

May 15th, 2012

Colonel Steven Baker, Commander
U.S. Army Corps of Engineers
Wilmington District
P. O. Box 1890
Wilmington, NC 28402-1890

Dear Colonel Baker,

The Nature Conservancy (TNC) appreciates the opportunity to assist the United States Army Corps of Engineers (ACOE), Wilmington District in conducting the Section 216 study of the John H. Kerr Dam and Reservoir. Our participation in this process began prior to initiation of the study as TNC was one of the initial proponents for the work and helped garner Congressional support. We view the Kerr 216 study as an opportunity to pursue the shared goals of the Corps of Engineers and the Nature Conservancy to balance flood control, reservoir management, hydropower, natural resource conservation, economic development and other resources along the lower Roanoke River in sustainable ways. These shared goals are further expressed within the ACOE/TNC National Sustainable Rivers Partnership, within which the Roanoke was one of first rivers identified as a focal site and continues to be featured as one of only eight rivers nationwide.

At present, the 216 study is concluding the technical studies phase of data collection, modeling, etc. and progressing through the now parallel process of plan formulation and evaluation, prior to selection of a preferred alternative for final approval. Currently, there are three proposed water management alternatives that modify operations of Kerr dam. Based on the status of the study and TNC's participation within the Operating Policies & Administrative Procedures and Downstream Flow & Riparian Ecosystem working groups, among others, I write to request ACOE follow-through on analyses of reservoir water-level management and flood risk reduction benefits derived from the current operations and the 3 proposed alternatives for operation. This is an important aspect of the 216 study that has yet to receive appropriate study, though TNC made requests for inclusion of this research. Our first request was in a letter, dated 18 April 2000, from Dr. Sam Pearsall, former Director of Science for the NC Chapter of The Nature Conservancy, to W. Eugene Tickner, Deputy District Engineer, USACOE, Wilmington District, requesting that the Section 216 study include comparison of lake-level deviation between the current actual operation of Kerr and several re-operation strategies and analysis of the associated economic benefits derived from the re-operation strategies effects on lake levels. And, in my review of the Feasibility Study Draft report, provided by digital submission on March 5th, 2010 to Wilmington District ACOE Kerr 216 Study Project Leads, I noted on Page 27 of the draft that the proposed flow alternatives had an economic benefit both on the Reservoir side and to users of the floodplain that needed to be included in the assessment of alternatives.

Our request is grounded in the fact that the proposed water management alternatives not only provide downstream environmental benefits by reducing the duration of floodplain inundation, but also significant economic benefit derived from stabilizing lake-levels, which reduces bank erosion, diminishes impacts to reservoir recreation resources, and diminishes impacts to regional infrastructure and increases reservoir flood risk reduction capacity. These benefits are further explained in the following paragraphs.

Regarding Kerr Reservoir bank erosion, in ACOE's 2010 Environmental Assessment of shoreline stabilization projects for Kerr Reservoir, the preparers identify under Section 7.0, Cumulative Impacts the following concerns and opportunities:

- Since completion in 1952, operations of Kerr Lake have produced fluctuating water levels, affecting shoreline bank stability and impacting surrounding resources;
- Fluctuating water levels, coupled with high winds, are the primary contributing factors of moderate to severe erosion along approximately half of the shoreline at Kerr Lake (400 miles);
- Since 1999, North Carolina Parks and Recreation spent approximately \$2,000,000 on erosion control measures along public recreation areas at Kerr Lake in North Carolina;
- Minimizing water level fluctuation, both magnitude and frequency, will serve to reduce the need for future shoreline stabilization; however, such minimization will not occur until the operations at Kerr Lake are modified;
- Towards this goal a Section 216 Feasibility Study is in process; evaluating structural and operational alternatives for Kerr Lake and including consideration of revising operations;
- One consideration is better control of fluctuating water levels experienced at Kerr Lake by tracking inflow rates more accurately and developing more precise water balance management responses; this could reduce or eliminate future shoreline erosion issues.

Table 5 provides a summary of reservoir deviation from the guide curve under existing operations for the period from January 1st, 1972 through April 30th, 2010. As you can see from this summary, reservoir water levels are 3 feet above the recommended elevation 20 percent of the time and greater than 5 feet above 12 percent of the time. Looking at total deviation, the water level in Kerr Reservoir is 3 feet or more above or below the recommended level 27 percent or 3,780 days out of the 14,000 days in the sample in the period.

Kerr Reservoir provides quality natural resource-based recreation for area residents and desirable outdoor experiences for visitors each year. Lake level fluctuations substantially affect commercial and recreational activities on the Reservoir and within the surrounding region. There are 30 recreation areas on Kerr with a total of 1,322 campsites, 228 picnic sites, and 38 boat ramps. ACOE manages 12 of these areas and leases land to the State of North Carolina and the Commonwealth of Virginia to manage 15 other areas. Three marina areas are managed by private companies and 15 quasi-public recreation areas under lease to various churches, civic, and scout organizations. Lake level impacts to these resources are contained in Tables 1-4. Twenty-six wildlife management areas are located around the reservoir, which are used by hunters and nature enthusiasts. Use of these wildlife management areas by both wildlife and outdoor enthusiasts, primarily hunters, is significantly impacted by reservoir water-levels. Visitors to these recreation sites average 2.9 to 3.5 million visitor days of recreation per year.

Based on the above information and given the comprehensive nature of the 216 Study, it is imperative to include analysis of the economic impacts that fluctuating lake levels have on lake shore real estate, lake-based and near shore recreation, regional tourism, and local infrastructure. It is recommended that these analyses include current operation of Kerr compared to the 3 proposed water management operation strategies designed to benefit downstream ecosystems and which help stabilize lake levels and provide additional flood risk reduction benefits. This effort should analyze lake levels for each flow scenario and develop information related to deviation from Guide Curve, impacts to boat ramps, roads, tourism, fishing, etc. Such study should also quantify the respective flood risk reduction for each flow scenario based on the risk levels to capital infrastructure downstream, similar to the way the ACOE currently calculates annual flood benefits derived from Kerr Dam.

In addition to the Reservoir analysis work, the existing ACOE study conducted by RTI International regarding downstream floodplain impacts from the effects of current operations and one alternative operation strategy should be completed for the other two operation alternatives. Further, this work should be updated to include the portions of the floodplain inundated by floods of various magnitudes as delineated and accepted by ACOE. Revisiting this work would complete the downstream analysis of benefits and impacts for users of lower Roanoke River floodplain resources.

As we enter the alternative formulation and evaluation phase of the 216 study, it would benefit TNC and other stakeholders for ACOE to provide us with the Roanoke River Basin Operations Model outputs utilized in the study. These outputs were created from model runs developed by Hydrologics, Inc. for ACOE and include the 3 operation alternatives and existing operations scenarios. ACOE planning staff examined the potential and need for additional alternatives and developed feasible reoperation strategies that provide the benefits detailed above. Data within the model runs include among other variables, the projected flow out of the dams and water levels Kerr Reservoir and will help work group members better our understanding of the alternative management outcomes.

I appreciate the countless hours of work by ACOE staff to carry out a study of magnitude and complex nature as the section 216 for J.H. Kerr Reservoir. In order to ensure the study provides a comprehensive assessment of alternative impacts and benefits, it is critical that the above components be included in the analysis and outcomes. I look forward to working with ACOE staff and others to complete this timely work.

Sincerely,

A handwritten signature in black ink that reads "Chuck Peoples". The signature is written in a cursive, flowing style.

Chuck Peoples, Northeast North Carolina Program Director

Tables 1-4. Lake Level Impacts on Reservoir and Surrounding Assets

Table 1: Unusable Public Campsites

Lake	Corps	NC	VA	Total
Elevation	426	650	137	1211
300 feet	0	0	0	0
302	3	44	0	85
304	5	164	0	169
306	58	252*	0	310
310	112	427	0	539

Table 2: Unusable Public Beaches

Lake	Corps	NC	VA	Total
Elevation	13	1	N/A	14
300 feet	0	0	N/A	0
302	2	0	N/A	2
304	10	1	N/A	11
306+	13	1	N/A	14

Table 3: Unusable Public Boat Ramps

Lake	Corps	NC	VA	Total
Elevation	15	15	4	34
300 feet	0	0	0	0
302	0	0	0	0
304	2	3	0	5
306+	5	12	0	17

Table 4: Marina Impacts

Lake Elevation	Clarksville VA	Steele Creek NC	Satterwhite Point NC
300 feet	198 slips + ramp	350 slips + ramp	130 slips + ramp
302	Full ops	Full ops	Full ops
304	Highest level that allows full ops; no room for rise	Full ops	Moving docks in and out becomes difficult
306+	Ramp closed; 3 of 4 walkways to slip docks closed; critical at 308+	No data available	Main Parking Lot inundated; ramp closed (307)

Table 5. Reservoir Elevation in relation to Guide Curve under Current operations

Reservoir Elevation	# Days	Percent of Total
Elevation 15 or more feet above Guide Curve	164	1%
Elevation 10 or more feet above GC	631	5%
Elevation 5 or more feet above GC	1703	12%
Elevation 3 or more feet above GC	2736	20%
Elevation $\leq 15'$ below GC	60	0%
Elevation $\leq 10'$ below GC	111	1%
Elevation $\leq 5'$ below GC	354	3%
Elevation $\leq 3'$ below GC	1011	7%



DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
69 DARLINGTON AVENUE
WILMINGTON, NORTH CAROLINA 28403-1343

REPLY TO
ATTENTION OF:

June 8, 2012

Environmental Resources Section

Mr. Chuck Peoples
Northeast North Carolina Program Director
The Nature Conservancy
Roanoke River Field Office
Post Office Box 327
Halifax, North Carolina 27839

Dear Mr. Peoples:

Thank you for your letter of May 15, 2012, regarding the John H. Kerr Dam and Reservoir Section 216 study. We appreciate The Nature Conservancy's long-term involvement with this project and look forward to your continued involvement.

As you know in addition to the existing operational releases from John H. Kerr Reservoir, we have recently focused on 3 measures: (1) modified guide curve with releases up to 35,000 cfs from January to June (MGC_35k), (2) this same measure except extended the entire year (MGC_35k year-round), and (3) Quasi-Run-of-River (QRR) where basically weekly average inflow would equal weekly average outflow up to 35,000 cfs. The purpose of these measures is to improve the lower Roanoke River ecosystem by reducing the long-term flooding of bottomland hardwoods that have occurred during wet years under existing operations. However, the investigations lead by Mr. Tim Wilder, of the Corps' Engineering Research and Development Center (ERDC), indicated that only QRR has an ecosystem benefit; therefore, MGC_35k and MGC_35k year-round will not be considered nor evaluated further. ERDC's report was provided to you and others electronically on February 21, 2012. As requested, the feasibility report will include discussion of the economic benefits of QRR both on the Kerr Reservoir side and the floodplain downstream. These benefits will include stabilizing reservoir levels and associated benefits to recreation and fisheries along with reduction in shoreline erosion and impacts to roads. QRR will also restore flood storage capacity in the reservoir sooner. However, these issues including economics will generally be discussed in qualitative terms, since the major benefit of QRR is to the ecosystem downstream of Roanoke Rapids Dam.

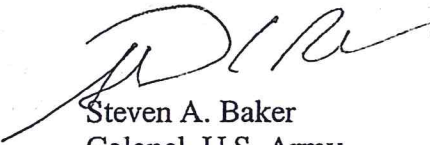
Regarding flood risk reduction, over the last 21 years the average annual damages prevented have been about \$14.2 million. This has ranged from \$0 in drought years like 2002 up to about \$149 million in wet years like 1996. This average \$14.2 million would be reduced by the average annual additional agricultural damages due to QRR of about \$234,000. Some minor additional non-agricultural damages are also expected under QRR operations based on the Corps' damage curves used for estimating annual damages prevented each year. This information will be included in the feasibility report.

You requested that the Research Triangle Institute analysis be updated to include the MGC_35k, and MGC_35k year-round alternatives and inundation scenarios. The Corps does not believe this additional work is needed due to the additional costs and time that would be required and since QRR is the only measure for the lower Roanoke River that has an ecosystem benefit and; therefore, the only measure that will likely be recommended for implementation as a part of the national ecosystem restoration plan.

Finally, the requested Roanoke River Basin Operations Model output utilized by the Corps for the study was provided to you electronically on June 1, 2012, by Mr. Jeff Lin of my staff.

Thank you for your continued interests in the John H. Kerr Section 216 study. If you have any additional comments or concerns, please let me know or contact either Mr. Frank Yelverton, Environmental Resources Section, at (910) 251-4640, frank.yelverton@usace.army.mil, or Mr. Jeff Lin, Plan Formulation and Economics Section, at (910) 251-4689, jeffrey.p.lin@usace.army.mil).

Sincerely,



Steven A. Baker
Colonel, U.S. Army
District Commander

TO: Members of the Roanoke River Basin Bi-State Commission
FROM: Chuck Peoples, NC Member Roanoke River Basin Bi-State Commission
RE: United State Army Corps of Engineers (ACOE), Kerr Reservoir- Section 216 Study
DATE: July 25th, 2012

I am providing information related to a request I made in my capacity representing The Nature Conservancy to the ACOE regarding the Section 216 Study of Kerr Reservoir. Also enclosed is the ACOE response to my request. In short, there are several key points you should note from this request and the ACOE response:

1. Our request that ACOE analyze and document direct reservoir benefits and derived economic benefits to the surrounding region from the alternative measures is not to be formally considered or analyzed.
 - a. These benefits include, but are not limited to:
 - i. Reduced impacts to recreational amenities including lake-level effects on parks, campsites, boat ramps, fishing tournaments etc.
 - ii. Reduced rates of lake shore erosion;
 - iii. Increased flood storage capacity
2. Neither of the interim strategies worked out in collaboration with representative stakeholders (i.e., Alternative 6B, as shown in presentation I made to the Commission 2 years ago) now shown as MGC_35k and MGC_35k year-round is going forward in the analysis of alternatives due to the limited benefits afforded the downstream ecosystem as determined by Tim Wilder of USACOE-ERDC;
 - a. These alternatives were always viewed by the stakeholders as an iterative approach to management that could be implemented and evaluated over time;
 - b. Quasi Run of River (QRR) will be the water management scenario utilized in the evaluation of proposed alternatives.
3. All of the alternatives **reduce downstream inundation duration, provide reservoir water-level and flood reduction capacity benefits** but these **will not be formally quantified**;
 - a. RTI's study of the downstream effects is not to be updated with the proposed alternative.
4. ACOE is utilizing downstream impacts to an estimated 1,600 acres, active agricultural lands as determined by an undocumented analysis of impacts.
 - a. These acres include the following attributes:
 - i. 33.6 acres (ac.) wholly contained on conservation lands, 25.5 ac. misclassified as ag, and 59 ac. identified by Div. of Coastal Mgmt as wetlands for restoration;
 - ii. 138 ac. on lands where owner supports concept of more water faster to lessen duration of inundation
 - iii. 405 ac. that are hydric (wetland) or partially-hydric soils

Please read this over and if you have any questions or comments, I would be glad to discuss this request in further detail with you.

Sincerely,

A handwritten signature in black ink that reads "Chuck Peoples". The signature is written in a cursive style with a large, looped initial "C".

Chuck Peoples