

John H. Kerr Dam and Reservoir: Ingredient in a Recipe for Disaster

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Purpose of this Paper

- This paper may become a tool for teaching in a biosecurity and bioterrorism curriculum.
- Terrorist can use the reservoir as a weapon of mass destruction.
- The original infrastructure of the dam and reservoir were not intended to become tools of WMD.
- Any incident causing harm to the reservoir could result in a major disaster to the public and its ecosystems.



Objectives

- Explain how bioterrorists could use the dam as a weapon
- Explain how the demographics and engineering of this dam as with any dam make it a suitable target for terrorist.
- Present scenarios of an accidental contamination and a deliberate attack on the John H. Kerr Dam and Reservoir
- Explain planned responses by local, state, and federal agencies to each of the scenarios.



History of the Dam

- Intended purpose of the dam was to control flooding and produce electricity.
- Initial study in 1927 determined that several dams were needed to control flooding in the Roanoke River Basin.
- North Carolina Congressman John H. Kerr was responsible for getting the appropriations through congress to begin building in 1944.



History Continued

- The project was completed in 1952.
- The local name “Buggs Island” came from the early settlers in the area who lived on a nearby island owned by the Samuel Bugg family.
- The dam and reservoir are maintained, protected, and owned by the federal government.



Dam and Reservoir Facts

- Dam is 2,785 feet long with a road traversing the water.
- It is 144 feet tall with 22 flood gates which are 32 feet high and 42 feet wide.
- The reservoir has the Bannister River, the Dan River and the Staunton River as its tributaries.
- Lake elevations are determined by rainfall amounts, runoff amounts, drought, and municipality usage.



Facts Continued

- Reservoir covers 48,900 acres with 800 miles of shoreline.
- Virginia counties of Charlotte, Halifax, Mecklenburg, and Brunswick border the reservoir on the north.
- North Carolina counties of Vance, Granville, and Warren border the reservoir on the south.



Resources

- Abundant wildlife such as the Bald eagle, osprey, otter, beaver, black bear, rabbits, deer and countless other animals live around the reservoir.
- Species of fish include small and large mouth bass, crappie, catfish, carp, and garr. Anadromous fishes such as shad and striper and American eels find their way into the reservoir to spawn.



Reservoir Uses

- Municipalities of South Hill, Clarksville, Boydton, Chase City, Henderson, Warrenton, and Norlina are a few towns using the reservoir for drinking water.
- City of Virginia Beach pumps 6 square acres of water a day from the reservoir for consumption.
- Va. Bass and Bass Masters use the reservoir for fishing tournaments.
- Camping, fishing, boating, and swimming add to the economics of the area.
- Tourism around the reservoir is a major source of income.



Terrorism and WMD

- Terrorism is defined as the intentional use of weapons of mass destruction to cause death or disease of animals, plants, and humans, and destruction of critical infrastructures such as dams and the environment.
- Terrorist choose their weapons based on the intended target, motives, and the desired results.

Hierarchy of Response to an Incident

- Location and severity play key roles in determining who responds to occurrences on the John H. Kerr Reservoir.
- Local and state governments would handle the majority of agricultural related disasters. (Depts. of Health, Agriculture, Game and Inland Fisheries, Law Enforcement)
- If the situation escalates, the Federal Department of Interior, (Homeland Security), EPA, FDA, USDA, and FBI could be involved.



Accidental Scenario

- A Mecklenburg county farmer allows 1000 pounds of Atrazine to lay uncovered or containered during a severe thunderstorm.
- The atrazine enters the lake across the reservoir from the water treatment plant.
- The farmer tells his friend who manages the facility about the runoff but no formal report is made.
- The reservoir water becomes contaminated.



Questions

- Is this an act of terrorism?
- Who is responsible?
- What penalties should be levied?
- Is the water treatment plant at fault for anything?
- If the incident had been handled properly, who or what agency would be responsible for alerting the general public to the atrazine contamination?



Intentional Scenario

- A disgruntled employee of a nuclear power facility decides to retaliate against his supervisor by dumping the radioactive isotope tritium into the John H. Kerr Reservoir.
- Tritium will disrupt the food web in the reservoir all the way to humans.
- Complete ecosystems will shut down in and around the reservoir.
- Humans cannot consume water with excessive levels of tritium.



Questions

- Is this an act of terrorism or just a disgruntled employee acting out?
- What mistakes has the employee made that should lead to discovering his act of violence?
- Can tritium, in this scenario, be considered a weapon of mass destruction.
- Should any local authorities share in any responsibility associated with this incident?
- What would be the greatest loss should this incident actually take place?



Final Conclusions

- A tool for controlling flooding, creating electricity, and providing drinking water to municipalities can be used as a weapon of mass destruction.
- By using the John H. Kerr Dam and Reservoir, terrorists could remind Americans that they are still vulnerable to outside attacks.
- Explosive events such as the Twin Towers and Pentagon on 9/11 are not the only means to causing mass destruction to Americans.



Final Thoughts

- The John H. Kerr Reservoir has been a part of my life for 51 years. Fishing, swimming, boating, and enjoying sunsets have enhanced my life. It would be horrible to lose it.
- We are vulnerable to accidental and intentional attacks on areas that do not appear to be of interest to terrorists.



Thoughts continued

- Through education, hopefully people will become more aware of how terrorists and weapons of mass destruction could be used against us.
- I hope people understand the importance of any aquatic ecosystem. Without these ecosystems, humans do not survive.