STATE PARKS AND SCIENCE

By Douglas McClure Wood

Senate Bill 270 and House Bill 4182, introduced by Governor Justice will allow logging in our state parks. This will cause damage to numerous bird, plant, and amphibian species, our growing tourism industry, and our state's image on the national scene. But a lesser known loser due to Governor Justice's bills is scientific research. Many state and federal agencies, private consulting firms, colleges, and universities depend upon mature forested environments in our state parks to act as research benchmarks to contrast with more disturbed landscapes. Research categories that depend upon such benchmarks are numerous and varied, such as forest health, nutrient-cycling, wildlife habitat needs, invasive species monitoring, air quality, and water quality.

As a good example of how state park forests contribute to research needs, consider the following. The WV Dept. of Environmental Protection (WVDEP) monitors the condition of stream health statewide. To do this, the agency must keep track of stream sites that have reference conditions, that is, the best of the best. These reference sites are located in mature-forested watersheds with few human disturbances. Twelve of the WVDEP's reference sites are located on nine state parks and four of those are long-term monitoring sites, which makes their protection even more necessary to our understanding of water quality changes over time throughout the Mountain State and the Appalachian Mountains region. Director McDaniel of the WV Dept. of Natural Resources (WVDNR) has revealed at least six of the state parks he intends to have logged: Watoga, Cacapon, Lost River, Holly River, Twin Falls, and Cedar Creek. All but Lost River host at least one of the WVDEP's reference sites. Logging within these reference-site watersheds may degrade the sites from their extremely important benchmark status, and compromise the long-term water quality studies of that agency.

Other agencies, like the WV Dept. of Highways and the US Army Corps of Engineers, utilize the data from these reference sites and others that they monitor on state parks to help steer their environmental programs. Many environmental consultants who provide services to engineering, manufacturing, mineral extraction, and other firms depend upon the data from these reference sites and other reference sites that they have established on the parks. Universities and colleges, both in-state and out-of-state, also depend upon reference sites, streams and watersheds in WV state parks for their research. Consequently, state park reference sites located in mature-forested watersheds support many jobs across a wide spectrum of position types, from college-intern field-grunts to high-level state, federal, and private-sector program administrators. It is precisely the statutorially-established, long-term protected condition of the forests on these state park streams that gives these research interests surety that the reference conditions will remain relatively stable and free of short-term changes.

The WVDNR is responsible for monitoring bat populations statewide in cooperative partnership with one of its funding sources, the U.S. Fish and Wildlife Service. They perform a few types of long-term assessment techniques, including mobile surveys using bat sonar detectors. Several state parks serve as parts of survey routes. Two endangered species (Indiana Bat and Virginia Big-eared Bat) and one threatened species (Northern Long-eared Bat) have been detected in some of these parks. These detections require consultation with the U.S. Fish and Wildlife

Service regarding appropriate habitat management to prevent accidental or deliberate killing of the endangered and threatened species. The statutorially-protected mature forests within the state parks are perfect for establishing long-term, benchmark sonar survey sites. Bat researchers recommend not disturbing older, more mature forest stands, which produce more large (thus longer-standing) roosting snags and loose-bark living trees than do early-successional forests. Many bats concentrate their feeding activities in small canopy gaps in such mature forests and along stream corridors overtopped by large canopy trees (Taylor 2006:5-7).

The mature forests in our WV state parks serve as excellent benchmark herpetological sites, especially for terrestrial and aquatic salamanders. The collections of Marshall University, Ohio State University, Carnegie Museum of Natural History and many other research institutions have benefitted from regulated scientific collection and study of amphibians and reptiles on our state parks. Many of the parks' forest soils have been protected for 8 or 9 decades from the compaction, drying, and eroding damages caused by logging equipment, and detrimental to our state's diverse array of salamander species. Federally-designated wilderness areas in the national forests of our eastern mountain counties, also provide long-term protection of forest soils, but there are no such wilderness areas in our western counties, so our state parks serve a similar ecological role in the Allegheny Plateau and Cumberland Mountains Ecoregions. In these ecoregions, mature forests rich in salamander diversity are found scattered north and south between Hancock County and Mercer County, providing a broad latitudinal distribution of well-protected herpetological study sites, unlike any other publicly-managed system. Logging these gems will likely reduce salamander populations by physical and chemical damage to terrestrial and aquatic habitats, and by microhabitat fragmentation.

When the most recent WV Breeding Bird Atlas field work was conducted during the period 2011-2015, research blocks of land were added to the priority list of bocks to ensure that nearly entire state park boundaries were inventoried during the breeding seasons of most bird species. The results of that research found that most state parks harbor several species of forest-interior-nesting birds that prefer mature forest habitats and that are rapidly declining rangewide and statewide as such late-successional habitats are being converted to early-successional vegetation or becoming fragmented by human disturbances such as mountain-top mining, gas-shale fracturing, and residential area expansion. E-bird is an internet-driven citizen-science effort that is widely acclaimed. Almost all of WV's state parks are listed as birding hot spots on the webpage: http://ebird.org/ebird/hotspots . Use the following webpage to see how often mature-forest-breeding bird species are observed at the state parks, which highlights the importance of our parks to these birds and to the economic phenomenon known as *eco-tourism*: http://ebird.org/ebird/map/ .

Rare plants and rare plant communities have been inventoried on state parks in past decades, some of which are still occasionally monitored. In fact, the high conservation value and protected nature of these parks has supported just about every type of biological inventory (those previously mentioned plus snails, lichens, insects, etc.), with the notable exception of timber inventory. Of course not. Why would there be a wood-fiber inventory for such high-conservation-value lands containing species-rich declining habitat types—mature forests with dominant canopy trees approaching or surpassing 100 years of age?

State parks comprise only 0.6% of our state's forested land, but they are immensely important for scientific research. Most of the park system's forests, so necessary for important research projects, have been protected since the 1920s and 1930s. Logging them now will turn these benchmark forests into just another muddy, splintered mess that encourages invasive multi-flora rose, autumn olive, and tree-of-heaven; plants that farmers and other private landowners are desperately trying to eradicate from their own lands adjacent to the state parks. Should we convert these sources of clean water and air, rare birds and plants, and tourism dollars to sources of invasive species, muddy streams, and tourist-void zones? Let's work together to find another way to fund the much-needed infrastructure in our parks.

Contact Governor Justice and let him know how you feel about logging in our state parks:
Toll free = 888-438-2731 or local = 304-558-2000, and Governor's Mansion = 304-558-3588.
For more information, check out these websites:
http://wvrivers.org/our-programs/public-lands/
http://wvrivers.org/sosparks/
http://wvrivers.org/2018/01/sosparksfaq/
https://www.kanawhaforestcoalition.org/events

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Reference:

Taylor, Daniel A. R. 2006. *Forest Management and Bats*. Bat Conservation International.