

Uranium Mining for Virginia

Questions and Concerns for the
Roanoke River Basin

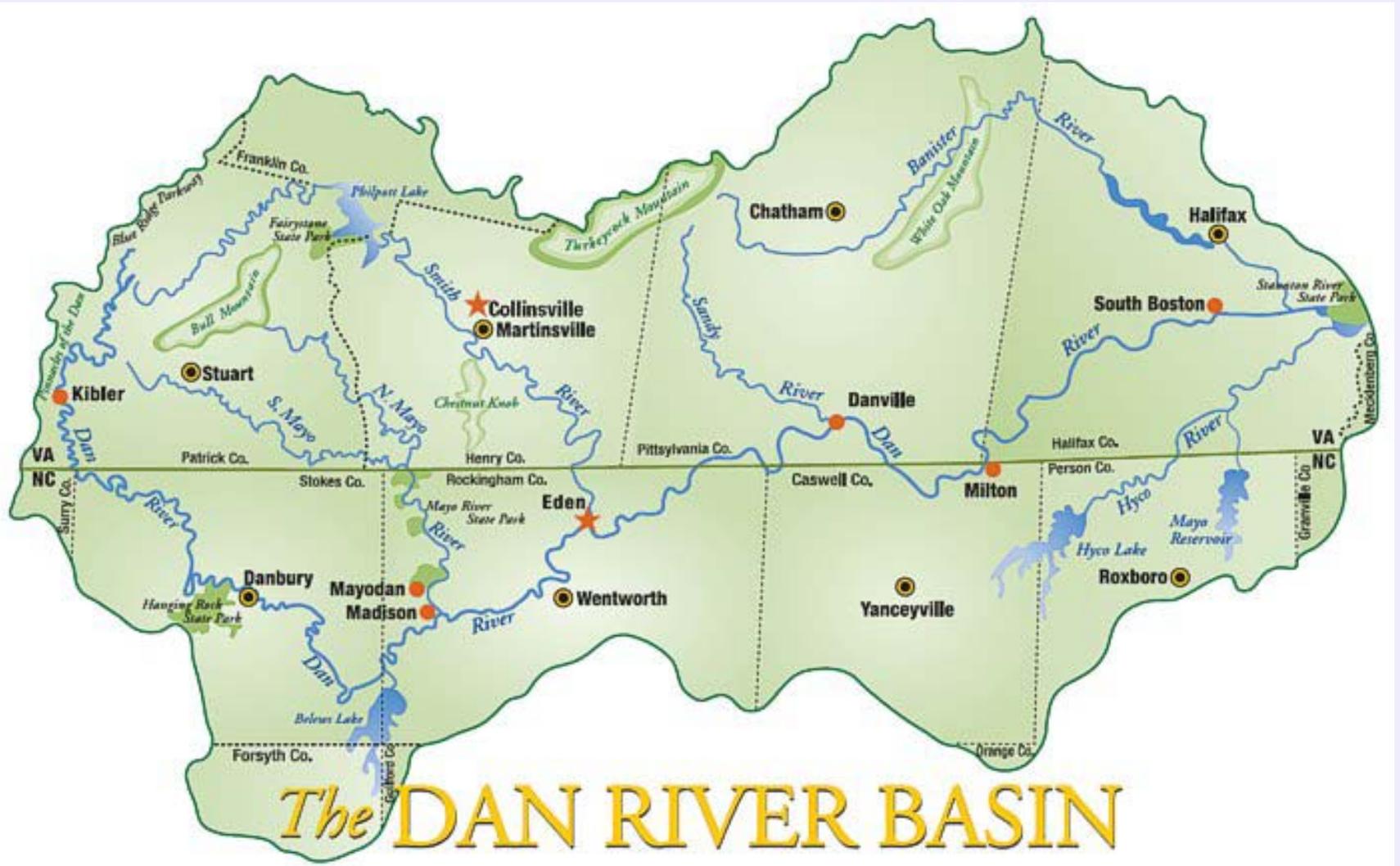
Dan River Basin Association

30 April 2009

Dan River Basin Association

- Preserving and promoting the natural and cultural resources of the Dan River basin through stewardship, recreation and education
and
- Creating wealth through cross-border collaboration and sustainable economic development

Working across 3,300 square miles



What We Do

play – learn -
care

- Recreation
- Education
- Conservation
for
- Sustainable
Economic
Development
- Nature and Heritage
Tourism



DRBA's Mining Task Force

Questions for Study Committee

- Is it safe to mine and mill uranium and store the tailings in Virginia?
- Safety issue aside, how are public perceptions of uranium mining affecting the region?

Health and Public Perceptions

- Newer studies re. public health and community exposure to uranium mines and mills are adding new concerns rather than alleviating them.
- River outfitter customers are asking not to go on “the river with the uranium mining.”
- Potential residential buyers are turning away from rural Pittsylvania County.

Concerns for the Basin

*Impacts of **all** phases: mining, milling, long-term storage of radioactive wastes and heavy metals*
– **surface & ground water**

Impacts on:

- Water quality
- Water quantity
- Drinking water supplies
- Flow, migration of water
- Concentrations of pollutants during drought conditions

Lack of Information

Hydrological regimes for areas with occurrences of uranium are unknown

- Ground and surface water interaction
- Migration of water through the strata
- Impact of drilling and removal of overburden on systems

Impact of Virginia's major storm events – hurricanes, flooding, heavy rains

What we also don't know

- Volume of water - all operations
- Sources of water (wells, streams, rivers?)
- Quality of untreated water after use
- Physical properties of pollutants (how transported, toxicity, radioactivity)
- Treatment process proposed
- Quality of water at discharge
- Points of discharge

It all depends....

Answers may be specific to:

- Site
- Climate
- Ore grade
- Chemistry and metallurgy of ore
- Plant process design

Geology matters – hard rock vs.
sedimentary rock – profound difference

We do know

Waste Volumes are Large – Estimates range over tens of thousands of acre feet of tailings, plus water and chemicals, depending on site.

Waste Storage not a Proven Technology – Containment cell liners designed to last a few hundred years; liners have failed and leaked.

Need to Plan for the Long Haul - Half life of radium (decay product is radon) is 1,602 years.

Long-term Commitments

- Monitoring methods
- Oversight
- Remediation, and
- Protection of Virginia's taxpayers from bearing costs of cleanup if worst-case scenario occurs

A Virginia Experiment?

- Most methods for on-site storage of hazardous U mining and milling have been developed for arid climates in isolated areas
- According to experts, *no similar project exists in the U.S., perhaps anywhere, and there is no large uranium mine currently processing such an ore type.*

No Answers as Yet

A state-wide study must address these questions before the General Assembly considers lifting the moratorium on the mining of uranium in Virginia.

A Review of the Literature *Considerations for Virginia*

- Every single uranium mine and mill in the U.S. has generated significant pollution to the air, land, and groundwater.
- Billions of taxpayer dollars have been spent to attempt to clean up said pollution.
- In no case was the clean up completely successful

Contact Information

Katherine K. Mull

Executive Director

Dan River Basin Association

336.627.6270

kmull@danriver.org