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*Secretary of Natural and Historic
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COMMONWEALTH of VIRGINIA
Department of Wildlife Resources

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Executive Director

December 10, 2021

The Honorable Janet Howell
Chair, Senate Finance and Appropriations Committee
Senate of Virginia
via email to: district32@senate.virginia.gov

The Honorable Luke Torian
Chair, House Appropriations Committee
Virginia House of Delegates
via email to: DeLTorian@house.virginia.gov

Dear Senator Howell and Delegate Torian,

Pursuant to Item 383(E) of the Budget Bill, I am happy to submit to you the attached report completed by the staff of the Department of Wildlife Resources and the Department of Conservation and Recreation regarding the Rapidan Wildlife Management Area. Staff from both agencies are available at any time to provide any additional information or address any questions.

Simply let me know at any time if the Department can be of assistance on this or any other matter.

Sincerely,

A handwritten signature in blue ink, appearing to be 'RB' followed by a horizontal line.

Ryan Brown
Executive Director

C: Clyde Cristman, Director, Virginia Department of Conservation and Recreation

**ASSESSMENT OF THE FEASIBILITY OF
DEVELOPING THE RAPIDAN WILDLIFE MANAGEMENT AREA
INTO A STATE PARK**



Prepared by the Virginia Department of Wildlife Resources
and the Virginia Department of Conservation and Recreation

November 1, 2021

Assessment of the Feasibility of Developing the Rapidan Wildlife Management Area into a State Park

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EXECUTIVE SUMMARY

In 2021, the Virginia General Assembly requested an assessment of the feasibility of converting the Rapidan Wildlife Management Area (WMA), owned by the Virginia Department of Wildlife Resources, into a State Park. The assessment required an evaluation of impacts to wildlife within the WMA, an evaluation of any limitations associated with control of the property; capital and operational costs associated with establishing and managing a state park at this location; and an evaluation of a timeline needed to establish a state park. This report is the result of that assessment, completed by the Virginia Department of Wildlife Resources and the Virginia Department of Conservation and Recreation. As a result of the assessment, the agencies have concluded that the ability to develop a traditional Virginia State Park at the Rapidan WMA is limited due to environmental constraints, with development being impactful to existing fish and wildlife and habitats. State Park development costs are difficult to estimate without an environmental assessment, geotechnical assessment and Master Plan as required for all state parks. A very preliminary estimate for DCR to develop and staff a minimal park operation is \$7.9 million and expanded infrastructure would be an additional \$10 million. Preliminary estimates for minimal operations start up would be six to ten years. Finally, the potential for diversion of funding from existing federal grants administered by the U.S. Fish and Wildlife Service and the cost associated with required replacement land could be substantial.

SCOPE OF STUDY

During the 2021 special session to finalize the FY2021 budget, the Virginia General Assembly included an amendment (House Bill 1800, Chapter 1, item 383.E) requesting that the Directors undertake a study to determine the feasibility of developing the Rapidan Wildlife Management Area (WMA) into a State Park. The elements of the study were set forth in that amendment:

383.E. The Directors of the Departments of Wildlife Resources and Conservation and Recreation shall assess the feasibility of developing the Rapidan Wildlife Management Area into a State Park and provide a copy of its assessment to the Chairs of the House Committee on Appropriations and the Senate Committee on Finance and Appropriations no later than November 1, 2021. This assessment shall include, but not be limited to, the impact on wildlife currently within the management area; any restrictions of deeds, easements, covenants or grant funding used in the initial acquisition of the wildlife management area; capital costs for developing recreational access and overnight accommodations; ongoing operational costs of the proposed facility; and an anticipated timeline for phased access to public recreational facilities within the existing master planning process.

The Virginia Department of Wildlife Resources (DWR) is responsible for conserving and managing wildlife and habitats across the Commonwealth and for providing access for wildlife-related recreation. The Virginia Department of Conservation and Recreation (DCR) is responsible for guiding and supporting outdoor recreation and conservation throughout Virginia. This report is the result of a collaborative feasibility study of the Rapidan WMA, owned by the DWR.

This study's scope is to determine if some or all of the Rapidan WMA can be developed into a State Park. As part of this effort, the following questions are addressed:

- What recreational opportunities are present on the WMA currently?
- Are there restrictions of deeds, easements, covenants or grant funding resulting from the initial acquisition of the WMA?
- What are the impacts of such development on wildlife currently within the WMA?
- Can the Rapidan WMA be developed as a State Park?
- What capital costs would be incurred to develop recreational access and overnight accommodations for a State Park?
- What annual, on-going operational costs would be incurred for a State Park at this location?
- What is the anticipated timeline for phased access to public recreational facilities within the existing DCR-managed State Park master planning process?

LOCATION

The Rapidan Wildlife Management Area (WMA) lies on the east slope of the Blue Ridge adjacent to Shenandoah National Park in Madison and Greene Counties. It is located approximately 25 miles southwest of Culpeper and 30 miles north of Charlottesville. The WMA is comprised of eight (8) separate parcels/tracts. The three largest and most popular tracts being the Rapidan, Middle River, and South River. The other five (5) tracts include Kirtley Mountain, Fletcher, Blakey Ridge, Big Tom Mountain, and Allen Mountain (Appendix A).

ACQUISITION HISTORY

The DWR acquired the area currently defined as the Rapidan WMA in multiple phases. The initial 8,285 acres were purchased in fee-simple in 1963, with additional parcels added in 1965, 1968, 1983, 1989, and 2007. At present, the WMA is comprised of eight tracts totaling 10,870 acres.

OVERVIEW

The Rapidan WMA ranks among some of the most beautiful locations along the east slope of the Blue Ridge Mountains adjacent to Shenandoah National Park. Few publically accessible lands in the northern Blue Ridge are more satisfying to fish and are pleasing to the eye than the upper reaches of the Rapidan and Conway/Middle rivers at full stage, or the mature mixed hardwood forests in the area's deep hollows. *Note: The Middle River is also called the Conway River, depending on the map and the people one talks to. Thus, for this report, the two names of this river are interchangeable.*

The Rapidan WMA is broken into eight separate tracts. Four of these adjoin Shenandoah National Park and share nearly 25 miles of boundary. The WMA is characterized by narrow, rocky stream courses and deep valleys that rise to rugged mountains with moderate to steep slopes. The valleys and steep slopes characterizing the Rapidan WMA are depicted in Appendices B and C. Flood zones are very narrow, making up a very small area of the WMA (Appendix B). Similarly, flat to moderate slopes are very limited and are found associated with

the floodplain, toe slopes, top slopes and mountain tops (Appendix C). Elevations of the WMA range from 1,400 to 3,840 feet. The Rapidan, Conway/Middle, and South rivers are the area's major streams that drain the rugged watersheds of the surrounding mountains. The vegetative landscape of the WMA is entirely forested, characterized by mature mixed hardwoods interspersed with smaller mixed pine-hardwood stands. Relict northern hardwood forests comprised of sugar maple, yellow birch, and black birch can be found in the higher elevations and in a few of the deep drainages. Evidence of steep mountain roads, old home sites and cemeteries, and rock piles, left over from field clearing and farming, still linger as a testament to the sturdy mountaineer families that once lived in this area.

CURRENT RECREATIONAL OPPORTUNITIES

The Rapidan WMA is a popular destination for many people to recreate. Anecdotal observations among DWR staff indicate the WMA is a very popular destination for users partaking in an array of activities that include hunting, bear hound training, trout fishing, wildlife viewing, wildlife and nature photography, hiking, horseback riding, and primitive camping. Camping registration data prove the Rapidan WMA is a popular camping location — among all WMAs across Virginia, this WMA leads the state in the number of registrations. Although an array of activities are permitted, they are subject to wildlife management area rules. The rules are posted on all the informational kiosks and found on the DWR website (General Rules, Appendix D).

Hunting

Because of the Rapidan WMA's proximity to Shenandoah National Park (SNP) where hunting is prohibited, unique hunting opportunities for deer and bear exist because of the vast protected refuge afforded by the SNP. Deer populations in the WMA, though moderate in numbers, remain stable and provide quality hunting opportunities. The rugged terrain and remoteness of the Rapidan WMA, and its close proximity to the Shenandoah National Park, make the WMA a premier location for black bears and a destination for black bear hunters. Turkey populations remain stable as well, although a rugged and entirely forested landscape supports low to moderate numbers. Ruffed grouse are found in low to very low numbers, scattered throughout the WMA. Despite the challenge of finding grouse on the WMA, a few grouse hunters enjoy the challenge and rugged hunting conditions. Good populations of gray squirrels can be found throughout the area. American woodcock are readily found in some of the low-lying wetter sites and toe-slopes near old house sites, cemeteries, and along some of the large streams.

Fishing

The Rapidan WMA has an exceptional native brook trout fishery. Healthy populations of brook trout abound in the three major rivers (Rapidan, Conway, and South) and a few tributary streams, the most notable of which are the Rapidan and Conway rivers. The Rapidan River is a nationally recognized river for its brook trout fishery. The Conway River also contains numerous wild brown trout to entice the adventurous angler. Small, swift-flowing headwater streams grade into larger boulder adorned rivers. Cascading white water interspersed with shallow and deep quiet pools filled with native brook trout provide a wonderful experience for the trout angler. Fish-for-fun regulations apply on the Rapidan River and all its tributaries within the boundaries of the WMA and Shenandoah National Park. Known angler use and anecdotal conversations with

representatives of fishing stakeholder groups indicates a high level of interest in preservation of these streams and fishing opportunities.

Wildlife Viewing

The Rapidan WMA is a rugged, forested area that is diverse in topography ranging from high elevations, moist coves, springs, spring seeps, small streams and rivers. This topographic diversity supports a diversity of resident and transient avian species, amphibians, insects and other invertebrates, and a rich assemblage of plants. Consequently, the Rapidan WMA lends itself to great wildlife viewing and enjoyment of nature.



The Rapidan WMA is a popular place for wildlife and fish-related activities. While hunting, fishing, and wildlife viewing are the primary uses of the area, other outdoor activities compatible with the WMA include hiking, primitive camping and nature photography. Primitive dispersed camping (no developed sites or facilities) is permitted throughout the WMA; however, it is subject DWR regulation and WMA Rules (Appendix D). The rules are posted on all the informational kiosks and can be found on the DWR's website.

CURRENT ACCESS

Access to the Rapidan WMA varies depending on the tract. Some access points are straightforward, with direct access via public roads, while other access is through private land and the Shenandoah National Park. Six of the eight parcels are readily accessible by the public and DWR staff via public and private roads, but two of the tracts, Big Tom Mountain and Allen Mountain, are completely landlocked and have no administrative or public access. (Appendix A).

Rapidan Tract

Only one access point. Access to this tract is served by what has always been referred to as the Hoover Road, as Camp Hoover (also known as Rapidan Camp) in Shenandoah National Park was built and accessed using this road system. From the end of a VDOT road (SR 649, Quaker Run Road), a rough, single lane private dirt road continues through several private properties before entering a section of Shenandoah National Park. The rough road continues through National Park property until it enters DWR property at the Rapidan River.

Middle River Tract

Only one access point. Access is straightforward, having a state-maintained (VDOT) one-lane road (SR 615, Bluff Mountain Road) leading to, and extending about 3 miles into the tract. The

pavement ends at the boundary of the WMA and continues as a narrow, rough gravel road that has not been maintained by VDOT for at least the last 10 years.

South River Tract

Only one access point. Access to this tract is straightforward. Access is served by one state-maintained road (SR 642, Taylor Mountain Road) through a portion of the Dogwood Valley neighborhood. Pavement will end and a gravel, single-lane state maintained road continues up Taylor Mountain. Beyond the end of state maintenance, the road continues to the South River Tract, but narrows and becomes very rough (high-clearance vehicles only). Only one small parking area exists at the terminus of the road.

Kirtley Mountain Tract

Only one access point. Access to this tract is straightforward. Access is served by a private road (Cobblestone Row) owned and maintained by the Lost Valley Homeowners Association and by mutual agreement with DWR. Cobblestone Row is accessed from Bluff Mountain Road (SR 615) just before entering the Middle River Tract of the WMA. A small parking area exists where Cobblestone Row enters the Kirtley Mountain Tract.

Fletcher Tract

Only one access point. Access is straightforward, served by a one-lane VDOT road (SR 675) leading to a turnaround just shy of DWR property. Beyond this turnaround, the VDOT right-of-way (ROW) continues but is not maintained (VDOT maintenance was discontinued in the 1940's) and is therefore very rough (high clearance vehicles only). A small parking area exists within the Fletcher Tract accessed by the ROW that allows for public access.

Blakey Ridge

Only one access point. This is the smallest tract of the Rapidan WMA and is accessed solely by private roads. Access is served by the same road system that provides access to the Rapidan Tract; however, at the Shenandoah National Park property boundary, an unimproved single-lane private dirt road splits off to the south. The tract is located along this road further down Blakey Ridge at the site of an old fire tower.

Big Tom Mountain

No public or administrative access.

Allen Mountain

No public or administrative access.

Shenandoah National Park

A significant portion of the Rapidan WMA's boundary adjoins the Shenandoah National Park (SNP) (Appendix A). Hikers, backpackers, and horseback riders using the SNP can access the Rapidan WMA in a number of places. A few hiking trails cross through small areas of the WMA (e.g., Dark Hollow Falls Trail, Conway River Trail) or tie in with roads shared between the National Park Service and the DWR (e.g., Rapidan Road in the Rapidan Tract, Conway River Road, and South River Road). A few trails, like the Conway River Trail and the Devil's Ditch Hunter Access Trail, have one of the trailheads on the Rapidan WMA.

FUNDING HISTORY AND OBLIGATIONS

The DWR's acquisition of the Rapidan WMA has occurred with a variety of funding sources. The first 8,900 acres were acquired in fee-simple between 1963 and 1968 with non-federal funds from the Game Protection Fund, a special account in which revenue generated from the sale of hunting and fishing licenses is deposited. Two parcels were purchased in fee-simple in the 1980s with federal grant funds through the Pittman-Robertson Wildlife Restoration Program and the Dingell-Johnson Sport Fish Restoration Program, both of which are administered by the U.S. Fish and Wildlife Service (USFWS). Additionally, the entire WMA is currently, and has historically, been managed and maintained using federal Pittman-Robertson Wildlife Restoration grant funds and non-federal funds generated from the sale of hunting and fishing licenses.

No deed restrictions have been explicitly placed on any parcel except the property gifted by the Fray family. In that instance, the deed notes that the property shall be used primarily as a hunting and fishing site open to the public and that the property reverts back to the family if it is transferred out of public ownership or if hunting or fishing is banned on the property. The original owners also retain timber rights on the parcel through 2025. No notice of federal participation was recorded with the two parcels purchased with federal grant funds.

Federal regulations governing the federal Wildlife and Sport Fish Restoration (WSFR) Program (50 CFR 80) require that real property acquired with grant funds be used for the purpose authorized in the grant (50 CFR 80.134). The purpose of the acquisitions of the parcels that comprise the Rapidan WMA is to manage fish and wildlife and the habitats that support them, with hunting, fishing, wildlife viewing, and other wildlife-based recreation allowed as consistent with management goals of the property. The DWR may allow commercial, recreational, and other secondary uses of a WSFR-funded property or other capital improvement, but these secondary uses must, in no way, interfere with the authorized purpose of the grant.

If the property is used in a manner that interferes with the authorized purposes, the DWR will be required to fully restore the property to its authorized purpose, identify and acquire a replacement property using non-federal funds, or risk losing federal funding altogether. During the past five years, the DWR has received approximately \$18 million/year (ranging from \$15.8 million to \$20.1 million) in WSFR program funds. In federal fiscal year 2021, the DWR received a total of \$17.9 million from the WSFR programs. These monies fund a significant portion of Virginia's fish and wildlife conservation and management efforts and represent a considerable component of the DWR's total annual revenue of approximately \$63-\$65 million.

Prior to the USFWS approving the DWR to transfer title or management control of the Rapidan WMA to the DCR, **the DWR and the USFWS would need to jointly determine that the**

portions of the WMA acquired with WSFR funds are no longer useful or needed for its original authorized purpose (50 CFR 80.137). The demonstration that the property is no longer needed for its purpose is a high bar to pass, requiring substantial justification, and would subject to a National Environmental Policy Act (NEPA) determination, including evaluation of alternatives and public review.

Under both federal and state law, the DWR must prevent “diversion” of hunting and fishing license revenues. A diversion occurs when the Agency uses license revenues (or land acquired with license revenues) in a manner inconsistent with the authorities and responsibilities of the DWR as dictated by state law. To guard against this diversion, and consistent with federal regulations (50 CFR 80.10), the Virginia General Assembly previously passed “state assent legislation” (§29.1-103.2). This legislation affirms the requirement that license revenue be controlled only by the DWR (as the fish and wildlife agency in Virginia) and be used only for administration of the DWR and its programs. It also is an official requirement to participate in the federal WSFR program itself.

Transfer of the portions of the Rapidan WMA that were acquired with state license funds to the DCR without compensation of fair market value of the property to the Game Protection Fund would result in a diversion of license revenue and jeopardize the DWR’s eligibility to participate in and receive federal funds from WSFR programs. The use of the Rapidan WMA for a purpose other than management of fish- and wildlife-related resources for which the DWR has authority under state law would constitute a diversion and jeopardize the DWR’s eligibility to participate in WSFR programs.

In summary, these state and federal restrictions would prevent the transfer of the Rapidan WMA to another agency. Doing so would violate federal regulations and result in the loss of very significant federal revenues received annually by the DWR. While it is possible that this transfer could occur if suitable “replacement property” were provided that achieved comparable fish, wildlife and public use benefits and opportunities consistent with the original property and location, and be of at least equal market value, the USFWS confirms in its September 17, 2021, letter (Appendix E) to the DWR that this would be a very challenging effort to accomplish.

CURRENT FISH AND WILDLIFE RESOURCES

The eight tracts and surrounding area, the streams and associated habitats and the proximity to Shenandoah National Park (and within the Park itself) offer a range of important habitat types for a variety of native species. Within the boundaries and the proximity around the property, nearly 600 wildlife species are known or likely to occur, including 33 designated as Tier I or Tier II Species of Greatest Conservation Need (SGCN) in the Virginia Wildlife Action Plan, including Northern Long-eared (federal threatened), Little Brown (state endangered), and Tri-colored (state endangered) bats; Loggerhead Shrike (state threatened); Timber Rattlesnake; James Spiny Mussel (federal endangered), and Cerulean Warbler (a complete list of SGCN is provided in Appendix F). The area holds several “world class” wild trout streams, has one of highest relative densities of black bears in Virginia, and has recently been included in the DWR’s zone for white-tailed deer Chronic Wasting Disease active surveillance and management.

Potential impacts to wildlife in the area are difficult to assess without specific knowledge of how an area will be managed for changing use/purpose, and evaluation and avoidance of these impacts would be an important and continuing effort as any plans for a state park were developed and implemented. Consequences of developing new areas for increased mixed-recreational use are disturbances to wildlife species (such as disruption of normal lifecycle activities of feeding, breeding and resting) and increased human-wildlife interactions due to human activities (such as hiking, noise, lights, pets, food attractants). Changes to habitat, land management and use on the Rapidan would certainly cause a number of near- and long-term impacts to wildlife species resulting from less active forest management, changes to hunting pressure, increased human activity, and additions to recreational infrastructure (e.g., introduction of roads, picnic grounds, bathrooms, and camp grounds). Wild trout, in addition to amphibians, and other aquatic or semi-aquatic species, are highly sensitive to "development" in the watersheds in which they live. Increased land disturbance, increased impervious surface, increased road density, increased vehicular traffic, and reduction of forested habitat will degrade water quality significantly and increase fine sediment entering these streams, rendering them unsuitable for aquatic wildlife. The DWR has identified some more readily evident wildlife-specific impacts, noted below, that would be expected if management at the Rapidan WMA were to change.

Birds

The Rapidan provides critical breeding habitat for a number of resident and migratory avian species. Habitat loss is one of the most important factors leading to declines in species and is a concern that would need to be evaluated and monitored if land management practices are changed on the Rapidan WMA. Investigations of a number of primary sources specific to the Rapidan WMA, including Monitoring Avian Productivity and Survivorship (MAPS) data, banding information (2001-2003), DWR point counts (2004), and eBird checklists (2011-2021), resulted in a comprehensive and extensive list of birds species found on the WMA. To narrow the focus, 15 SCGN avian species confirmed on the Rapidan WMA were identified to be at the most risk for habitat loss or changes. These species and associated broad habitat associations include SCGN Tier II –IV species in a range of habitat types (Appendix G).

Complex population impacts resulting from habitat alteration is dependent on how specific changes impact each species. For example, one of the highest-ranked SGCN found on the WMA is the Cerulean Warbler (Tier II), which has been consistently documented on the WMA over time. This canopy-nesting species prefers mature hardwoods and benefits from canopy heterogeneity. Habitat for this species is managed through silvicultural treatments and, depending on how management changes or development occurred, the species may be positively or negatively impacted. Benefits could occur if small gaps in the canopy were created as a result of clearing for infrastructure (e.g., clearing small areas for individual cabins). However, negative impacts would occur with more extensive timber clearing or other large contiguous areas of incompatible infrastructure development (e.g., parking lots, large grouping of cabins).

Small Nongame Mammals

Impacts to populations of SGCN small nongame mammals would be anticipated, though difficult to quantify due to the lack of species specific surveys on the WMA (the completion of surveys may be advisable should plans to construct a state park proceed). However, overall assessment of

the habitat and recorded observations nearby indicate suitable habitat and potential occurrence of a number for SGCN species. The Tier IV eastern spotted skunk occurs in the mountains of Greene and Madison counties. The Rapidan WMA has excellent habitat for spotted skunks, consisting of large blocks of mature forest with good understory and lots of rocky areas. Additionally, the Allegheny woodrat, also a Tier IV SGCN, shares similar habitats. While there are no confirmed records of fishers, another Tier IV SGCN, in Greene or Madison counties, there are confirmed observations in nearby Page County. Fishers may be present on the Rapidan WMA, as the forested habitat and prey base (squirrels) is considered suitable for this secretive and rare species. Older records of federal or state listed Northern Long-eared, Little Brown, & Tri-colored Bats exist to the west and south of the property, but no surveys have occurred on the WMA to date.

Fisheries

There are 16 wild trout streams (including unnamed tributaries) located within a 5-mile buffer of the WMA (Appendix H). In addition to negative impacts to the watersheds accruing from development, including sedimentation from road and trail development and nutrient loading from facilities, there are a number of concerns regarding angler pressure on these streams. The Rapidan River is one of the most heavily fished wild brook trout streams in Virginia. The results of angler/creel surveys conducted on the Rapidan WMA in 2001 indicated 1,500 hours of angling pressure per kilometer on the Rapidan River March through June. The average number of angler hours per kilometer across 12 other wild trout streams during the same study period was 283 angler hours/km. The Rapidan River also contains one of the best wild brook trout fisheries in Virginia. The high amount of fishing pressure can be attributed to the history of the stream (Camp Hoover), located in and around the SNP, and the fact that the Rapidan River was the first wild trout stream in Virginia to be managed with special fishing regulations. Being located on the eastern side of the SNP and closer to the northern Virginia area also contributes to increased angling pressure. Since the entirety of the Rapidan River on the WMA and within the SNP boundary is catch-and-release, this intense fishing pressure has negligible impact on the wild brook trout population. The DWR and the National Park Service's long-term data regarding the fish population indicate that environmental factors are the main drivers of the brook trout population. While increases in fishing pressure may not impact the trout population, angler satisfaction would likely be negatively impacted were there to be increased recreational use of the area.

The Conway River within the Rapidan WMA is also one of the better wild trout streams in Virginia. It contains a healthy wild brook and brown trout fishery. The DWR has not conducted any angler creel surveys on the Conway River, but recognizes that the river does receive higher angling pressure than other wild trout streams across the Commonwealth. This result is due primarily to its proximity to northern Virginia and the SNP. The Conway River is managed with special regulations (single hook, 9 inch minimum size). There is also no indication that angling has any impact on the wild trout populations. However, there is more of a possibility that there would be increased harvest of +9-inch fish with increased angler pressure. Although trout fishing opportunities could be an asset to a nearby state park, angling pressure on both the Rapidan and Conway rivers is also likely reaching a "saturation" point in regard to the wild trout angling "experience." Adding more anglers could lead to these streams being "overcrowded," thus reducing angler satisfaction. Finally, were recreational usage to change, there is

a moderate risk of negatively impacting the aquatic ecosystems (and wild trout populations) and decreasing angler satisfaction due to increased angler pressure.

Forest Game Species

Black Bear

Based on population reconstruction and harvest data, bear population densities in the Madison County area are relatively high compared to other counties in the Commonwealth. The rugged terrain and remoteness of the Rapidan WMA, and its close proximity to the Shenandoah National Park (an unhunted source population), make the area a prime location for black bears. With conversion to a state park, local black bear populations would be expected to increase to an even higher density with less hunting. Potential user conflicts between park users and bear hunters on any lands remaining open for bear hunting would also need to be carefully monitored by the two agencies.

Madison County's total bear harvest during the last 3 seasons (2018-2020) has ranged from 5th-25th highest (55-102 bears) among counties in the Commonwealth; the harvest in the county by hunters using dogs during this period ranged from 7th-21st (26-59 bears) highest. During 2018-2020, bear harvest on the Rapidan WMA ranged from 3rd-12th highest (4-15 bears) among state lands across Virginia. With conversion to a state park, black bear harvest on this area would be expected to decrease substantially with reductions in hunting opportunities and hunter access.

Rapidan WMA is heavily hunted for bears, particularly by bear hunters who use hounds. Located adjacent to the Shenandoah National Park, which serves as a refuge for bears, the Rapidan WMA has traditionally been among the more coveted hunting locations for bear hunters. With conversion to a state park, black bear hunting is expected to decline substantially with reductions in hunting opportunities and hunter access.

Bear hunting and management actions on Rapidan WMA impact not only the potential for bear-human conflicts on the area itself but also on lands surrounding the WMA. Fruit orchards, many of which are located at the base of the Blue Ridge in close proximity to the WMA, are an important agricultural commodity in Madison County. In addition to damaging orchards, bears also occasionally depredate on chickens and crops in the area. During 2008-2018, an average of 5 bear kill permits (moderate for a Virginia county) were issued annually to landowners in Madison County for damage caused by bears. With conversion to a state park, bear-human conflicts would be expected to increase, along with issuance of kill permits, in surrounding lands due to an increase in bear populations in the area. In addition, if picnic areas, campgrounds, or other such recreational areas were developed in a new park, proactive planning and substantial investment would be needed regarding proper food storage, bear-secure waste collection systems, exclusionary materials, and education and policies directed at visitor behavior in order to minimize human-bear conflicts within the park.

White-tailed Deer

Based on harvest data, deer population densities on the Rapidan WMA are at a moderate density. Overall, there appears to have been a decline in the deer population density on this area over the

past 25 years. A more significant decline has been documented on nearly all public lands along and west of the Blue Ridge Mountains over the past 25 years. This regional deer population decline is likely related to maturing forests rather than to hunter harvest or other factors. Active management of forest habitats through timber harvest or prescribed burning is beneficial to deer; however, unchecked deer populations can negatively impact understory vegetation and associated wildlife species (e.g., ground or shrub nesting birds). With conversion to a state park, reduced forest management combined with reduced deer hunting could result in an equal or higher deer population, but with deer in poorer body condition and with greater potential impacts to understory vegetation.

Based on harvest data, the annual deer harvest on the Rapidan WMA has averaged about 40 deer per fall annually over the past decade. As noted above, there appears to have been a decline in the deer kill numbers on the Rapidan WMA over the past 25 years. With conversion to a state park, deer harvest on this area would be expected to decrease with reductions in hunting opportunities and hunter access.

According to local wildlife management staff, deer hunting pressure on Rapidan WMA is light to moderate. With conversion to a state park, deer hunting is expected to decline further with reductions in hunting opportunities and hunter access.

Wild Turkey

The population density estimate for wild turkeys in Madison County based on spring gobbler harvest and habitat suitability models is low, but with an increasing trend (significant at 5.2%, 2011-2020). Turkey populations in this area have historically been low likely due to poor habitat, particularly nesting and brood rearing cover. In recent years, the DWR staff have spent considerable efforts to improve nesting and brood rearing cover through active forest and open land management. Conversion of this area to a state park would likely negatively impact turkey populations in this area if habitat management efforts decreased.

Madison County has ranked in the bottom tier of counties (81 out of 101, not including most cities or towns) for spring gobbler harvest due to low population densities for the last three years (2019-2021). While lower than many of the surrounding counties, the 2020 and 2021 spring harvests were significantly higher (6%) than the running three year average for the county, thus showing some moderate improvements in populations and harvest opportunities. Rapidan WMA is frequented by both spring and fall turkey hunters each year. Spring hunters annually harvest 4 to 10 birds from the Rapidan WMA while fall hunters take 0-3 birds annually. It should be noted though that the fall season in Madison County is very restrictive (2 weeks) due to the low population density.

With Rapidan WMA being the only public hunting land in Madison County it generally receives a fair amount of pressure throughout the spring turkey season. The opening day and first two weeks of the spring season can be fairly busy with another surge near the end of the season. Many hunters enjoy the rugged nature of the WMA and the challenges it provides to harvest a spring turkey. Fall hunting, specifically for wild turkey is not as prevalent on this WMA but opportunistic hunting by deer hunters does occur. Conversion of this area to a state park would

reduce the hunting opportunities currently provided on this area and result in higher pressure on other state or federal lands outside of Madison County.

Ruffed Grouse and Woodcock

American Woodcock and Ruffed Grouse are designated as Tier II and III SGCN, respectively, in the Virginia Wildlife Action Plan due to declining populations and associated early-successional habitats. Ruffed grouse can be found at low densities throughout the area and woodcock are found in some of the wetter sites near old house sites and along some of the large streams in the area. Although grouse and woodcock hunting is limited compared to other game, generally upland game birds are increasingly hard to find on WMAs east of the Blue Ridge. The loss of this large area of public land hunting opportunity would be significant and over a wide area, but is difficult to quantify due to the lack of small game harvest reporting/programs for these species. Conversion to a state park would almost certainly reduce hunting opportunities for these species.

Woodcock and ruffed grouse are dependent on early-successional forests. Active management of diverse forest habitats through timber harvest or prescribed burning is important for both species. If conversion to a state park results in fewer habitat management opportunities, reduced forest management would likely result in lower grouse and woodcock populations.

Natural Heritage Resources

The Swift Run Gap to Roach River Barrens Conservation Site intersects the Rapidan WMA, and there are documented natural heritage resources adjacent to the WMA on the SNP. The conservation polygon (Appendix I) delineates an area that provides habitat and buffer for one or more natural heritage resources. A natural heritage resource survey of the Rapidan WMA has not been conducted. Documented elements observed within 5 miles of the Rapidan WMA include 3 Stream Conservation Units (SCU), 8 conservation sites (Appendix J) as well as 24 documented natural heritage-designated animal and plant species (Appendix K).

DEVELOPMENT OF THE RAPIDAN WMA AS A STATE PARK

The Rapidan WMA is located within two recreation planning districts – PDC 9 (Rappahannock-Rapidan Regional Planning District) and PDC 10 (Thomas Jefferson Regional Planning District). There is one state park in both districts and it is Sky Meadows in Paris, Virginia. The WMA spans Madison and Greene Counties, which have low populations of less than 20,000 residents each. According to the 2020 population estimates provided by Weldon Cooper Center for Public Service, population increases in these counties are due primarily to in-migration caused by their proximity to northern Virginia.

The property, as well as the adjacent properties, are zoned ‘Rural, non-growth’ in Greene County’s comprehensive plan and as ‘Conservation’ in Madison County’s comprehensive plan. A state park within one of these areas would meet the zoning requirements.

The 2007 Virginia Outdoors Plan (VOP) recommended that there be 10 acres of state parkland for every 1,000 citizens. Weldon Cooper Institute estimated the population of Virginia in 2020 is

8.59 million. Thus 85,900 acres of strategically located state parks are needed to meet Virginian's needs. Currently, there are 75,895 state park acres, a deficit of approximately 10,000 acres.

There are no Virginia State Parks within an hour's drive for citizens of Greene and Madison counties nor the larger communities of Charlottesville and Culpeper (state park travel time map, Appendix L). The population within one hour's drive of the WMA is 134,652 and a population of 2,800,916 is within two hours of the area. Travel time from this area to existing state parks are: Lake Anna State Park, 1 hour and 17 minutes; Shenandoah River State Park, 1 hour and 24 minutes; Seven Bends State Park, 1 hour and 35 minutes; Sky Meadows State Park, 1 hour and 39 minutes; Natural Bridge State Park, 1 hour and 54 minutes; Pocahontas State Park, 2 hours and 1 minute; Widewater State Park, 2 hours and 3 minutes; James River State Park, 2 hours and 6 minutes; Douthat State Park, 2 hours and 22 minutes; and Smith Mountain Lake State Park, 2 hours and 40 minutes.

Easy access to Shenandoah National Park (SNP) and Skyline Drive, less than nine miles from the WMA, provide access to many nearby outdoor recreation opportunities. The SNP public land adjacent to the WMA provides hiking trails, forest road access, cabins and improved campgrounds. For example, the Swift Gap Run Entrance Station of the SNP is only 9.8 miles from the Rapidan WMA. The SNP offers three sites with camping and two sites with cabins (Lewis Mountain, Big Meadows and Loft Mountain) in less than a one-hour drive of the WMA. Additionally, there are two private campgrounds within a ten-mile radius of the Rapidan WMA.

According to the 2018 Virginia Outdoors Plan (VOP), the top needs for recreation in these recreational planning regions are noted below, with the need for access to places to exercise and camping being low.

Table 9.1 Most-Needed Outdoor Recreation Opportunities

Rappahannock-Rapidan Recreational Planning Region

activity	% of households in	
	region	state
Natural areas	50	54
Parks	44	49
Trails	43	43
Water access	43	43
Historic areas	40	39
Scenic drives (driving for pleasure)	23	29
Playing fields, sports and golf facilities	21	22

Source: 2017 Virginia Outdoors Demand Survey.

Table 10.1 Most-Needed Outdoor Recreation Opportunities

Thomas Jefferson Recreational Planning Region

activity	% of households in	
	region	state
Natural areas	64	54
Parks	50	49
Trails	45	43
Water access	45	43
Historic areas	30	39
Scenic drives (driving for pleasure)	22	29
Playing fields, sports and golf facilities	17	22

Source: 2017 Virginia Outdoors Demand Survey.

Use of the Rapidan WMA, or any portion thereof, for State Park recreation would require the following needs:

- Areas of 0-15% slope, of which there are less than 425 acres (<5% of the WMA) and most of which occur on roads or immediately adjacent to the streams/rivers on the WMA;
- Access to potable water (wells would have to be built as no potable water access currently exists on the WMA);

- Easy road access (most existing roads are currently suitable only for 4-wheel drive vehicles);
- Perkable soils for septic (all of the soils on the WMA are “Very Limited” to “Somewhat Limited” for septic development);
- Opportunities for development of outdoor recreation facilities (few compatible existing areas exist due to lack of open areas, presence of steep slopes, poor roads and lack of public water, electric and sewer utilities); and
- Expansion and improvement of existing trails (from existing 4 miles to at least 6 miles).

ANTICIPATED FINANCIAL AND OPERATIONAL COSTS OF CONVERSION

The ability to develop a traditional Virginia State Park at the Rapidan WMA will need to address environmental constraints, such as terrain, the floodplain and unsuitable soils. This site lends itself more to a recreational facility with minimal improvements, offering primitive camping, hiking, fishing, wildlife observation and hunting. A factor in developing the WMA as a state park is the difficulty of access to the area. To meet park access requirements and potential visitor demands, the DCR estimates that a substantial amount of road improvements (nearly 2.5 miles) would be needed, at a cost of about \$2 million.

Management of a state park requires a maintenance yard/shop, equipment and supply storage, staff residence, and administrative space. An estimate of annual operations costs for a state park created from the Rapidan WMA is provided below and compared with Seven Bends State Park (a brand new day-use park) and Caledon State Park, an established day-use park. The figures provided for the existing state parks are based on data from 2020, with the Local Economic Impact values based on the 2020 Economic Impact Study prepared by the Virginia Tech Pamplin School of Business.

	Rapidan WMA	Seven Bends State Park	Caledon State Park
Size (acres)	8,509 (a portion could go to State Parks)	1,066	2,593
Natural water feature(s)	Headwaters of Rapidan and/or Conway rivers	North Fork Shenandoah River	Potomac River
Yearly attendance	unknown	87,097	93,751
Population density (within 1-hour drive radius)	134,652	1,715,089	5,823,211
Distance from a major state highway (miles)	5.4	2	4.8
Operations budget (including staffing)	\$375,000 estimate*	\$376,132	\$609,236
Staffing (FTE)	2	2	3
Annual revenue	<\$25,000 estimate	\$12,881	\$68,533
Local economic impact	unknown*	\$4.3M	\$3.7M

FACILITIES	(proposed)	(existing)	(existing)
Picnic shelters	1	2	1
Car-top boat launch	0	2	2 canoe/ kayak landings
Vault toilets	1	2	1 restroom
Primitive campground w/ vault toilet & water	1	0	1
Trail miles	4 existing	9.9	16.6

* This estimate would be for a park without a visitor center or overnight facilities.

Development of a portion of the Rapidan WMA as a park, whether a state park or other, will require an investment of capital funds (for facility development) and operational funds (including staffing). Based on the information provided above, the DCR recommends that the following facilities be considered the minimum if the WMA is developed as a state park:

- 1 picnic shelter
- 1 small parking lot
- 1 vault toilet
- Primitive camping pads with a vault toilet and water
- 6 miles of trails
- Access road(s)

It should also be noted that the above facilities are already provided on-site or nearby. In addition, the following facilities are considered a minimum for development of the site as a Virginia State Park:

- Administrative office
- Maintenance area and public utilities
- Staff residence

These items are necessary for opening a state park. It may be possible to locate these functions nearby at offsite locations through rentals or cooperative agreements for facilities that would meet the required needs and safety components for the work activity. However, before any additional development is added to the proposed park, these facilities need to be provided on-site. A very preliminary cost estimate for this infrastructure and staffing is \$7.9 million and could be implemented in six to ten years. The construction estimates are based on adequate soil stability and permeability. A geotechnical analysis and survey must be completed prior to land disturbance or building development.

Additional infrastructure that could be done at a later date includes:

- Visitor center and utilities
- Maintenance yard
- Staff residence
- Housekeeping cabins

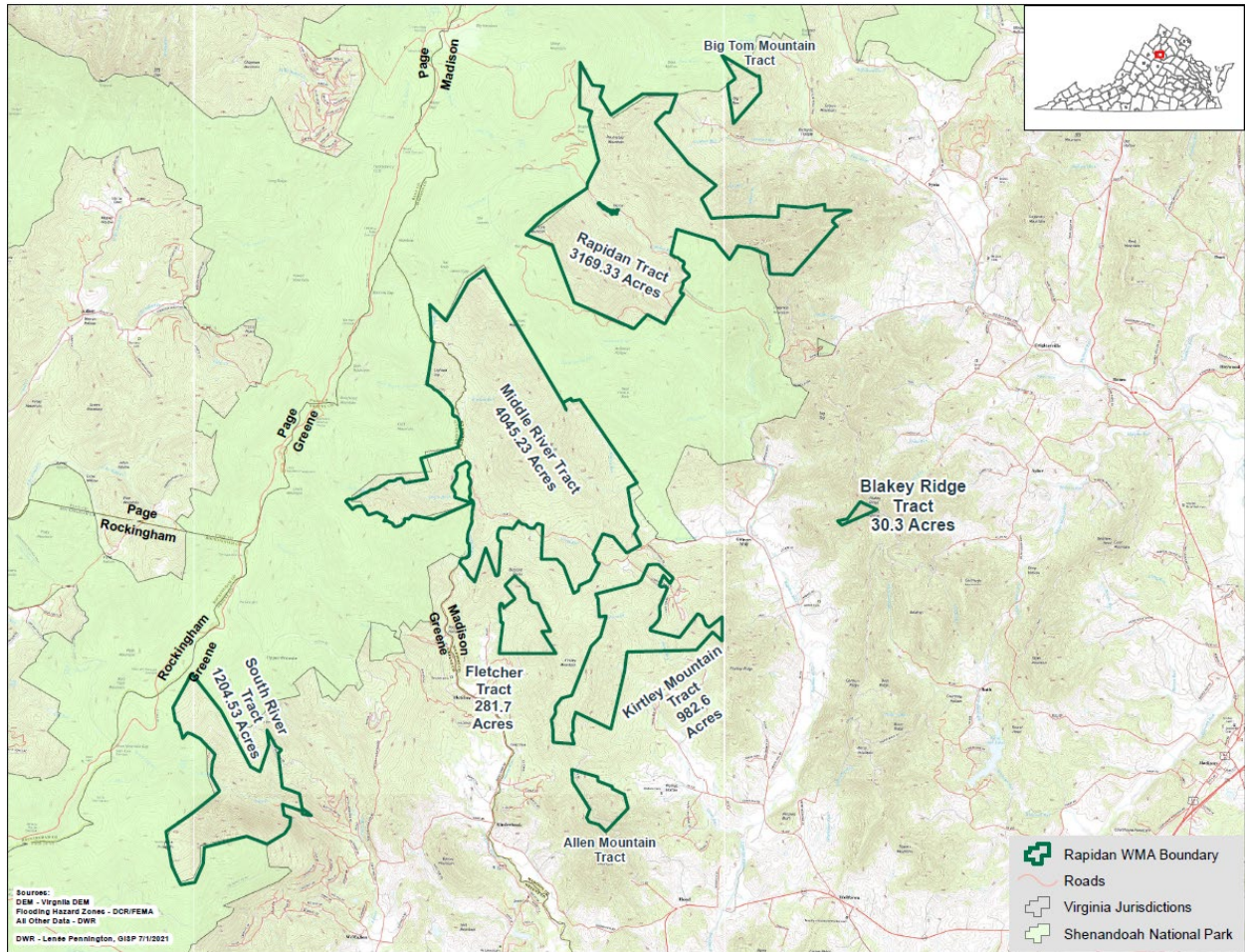
Pursuant to Section 10.1-200.1 of the *Code of Virginia*, a Master Plan would need to be completed after transfer of the property to the DCR to determine what types of facilities would be necessary and the estimated costs of those facilities. A very preliminary estimate for these additional facilities and associated operational costs is \$10 million and could take ten to twenty years based on current trends. The construction estimates are based on adequate soil stability and permeability. A geotechnical analysis and survey must be completed prior to land disturbance or building development.

CONCLUSIONS

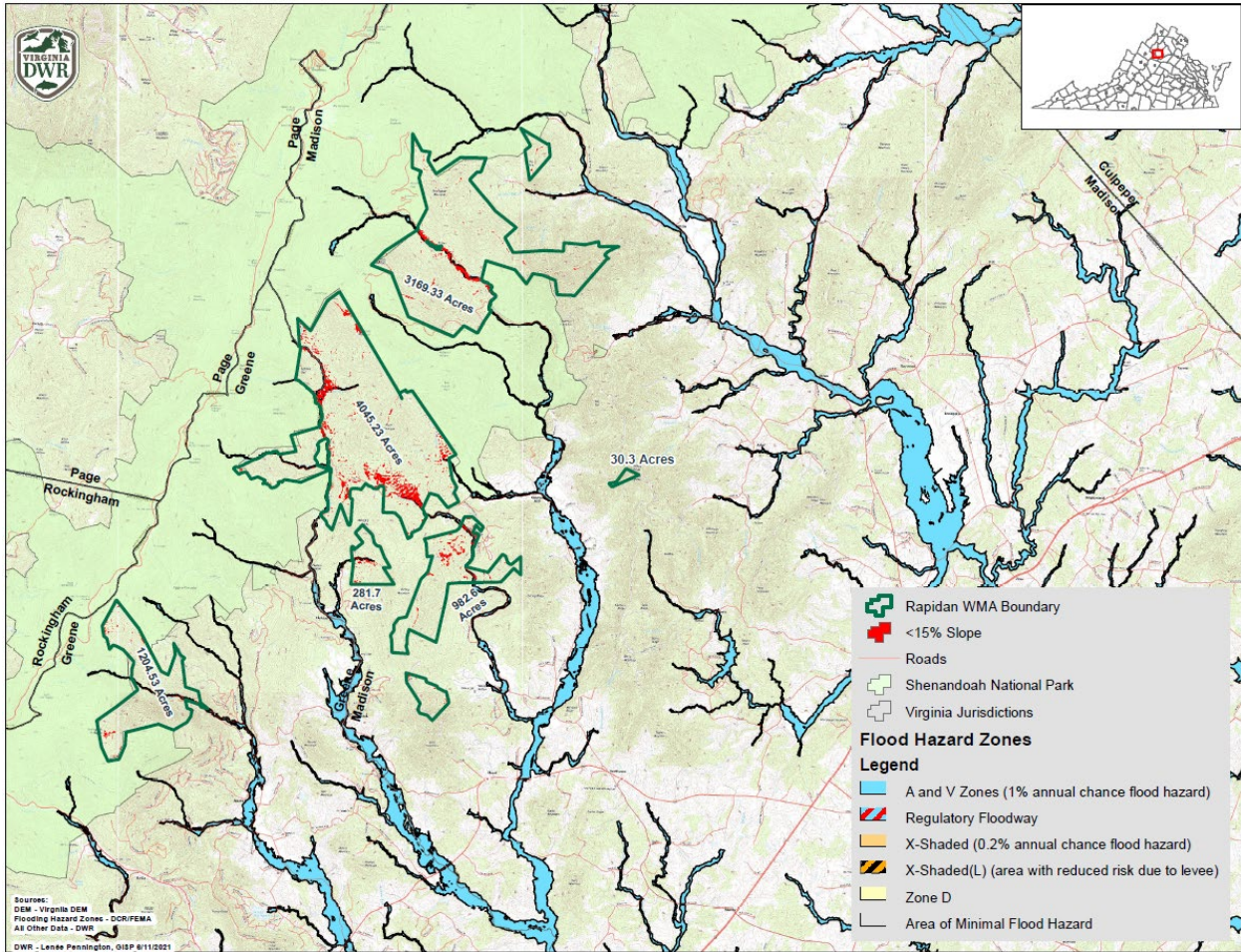
The ability to develop a traditional Virginia State Park at the Rapidan Wildlife Management area would need to address environmental constraints such as terrain, the floodplain, and unsuitable soils. This site lends itself more to a recreational facility with minimal improvements, used for primitive camping, fishing, hiking, wildlife observation and hunting. These activities are already provided at Rapidan WMA and the nearby Shenandoah National Park. Additionally, there could exist some possibility for enhancement or expansion of existing DWR facilities that would remain consistent with applicable federal constraints while providing a heightened experience for all users. If the site becomes a State Park, additional facilities and cost estimates would be finally determined based on the State Park Master Plan process defined in the Code of Virginia (§10.1-200.1).

Perhaps most importantly, because portions of this property were purchased using federal funds, and the entire WMA has been managed using federal funds, there will be necessary procedures that must be followed resulting from the diversion of the property from its original intended purposes to ensure that the DWR does not risk losing federal funds altogether. The federal requirement to replace the acreage of the Rapidan WMA converted to a State Park with acreage of at least equal market value with and fish, wildlife, and public use opportunities consistent with the original property location and grant impose additional costs. These potential costs, along with physical and environmental constraints imposed by the Rapidan WMA properties, may also make looking at other potential properties in the area a worthwhile endeavor if development of a state park in this area is desired.

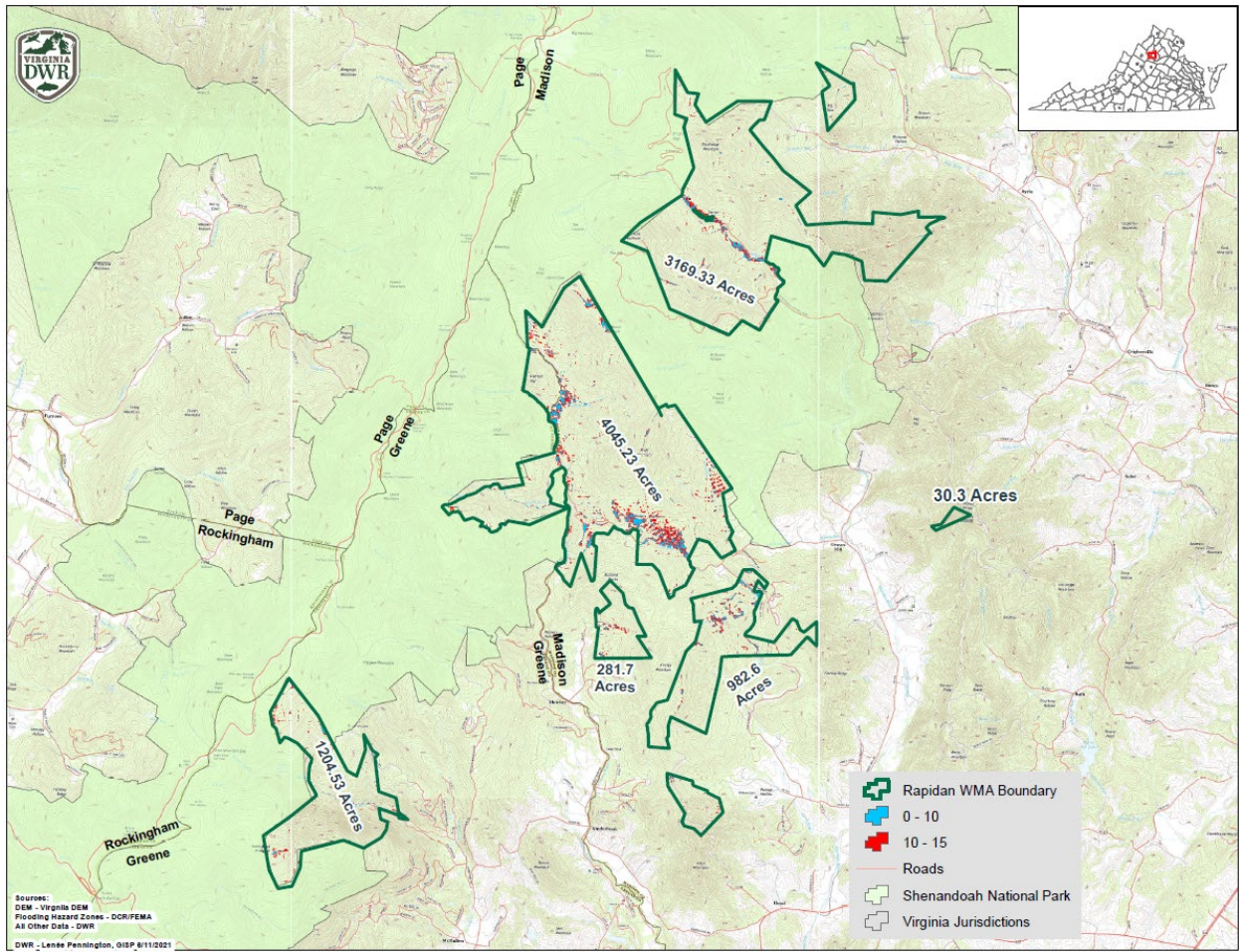
Appendix A. Rapidan Wildlife Management Area



Appendix B. Flood Zone Map of Rapidan WMA



Appendix C. Rapidan WMA Parcels and Slope (>10% and >15%)



Appendix D. Rapidan WMA Rules

WILDLIFE MANAGEMENT AREA

GENERAL RULES AND REGULATIONS

The goal of the Wildlife Management Area system is to: *Maintain and enhance habitats that support game and nongame wildlife while providing opportunities to hunt, fish, trap, and view wildlife. Other uses of WMAs may be allowed, as long as they do not interfere with these goals and uses of WMAs.*

ACCESS PERMIT

Any person, 17 years of age or older accessing a DWR Wildlife Management Area or Fishing Lake must have in possession one of the following valid DWR licenses/permits: freshwater fishing license, hunting license, trapping license, boat registration or Access Permit.

GENERAL

Activities involving groups of more than 12 persons require written authorization from the Department.

Display or consumption of alcoholic beverages or marijuana in public is prohibited.

Commercial activities are prohibited except by written authorization from the Department.

HUNTING & TRAPPING

Refer to the current Hunting & Trapping in Virginia digest and posted signs for special hunting or trapping rules that apply to this WMA.

FIREARMS

It is unlawful to have in possession or in a vehicle a firearm or any hunting weapon that is not unloaded and cased or dismantled:

- While on Department-owned lands statewide except when it is lawful to take bear, deer, grouse, pheasant, quail, rabbit, raccoon, squirrel, turkey, waterfowl or migratory game birds.
- Except when possessing a permit issued by the Department
- Except when possessing a handgun and a valid concealed carry permit issued by a Circuit Court

It is unlawful to possess or transport a loaded firearm or loaded hunting weapon in or on any vehicle at any time on a WMA.

Target shooting is allowed only on designated ranges.

FISHING, BOATING AND SWIMMING

Refer to the current Virginia Freshwater Fishing Regulations digest and posted signs for special fishing rules that apply to this WMA.

It is unlawful to use boats propelled by a gasoline motor or sail unless otherwise posted.

Swimming is prohibited unless otherwise posted. Anglers, hunters, and trappers actively engaged in fishing, hunting, or trapping may wade in public waters.

Only rod and reel angling is allowed. All other methods of take (trotlines, juglines, limblines, etc.) are prohibited.

CAMPING/FIRES

A camping authorization is required to camp on WMA's. Authorization can be obtained at any license agent or at gooutdoorsva.com.

Primitive camping is allowed for up to 14 consecutive nights when occupants are engaged in authorized activities (no more than 14 nights in any 28-day period). Camping is prohibited on or within 300 feet of any boat ramp, fishing lake or at other specific sites as posted or marked on WMA maps. All campers are required to store food in such a manner that it is not accessible by wildlife. Detailed camping regulations are found in 4VAC-15-20-155.

It is unlawful to leave a campfire unattended. From February 15 to April 30 campfires are allowed only between the hours of 4:00PM and midnight.

DOGS

It is lawful to chase with dogs or train dogs on Department-owned lands only during authorized hunting, chase or training seasons that specifically permit these activities.

Dogs must be leashed at all times outside of open hunting, chase or training seasons.

HORSEBACK/BICYCLE RIDING AND HIKING

Horseback and bicycle riding only on roads designated for these uses. No riding in cultivated or planted fields, or on eroded areas. No cross-country riding. Class I and II electric power-assist bicycles as defined in § 46.2-100 can be used where traditional bicycles are allowed. These are bicycles with no more than three wheels, operable pedals, electric power-assist motors of no more than 750 watts and a maximum speed of 20 miles per hour. Class III electric power-assist bicycles are prohibited.

Hiking is welcome. Riders, cyclists and hikers should be mindful of all open hunting and trapping seasons. Please avoid engaging in these activities when they may interfere with hunters, anglers and wildlife watchers. Blaze orange hat or blaze pink clothing is recommended for non-hunters during hunting seasons.

CAVING

All caves are closed to access without written authorization from the Department.

DRONES

Launching, landing or operating a drone (unmanned aerial vehicle) is prohibited without written authorization.

VEHICLES

Motor vehicles are prohibited behind barricades or gates designed to prevent entry or within areas otherwise posted to prohibit motor vehicles.

Operation of ATVs and other unlicensed motor vehicles is prohibited.

Cross-country motor vehicle travel is prohibited.

Motor vehicles, campers and trailers may be parked on Department-owned lands only when the owners/responsible party are engaged in authorized activities.

RESOURCE AND PROPERTY DAMAGE

It is unlawful to construct or occupy any permanent structure (including a permanently-affixed tree stand) except by Department permit.

Portable tree stands which are not permanently affixed can be placed on department-owned lands on or after September 15th and must be removed on or prior to January 31st of the following calendar year. Tree stands will be considered abandoned and confiscated by the department if left on department-owned lands after January 31st.

It is unlawful to cut, mutilate, destroy, or remove vegetation or to remove other minerals, artifacts or other property from this area. Metal detecting/artifact hunting is prohibited.

It is unlawful to disturb or remove wildlife that is not being legally hunted, trapped, or fished without written authorization from the Department.

Planting or manipulating vegetation on the WMA is prohibited.

Berry picking and gathering of mushrooms or other fruits is allowed.

It is unlawful to damage, deface or remove any building, gate, fence, sign or other property.

Posting of unauthorized signs, notices and flyers at any location on the WMA is prohibited.

DISABLED INDIVIDUAL ACCESS

Roads and trails are open to manual and power wheelchairs and personal mobility assistive scooters (for indoor/outdoor use) designed primarily to assist people with disabilities. Individuals are encouraged to use caution when selecting trails, as many were designed for foot traffic only. Terrain may make them unsuitable for personal mobility devices.

Electric vehicles up to 54 inches in width are only allowed on designated Barrier Free trails.

OTHER USES ARE ALLOWED ONLY BY WRITTEN AUTHORIZATION FROM THE DEPARTMENT

Appendix E. Letter from U.S. Fish and Wildlife Service



United States Department of the Interior

FISH AND WILDLIFE SERVICE
300 Westgate Center Drive
Hadley, MA 01035-9589



September 17, 2021

In Reply Refer To:
FWS/IRO1/WSFR – North Atlantic-Appalachian Region

Rebecca Gwynn, Deputy Director
Virginia Department of Wildlife Resources
P.O. Box 90778
Henrico, VA 23228

Dear Ms. Gwynn:

Thank you for your recent inquiry regarding the Virginia General Assembly's request to assess the feasibility of developing the Rapidan Wildlife Management Area (Rapidan WMA) into a state park.

Based on information that you provided as well as from our grant records, we have determined portions of the Rapidan WMA were purchased with Federal grant funds under the Pittman-Robertson Wildlife Restoration Program and Dingell-Johnson Sport Fish Restoration Program (WSFR) administered by the U.S. Fish and Wildlife Service (Service), and revenue from state hunting and fishing license revenue (license revenue). In addition, the entire WMA is currently, and has historically, been managed and maintained using PR-Wildlife Restoration grant funds.

The following initial determinations are based on our understanding that the proposed action being analyzed is for the Department of Wildlife Resources (DWR) to transfer title and/or management control of the Rapidan WMA to the Department of Conservation and Recreation's Division of State Parks.

Federal regulations governing the WSFR Programs (50 CFR 80) require that real property acquired with grant funds be used for the purpose authorized in the grant (50 CFR 80.134). Prior to the Service approving DWR to transfer title or management control of the Rapidan WMA to another entity, DWR and the Service would need to jointly determine that the portions of the WMA acquired with WSFR funds are no longer useful or needed for its original authorized purpose (50 CFR 80.137). Demonstration that the property is no longer needed for its purpose is

a high bar to pass requiring substantial justification and would be subject to a National Environmental Policy Act (NEPA) determination including evaluation of alternatives and public review.

Federal regulations also require that DWR have in place “state assent legislation” to be eligible to participate in the WSFR programs. This legislation affirms the requirement that license revenue be controlled only by DWR, the state fish and wildlife agency in Virginia, and be used only for administration of DWR (50 CFR 80.10). Transfer of the license acquired Rapidan WMA to the Division of State Parks without compensation of fair market value of the property to the license account would result in a diversion of license revenue and jeopardize DWR’s eligibility to participate in WSFR programs (50 CFR 80.21). Further, use of the Rapidan WMA for a purpose other than management of the fish- and wildlife-related resources for which DWR has authority under State law would constitute a diversion and jeopardize DWR’s eligibility to participate in WSFR (50 CFR 80.136).

If any construction activities or long-term management projects on the WMA were funded with WSFR funds, DWR may have obligations to continue to manage those areas for the purposes of the grant. For any capital improvement that is within its useful life that would no longer meet the functions for which it was constructed, DWR would be required to repay grant funds (50 CFR 80.133).

As described above, the Federal requirements for DWR to divest of a WMA acquired and managed with WSFR funds and license revenue are substantial and complex and could jeopardize DWR’s ability to access WSFR grant funds in the future. In Federal fiscal year 2021, DWR received a total of \$17.9 million from the WSFR programs. Further work on this issue would require significant financial and administrative obligations by DWR to complete, as well as concurrence from the Service prior to any transfer occurring.

Should the state legislature and DWR continue to consider this proposal for a state park on these lands, we strongly recommend that our agencies continue to work closely together on next steps. If you have further questions, please don’t hesitate to contact me at colleen_sculley@fws.gov or (413) 253-8501.

Sincerely,



Colleen E. Sculley
Chief, Division of Wildlife
and Sport Fish Restoration

Appendix F. VAFWIS report, 33 species with official status or identified as a Tier I or Tier II Species of Greatest Conservation Need

The Rapidan WMA, surrounded by a 5-mile buffer, contains 585 known or likely species. This table represents the subset of species with special status as well as predicted habitat for aquatic tiered species.

BOVA Code	Status*	Tier**	Common Name	Scientific Name
060017	FESE	Ia	Spiny mussel, James	Parvaspina collina
101005	FE	Ia	Bee, rusty patched bumble	Bombus affinis
020045	FESE	Ic	Salamander, Shenandoah	Plethodon shenandoah
050035	FESE	IIa	Bat, Virginia big-eared	Corynorhinus townsendii virginianus
050022	FTST	Ia	Bat, northern long-eared	Myotis septentrionalis
010330	FTST	Ib	Chub, spotfin	Erimonax monachus
060029	FTST	IIa	Lance, yellow	Elliptio lanceolata
070001	FTST	IIc	Isopod, Madison Cave	Antrolana lira
050020	SE	Ia	Bat, little brown	Myotis lucifugus
050027	SE	Ia	Bat, tri-colored	Perimyotis subflavus
010430	SE	Ib	Dace, Tennessee	Chrosomus tennesseensis
060006	SE	Ib	Floater, brook	Alasmidonta varicosa
050009	SE	IIa	Shrew, American water	Sorex palustris
030062	ST	Ia	Turtle, wood	Glyptemys insculpta
040096	ST	Ia	Falcon, peregrine	Falco peregrinus
040293	ST	Ia	Shrike, loggerhead	Lanius ludovicianus
060081	ST	IIa	Floater, green	Lasmigona subviridis
040292	ST		Shrike, migrant	Lanius ludovicianus
			loggerhead	migrans
030063	CC	IIIa	Turtle, spotted	Clemmys guttata
030012	CC	IVa	Rattlesnake, timber	Crotalus horridus
030040		Ia	Pinesnake, northern	Pituophis melanoleucus melanoleucus
040306		Ia	Warbler, golden-winged	Vermivora chrysoptera
050024		Ia	Myotis, eastern small-footed	Myotis leibii
100248		Ia	Fritillary, regal	Speyeria idalia idalia
020027		Ic	Salamander, Cow Knob	Plethodon punctatus
040213		Ic	Owl, northern saw-whet	Aegolius acadicus
040052		IIa	Duck, American black	Anas rubripes

040036		Ila	Night-heron, yellow-crowned	Nyctanassa violacea violacea
040320		Ila	Warbler, cerulean	Setophaga cerulea
040140		Ila	Woodcock, American	Scolopax minor
040203		Ilb	Cuckoo, black- billed	Coccyzus erythrophthalmus
040105		Ilb	Rail, king	Rallus elegans
010075		Ilc	Shiner, popeye	Notropis ariommus

Habitat Predicted for Aquatic Species of Greatest Conservation Need, Tier I & II Species:
Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aquatic Species

Stream Name	Tier Species					
	Highest	BOVA Code, Status*, Tier**,				
	TE*	Common & Scientific Name				
Blue Run (20802041)	FESE	060017	FESE	Ia	Spinymussel, James	Parvaspina collina

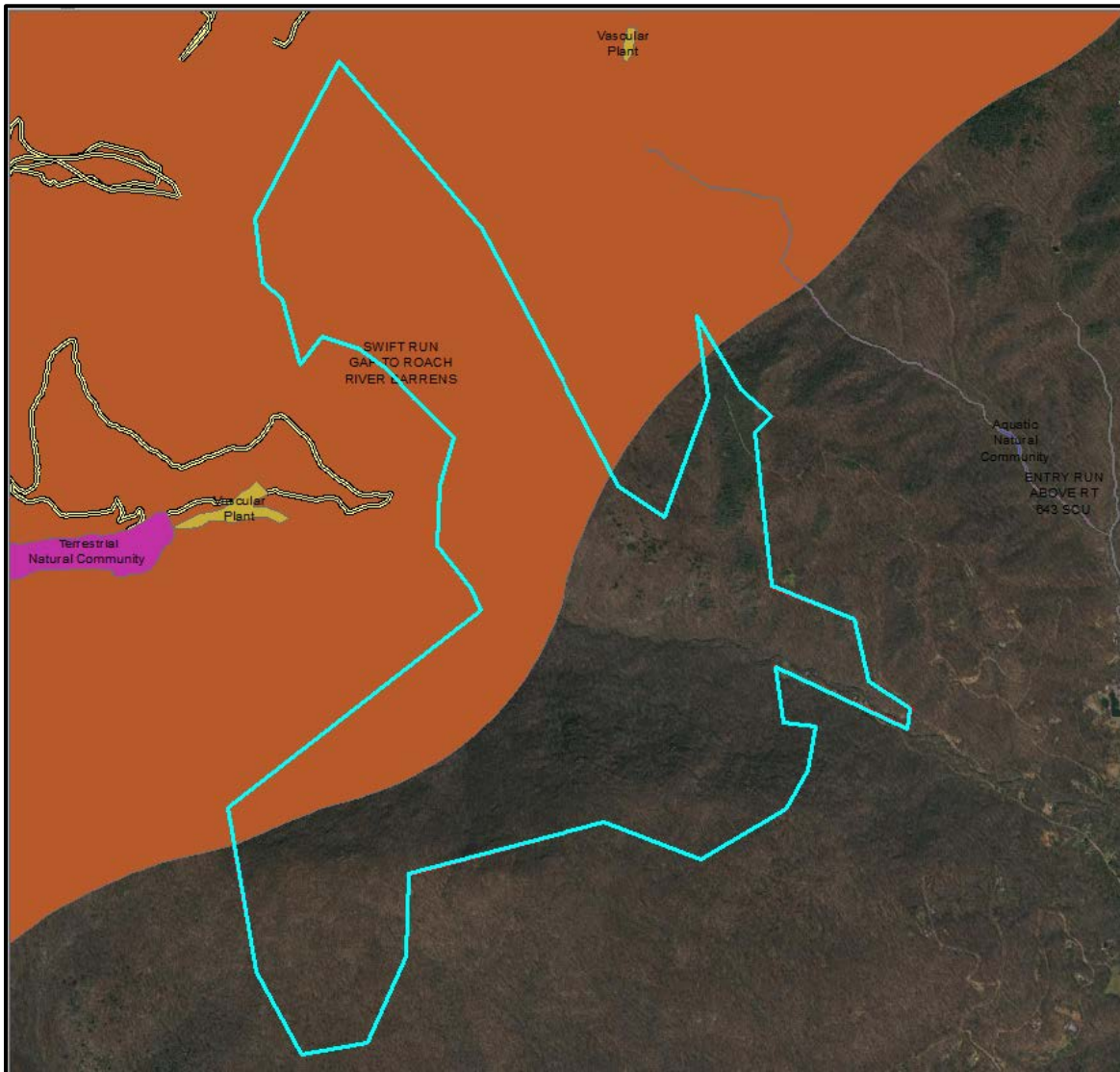
Appendix G. Avian Species of Greatest Conservation Need breeding at Rapidan WMA impacted through habitat loss/changes.

Common Name	SGCN Tier	Habitat Association	Rapidan WMA MAPS (2001-2003)	Rapidan WMA Point Count Surveys (2004)	eBird Rapidan WMA Hotspot Data (2011-2021)
American Woodcock	II	early-successional			x
Cerulean Warbler	II	forest	x	x	x
Yellow-billed Cuckoo	III	forest			x
Belted Kingfisher	III	riparian			x
Kentucky Warbler	III	forest	x	x	x
Northern Flicker	IV	open/edge			x
Eastern Wood-Pewee	IV	forest		x	x
Eastern Kingbird	IV	open/edge			x
Wood Thrush	IV	forest; early-successional post-fledging	x	x	x
Gray Catbird	IV	early-successional	x		x
Brown Thrasher	IV	early-successional	x		x
Black-and-white Warbler	IV	forest	x	x	x
Eastern Towhee	IV	early-successional	x	x	x
Field Sparrow	IV	early-successional			x
Grasshopper Sparrow	IV	grassland			x

Appendix H. Wild Trout Streams within a 5-mile radius of Rapidan WMA

Reach ID	Stream Name	Class	Brook Trout	Brown Trout	Rainbow Trout
07BUG-01	Big Ugly Run	Wild trout	Y		
07DRU-01	Dry Run	Wild trout	Y		
07LEE-01	Lee Run	Wild trout	Y		
07NKS-01	Naked Creek, SB	Wild trout	Y		
07NKS-01T	Naked Creek, SB	Wild trout			
07WSR-01	West Swift Run	Wild trout	Y		
08CON-01	Conway River	Wild trout	Y	Y	
08DEO-01	Devils Ditch	Wild trout	Y	Y	
08ENT-01	Entry Run	Wild trout	Y		
08ENT-01T	Entry Run	Wild trout			
08GAR-01	Garth Run	Wild trout	Y		
08POC-01	Pocosin Hollow	Wild trout	Y		
08SOT-01	South River	Wild trout	Y		
10MUT-01	Mutton Hollow	Wild trout	Y		
10SFR-01	Swift Run	Wild trout	Y		
10SFR-01T	Swift Run	Wild trout			

Appendix I. DCR-NH Conservation site polygon



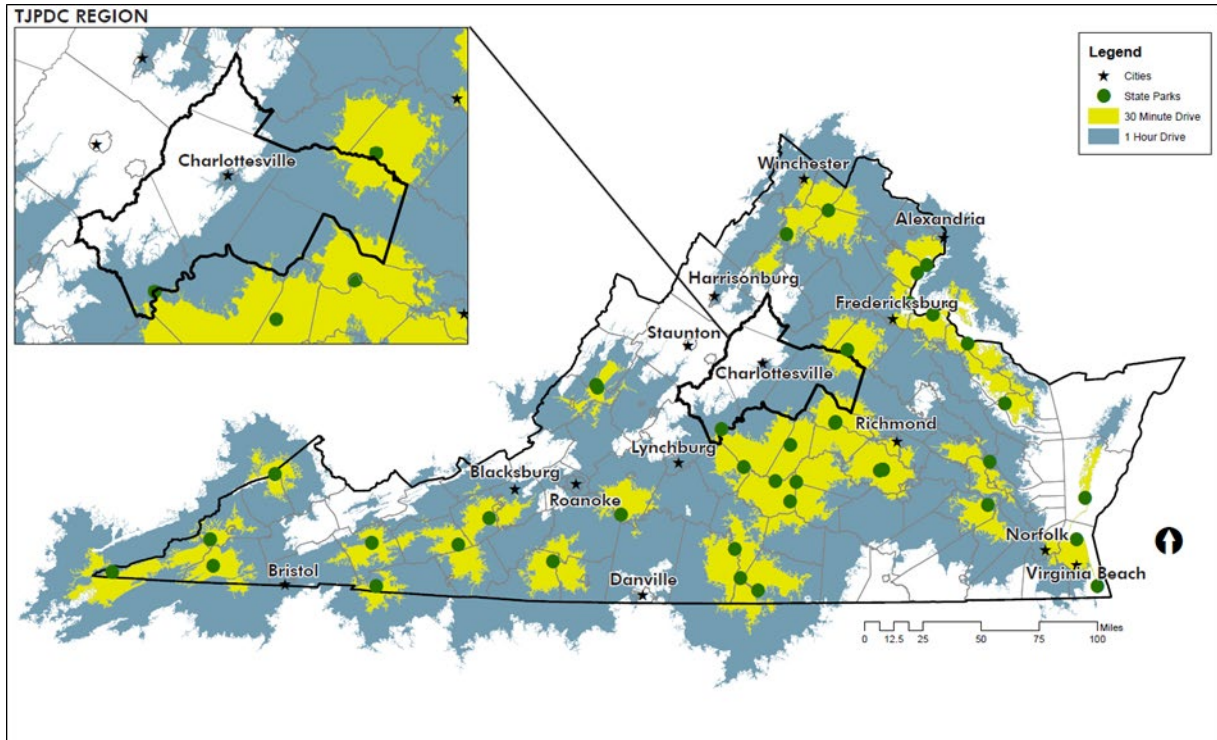
Appendix J. DCR-NH Conservation Sites (September 2015) Within 5 Miles of Rapidan WMA

SITE ID	SITENAME	TYPE	Listed	BRANK
2867	NORTH FORK HOLSTON RIVER - LITTLE WOLF RUN SCU	SCU	Federal	B3
1189	BEARFENCE MOUNTAIN	Conservation Site		B2
1498	HIGHTOP OVERLOOK	Conservation Site		B2
2237	ROACH RIVER BARRENS	Conservation Site		B2
1864	POCOSIN - ENTRY RUN	Conservation Site		B3
2517	FIELD HOLLOW CLIFF	Conservation Site		B3
2975	SOUTH RIVER ALONG RT 621 SCU	SCU		B3
81	SOUTH RIVER	Conservation Site		B4
2996	ENTRY RUN ABOVE RT 643 SCU	SCU		B4
14	DEAN MOUNTAIN RIDGE	Conservation Site		B5
2318	SWIFT RUN GAP	Conservation Site		B5

Appendix K. DCR-NH Elements (September 2015) Observed Within 5 Miles of Rapidan WMA

Common Name	Tier**	Coordination Element	Scientific Name
Central Appalachian Basic Seepage Swamp		Yes	Acer rubrum - Fraxinus americana - Fraxinus nigra - (Betula alleghaniensis) / Veratrum viride - Carex bromoides Forest
High- Elevation Outcrop Barren (Black Chokeberry Igneous / Metamorphic Type)		Yes	Aronia melanocarpa - Gaylussacia baccata / Carex pensylvanica Shrubland
Rand's Goldenrod		Yes	Solidago randii
Central Appalachian Montane Rich Boulderfield Forest		Yes	Tilia americana - Fraxinus americana / Acer pensylvanicum - Ostrya virginiana / Parthenocissus quinquefolia - Impatiens pallida Forest
Glade Spurge		Yes	Euphorbia purpurea
Rand's Goldenrod		Yes	Solidago randii
Red raspberry		Yes	Rubus idaeus var. strigosus
Large purple fringed orchid		Yes	Platanthera grandiflora
Central Appalachian Montane Oak - Hickory Forest (Rich Type)		Yes	Quercus rubra - Carya (ovalis, ovata) - Fraxinus americana / Actaea racemosa - Hydrophyllum virginianum Forest
Dwarf grape fern		Yes	Botrychium simplex var. simplex
Central Appalachian Mafic /		Yes	Fraxinus americana / Physocarpus opulifolius / Carex pensylvanica -
Calcareous Barren (Mid-Elevation Type)			Allium cernuum - (Phacelia dubia) Wooded Herbaceous Vegetation
Purple Clematis		Yes	Clematis occidentalis var. occidentalis
White underwing		Yes	Catocala relictata
NB-Rapidan- Upper Rappahannock First Order Stream		Yes	NB-Rapidan-Upper Rappahannock First Order Stream
Central Appalachian Montane Oak - Hickory Forest (Rich Type)		Yes	Quercus rubra - Carya (ovalis, ovata) - Fraxinus americana / Actaea racemosa - Hydrophyllum virginianum Forest
Large purple fringed orchid		Yes	Platanthera grandiflora
Wren, winter		Yes	Troglodytes troglodytes
Glyph, depressed	IIIc	Yes	Glyphyalinia virginica
Butterfly, early hairstreak	IVc	Yes	Erora laeta
Appalachian Rich Cove Forest (Tuliptree - Mixed Hardwoods Type)			Liriodendron tulipifera - Fraxinus americana - Tilia americana / Lindera benzoin / Actaea racemosa Forest
Yellow Avens			Geum aleppicum
Central Appalachian Rich Cove Forest (Sugar Maple - Basswood Type)			Acer saccharum - Tilia americana / Caulophyllum thalictroides - Laportea canadensis - Osmorhiza claytonii Forest
Pinesnake, northern	Ia		Pituophis melanoleucus melanoleucus

Appendix L. State Park Travel Time



The Yellow areas are for travel times of one hour, the optimum travel time for citizens in the Commonwealth to a state park. Blue areas are for two hour travel times. [Provided by Thomas Jefferson PDC]