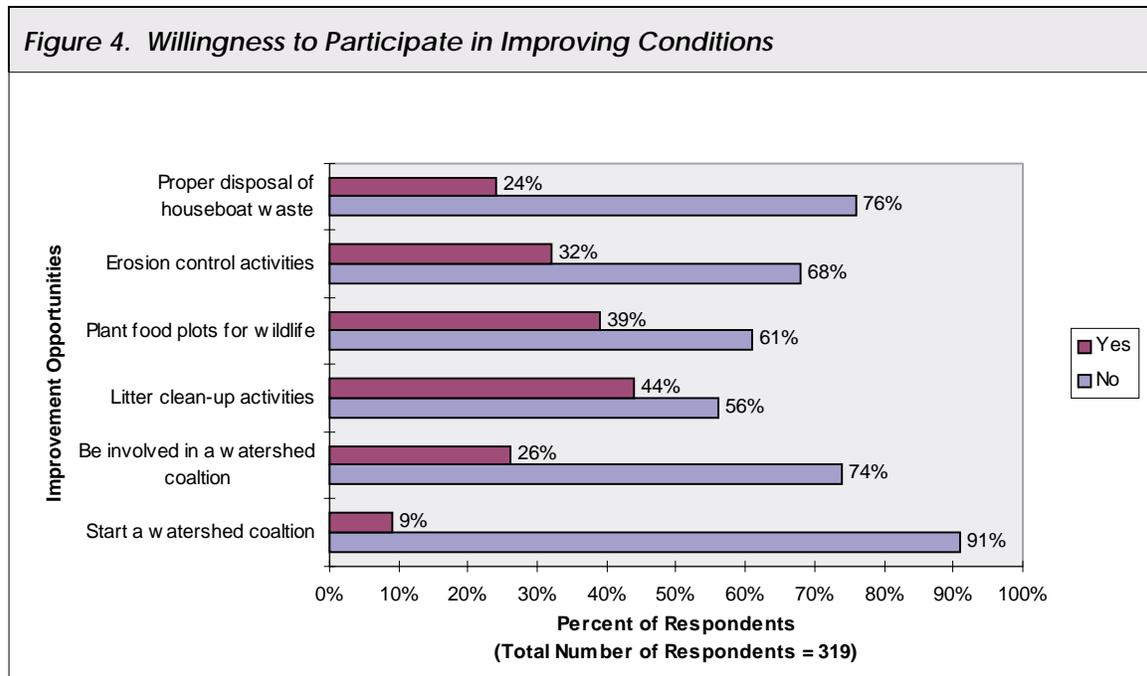
Opinions of water quality. Figure 3 displays respondents' opinions regarding the water quality of Norris Reservoir and the streams that flow into the Reservoir. The majority of respondents (59%) indicated that the quality of water is good, while 37% indicated that it was fair; the remaining 4% indicated poor.



Respondents were asked to explain their rating of the water quality in Norris Reservoir. As shown in Table 6, respondents' predominantly based their rating on: comparison with other reservoirs, appearance of the water, observed litter and/or house-boat waste, degree of improvement needed, and the apparent health of fish in the reservoir. Additional explanations of the water quality included: use of TVA's water quality reports, degree of industrial/agricultural waste, amount of development and population (i.e., recreational users and residents), water level, and/or their recreational use of the reservoir (e.g., swimming).

Table 6. Major Themes and Issues.		
Explanations of Water Quality Rating		
Themes	Rating	Issues
Comparison with Other Lakes	Good	<i>Norris Lake over all seems cleaner than other lakes; Norris is the cleanest reservoir in the TVA system; I have been to very few lakes where the water quality is anywhere near this beautiful lake</i>
	Fair	<i>fair in relation to other area lakes</i>
	Poor	<i>we have looked at other lakes as we travel</i>
Appearance	Good	<i>it always seems clear; clarity and observed cleanliness; it appears healthy</i>
	Fair	<i>15 years ago, the water was cleaner than it is today; water is green an not clear in many areas; foam floating on water would indicate that water is polluted</i>
	Poor	<i>slime is everywhere</i>
Litter	Good	<i>I do not see much trash; not excessively littered</i>
	Fair	<i>too much garbage is being dumped near the shoreline; it is a shame to see all the cans and garbage floating in the lake</i>
	Poor	<i>excessive trash coming downstream; trash is everywhere</i>
House Boat Waste	Fair	<i>there is improper waste disposal from boats; I know there is al lot of raw sewage from boats being dumped into the lake</i>
	Poor	<i>people dump raw sewage straight into the lake</i>
Needs Improvement	Good	<i>for the most part the water is very good, but there are areas that need more clean-up efforts</i>
	Fair	<i>it could be better; some areas need to be cleaned up; could definitely be improved; efforts need to be taken to clean up in-flowing streams</i>
Good Fishing	Good	<i>no fish advisories until recently; I have been eating the fish from these waters all of my life; good diversity of fish</i>
	Fair	<i>it is supposed to be safe to eat the fish you catch; fish seem to be healthy</i>

Public participation and improvements to Norris Reservoir Watershed. As shown in Figure 4, 39% and 44% of respondents reported that they would help in litter clean-up activities and/or planting food plots for wildlife, respectively. In addition, between 24% and 33% reported they would participate in a watershed coalition, erosion control/prevention, and/or committing to proper disposal of houseboat waste. Approximately 9% of respondents indicated an interest in starting a watershed coalition.



Open-ended questions. Respondents were asked to write comments regarding the following questions

- 1) What do you value most about the public lands and waters around Norris Reservoir?
- 2) Over the next ten years, what will be the major problems or issues that must be addressed regarding the Norris Reservoir Watershed?
- 3) What projects/activities are needed to provide cleaner water in Norris Reservoir and the streams that flow into it?

A content analysis was conducted on all responses to each question. This analysis involved categorizing and compiling responses for themes using qualitative data analysis techniques. Figures 5 - 7 display the percentages of total responses by themes for each question. Additionally, comments for each theme are provided in Tables 7 - 9

What do you value most about the lands and waters around Norris Reservoir?

For this question, approximately 60% of respondents' comments collectively referred to water quality, natural scenery, and the lack of development. The remaining comments expressed value in the recreational opportunities, abundant wildlife and habitat, cleanliness of the area, the peace and solitude of the area, and the fact that it is a public resource accessible to everyone.

**Figure 5. Percentage of Response Themes/Issues
(What Do you Value Most About the Lands and Waters Around Norris Reservoir?)**

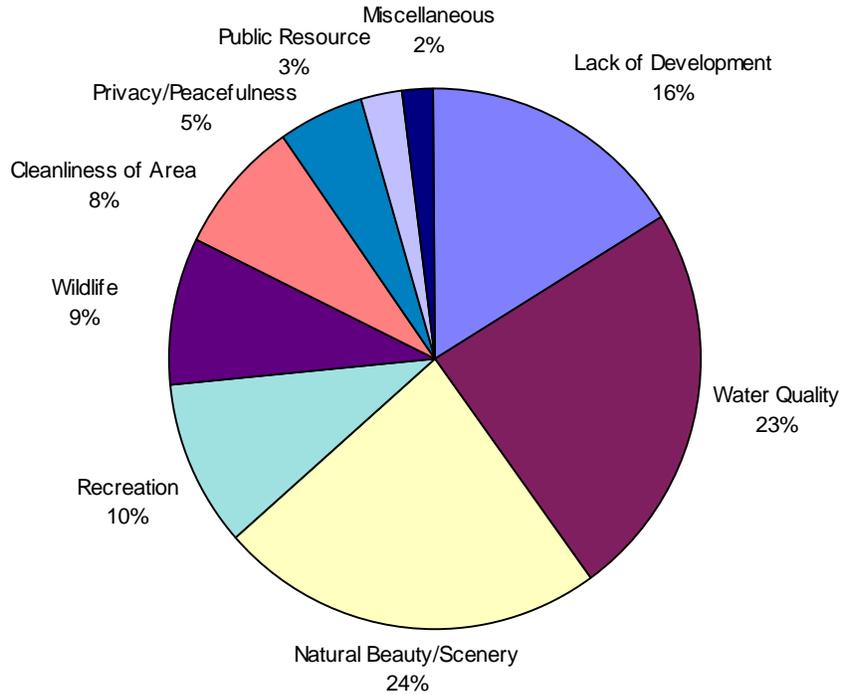


Table 7. Major Themes/Issues

<i>What do you value most about the lands and water around Norris Reservoir?</i>	
Themes/Issues	Comments
Water Quality	<i>water quality; cleanliness of water; water purity; clean, pretty water</i>
Natural Beauty/Scenery	<i>the pristine beauty; beauty of the lake; scenic landscape; view from the lake; landscape and trees; beautiful wooded forests ; natural areas</i>
Lack of Development	<i>the remaining undeveloped lands that surround the lake; not over developed; free of commercial development; most shoreline has not been developed; without industrial or private encroachment; not as developed as some other lakes; undeveloped wildlife areas; not every inch crowded with homes</i>
Wildlife	<i>the numerous habitats and the variety of species throughout the area; wildlife observation; friendly to wildlife; abundant wildlife; able to see native wildlife</i>
Cleanliness of Area	<i>beautiful and clean; how clean and beautiful the entire area is ; cleanliness</i>

<i>Table 7 (cont.). Major Themes/Issues</i>	
<i>What do you value most about the lands and water around Norris Reservoir?</i>	
Themes/Issues	Comments
Recreation	<i>outdoor recreation opportunities; water ways for recreation; access to wild area through hunting, hiking, camping, and fishing; swimming and pleasure boating good fishing; fish are edible</i>
Privacy/Peacefulness	<i>being able to relax and get away; tranquillity; solitude, unspoiled conditions; relative privacy; peace and quiet</i>
Public Resource	<i>large acreage of public lands; abundance of public owned shoreline and land; public access; keep land public</i>

Over the next ten years, what will be the major problems or issues that must be addressed regarding the Norris Reservoir Watershed?

Water quality and over development were the predominant themes/issues regarding this question. Nearly 30% of comments collectively expressed concern about erosion, loss of natural resources and wildlife, litter, and boat waste. Approximately 20% of comments referred to crowding and over use of the area as well as boating and jet ski use. Remaining comments expressed concern regarding fluctuating water levels.

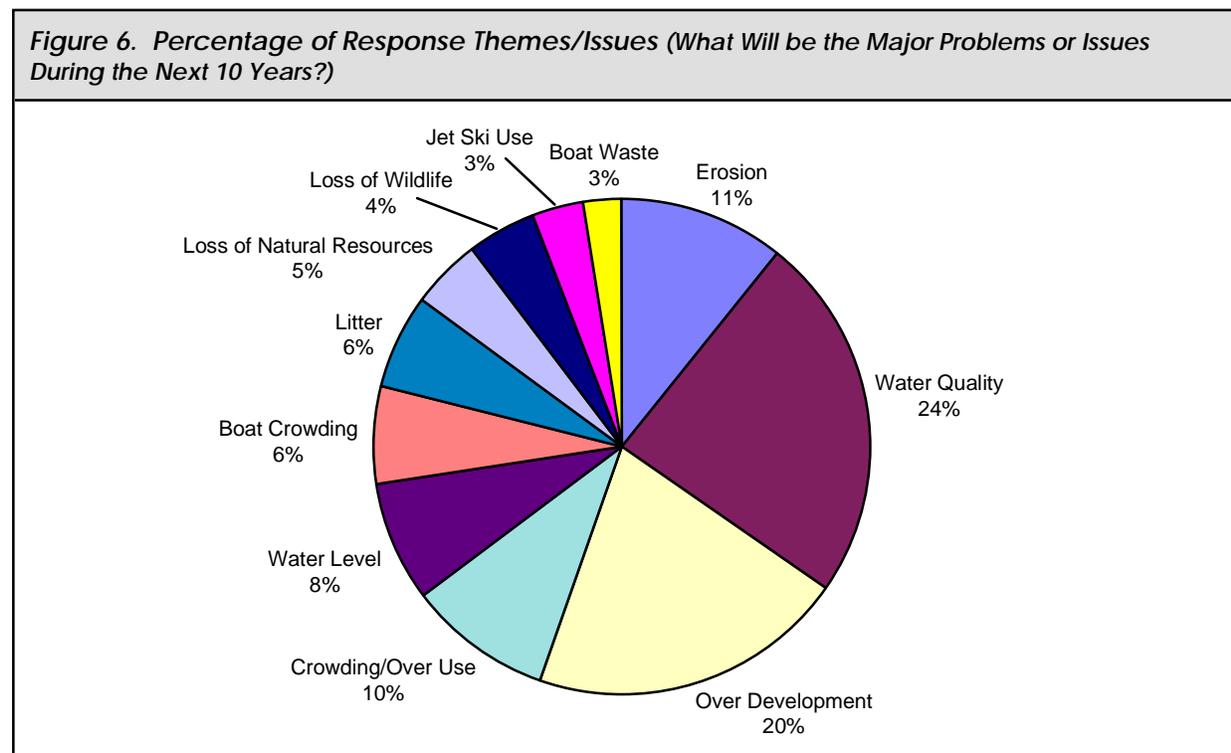


Table 8. Major Themes/Issues and Example Comments.	
What will be the major problems or issues during the next 10 years?	
Themes/Issues	Comments
Water Quality	<i>water pollution; keep water clean; decrease in water quality from development; septic tank problems; maintaining water quality; Norris Lake will probably be polluted without proper waste water management (i.e., septic, etc.)</i>
Over Development	<i>greatly increased residential, commercial, and industrial development; increasing private home development and boat houses crowding the shoreline; limit commercial and residential development; over development without planning or controls in place; the push for more development must be stopped; increasing private home development</i>
Erosion	<i>shoreline erosion from wave action; erosion from developments; concerned about erosion</i>
Crowding/ Over Use	<i>increasing human population and their use of the watershed; overuse causing depletion of resources; numbers using the watershed; increased boat traffic; increase in recreational use</i>
Water Level	<i>water draw-down and effect on marinas; large lake fluctuations; lowering of the lake too early; please let up on draining our lake so early and so fast</i>
Boat Crowding	<i>proliferation of water craft; how many jet skis and houseboats can you put on one body of water?; over use by boaters of all kinds; concerned about the increasing number of jet skis and large boats</i>
Litter	<i>trash problems; trash on shoreline; litter from boaters and campers; need to eliminate the trash being dumped into the lake; need garbage/litter control</i>
Loss of Natural Resources	<i>loss of the beautiful, peaceful forests; better management of resources; the continued abuse of the area's resources will have an effect on wildlife and the people; depleting resources; need more wilderness areas with native vegetation</i>
Loss of Wildlife	<i>loss of land and wildlife habitat to development; improve wildlife habitat; loss of wildlife; too much building on the land without regard to wildlife</i>
Boat Waste	<i>houseboats dumping sewage into the lake; septic tank discharge into lake; need waste control; waste from houseboats, boats, and marinas</i>
Personal Watercraft Use	<i>limit jet skis; many jet ski operators are unsafe; ban or restrict jet skis; jet skiing on the lake is a big safety issue; jet skis are under regulated—they are too fast and drivers are too young</i>

What Projects/Activities are needed to provide cleaner water in Norris Reservoir and the streams that flow into it?

For this question, approximately half of all responses mentioned activities associated with enforcement of waste pollution, waste pollution from industry, agriculture, and boating, and the need for sewage treatment and water monitoring. More than 20% of comments expressed the need for litter removal and education programs for pollution and litter prevention. Many respondent also commented on limiting/restricting development, restricting jet ski use, and maintaining water levels.

Figure 7. Percentage of Response Themes/Issues
(What Projects/Activities are needed to provide cleaner water in Norris Reservoir and the streams that flow into it?)

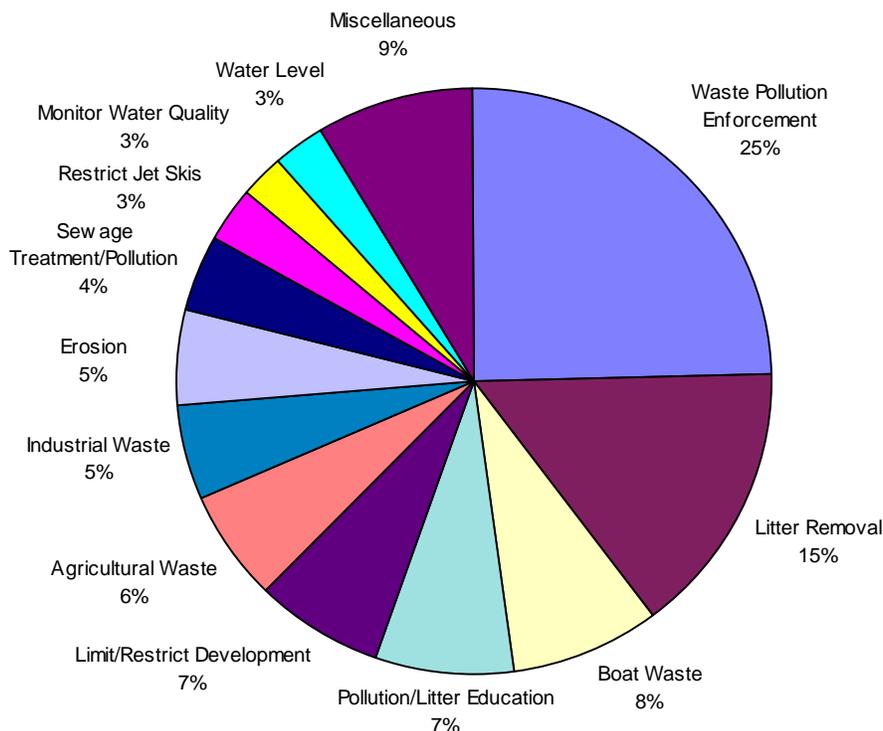


Table 9. Major Themes/Issues.

<i>What projects/activities are needed to provide cleaner water in Norris Reservoir and the streams that flow into it?</i>	
Themes/Issues	Comments
Waste Pollution Enforcement	<i>large fines for illegal dumping of waste and trash; stop the people disposing trash and household items into the watershed; control sewage discharge from boats and homes; strict guidelines and rules on houseboat waste dumping; need measures toward decreasing the amount of trash and human waste that enters the watershed; arrest or heavily fine those who pollute; monitor houseboat and dock waste; enforce existing laws and regulations for waste/litter; control sewage from marinas, houseboats, and houses on the shore; patrol water use areas for litterers</i>
Litter Removal	<i>volunteer shoreline cleaning programs; clean-ups need to be conducted on and around creeks and streams that flow into Norris; the lake banks need to be cleaned; better control of trash being dumped along streams flowing into Norris; more sponsored clean-up activities; more trash collection barrels at access sites; have regular clean-ups every spring and fall on weekend</i>

Table 9 (cont.). Major Themes/Issues.	
What projects/activities are needed to provide cleaner water in Norris Reservoir and the streams that flow into it?	
Themes/Issues	Comments
Boat Waste	<i>concerned about houseboat waste; need holding tanks on all houseboats; need holding tank enforcement; improper water disposal from boats, spilled fuel at marinas, etc.; limit use of 2 cycle marine engines, oil, gasoline, and exhaust; houseboats need to dispose of waste properly</i>
Pollution/Litter Education	<i>educate people on how to keep Norris clean; public education programs; school education against litter; more community involvement and education about dumping garbage/trash into lake; continue to educate land owners solid waste problem; promote awareness of pollution and litter solid waste problem; promote awareness of pollution and litter</i>
Limit/Restrict Development	<i>control residential and commercial growth around Norris Lake; limit development, especially subdivisions and industries; less development along bank; keep development from infringing on water quality and destruction of wooded areas; limit residential, commercial, and industrial development</i>
Agricultural Waste	<i>limit pollution from agricultural runoff; pollution of stream banks from cattle; livestock and other farming operations in the watershed should be closely monitored for compliance with anti pollution laws and regulations; make sure no pasture lands are next to the lake; keep cattle out of rivers and streams that feed into rivers; reduce livestock waste and other agricultural runoff; pesticide runoff</i>
Industrial Waste	<i>increase restrictions on chemical dumping; monitor industrial pollution; more policing of industry and illegal dumping; limit companies from dumping into lake</i>
Erosion	<i>reduce erosion in watershed; trail maintenance to prevent erosion; no wake zones in areas of extreme erosion; concerned about shoreline erosion; off-road vehicles are destroying the banks and the roads causing erosion; size and speed of personal water craft severely impact the shoreline</i>
Sewage Treatment/ Pollution	<i>better sewage treatment; more water treatment plants and sewer systems; control sewage from shoreline homes; need sewer lines; work with communities and state governments to pass more restrictive regulations that result in better sewer systems and septic facilities</i>
Restrict Personal Water Craft	<i>need more rules for jet skis; jet ski operation should be restricted to main channel only; jet skis ruin water quality via stirring up silt; lake is already too congested and they are very noisy and ridden in reckless manner; need age restriction for jet ski use</i>
Monitor Water Quality	<i>streams should be tested for pollution from any source; test in both headwaters and tail water to insure quality control; need frequent water testing and publishing of results; close inspection of all upstream sewer discharges--check farm drainage and run-off; prepare environmental assessment reports on existing developments with analysis on storm water discharge, implementation and adherence to NPDES, frequent monitoring of existing, new, and proposed developments</i>
Water Level	<i>less water fluctuation; the water level should be high throughout the total boating summer season; lake levels are terrible; a higher lake level and longer in the season would keep the boat wakes further from shore and stop some erosion</i>

Part II – Public Meeting & Interagency Comments

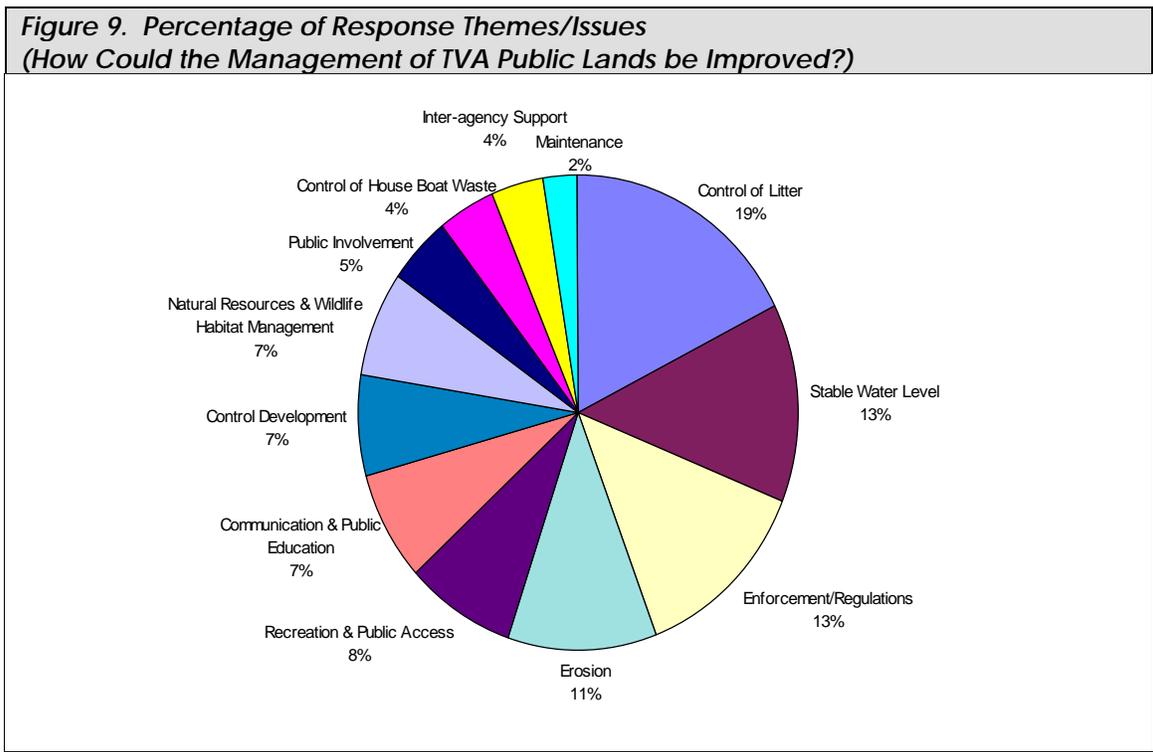
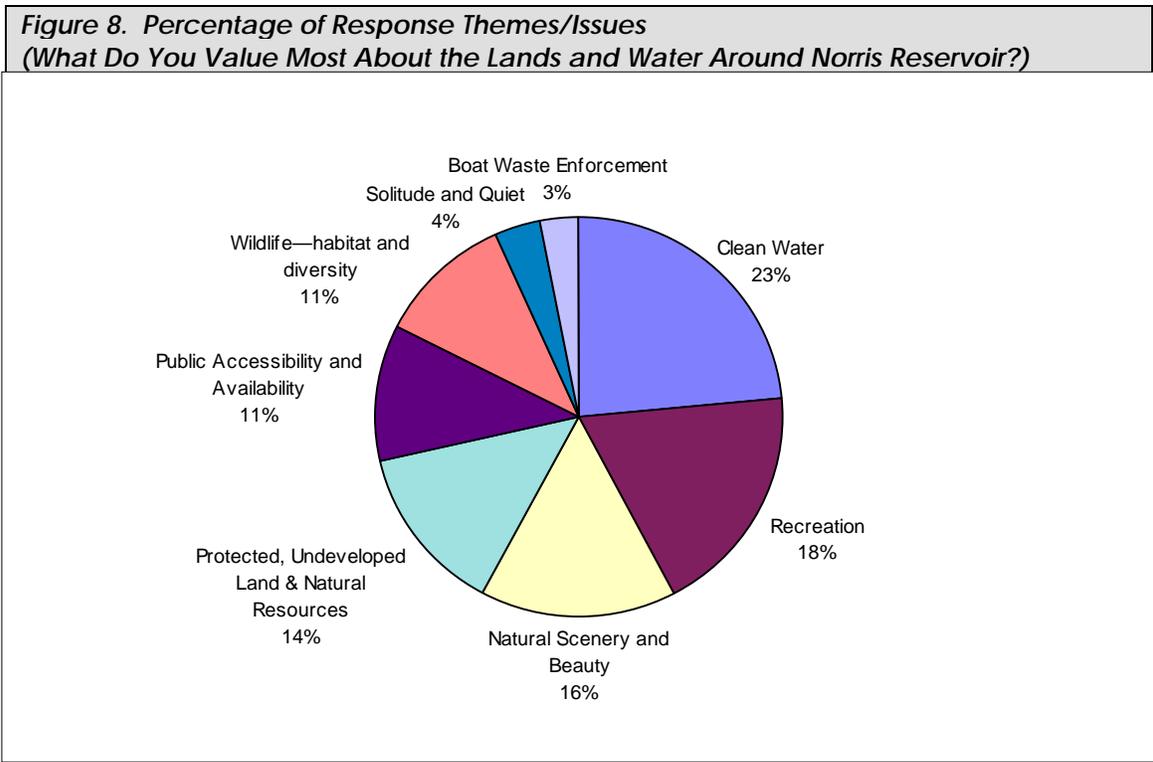
Public Meeting & Inter-Agency Comments. Citizens of the Norris Reservoir Watershed were invited to attend public meetings at Anderson Country High School (ACHS) (October 28, 1999) and Lincoln Memorial University (LMU) (November 2, 1999). At each public meeting, all attendees (104) were invited to participate in small discussion groups where they were asked to respond to questions concerning the Norris Reservoir Watershed. Participants were assigned to one of nine discussion groups, with six groups at ACHS and three groups at LMU. Each discussion group included two TVA staff—a group facilitator and a recorder.

Group participants were asked:

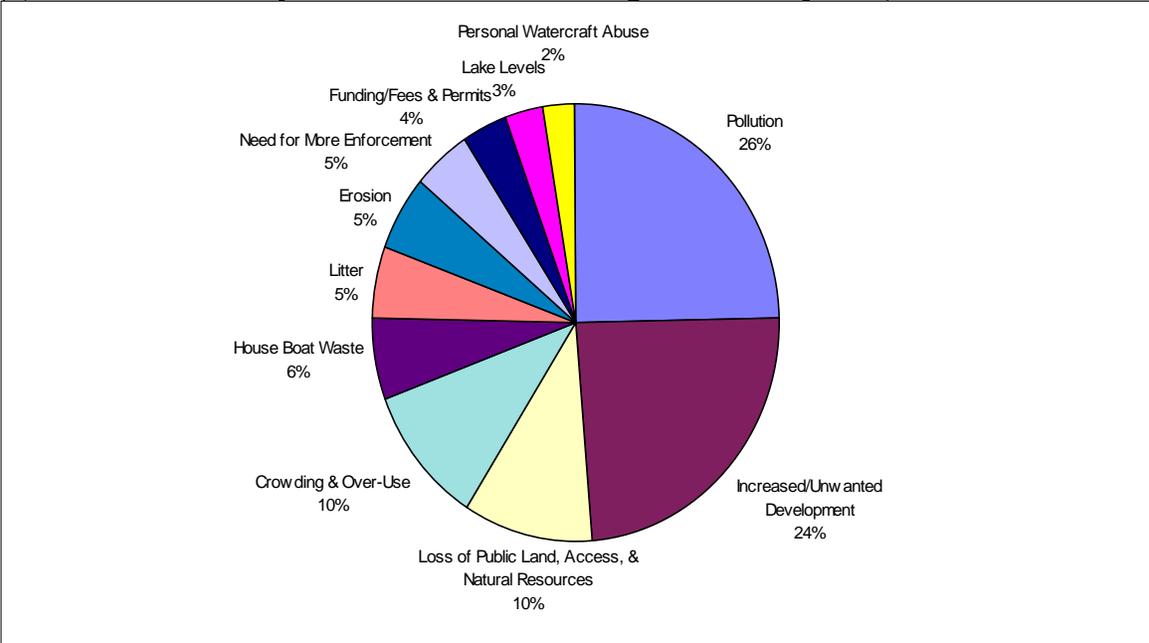
- 1) What do you value most about the public lands and waters around Norris Reservoir?
- 2) How could the management of TVA public lands be improved?
- 3) Over the next ten years, what will be the major land use, water quality or other problems and issues that must be addressed within the watershed drained by the Clinch and Powell Rivers, including the Norris Reservoir Watershed?
- 4) How do you think water quality of the lake, rivers, streams, tributaries will change in the watershed drained by the Clinch and Powell Rivers (including the Norris Reservoir Watershed) over the next five to ten years?

Additionally, TVA compiled comments from inter-agency personnel who have management responsibility or interest in the Norris Reservoir Watershed.

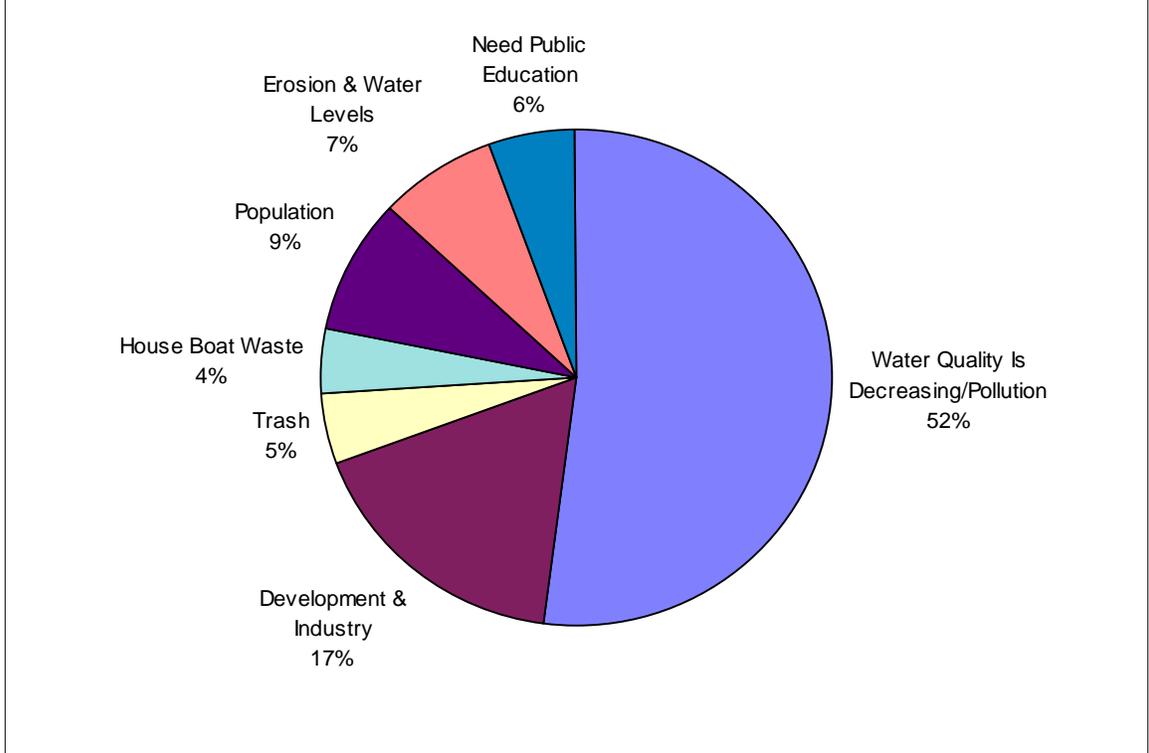
A content analysis was conducted on all responses to each question. This analysis involved categorizing and compiling responses for themes using qualitative data analysis techniques. Figures 8 - 11 display the percentages of total responses by themes for each question. Comments were combined for all discussion groups and listed in Appendix II.



**Figure 10. Percentage of Response Themes/Issues
(What Will be the Major Problems or Issues During the Next 10 years?)**



**Figure 11. Percentage of Response Themes/Issues
(What are the sources of decreasing water quality?)**



Appendix 1

Table of Comments: Open-Ended Questions

WHAT PROJECTS/ACTIVITIES ARE NEEDED TO PROVIDE CLEANER WATER IN NORRIS LAKE AND THE STREAMS THAT FLOW INTO IT?

COMMENT	NUMBER OF COMMENTS
CONTROL WASTE	
BOAT WASTE	
Tightly monitor and control sewage and contaminant discharge from houseboats, cabin boats, and marinas	50
Inspect houseboats and floating houses. Enact more strict regulation and increase enforcement of laws regarding holding tanks for all boats motored and moored. Penalties for non-compliance should be prompt.	28
Need more police on the lake to enforce laws and control dumping & littering.	7
Increase the number of field agents in order to better monitor and police the shores and waterways and enforce regulations as they apply to boaters, campers, hikers, and homeowners. Penalize offenders.	4
Make marinas responsible for monitoring and controlling from houseboats in their harbor by keeping records of who has holding tanks on houseboats and when they get them pumped. Boats that are not pumped regularly should be removed from TVA waters.	3
Since many boats do not have toilet facilities, discourage boaters from urinating in the lake.	3
Control pollutants (oil) from boats and jet skis.	2
Ensure that pump-out facilities do not dump contents into lake.	2
Need stiffer sanctions for illegal dumping of any pollutants from any source.	2
Control marina fueling spills.	1
Continue TRWA sewage pump-out program.	1
Do not allow grandfathering with regard to houseboat discharge regulations.	1
Require tanks be added if not present.	1
Control the debris which is being thrown in the lake from houseboat construction and remodeling around the marinas.	1
Prevent gas pumps from leaking in the water.	1
Install outhouses at appropriate sites.	1
Limit use of 2 cycle marine engines, oil, gasoline, and exhaust gases.	1
Initiate a houseboat waste management program which might include a drop-off station and/or a patrol boat to assist with pick-up.	1
Make pump-out stations more accessible and less expensive.	1
	<i>Subtotal</i> 111
AGRICULTURAL WASTE	
Eliminate agricultural waste in water.	9
Eliminate livestock watering areas, eliminate pollution from cattle on stream banks, and develop methods for keeping cows out of the lake.	8
Restrict pesticides and chemical fertilizer on land bordering streams.	5
Eliminate all agricultural licenses on TVA land.	1
Closely monitor livestock and other farming operations in the watershed and strictly enforce compliance with anti-pollution laws and regulations.	1
Make sure no pasture lands are adjacent to the lake.	1
	<i>Subtotal</i> 25

INDUSTRIAL WASTE	
Control industrial pollution/waste, monitor, test, and enforce punishment when needed.	15
Increase policing of industry illegal dumping.	2
Prevent manufacturing firms from locating on rivers that feed Norris Lake.	1
Increase monitoring of the waste treatment plant on Cove Creek.	1
Require communities and businesses to follow state effluent standards	1
Monitor all existing and new industrial and residential land development for pollution run-off into Norris lake watershed.	1
<i>Subtotal</i>	<i>21</i>
RESIDENTIAL WASTE	
Closely inspect and control sewer discharges from homes along the shoreline	6
Need sewage treatment and sewer lines.	2
Collect fines from residents who dump their garbage or pipe their toilets into the creeks.	1
Support efforts to ensure adequate set back between aquatic systems and streams, creeks, lakeshore.	1
Prevent homeowners from excessive use of chemicals on lawns.	1
Regulate burning of trash.	1
Require municipal sewer systems.	1
Reduce/control septic field discharge to lake from lakefront development.	1
<i>Subtotal</i>	<i>14</i>
TOTAL	171
CONTROL LITTER	
TRASH REMOVAL	
Prevent and control littering and enforce litter laws.	36
Plan and organize volunteer litter clean-ups in fall and spring.	18
Increase the number of trash cans and trash pick-up at access sites—easier access to dumpsters.	9
Institute severe penalties (large fines and jail time) for illegal dumping of waste and trash.	7
Use inmate labor to clean up litter.	5
Consider instituting very heavy fine, arrests, and publishing names of those who litter in the newspaper.	4
Control trash dumping and conduct cleanups along streams and creeks flowing into Norris.	3
Reinforce and reward neighborhood and community involvement-- Encourage non-profit groups and volunteers to assist in clean-up of lakeshore	3
Enforce anti-litter campaign (bottle bill).	2
Earmark littering fines collected and use the money for trash removal.	1
Prevent and control littering from by trailer campers from Indian River to Black Fox.	1
Need better trash disposal practices in VA and in TN counties that impact Norris Reservoir. Hancock, Clairborne, & Campbell have deplorable trash dumping.	1
Check parking areas (around Loyston Point) for trash and water pollution.	1
TVA should work to strengthen state laws concerning litter.	1
Close or develop the Murrayville Baptist Church area in La Follette because litter is causing problem and homes are being broken into.	1

Institute an adopt-a-shoreline similar to the adopt-a-highway program.	1
Initiate proactive, rather than reactive, public policy on watershed scales.	1
Increase monitoring around hill area where trash is being dumped.	1
Need zoning in counties surrounding Norris lake to prevent garbage from being dumped in feeder streams.	1
Need to take drastic measures to control litter in certain areas near Tazewell and surrounding communities.	1
Require camping permit which includes name, address, and driver license # and hold offenders accountable for littering.	1
Prevent fisherman from littering.	1
Stop the sale of bait in disposable containers.	1
Encourage land and marina owners to clean up banks when water is low.	1
Monitor side streams with help of conservation groups like TU.	1
Supervise campers more closely when they leave.	1
TOTAL	104
LIMIT DEVELOPMENT	
Limit commercial and residential development around the water.	25
TVA needs to buy more land that is already for sale around the lake to prevent it from being developed.	2
Plan shoreline and control shoreline clearing by developers.	2
Keep development out of drains near water bodies.	1
Preserve undeveloped areas by prohibiting development.	1
Prevent further over-population of the lake.	1
Do not allow additional marinas.	1
Discourage further industrial development in the Norris area.	1
Obtain wildlife area or state park status for a greater area so that it cannot be commercially developed.	1
Do not allow golf courses to build on the lake because they have too much runoff.	1
Frequently monitor the existing developments with added emphasis on new and proposed developments.	1
Any land that is released should be developed by TVA and then sold to the public with zoning and requirements already established to control the lake.	1
TOTAL	38
WATERCRAFT SAFETY/RESTRICTIONS	
Need laws requiring that personal water craft operators be at least 16 years old and complete a safe boating class.	3
Limit jet ski usage to one section of the lake or river	3
Enforce speed limits.	3
Regulate hours for boat usage to prevent overcrowding.	2
Limit the size of boats permitted on the lake.	2
Set up a check point and collect fees from jet skiers	2
Reduce boat speed around developed and residential areas.	1
Offer education on boating use.	1
Reduce the number of houseboats on the lake.	1
Ensure that out-of -state boaters follow TRWA rules rather than simply use and abuse the area and then leave it	1
Prevent overcrowding by large boats (cruises, etc.)	1
Control noise and nuisances caused by jet skis.	1
Ban jet skis.	1

Require permits for jet skiers.	1
Reduce the number of very loud boats.	1
Strictly inspect boats allowed on lake.	1
Reduce the number of floating trailer parks.	1
TOTAL	26
EDUCATION	
Conduct more public awareness campaigns regarding littering.	5
Hold community awareness programs to increase understanding of the watershed as an ecosystem. ("everyone lives downstream")	4
Need much more information from TVA on what we should do to make our lake cleaner and to slow pollution.	4
Institute a "save our rivers and lakes" campaign in schools.	2
Target boaters and campers with an ant-littering campaign.	1
Use schools to educate at an early age against littering.	1
Sponsor TV ads which show the results of highway littering.	1
Teach farmers how to prevent fertilizer runoff and soil erosion.	1
Conduct public "Clean up after yourself" campaign	1
Conduct boat safety and wildlife training for pleasure boaters	1
Increase public awareness of the effect that dumping has on wildlife	1
Conduct waste water workshops for boaters to raise awareness about discharging and acceptable alternatives.	1
Conduct workshops targeting developers to educate them about the destruction of native vegetation and its subsequent effect on water quality.	1
Conduct a public education project to work with Campbell county residents to improve their garbage practices.	1
Use promotional materials at public use areas to encourage people to clean up after themselves.	1
TOTAL	26
NATURAL RESOURCES	
Make better use of standard forestry practices.	3
Expand development of fish and wildlife habitats.	2
Protect natural areas.	2
Manage the existing natural resources.	2
Need more grass to hold soil in ditches and fields and some small dams to let soil settle out before it reaches the lake.	2
Encourage private landowners to plant vegetation strips along spring branches and creeks.	1
Stop strip mining.	1
Patrol and enforce laws against poaching and spot lighting deer and wildlife.	1
Improve management of fish by eliminating exotic species and striped bass.	1
Eliminate rock bass.	1
Protect wildlife.	1
Enhance and protect all of the Norris Lake watershed owned by TVA.	1
Plant more trees on TVA lands.	1
TOTAL	19

EROSION	
Control shoreline and bank erosion.	10
Apply stream/lake buffer zones (e.g. on each side of lake beginning at 1020 elevation and extending outward for 1 mile).	2
Control four wheelers which are destroying the banks and roads.	1
Limit size and speed of boats so they do not severely impact shoreline.	1
Ban jet skis.	1
Control erosion from dirt bikes, motorcycles, and ATVs on Island F.	1
Install rip rap.	1
TOTAL	17
MONITOR WATER	
WATER QUALITY	
Continuous testing of waters (lake, streams, etc.) to ensure water quality.	6
Continuous testing headwaters and tail water to ensure water quality control.	2
Look at influents and removal process to ensure a proper balance to maintain the lake as clear as it is.	1
Frequently monitor area streams and reservoirs. (Benthics, IBIs. Water quality)	1
Control pollution into Clinch River.	1
Check pollution levels around Sneedsville, measuring all effluent sources.	1
Prepare environmental assessment reports on existing developments with analysis on storm water discharge.	1
Implement and adhere to the NPDES (National Pollution Discharge Elimination System).	1
TVA should work to strengthen state laws concerning water quality	1
Scientific management of oxygen levels and other technical factors.	1
<i>Subtotal</i>	<i>16</i>
WATER LEVELS	
Need higher lake levels more often. (e.g., at or above 1000'). Lake levels are reduced too often and we can only use the lake for 2 months out of the year.	5
Prevent boat wakes from occurring so close to shore by keeping water levels higher.	2
<i>Subtotal</i>	<i>7</i>
TOTAL	23
FACILITIES	
Need better accessibility to pump-out stations.	3
Increase the number of full hook-ups at campgrounds to better accommodate campers.	1
Need recycling facilities for the entire Norris Lake watershed area	1
TOTAL	5
FEES	
Assess a tax on out-of-state/non-resident boaters and campers.	2
Implement a lake user fee for recreational users and property owners. Use the fees to improve public facilities, shoreline stabilization, or to help off-set the increase in cost of adding more state inspectors in order to do more frequent field checks.	1
Enforce TVA's SMP and fine those who do not comply.	1
Collect fines for inappropriate use of lake and streams.	1
TOTAL	5

RESTRICTIONS	
Restrict motorized vehicles around water.	1
Limit horses to designated areas.	1
Enforce regulations regarding private docks and building below 1044'.	1
Set limits on how many houseboats can be built and stored at marinas. The marinas are encroaching out into the lake.	1
TOTAL	4
RECREATION	
Transfer some areas to TWRA for public hunting access areas.	1
Need a state park in upper Norris	1
Need more structures for fishing and duck hunting.	1
Consider greater fishing only zones with low speed pass through by non-fishing vessels.	1
TOTAL	4
PERMITS	
Need better enforcement of ARAP permits, TCA 26A permits and VSACE 404.	1
TOTAL	1
PRIVILEGES AND RIGHTS	
Increase privileges given to landowners along the shoreline.	1
TOTAL	1

WHAT ARE YOUR PREFERENCES REGARDING MARINAS AROUND NORRIS LAKE?

COMMENT	NUMBER OF COMMENTS
MARINA MANAGEMENT	
Improve the management of marinas so that they are well-kept and modern and ensure that repairs and upgrades are made on a timely basis	10
Marinas failing to update their buildings, sewage pumping, and clean up parking areas should be fined.	3
Need more accessible pump-out stations	1
Need more competent personnel at marinas	1
Marinas need to be empowered to see that any floating houses and houseboats have holding tanks and that they are pumped out properly.	1
Supervise the management of the docks to ensure that they are clean and not damaging to the environment.	1
Allow unused TVA marina property for bid ("use it or lose it" clause)	1
Existing marinas should not encroach upon neighbors', landowners', and boaters' rights (e.g., blocking channels, cables, wires, etc.)	1
Marinas should be made to conform to some kind of aesthetic standards. They are the junkyards of Norris Lake. Commercial docks in other places are much more neat and clean than many facilities on Norris.	1
More public ramps are needed with access to bait, tackle, and fuel	1
TOTAL	21
BOAT RESTRICTIONS	
Limit large boats and buckeyes.	1
Restrict the number of houseboats and pleasure boats.	1
Boaters should not be allowed to park boats so far out into the main waterway.	1
There are too many boats not cleaning up after themselves.	1
Houseboats at most marinas need repairs.	1
TOTAL	5
LIMIT EXPANSION	
Halt marina expansion for a minimum of 10 years. Most marinas have plenty of open space within their existing boundaries. They should be required to fill in that open area before they are granted permits to expand.	1
Limit marina expansions	1
Limit the size of present and future marinas (present sizes are excellent)	1
TOTAL	3
IMPROVE ROADS	
No new roads but better access to existing roads.	1
TOTAL	1
LOWER FEES	
Lower prices for fuel, boat storage	1
TOTAL	1

WHAT DO YOU VALUE MOST ABOUT THE LANDS AND WATERS AROUND NORRIS LAKE?

COMMENT	NUMBER OF COMMENTS
APPEARANCE	
Scenic beauty of the shoreline and hills around the lake	106
Lack of development along the shoreline	78
Privacy, peacefulness, and remoteness of some of the areas	30
Emphasis on limiting development in order to conserve water quality and wooded areas	2
TOTAL	216
WATER QUALITY/CLEANLINESS	
Cleanliness of water and land	150
High water levels	5
Water levels are good	4
TOTAL	159
RECREATION	
Hunting & Fishing	27
Forests, state parks	22
Public access	15
Not overcrowded	13
Camping and hiking	9
Recreational opportunities and facilities	8
That they are public lands which buffer private development.	5
Boating	4
ATV and off road vehicles	2
Safety	2
Lack of jet and water skiing and tubing during the water months	1
TOTAL	108
NATURAL RESOURCES	
Wildlife	41
Good fish that are edible	3
Vegetation	2
TOTAL	46
UTILITY	
TVA personnel and administrators do a good job and are attentive to problems	2
Products produced	1
Agriculture	1
Erosion control	1
Purpose of the man-made lake and dam	1
Inexpensive power	1
TOTAL	7
NEEDS IMPROVEMENT	
Build a resort state park in Clairborne Little Sycamore Creek	1
Need nutrients for fish growth and need more habitat	1
Take steps to preserve the disappearing wildlife habitat	1
Need to stock more crappie. Help TRWA determine proper stocking levels.	1
Limit and restrict building and industry	1
We need to maintain the forests and natural areas as much as possible	1
ATVs and jeeps need access to bottom lane in winter	1
Let everyone pay to benefit from our historic waterways.	1
TOTAL	8

WHAT WILL BE THE MAJOR PROBLEMS OR ISSUES IN THE NEXT 10 YEARS?

COMMENT	NUMBER OF COMMENTS
WATER QUALITY	
Water quality	91
Water levels lowered too much and too early	29
<i>Subtotal</i>	<i>120</i>
POLLUTION AND WASTE MANAGEMENT	
Pollution	38
Boat waste	21
Agricultural waste	3
Industrial waste	5
<i>Subtotal</i>	<i>67</i>
TOTAL	187
DEVELOPMENT	
Too much commercial and residential expansion	76
Zoning and control of home building by code	1
Keep the dam in great condition	1
Ban multi-unit dwellings.	1
TVA selling too much land - no state park on Clinch River	1
Require any development of more than 3-5 homes be hooked up to a public sewer system.	1
<i>Total</i>	<i>81</i>
WATERCRAFTS	
Too much boat and /or jet ski traffic	30
Watercraft speed and safety	19
Jet-skis (need to be limited, too much noise)	13
Boats are too large for the size of the lake	3
Noise	3
Boat misuse	3
Jet-ski age limit should be increased and enforced	2
Commercial houseboat rentals	1
<i>Total</i>	<i>74</i>
NATURAL RESOURCES	
Loss of wildlife and fish habitats - improve habitat preservation	24
Destruction of vegetation and wooded areas; need better management of resources	8
Poor fish quality and excessive fishing for some species	5
No clear cutting of forests	3
Poaching	1
Hunting and camping	1
Lack of education about environmental issues	1
Water quality effect on zebra mussels	1
Effect of water level fluctuations on fish	1
Deer population	1
People trying to take hunting land away from our children	1
Inability to maintain a sufficient buffer of woods around the shoreline because owners cut down trees and are only assessed with minor fines.	1
<i>Total</i>	<i>48</i>

RECREATION	
Overcrowding	29
Need better management in balancing the needs of various lake users	3
Need more boat launches	2
Hunter safety (people are hunting too close to homes)	1
Unauthorized recreational activities (camping, use of 4 wheelers, etc.)	1
Public access for day users	1
Need more public boating opportunities like public boat rides to marina	1
Total	38
FACILITIES AND MAINTENANCE	
Litter	29
Need usage fee in order to fund preservation and maintenance	1
Growing population will need more facilities while preserving ecology	1
Sewage cleanup	1
Total	32

WHAT PROJECTS/ACTIVITIES ARE NEEDED TO PROVIDE CLEANER WATER IN NORRIS LAKE AND THE STREAMS THAT FLOW INTO IT? PLEASE EXPLAIN

COMMENT	NUMBER OF COMMENTS
WATER QUALITY AND APPEARANCE	
The water appears clean.	47
Water tests clean and free of pollutants most of the time	9
Good potability	7
Water quality has decreased	7
Swimming quality is OK and water seems clean	4
O2 levels are too low	2
Not enough monitoring sites, especially at major streams along the upper reaches of the Clinch and Powell arms of lake near towns and farms. Water quality is very poor.	2
Water is fair	2
Water is muddy and dark	2
Need some kind of aquatic plant life for a healthier water system	1
Water quality deteriorates rapidly in the summer	1
Jet skis cloud the water with silt	1
Decline in visual quality	1
Failed state water quality standards for oxygen, bottom life, and sediment	1
Coal Creek is always dirty and sometimes smelly	1
Need to maintain water level to bring back biological balance	1
The water doesn't appear to have suspended sediments after a hard rain. The lake is clear down to 15' below the surface.	1
Water quality needs improvement evidenced by brown scum on bottom of boat	1
New aquatic plants are growing in shallow areas in the last 2 years that weren't there before	1
Filaments, algae, and other aquatic forms are on the increase and may be due to nutrient enrichment	1
Can't drink water untreated	1
Underwater visibility is poor	1
Poor in the spring when lake is rising and flushing banks.	1
Erosion, sedimentation, and bacterial contamination reduce the water quality	1
TVA and TWRA have not increased monitoring of water quality as needed with the increase of watercrafts	1
On Monday mornings the foam floating on water indicated pollution (e.g., Pt3)	1
TOTAL	99
COMPARISON TO OTHER LAKES	
Norris is one of the cleanest lakes	55
Lack of development helps appearance and water quality	6
Noisy and congested - needs better management	3
Norris is fair relative to other area lakes	3
Not sure how it compares to other lakes	2
Better at times than LBL	1
Not so good Wild Management Areas.	1
Norris is the best in the area for activities	1
It is one of the most scenic	1
Norris is much better than the Ohio Lakes	1
TOTAL	74

POLLUTION/WASTE MANAGEMENT	
Control boat waste - current controls are inadequate	22
Limit agriculture run-off	11
Reduce industrial dumping and pollution from mining.	5
Eliminate public dumping	4
Get cows out of lake	3
Non-point source pollution problems are not being addressed and will dramatically increase with more development	3
Eliminate straight piping of sewage from residential areas	3
Litter control and clean up	2
Concerned about sewer treatment facilities polluting the water	2
Population growth is increasing pollution	2
Prevent fuel spills and dumping at marinas	1
Cove Creek is being harmed by the water treatment plant	1
Gas and oil pollution from boat motors	1
Most significant pollution sources are farms on the upper Clinch and coal mine run off on Powell.	1
Need addition controls on various discharging from factories, steam plants, farming observations, logging, and soil movement (strip mining, development, clean cutting timber, chip mills)	1
TOTAL	60
LITTER REMOVAL	
Littering is excessive and needs to be controlled	23
Surface trash needs to be removed	5
Use prisoners to clean up trash	1
Put fencing across stream to catch trash. It is not safe to navigate Powell River starting at marina 12 upstream due to trash.	1
Clean up in-flowing streams of debris and waste	1
Too much trash and waste is causing too much algae to grow on branches in water in the fall.	1
Establish recycle program and drop-off centers	1
TVA does not monitor 5-10 miles up the branch which is where 90% of the garbage comes from	1
TOTAL	34
VEGETATION/WILDLIFE	
Fishing is good and fish are edible	17
Fish are not edible	2
Poor fishing year round	1
Control contamination problems	1
Fishing for bass is low	1
Good diversity of fishes and few biological warnings regarding consumption	1
The number of endangered species has increased and non-native species are invading	1
Vegetation in watershed is adequate due to the steep terrain	1
The overall habitat seems healthy with no drastic decrease in any population	1
No cutting trees unless dead or diseased	1
Plant more water growing plants	1
TOTAL	28

NEEDS IMPROVEMENT	
Strive to improve water quality	9
Streams and tributaries strongly need emphasis in order to maintain and improve water quality	2
Clean up marinas and old houseboats	2
Limit large boats	1
TVA must buy some of the land that is for sale to prevent development and over-population of the area.	1
TVA is only concerned with generating more electricity to protect jobs	1
Prevent overcrowding	1
TOTAL	17
LIMITED DEVELOPMENT	
The lack of development and industry helps keep the water clean	8
Control residential and industrial development	1
Few industrial/municipal discharges compared to other lakes	1
TOTAL	10
EROSION	
Control erosion	4
Encourage buffer zones of vegetation along the lake fronts	2
Assist landowners in restoring riprap vegetation	1
Riprap shoreline	1
Poor erosion control – need new projects	1
TOTAL	9
EDUCATION	
Educate the public regarding litter control	2
Educate public on the unique biodiversity of the Powell and Clinch rivers and the need to protect this resource from pollution	2
Talk with marina owners and local citizens	1
TOTAL	5
MONITORING AND ENFORCEMENT	
Marinas or TRWA or someone has to monitor the dumping of raw sewage from houseboats and floating houses.	1
Lack of quality control on tributaries which feed into the lake	1
Have not seen much policing of the lake	1
When possible need to ticket those who litter	1
TOTAL	4
WATERCRAFT	
The lake has become overloaded with boaters of all types.	2
TOTAL	2

WILLINGNESS TO PARTICIPATE IN IMPROVING CONDITIONS

COMMENT	NUMBER OF COMMENTS
WILLINGNESS TO PARTICIPATE	
Unable to participate due to age or health	7
Interested but do not live in area	3
Willing to help	2
Willing to participate even though not a full-time resident	1
Unable to commit because it's too far away	1
TOTAL	14
LITTER CLEANUP	
Keep beach cleaned up	1
Clean up and mark hiking trails	1
Report to you the people that need to clean up their act	1
Need small barge or large pontoon in order to clean the lake while on the water	1
Will report boat numbers of those who litter if there is a central phone number to call and a letter could be sent to that boat owner.	1
Do our part to prevent pollution (keep up engines, pick up other boaters' trash	1
Watch for violations of people disposing of garbage in the lake.	1
Will properly dispose of wastes arising from pontoon activity	1
TOTAL	8
MANAGE NATURAL RESOURCES	
Working with TVA Quail Unlimited and the Wild Turkey Federation to improve wildlife habitat on the Norris watershed	1
Form coalitions to prevent mismanagement of resources	1
Installation of fish habitat.	1
Help with improving fish habitat and litter clean up	1
Be involved with habitat projects for wildlife	1
Help in fish stocking program - it is badly needed.	1
TOTAL	6
RESTRICT RECREATION	
Restrict the size and number of boats and jet skis	2
Participate in establishment of trained volunteer patrol of waterway (particularly in the management of jet ski safety)	1
To set up a program to open the dilapidated access roads to the shore because everyone doesn't own an ATV	1
TOTAL	4
LIMIT POLLUTION	
Develop option for farmers with cattle to prevent watering them in creeks and rivers.	1
Stricter pollution laws	1
Limit houseboats and floating houses	1
Closer monitoring for houseboat and dock waste	1
TOTAL	4
LIMIT/PLAN DEVELOPMENT	
Limit further development by private parties.	1
Build hiking or mountain bike trails	1
I would like to work in partnership with CPWT to develop a parcel of land in Sharp's Chapel for camping, biking, nature observation, and an outdoor classroom for schools in Union County.	1
TOTAL	3

RAISE WATER LEVELS	
Work on issues related to leaving the water level up longer.	1
Help convince TVA to raise lake levels in late summer and fall	1
TOTAL	2
EDUCATION	
Boater education	1
Educate old and young regarding litter and its effect on lake waters especially the danger of glass on the banks. Tough anti-litter law pertaining to creeks, rivers, and other waters.	1
TOTAL	2

Appendix II

Table of Comments: Public Meetings

WHAT DO YOU VALUE MOST ABOUT THE PUBLIC LANDS AND WATERS AROUND NORRIS LAKE?

COMMENT/THEME	FREQUENCY
BALANCE OF DEVELOPMENT AND NATURAL RESOURCES	
Wise use of natural/man-made resources	1
Mix between quality development and natural areas	1
<i>SUBTOTAL</i>	2
BOAT WASTE ENFORCEMENT	
Necessary rules for sewage dumping are in place	4
<i>SUBTOTAL</i>	4
CULTURAL PRESERVATION	
Preservation of cultural resources	1
<i>SUBTOTAL</i>	1
DEVELOPMENT	
INCREASED DEVELOPMENT	
Lake and land provide opportunities that would draw development to area	1
<i>SUBTOTAL</i>	1
INDUSTRIAL/COMMERCIAL DEVELOPMENT	
No TVA land used for industrial development	3
Low amount of commercial development	1
<i>SUBTOTAL</i>	4
LIMITED DEVELOPMENT	
Large quantities of protected/undeveloped land (shoreline) on Norris Reservoir—rural isolation	20
Should not encroach on public land	6
No development	3
Minimized development—development is regulated	3
Land and water is not crowded	2
Non-commercial development	1
<i>SUBTOTAL</i>	35
RESIDENTIAL DEVELOPMENT	
Lack of residential shoreline	2
<i>SUBTOTAL</i>	2
DOCKS/RAMPS	
Can have boat docks and direct access	3
Commercial docks	1
Boat ramps	1
<i>SUBTOTAL</i>	5
EROSION	
Uneroded shoreline and control of erosion	2
<i>SUBTOTAL</i>	2
FEES	
Free access	2
<i>SUBTOTAL</i>	2
LITTER CONTROL	
Rules for littering are in place	4
<i>SUBTOTAL</i>	4

LOCATION	
Location—it is convenient with interstate access	1
	<i>SUBTOTAL</i> 1
NATURAL RESOURCES/WILDLIFE	
Variety of wildlife and aquatic life—unique biodiversity	14
Wildlife preservation	8
Pristine nature as a habitat for wildlife	5
Beauty of forested areas	4
Vegetative shoreline	2
Wildflowers	2
Planting drawdown zone with annual grasses	2
Freedom to enjoy natural resources	1
	<i>SUBTOTAL</i> 38
LACK OF NOISE	
Peaceful and quiet/solitude	4
	<i>SUBTOTAL</i> 4
RECREATION	
Variety of activities—not just one predominant activity (e.g., fishing)	11
Fishing	7
Public access	5
Hunting	5
Family recreation	4
Camping	3
Hiking	3
Picnic areas	1
Low density recreation	1
	<i>SUBTOTAL</i> 40
SCENIC BEAUTY	
Beautiful, natural look	29
Cleanliness of land	4
Stunning beauty— <i>islands, shoreline, trees</i>	1
	<i>SUBTOTAL</i> 34
SEWAGE SYSTEMS	
Sewage capacity	1
	<i>SUBTOTAL</i> 1
TVA	
Presence of TVA and permitting role of TVA to control tree-cutting and preservation of natural beauty	2
TVA's managed development—control of shoreline	1
TVA's expertise to help solve problems	1
	<i>SUBTOTAL</i> 4
VALUE AND ECONOMY	
Value of living on the lake	1
High property values—good investments	1
Money from tourism boosts the economic base of the region	1
	<i>SUBTOTAL</i> 3
WATERCRAFT SAFETY/RESTRICTIONS	
Less large ocean-going boats with big waves	2
	<i>SUBTOTAL</i> 2

WATER LEVEL	
Recreational and tourism value of high water levels	1
<i>SUBTOTAL</i>	<i>1</i>
WATER (QUALITY AND SUPPLY)	
Cleanliness of water—high water quality	36
Controlled point-source pollution	1
No fish consumption warnings	1
Water quality for fishing, hunting, scenery, and walking	1
Lake provides water for houses	1
Clean rivers and tributaries	1
<i>SUBTOTAL</i>	<i>41</i>

HOW COULD THE MANAGEMENT OF TVA PUBLIC LANDS BE IMPROVED?

COMMENT	FREQUENCY
AGRICULTURAL USE	
Eliminate agricultural license program to prevent land abuse cheaply	1
<i>SUBTOTAL I</i>	<i>1</i>
BALANCE OF DEVELOPMENT, RESOURCES, AND/OR RECREATION	
Put less emphasis on economic development and more on preserving natural resources	1
Balance economic tradeoffs between power production and recreational profit	1
<i>SUBTOTAL</i>	<i>2</i>
BOAT/RECREATIONAL WASTE ENFORCEMENT	
Better control of houseboat waste	7
Enforce sewage dumping into Norris Lake	2
Control human waste runoff from unregulated informal camping	1
Control oil, etc. emissions from boat motors	1
Enforce holding tanks	1
<i>SUBTOTAL</i>	<i>12</i>
CULTURAL PRESERVATION	
Control arrowhead removal	1
<i>SUBTOTAL</i>	<i>1</i>
DEVELOPMENT	
ALLOCATE LAND	
Allocate land for state park	3
<i>SUBTOTAL</i>	<i>3</i>
INDUSTRIAL DEVELOPMENT	
Limit industry	1
<i>SUBTOTAL</i>	<i>1</i>
LIMIT DEVELOPMENT	
No sale of public lands—leave land alone and protect from development/abuse	6
More monitoring of existing rules to control development	2
No more development	2
Keep Island F public	1
<i>SUBTOTAL</i>	<i>11</i>

DOCKS/MARINAS	
Upgrade current marinas before adding new ones	2
Better enforcement of houseboat docking outside marinas	1
Better inform new dock owners of rules and regulations	1
Restrict harbor limits—some are now too large	1
Need more flexibility working with marinas	1
	<i>SUBTOTAL</i>
	6
EDUCATION	
Need better communication and education about problems and concerns on public lands and waters (e.g., ad campaigns, radio spots, public service announcements)	10
Need school programs (like Clinch-Powell RC & D)—train children about litter	4
	<i>SUBTOTAL</i>
	14
EROSION	
Control shoreline erosion	4
Limit size of boats to control erosion	2
Eliminate erosion problems caused by 4-wheelers	2
Need demonstration projects using Best Management Practices—transferring technology on private lands particularly for shoreline erosion timber harvests	2
Need share programs for erosion prevention with bioengineering emphasis	2
TVA/TWRA/State/Federal/USACE provide grants to private landowners to treat site-specific shoreline erosion	1
Use more natural vegetation/planting to control shoreline erosion—increase fish habitat	1
Allow homeowners to take action stabilizing shoreline, preventing erosion (rearranging rocks riprap)—give tax credits to encourage this	1
Use more natural methods to control shoreline erosion	1
No riprap	1
	<i>SUBTOTAL</i>
	17
FACILITIES	
Land owners need to be allowed water use facilities (with a charge if needed)	2
Limit public road access	1
	<i>SUBTOTAL</i>
	3
FEES	
Lake user fees for all out-of-state users only	5
Charge for weekend use	1
Use fees for more enforcement	1
No fees are needed	1
Land usage fees will be needed	1
	<i>SUBTOTAL</i>
	9
LITTER CONTROL/MAINTENANCE	
Control litter—maintain clean shoreline	8
Need organized effort for public to maintain appearance and cleanliness of lake area	7
Issue more citations for littering and dumping (have boat docks hand out bags, camping permits, registration of dock)—increase fines	5
Clean/remove fallen trees in lake to alleviate accidents	2
Need regulations (that TVA regularly monitors) to reduce trash, clean boathouses, maintain boat docks	2

Control informal recreation areas for litter, trash, and waste	2
More designated campgrounds with trash containers would help	2
TVA dredge out areas	1
Remove violations and encroachments (e.g., dilapidated docks)	1
Close abused informal recreation areas	1
Publish citations for littering—need active enforcement	1
<i>SUBTOTAL</i>	32
NATURAL RESOURCES/WILDLIFE	
End logging—leave old growth alone	5
Need more vegetation/nutrients for fish habitat	4
Need wildlife management clearings—manage land for a wide range of wildlife habitat (e.g., native warm season grasses food plots)	4
Need more forestry and wildlife management	3
Don't end logging—some logging for habitat	2
Maintain wild pristine areas	2
Eliminate all man-made fish attractors	1
<i>SUBTOTAL</i>	21
PERMITS	
Need permit system in Big Creek	1
Make it easier for communities to get permission to use TVA land (e.g., fire station, parks)	1
<i>SUBTOTAL</i>	2
POLICE/SAFETY	
Better law enforcement on TVA land—more TVA officers	3
Need enforcement regarding weekend use and abuse	1
TVA should be given citation authority with corrective measures	1
<i>SUBTOTAL</i>	5
PUBLIC INVOLVEMENT	
Public ideas should be implemented (e.g., water levels)	3
Listen to homeowners and lake users	1
Form homeowners/lake user coalition to promote higher water levels	1
Communicate with the public	1
Need more public input on easement transfers	1
<i>SUBTOTAL</i>	7
RECREATION	
No ATVs on shoreline	2
Give all recreation a place—designate specific areas for specific uses	2
Improve land-based access to public lands (e.g., hiking, biking, beach)	2
More designated swimming areas to avoid conflict between swimmers and fishers	1
Need more public camping areas (even with fees)	1
Provide canoeing/kayaking places	1
Do not exceed recreational capacity	1
No hunting or shooting guns near subdivision and on hiking trails	1
More boat camping sites	1
Maintain large tracts of public land for nonmotorized vehicle use	1
<i>SUBTOTAL</i>	13

REGULATIONS/RESTRICTIONS	
Need more enforcement of existing regulations (e.g., fines for clear cutting)	3
Better inform public of rules and regulations on use of public land	1
Need good regulations about stripping shoreline and control of lawn— increase the fines	1
Variation in land-rights/land ownership should be better defined. Where is TVA land? How can it be used?	1
No local zoning	1
<i>SUBTOTAL</i>	7
SEWAGE SYSTEMS	
More vigorously enforce laws regarding the treatment of raw sewage (e.g., septic systems)	1
<i>SUBTOTAL</i>	1
SPEED LIMITS	
Establish no-wake zones (small coves) where appropriate for speed safety— need signs, buoys, etc.	2
Control watercraft speed	1
<i>SUBTOTAL</i>	3
TVA	
TVA, TWRA, and TDA need better coordination	3
Tennessee and Virginia need to work together	2
Better management of and interaction with commercial operators	1
Have TVA/TWRA spend more time in field—not doing paper work	1
TVA and TWRA should work together	1
TVA should enforce new SMI policy, especially regarding vegetation and dock sizes	1
Need a social/environmental justice focus by TVA—don't abuse the public trust	1
Have TVA personnel spend different times of the year out on Norris Lake for appreciation	1
Need cooperation between county, state, and TVA on county growth plan	1
<i>SUBTOTAL</i>	12
VALUE AND ECONOMY	
Look at land in plan that could be disposed of to private entities for economic impact to the community	2
Make decisions on public lands that don't devalue private land	1
<i>SUBTOTAL</i>	3
WATERCRAFT SAFETY/RESTRICTIONS	
No more regulations on personal watercraft than on any other boats	2
Limit jet skies—keep them out of some areas	2
Control size and number of watercraft—restrict watercraft	2
Better manage the grandfathered 4B boats	1
Require boat operators license	1
Maintain concern for water safety	1
Keep motorized boats out of some areas to help wildlife, erosion, etc.	1
<i>SUBTOTAL</i>	10

WATER LEVEL	
Maintain a constant water level	13
Maintain higher water levels longer (at least through Labor Day)	9
Accurately predict the water level	1
Water level should not rise to tree level—this contributes to soil erosion and loss of trees	1
Quick drawdown is a navigational hazard	1
Control water [level] to reduce mosquito population	1
	<i>SUBTOTAL</i> 26
WATER QUALITY	
Regulate non-point pollution entering lake	3
Keep cattle out of the water	2
Continue monitoring water (and soil) quality	2
Need to know more about water quality before planning the land	1
	<i>SUBTOTAL</i> 8

A WATERSHED IS THE LAND, USUALLY DEFINED BY RIDGES, THAT DRAINS RAIN AND SNOWMELT TO A LAKE, RIVER, OR OTHER WATERBODY. OVER THE NEXT TEN YEARS, WHAT WILL BE THE MAJOR LAND USE, WATER QUALITY, OR OTHER PROBLEMS AND ISSUES THAT MUST BE ADDRESSED WITHIN THE WATERSHED DRAINED BY THE CLINCH AND POWELL RIVERS, INCLUDING THE NORRIS LAKE WATERSHED?

COMMENT	FREQUENCY
AGRICULTURAL WASTE	
Livestock in creeks, tributaries, lake, rivers	3
Agricultural chemical runoff	2
	<i>SUBTOTAL</i> 5
BOAT WASTE	
Human waste treatment at boat dock facilities—need more dollars for state inspections	2
Nonnavigable housboat issues	1
	<i>SUBTOTAL</i> 3
CULTURAL PRESERVATION	
Disturbance of Native American Burial Grounds	1
	<i>SUBTOTAL</i> 1
DEVELOPMENT	
INDUSTRIAL DEVELOPMENT	
Increased industrial development because of water availability	4
	<i>SUBTOTAL</i> 4
OVER DEVELOPMENT	
Over development	6
Inappropriate development	2
Uncontrolled development in rural counties with no zoning and code enforcement	1
	<i>SUBTOTAL</i> 9

RESIDENTIAL DEVELOPMENT	
Water pollution from residential development	3
Increase in residential development results in too many watercrafts	1
Need overall development plan for whole Powell Valley watershed to prevent homes on mountain tops that affect skyline	1
<i>SUBTOTAL</i>	5
EROSION	
Excessive erosion	4
<i>SUBTOTAL</i>	4
FEES	
Increase and fairness of fees	1
Pressure from need for fees decreasing public use areas	1
Lake user fees needed	1
<i>SUBTOTAL</i>	3
LITTER	
Increasing litter on lakes by campers	2
Litter washes into the lake in Spring	1
Disposal of household trash	1
<i>SUBTOTAL</i>	4
MARINAS	
We may build too many marinas that the lake can not support	1
<i>SUBTOTAL</i>	1
NATURAL RESOURCES/WILDLIFE	
Large scale logging—clear cutting impacts (e.g., runoff)	3
An unbelievable amount of land could be cut in Cove Creek and Clear Creek—private landowners are selling to chip mills	1
Keeping the fishery from having a “fish advisory” for eating	1
<i>SUBTOTAL</i>	5
NOISE	
Noise pollution	1
<i>SUBTOTAL</i>	1
OVER USE/POPULATION	
Increase of lake users	4
Inability to enforce responsible usage by weekend recreation users	2
Less natural resources due to population influx	1
Mismanagement of property (destroying land, erosion, pollution) by people leasing land for short-term	1
Determining the optimum density for water quality, safety, recreation, development	1
<i>SUBTOTAL</i>	9
POLICE	
Not enough TWRA/TVA enforcement officers on the lake	3
<i>SUBTOTAL</i>	3
SEWAGE SYSTEMS	
Septic tanks should not be on half-acre lots	1
<i>SUBTOTAL</i>	1
TVA	
TVA funding to maintain and improve lake	1
<i>SUBTOTAL</i>	1

WATERCRAFT USAGE	
Increase in watercraft use on the lake (especially jet skis)	3
Higher use of jet skis, especially be kids—destroys the peace of the lake	2
<i>SUBTOTAL</i>	5
WATER QUALITY	
Pollution—poor water quality (groundwater discharge, surface water runoff, nonpoint discharge)	6
Runoff from abandoned coal miners	2
Water will not be safe to drink	1
Pollution by boat traffic	1
Pollution from sewage	1
Waste from road runners	1
Pollution from industry	1
<i>SUBTOTAL</i>	13

HOW DO YOU THINK WATER QUALITY OF THE LAKE, RIVERS, STREAMS, AND TRIBUTARIES WILL CHANGE IN THE WATERSHED DRAINED BY THE CLINCH AND POWELL RIVERS (INCLUDING THE NORRIS LAKE WATERSHED) OVER THE NEXT FIVE TO TEN YEARS?

COMMENT	FREQUENCY
BOAT WASTE	
Need to monitor houseboat waste	3
It will get worse due to lack of enforcement of waste laws	1
<i>SUBTOTAL</i>	4
DEVELOPMENT	
Control development or water quality will decrease (e.g., decrease in riparian areas)	16
Industry could make it worse	4
Bacterial problems from shoreline use facilities (e.g., Powell Valley Campground)	1
Runoff from road construction	1
Increased suburbanization causes increased erosion, shoreline water temperatures, eutrophication, and general water quality deterioration	1
New development should not encroach on natural sinks or diverting surface runoff to natural drains	1
<i>SUBTOTAL</i>	24
EROSION	
Erosion will increase unless there is a bank stabilization program	2
<i>SUBTOTAL</i>	2
LITTER	
Reduced water quality due to dumping cars, batteries, tires because of laws that make disposal difficult (state laws have caused this problem)	1
Trash is coming down tributaries and headwaters streams	1
<i>SUBTOTAL</i>	2

NATURAL RESOURCES/WILDLIFE	
Impacts from logging (e.g., natural fertilizer will be disrupted)	3
Need to introduce exotic plant/animal species	1
<i>SUBTOTAL</i>	4
REGULATIONS	
Need tough regulations regarding pollution	1
<i>SUBTOTAL</i>	1
OVER USE/POPULATION	
Reduced water quality due to increased population	7
<i>SUBTOTAL</i>	7
SEWAGE SYSTEMS	
Failing septic tanks—need septic tank inspections	3
<i>SUBTOTAL</i>	3
TVA	
The public must get involved	4
You can't predict unless TVA begins acting on suggestions at this meeting— the land and water quality will only get worse	1
<i>SUBTOTAL</i>	5
WATERCRAFT USAGE	
Petroleum contamination from watercraft	4
Boats are too large—control horsepower	2
Increasing jet skis and boat use will result in increasing erosion, overuse, and litter	1
<i>SUBTOTAL</i>	7
WATER LEVELS	
Poor water quality because of extreme drawdown	6
<i>SUBTOTAL</i>	6
WATER QUALITY	
Reduced water quality	19
Without positive changes and enforcement, the water quality will get worse	2
Reduced quality due to drought and global warming	1
Poor water quality if other reservoirs are not cleaned up	1
Citizens need to start taking action or the water quality will get worse	1
Very poor if waste water treatment plants are not built	1
Heavy metals are the biggest concern	1
<i>SUBTOTAL</i>	26

Appendix III Questionnaire

Norris Lake Watershed Survey

1. For each activity that you participate in, please check the appropriate box to show how you use the land and waters around Norris Lake.

- | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Bicycle riding
<input type="checkbox"/> Mountain biking
<input type="checkbox"/> Use of public boat ramp
<input type="checkbox"/> Use of marina
<input type="checkbox"/> Pleasure boating
<input type="checkbox"/> Sailing
<input type="checkbox"/> Jet skiing
<input type="checkbox"/> Water skiing
<input type="checkbox"/> Camping in developed area
<input type="checkbox"/> Camping in non-developed area
<input type="checkbox"/> Fishing | <input type="checkbox"/> Golfing
<input type="checkbox"/> Hiking
<input type="checkbox"/> Horseback riding
<input type="checkbox"/> Hunting
<input type="checkbox"/> Nature photography
<input type="checkbox"/> Off-road vehicles (ATV, Jeep, etc.)
<input type="checkbox"/> Picnicking
<input type="checkbox"/> Swimming in designated areas (beach)
<input type="checkbox"/> Swimming in undesignated areas
<input type="checkbox"/> Wildlife observation
Other (please specify) _____ |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

2. For each activity listed, please check the appropriate box indicating your preference for facilities on or around Norris Lake.

For Example:

Activity	Facility Preference			
	Need Less	Right Amount	Need More	No Opinion
Rafting		✓		
Bird watching				✓

Activity	Facility Preference			
	Need Less	Right Amount	Need More	No Opinion
Bicycle riding				
Mountain biking				
Boat ramp/boating				
Marina				
Pleasure boating				
Sailing				
Jet skiing				
Water skiing				
Camping in developed area				
Camping in non-developed area				
Fishing from the bank				
Fishing from a pier				
Fishing from a boat				
Golfing				
Hiking				
Horseback riding				
Hunting				
Nature photography				
Off-road vehicles (ATV, Jeep, etc.)				
Picnicking				
Swimming in designated areas				
Swimming in undesignated areas				
Wildlife observation				
Other (please specify) _____				

3. What projects/activities are needed to provide cleaner water in Norris Lake and the streams that flow into it?

4. Please check the box that best describes what you think about the future of marinas over the next 10 years.

- One additional marina is needed
- More than one marina is needed
- No new marinas are needed, but some existing marinas should expand their facilities
- No new marinas or expansions are needed
- No opinion
- Other (please specify) _____

5. For each land use, please check the box indicating your preference regarding the allocation of public land. For example, if you think the amount of development is about right, check the box indicated below.

Land Uses	Land Use Preference			
	Too Much Land	About Right Amount	Need More Land	No Opinion
State park area		✓		

Land Uses	Land Use Preference			
	Too Much Land	About Right Amount	Need More Land	No Opinion
Commercial recreation areas (commercially operated marinas, resorts, campgrounds, etc.)				
Resource management areas (forests, wildlife areas, etc.)				
Areas for state wildlife management areas				
Areas for state parks				
Sensitive resource areas wetlands, cultural, endangered species, etc.)				
Other purposes (please specify)				

6. Given \$100 to allocate to any or all of the activities listed below, write in the amount that should be spent.

For example: If you think \$55 should be allocated to your top priority activity, put \$55 in the allocation column for that activity. Be sure the dollar amounts total to \$100.

Issues	Allocation (\$0 – \$100)
Your top priority activity	\$55
Your next priority activity	\$45

Note: continue putting dollar amounts in the right column until you have “spent” the entire \$100.

Issues	Allocation (\$0 – \$100)
Improve recreational access and facilities	
Erosion control	
Improve wildlife habitat	
Work with private landowners to clean up/prevent impact to water quality	
Provide industrial/economic development opportunities	
Trash/litter clean-up	
Monitor water quality conditions	
Address houseboat waste issue	
Help farmers minimize agricultural impact to water quality	
Work with private landowners to improve forestry practices	
Other (please specify) _____	

\$100 Total

