MARYLAND DEPARTMENT OF NATURAL RESOURCES

WILDLIFE AND HERITAGE SERVICE

WILDLIFE MANAGEMENT AREA PLAN

FOR

DAN'S MOUNTAIN WILDLIFE MANAGEMENT AREA

15-Year Vision Plan

Location

Between Frostburg and Westernport

In

Allegany County
Maryland

On approximately

9,783 acres

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DAN'S MT. WILDLIFE MANAGEMENT AREA - 15 Year Vision Plan

Introduction

The Maryland Department of Natural Resources Wildlife & Heritage Service (WHS) is responsible for the management of approximately 123,000 acres of State property. These areas, entitled "Wildlife Management Areas" (WMAs), encompass 61 separate tracts of land and are located in 18 of the 23 counties that make up the State. WMAs range in size from as small as 20 acres to well over 29,000 acres, and represent most, if not all, of the major habitat types found throughout the State of Maryland. These properties make up a significant portion of the Department's land holdings of approximately 440,000 acres.

Most of Dan's Mt. WMA was purchased with Federal Aid in Wildlife Restoration Funds from 1953-1972. Since then, additional acreage was purchased with Program Open Space funds resulting in the current total of 9,783 acres. Dan's Mt. WMA is currently the largest WMA located in the Western Region.

In 2015, a 4,047 acre parcel of Dan's Mt. WMA was designated as a Wildland by the state legislature (Appendices 6-7). Maryland Wildlands are areas of state-owned land or water that have retained their wilderness character or contain rare or vanishing species of plant or animal life or similar features worthy of preservation. Designated by the Maryland General Assembly, they may include unique ecological, geological, scenic, and contemplative recreational areas. Wildlands are managed for passive recreation only, including hiking, hunting, fishing, bird watching. Because much of Dan's Mt. WMA was purchased with Federal Aid in Fish and Wildlife Restoration Act funds, there are unique stipulations written into the law to allow continued use and management of the wildland in accordance with the purpose for which they were purchased. The law specifically makes the following provision:

In Dan's Mountain Wildland area the Department may:

(1) Establish and maintain roads and trails to provide access for wildlife-dependent recreation;

(2) Improve and manage habitat for early-succession wildlife; and

(3) Take all other actions necessary to manage the area in a way that fulfills the purposes of the 1966 Federal Aid in Fish and Wildlife Restoration Act grant from the Department of the Interior that partially funded acquisition of the area.

WHS has the principal responsibility to lead in the management of Dan's Mt. WMA. In order to effectively establish long-term goals and objectives for its management of the area, a process was completed with the development of this 15-year management plan as an outcome. To meet specific goals set forth in this plan, the WHS will develop a five-year work plan that coincides with our five-year work plan for the WHS's Federal Aid Grant.

Specific goals and objectives for this WMA are consistent with the Statewide Mission and Goals Statement for Wildlife Management Areas. The mission of the WMA system is "to conserve and enhance diverse wildlife populations and associated habitats while providing opportunities for public enjoyment for the State's wildlife resources through hunting and other wildlife-dependent recreation."

The Goals of the WMA system are:

1. To maintain, enhance and protect sustainable and diverse wildlife populations.

2. Create, enhance and protect appropriate habitats, natural communities and ecologically sensitive areas.

3. Conserve rare, threatened and endangered species by protecting the habitat that supports them.

4. With a focused emphasis on hunting, provide wildlife-dependent recreation on areas with minimal capital improvements or other development.

5. Provide a venue to educate citizens on the value and need of wildlife and plant communities through outreach, demonstration and sound management.

Physical Description

Dan's Mt. WMA is located in western Allegany County, 15 miles south of Cumberland, Maryland, and near Westernport Maryland on the southern end of the

WMA (Appendices 1-3). The area lies astride of Dan's Mountain between MD Route 220 and Route 36. Access to the area is available via Route 220 and Route 36. At present, Dan's Mt. WMA comprises 9,783 contiguous acres. See site location map.

Dan's Mt. WMA is a largely forested tract located in a primarily forested region. Agricultural fields and other non-forested habitats are infrequently interspersed into a background matrix of mixed hardwood forest. Overall, Allegany County is 78% forested; the most heavily forested county in the state. Dan's Mt. WMA lies within the Georges Creek and Lower North Branch Potomac River watersheds. Although approximately 71% of the Georges Creek watershed is forest land, Georges Creek is listed as impaired under Maryland's 303(d) list due to acid mine drainage, nutrients and suspended sediment, and biochemical oxygen demand. The majority of the watershed overlies numerous coal deep mines and approximately 10% of the watershed has been strip mined. Coal mining has severely impacted the watershed, primarily through stream acidification, deforestation and altered hydrology. Agriculture covers about 12% of the watershed but prime agricultural soil only accounts for 1% of the watersheds soils. Agriculture's impact on water quality appears to be localized, such as streams in some agricultural lands that do not have riparian forest buffers. Steep topography dominates the watershed. Existing and projected impervious area is anticipated to remain between 4.5% and 5% of the watershed. The Potomac River LNB watershed consists primarily of forest land use (76.9%), but also includes some small concentrated pockets of urban land (14.6%), cropland (4.4%), and pasture (4.0%), as per the Chesapeake Bay Program Phase 5.2 (CBP P5.2) watershed model. The two watersheds comprise approximately 120,544 acres and are dominated by mixed hardwood forest ecosystems.

The predominant habitat type at Dan's Mt. WMA is deciduous forest, with 97% of the area supporting mixed hardwood forests of differing age classes. The remainder is in open herbaceous field, powerline right-of-way or public use facilities.

Topography, Soils and Hydrology

Dan's Mt. WMA is located in the Appalachian physiographic province, the division between The Ridge and Valley and Allegheny Plateau physiographic provinces. Elevations range between 800 and 2800 feet, with gently to steeply sloping terrain. Approximately 70% of the area has slopes of 30% or greater.

Much of Allegany County lies within a rain shadow of the Allegheny Plateau and Big Savage Mountain. This area has an average annual precipitation of 32.5 inches,

with heaviest precipitation occurring in June. Winter snowfall averages 32"/year. Temperatures vary from sub-zero in winter to 90's in summer. The growing season averages 168 days.

Soils are primarily of the Weikert-Calvin-Dekalb associations. These soils are gently sloping to very steep, somewhat excessively drained to well drained, shaley to very stony soils that are shallow to moderately deep over shale and sandstone. Erosion is the greatest management problem, while soils in this area usually require applications of lime for good agricultural production. Soil fertility is good for upland oaks, with site indices of 65 to 75. The soils are best suited to woodland production.

The WMA's steep, deeply dissected slopes encompass over 50 miles of small, 1st-3rd order streams, most of which are intermittent or ephemeral. Perennial streams (i.e., streams that have continuous year-round surface flows) include the upper 1st order reaches of Elk Lick Run and Moores Run on the upper west slope of Dan's Mountain. Perennial streams flowing off the east slope include Toms Hollow Run and Mill Run. Both streams are spring--fed and noted for their exceptionally high water quality and biotic integrity. Both also support native brook trout populations and rare species. Mill Run is the primary drinking water source for the communities of Rawlings and Rawlings Heights, located near the base of the watershed along the lower east slope of Dan's Mountain.

Capital Improvements

Few capital improvements have been made on this WMA. There is a 20 foot x 40 foot storage building and primitive camping area located off of Route 220, just north of Rawlings. Other capital improvements include: seven public access parking lots that are located on the area; there are 20 miles of roadway providing public and management access that requires annual maintenance; there are five signboards, 11 pole gates, and 35 miles of boundary to maintain. There is one bridge on a management area access road, and there are numerous areas with culverts.

There are no permanent offices or other facilities located on this WMA, and there are no plans to construct any in the future. Available access is the primary limitation to public use on the area. A Capital Budget request has been made to construct an access road from the current access off of Route 220 to the area near Rawlings. Providing public access while protecting the WMA's natural resources will be one of the major challenges going forward.

Acquisition

Dan's Mt. WMA currently comprises approximately 9,783 acres. State law requires any proposal by the state to purchase 100 or more acres in Allegany County to be approved by the county commissioners. This statute results in an additional review process for large acquisitions. Any opportunities to acquire additional acreage for Dan's Mt. WMA should pursued, when appropriate, to conserve and protect habitats and provide wildlife recreation in Allegany County. Acquiring property north and south along the ridgeline for conservation of rare species and to provide a contiguous north/south forested corridor for species dispersal is a high priority, as is acquiring adjacent property, especially in the northeast section of the WMA.

Unique and Sensitive Areas

The largely contiguous forest, topography, streams, and underlying geology of Dan's Mountain WMA support a variety of rare species, unique natural communities, and a high degree of biological integrity (Appendices 8-9). The greatest contributing factor to this integrity is the preponderance of large unbroken tracts of mature, old, and old growth forest and relatively undisturbed natural communities, unmatched by any other WMA in Maryland.

The boundaries of seven Ecologically Significant Areas (ESA's) either overlap or are contained within the WMA. Five of these ESA's are classed as Tier 1 (Dan's Rock, Danville Bench, Fairview, Mill Run/Fox Hill) or Tier 2 (Dan's Mountain South) in Maryland's Biodiversity Conservation Network (BioNet), indicating that they are critically or extremely significant for biodiversity conservation. Cliff and rock outcrops, high elevation ridge forests, and associated rare natural communities of Tier 1 and Tier 2 ESA's support three plants (Standley's goosefoot, *Chenopodium standleyanum*; giant-seed goosefoot *Chenopodium simplex*; roundleaf dogwood, *Cornus rugosa*), and Allegheny woodrat (*Neotoma magister*) listed in the state as Endangered, and three plants (climbing fumitory, *Adlumia fungosa*; running serviceberry, *Amelanchier humilis*; black-fruit mountain-ricegrass, *Piptatherum racemosum*) and one animal listed as Threatened (Northern long-eared bat, *Myotis septentrionalis*). Toms Hollow ESA is classed as a Tier 3 BioNet site, indicating that it is highly significant for biodiversity conservation in the state. Mill Run Tributary ESA is currently a Tier 5 BioNet site, but this rank will be updated to Tier 2 given the recent documentation of breeding Northern long-eared bats, now classified as Threatened on both federal and state protected species lists.

Additional rare and unique species of Dan's Mt. WMA that depend on cliff and rock outcrop habitats in a forested landscape include nesting common raven (*Corvus corax*) and winter wren (*Troglodytes hiemalis*, rare), porcupine (*Erethizon dorsatum*), timber rattlesnake (*Crotalus horridus*, rare), and running juneberry (*Amelanchier stolonifera*, rare). Wehrle's salamander (*Plethodon wehrlei*, In Need of Conservation), Appalachian cottontail (*Sylvilagus obscurus,* In Need of Conservation), Eastern small-footed bat (*Myotis leibii*, Endangered), and harebell (*Campanula rotundifolia*) also probably occur at Dan's Mt. WMA in these habitats. In past years, the declining golden-winged Warbler (*Vermivora chrysoptera*, In Need of Conservation) has nested along forest edges and succeeding old pasture in an abandoned small farm tract at the southern end of the WMA.

Maryland Biological Stream Survey data indicate that Mill Run and Toms Run are among the best streams in this region of the state, with relatively high fish and invertebrate biological integrity scores. Spring-fed streams associated with Mill Run and east of Toms Hollow Run support brook trout and two rare dragonflies, the primitive gray petaltail (*Tachopteryx thoreyi*) and the tiny Northern pygmy clubtail (*Lanthus parvulus*). Vernal pool habitats (small, seasonally flooded wetland depressions) surrounded by mature to old growth forest on Dan's Mountain provide critical breeding and year-round habitat for a number of frog and salamander species. Maintaining a minimum 300 foot forested buffer around vernal pools is a key habitat requirement for vernal pool breeding amphibians (e.g., spotted salamander [*Ambystoma maculatum*], marbled salamander [*A. opacum*]); such areas provide year-round habitat for these species. The WMA's small intermittent and perennial streams, along with scattered forested seepage wetlands and springs, also provide habitat for a variety of amphibians and invertebrates. Management practices that provide watershed-scale protection of springs, streams, and vernal pools, including forested buffers, are needed to maintain and, in some cases, restore these aquatic habitats.

Extensive forested blocks on the WMA support a variety of forest interior dwelling birds (FIDS) and other species, including little brown myotis (*Myotis lucifugus*, rare), tricolored bat (*Perimyotis subflavus,* rare), butternut (*Juglans cinerea*, rare), and American chestnut (*Castanea dentata*). The large unbroken forest of Dan's Mt. WMA forms the core of the Dan's Mountain Important Bird Area (IBA). This IBA was recognized by Maryland-DC Audubon for supporting a globally significant population of cerulean warbler (*Setophaga cerulea*), a rapidly declining species, as well as threshold populations of 5 at risk species of FIDS: worm-eating warbler (*Helmitheros vermivorus*), wood thrush (*Hylocichla mustelina*), American redstart (*Setophaga ruticilla*), black-and-white warbler (*Mniotilta varia*) and Kentucky warbler (*Geothylpis formosus*). Other state rare and declining forest bird species documented as breeding at the WMA include

sharp-shinned hawk (*Accipiter striatus*), brown creeper (*Certhia americana*), black-throated blue warbler (*Setophaga caerulescens*), blackburnian warbler (*Setophaga fusca*), and magnolia warbler (*Setophaga magnolia*). Several tracts of old growth forests in Dan's Mt. WMA provide optimal habitat for many of these species. Although the regular passage of migratory raptors, including concentrations of golden eagles (*Aquila chrysaetos*), was known for Dan's Mountain (including the WMA), recent studies have shown that golden eagles also overwinter in the area. To maintain habitat quality for these species and natural communities, the large, contiguous forest blocks dominated by mature to old growth forest should be protected by avoiding any additional habitat loss and fragmentation due to timber harvesting, roads, and anthropogenic openings. Existing roads and clearings should be maintained in a manner that minimizes fragmentation effects and consideration should be given to eliminating those existing roads and openings that most contribute to fragmentation.

Natural Communities of Dan's Mountain WMA – Ten natural community types, half of which are rare, have been documented at Dan's Mt. WMA (Appendix 9). Rare natural communities at Dan's Mt. WMA include small patches of forests on upper slopes and ridge tops (Northern Appalachian Chestnut Oak Forest), forests in coves (Central Appalachian Rich Cove Forest), and forests and more open woodlands associated with cliffs and rocky areas (Central Appalachian Basic and Acidic Boulderfield Forests). Two types of shale woodlands (foreknob barrens), rare communities specifically dependent on the underlying geology, can be found on the WMA (Central Appalachian Virginia Pine / Sparse Herbs Shale Woodland and Central Appalachian Chestnut Oak / Mixed Herbs Shale Woodland). Four natural communities that occur on Dan's Mt. WMA are considered to be globally rare because their distribution is limited to just a few states and they occur in small patches on the landscape. Although these rare natural communities are small in size compared to the WMA's more extensive, common community types, they provide important unique habitats. For example, a recent study documented the use of foreknob barren areas by breeding northern long-eared bats, a federally threatened species and preliminary genetic analyses indicate that Appalachian cottontail use these habitats.

Historically, old growth forest dominated most of the Maryland landscape, and supported a remarkable abundance and diversity of plants and animals, including game species. Today, statewide, only about 3,000 acres remain and many species associated with old growth conditions have since been extirpated or reduced to small, isolated populations. Recent studies have identified three areas on Dan's Mt. WMA that meet the DNR criteria for old growth forest: Upper Dan's Mountain (approx. 18 acres), Lower Dan's Mountain (approx. 25 acres), and Upper Mill Run (over 100 acres). Upper Dan's Mountain old growth forest is largely made up of northern red oak (*Quercus rubra*),

white oak (*Quercus alba*), and chestnut oak (*Quercus montana*) with large trees in various states of decay. Lower Dan's Mountain old growth forest is located on a rocky dry ridgetop and bench area, dominated by chestnut and northern red oak with an understory of rhododendron (*Rhododendron maximum*) and mountain laurel (*Kalmia latifolia*). Upper Mill Run old growth forest appears to have a higher density of old trees than much of the WMA, with no clear disturbance boundary. This area is dominated by chestnut and northern red oak. The oldest trees on these areas are over 300 years old. Additional tracts of old forest have been identified at Dan's Mt. WMA, and on-going studies indicate that some areas may be old growth. These areas contain several globally rare woodland communities known from a very limited distribution (MD, WV, VA) in the Central Appalachians. These include steep, south-facing foreknob barrens overlying the Jennings Shale formation and dominated by table mountain pine and pitch pine with dense patches of ericaceous shrubs (e.g. mountain laurel, blueberry and huckleberry [*Vaccinium* and *Gaylussacia* spp.]. Another potential old growth forest type represented here are steep, open, chestnut oak-dominated, boulderfield woodlands, sometimes occurring in steep ravines near the base of foreknob barrens. Acquisition targets for the WMA should include areas that support or help protect populations of rare species, natural communities (including old forest/old growth) and ESA's. Areas that facilitate wildlife movement and dispersal and reduce fragmentation effects should also be an acquisition priority.

Featured Species – Allegheny woodrat is a keystone species at cliff and talus outcrops within the WMA. An Appalachian native associated with wilderness areas, the woodrat or "packrat" caches large quantities of food and other items in protected crevices of rocks. A species unrelated to the much maligned introduced rat species of Eurasian origin, the Allegheny woodrat is differentiated by its furry tail, white feet and underbelly, and large ears. Woodrats are remarkably tame though seldom observed by people due to their nocturnal habits and occupation of remote and rugged terrain.

Within the WMA, extant woodrat populations occur along the crest and upper slopes of the ridge sporadically along its entire extent where rock outcrops are of sufficient size and complexity. Additional habitat occurs both south and north along the ridge crest on surrounding private lands, making this the most extensive population remaining in Maryland. Population monitoring data at nearby Dan's Rock, via mark-recapture live trapping, reveal significant annual variation but, overall, and while a long-term decline is evident, this population remains more viable than any other in Maryland. This population is isolated from others to the east and west by major roads, mining, development and expanses of agricultural land.

The decline of the Allegheny woodrat is due largely to fragmentation and degradation

of its forested habitat. Deforestation directly limits the species ability to disperse and recolonize extirpated areas. Landscape level forest fragmentation and associated availability of human-sourced food has dramatically increased raccoon (*Procyon lotor*) populations and elimination of large hollow trees, forcing raccoons to den in rock outcrops and subsequently exposing woodrats to a deadly parasite carried by raccoons. Loss of the American chestnut tree to blight and subsequent impacts of Gypsy moth (*Lymantria dispar*) on oak species have reduced available overwintering foods for the woodrat as well.

Management for the woodrat entails providing a landscape comprised of extensive and contiguous tracts of old forest with numerous embedded subpopulations allowing dispersal between sites without exposure to large open areas, development or high use roads. Mature to old growth forest with a diversity of mast producing trees for winter food caches, coupled with a variety of herbaceous plants and fungi, can provide year-round forage. A primary management boundary would include areas within 200 meters of rock habitat to include general foraging areas, though woodrats may travel >1 km for preferred foods. The protection and reestablishment of large tracts of old growth forest with natural canopy gaps and large nut-producing overstory trees near rock outcrops provides optimal habitat. In some cases, active management (e.g., Gypsy moth control using gypcheck or other control agents that minimize non-target mortality) may be necessary to prevent severe loss of mast trees from exotic pest outbreaks or to reestablish blight resistant varieties of American chestnut. Large hollow trees should be retained throughout Dan's Mt. WMA to provide alternative denning habitat for raccoons to reduce parasite transfer to woodrats.

This same natural mosaic landscape also supports the highest density of the state- and federally listed Threatened Northern long-eared bat (NLEB). This species has declined over 95% in Maryland due to white-nose syndrome, an on-going bat pandemic. Today, although its numbers have been severely reduced, more NLEB's have been captured at Dan's Mtn WMA than at any other location in Maryland during summer mist netting surveys. White-nose syndrome, caused by an exotic fungus introduced from Europe or Asia, has killed most of Maryland's hibernating bats since it arrived in the state in 2010. Dan's Mountain WMA is one of the few areas that still supports NLEB, a species once common in Maryland, but now one of our rarest. NLEB's often roost in live trees or snags located in small canopy gaps within large forest tracts and forage primarily in the complex, multiple layer canopy formed by shrubs and a diversity of tree sizes. Natural forest conditions in contrast to the even-aged management practices most commonly practiced today. Water sources, such as Mill Run and vernal pools, provide critical habitat for foraging and drinking for this species. Protection of roost sites and associated foraging habitats is one of the few conservation measures available at this

time and several have been identified at Dan's Mt. WMA.

Biological Inventory, Monitoring and Research

Over the years, Maryland DNR, Frostburg State University, University of Maryland-Appalachian Lab and others have conducted various surveys and studies of the WMA's flora and fauna, their habitats and the ecosystems that support them. This has included recent and on-going studies involving Northern long-eared bat, Allegheny woodrat, cerulean Warbler and old growth forest. However, much remains to be learned on this relatively large, remote tract of public land spanning nearly 10,000 acres. In the years ahead, to help refine conservation priorities and guide science-based management on the WMA, Maryland DNR will continue to conduct and oversee the following activities:

- Biological inventory and research to better determine the distribution, population size/condition, viability, and protection, management and restoration needs of rare, threatened and endangered species, and other species of concern;

- Research to determine the distribution, condition (e.g., age, composition, structure) and protection and restoration needs of old growth forest and other unique habitats and natural communities (e.g., foreknob barrens, sandstone outcrops, headwater streams, springs);

- Monitoring, as needed, of rare, threatened and endangered species and other species of concern, to assess their population trends, threats and conservation needs;

- Monitoring, as needed, of old growth forest and other unique habitats and natural communities to assess threats and management and restoration needs for these areas.

Recreational Use

The stated goal of the WMA system is to provide wildlife dependant recreation. These recreational activities include hunting, trapping, birding, wildlife photography, etc. These are activities that are consistent with the purposes of Federal Aid in Wildlife Restoration funding that is used for managing the area and in many cases was used in purchasing lands that make up the WMA.

Hunting is currently the primary recreational use of Dan's Mt. WMA. Pursuit of

forest game species such as white-tailed deer (*Odocoileus virginianus)*, gray squirrels (*Sciurus carolinensis*), ruffed grouse (*Bonasa umbellus*), black bears (*Ursus americana*), and wild turkeys (*Meleagris gallopavo*) provide the majority of hunter days on the area. Hunting for furbearers and upland wildlife such as raccoon (*Procyon lotor*), American woodcock (*Philohela minor*) and eastern cottontails (*Sylvilagus floridanus*) is secondary. Birdwatching, mountain biking, and hiking are also popular recreational activities on the area. Dan's Mountain WMA is within the core of an area recognized by the National Audubon Society as an "Important Bird Area".

It is anticipated that the demand for hunting forest game will continue and likely escalate as less private land is available to hunters. Along with this demand for hunting opportunity, it is expected that there will be increased interest in non-hunting use of the WMA, particularly hiking, mountain biking, equestrian use, and bird/wildlife watching. In accordance with Federal Aid in Wildlife Restoration Guidelines, only wildlife dependant recreation will be promoted or allowed on the area.

Monitoring of recreational use will be conducted annually through the use of infrared trail monitors to capture data on numbers of access events at the primary access points on the WMA. Additionally, monitoring of the hunting recreation will be continued using hunter harvest data for black bears, white-tailed deer, and wild turkeys through the hunter check-in system.

Potential Threats and Concerns

Dan's Mountain WMA, and Dan's Mountain as a whole, comprises a relatively large, contiguous tract of minimally disturbed forest habitat. However, it is increasingly bound on all sides by an expanding network of roads, development, strip mines, and other land uses that, directly or indirectly, impact plant and animal populations on the WMA. The greatest long-term threat to wildlife on the WMA, as is the case elsewhere in Maryland, is continued habitat loss and fragmentation. This includes areas both immediately adjacent to the WMA and the surrounding landscape. Of particular concern is expanding residential and commercial development, the prospect of a new highway (Route 220 realignment) on Dan's Mountain or in nearby areas, and various forms of energy development and mineral extraction (coal surface mining, wind, solar, natural gas exploration). For example, the building of wind power turbines and associated access roads and fragmentation could impact wildlife populations in the area, especially migratory bats and birds. All of these land uses are likely to significantly impact natural resources on Dan's Mountain and, in varying degrees,

recreational use.

Another major concern is on-going illegal Off-Road Vehicle (ORV) use and, potentially, increased equestrian and mountain bike use. As community and local business interests develop, there may be increased demand for non-compatible uses on or adjacent to the WMA. Impacts from adjacent development on hydrological processes are of particular concern. Any opportunity to acquire property or work with adjacent landowners through easements and land use planning may help prevent any adverse impacts. Increased pressure from non-wildlife dependent recreation such as hiking and mountain biking during the summer nesting seasons when road access is closed, could become a threat. Threats from forest pests and disease also may occur. Gypsy moth (*Lymantria dispar*) defoliation and mortality caused by emerald ash borer (*Agrilus planipennis*) could severely impact habitats on the WMA and should be monitored closely. Other threats include various invasive plants, insects, and diseases. The threat of fire is also a concern as the fuel load from tree mortality has increased significantly. Although fire can be a useful and beneficial enhancement to some habitats and natural communities, the threat is a concern in managing the impact of fire both on the WMA and the surrounding properties and residential areas. The status of wildfire and the Designated Wildland also presents a management challenge and there is a need for policy development to direct operations should a fire occur within the Wildland area.

Long term Goals for Dan's Mt. WMA

The long-term goals for Dan's Mt. WMA are to:

- Maintain, manage and improve current levels of public access for recreational use while avoiding and, where needed, reducing impacts to natural resources.

- Conserve, protect, and, as appropriate, restore sensitive habitats (including old growth forest) within a large, contiguous forest ecosystem.

- Conserve, protect, and restore populations of rare, threatened, and endangered species and other priority species (i.e., Species of Greatest Conservation Need as indicated in Maryland's 2015 State Wildlife Action Plan).

- Maintain and promote hunting and trapping opportunities for forest game, upland game, furbearers, and migratory game birds. Wild turkey, American woodcock, and ruffed grouse hunting will receive special emphasis.

- Enhance and maintain diverse habitats with a focus on native species. This goal will center on maintaining a mix of young forest habitats, herbaceous openings, shrub/scrub habitat, and mixed hardwood stands of various age structures.

- Enhance and maintain current facilities to ensure safe and efficient operations. Critical Maintenance and Capital Improvement Projects have been developed to improve access to the WMA.

- Prioritize acquisition efforts to meet recreational goals and ensure the long-term protection of natural resources on the WMA.

- Evaluate success of management activities and progress toward HMU goals and adjust activities as needed.

Habitat Management Units

Through the planning process, the WMA was organized into 4 Habitat Management Units (HMU) to facilitate development of specific goals and objectives for the property (see Appendices 4-5). Various habitat management objectives and strategies have been developed for each unit as described below. Unit descriptions include Key Wildlife Habitats as described in Maryland's 2015 State Wildlife Action Plan (http://dnr.maryland.gov/wildlife/Pages/plants_wildlife/SWAP_Submission.aspx).

HMU 1

Unit Description: Mesic Deciduous Forest, Early Successional Forest, Dry Oak Forest

HMU 1 comprises approximately 1664 acres of mostly forested habitat. This HMU is along the Western most border of the WMA along the boundary and where access and prior disturbance are more prevalent. These areas are mixed oak forest in various age classes. Most stands are in the poletimber to large sawtimber size classes. There is limited acreage that is in a young forest age structure. There are few herbaceous openings within this HMU other than an old pasture area on the south end of the property that is approximately 15 acres and the powerline right-of-way.

Many areas on the WMA have experienced significant tree mortality due to gypsy moths, ice storms, windthrow, natural tree senescence, and now, most recently, from emerald ash borer infestations. This has created numerous scattered light gaps, increased vegetative structure and additional food sources (e.g., grape [*Vitis* spp.], greenbrier [*Smilax rotundifolia*]), often in combination with dense mountain laurel (*Kalmia latifolia*) thickets, that together contribute to habitat for ruffed grouse and other species that are also associated with early successional habitats. However, connectivity of food, cover, and brood habitat are critical and additional management is needed in some areas to meet HMU goals. Isolated light gaps scattered over large areas may contribute to mortality as habitat sinks where predators key in on prey, especially during seasonal dispersal.

Also found scattered throughout the unit are pockets of aspen that have been maintained by regeneration cuts or released from competing vegetation. Because this unit has some of the only access points to the WMA it is a very popular hunting area for a variety of forest game species, with Ruffed Grouse, White-tailed deer, Wild Turkey, and Black Bear readily pursued.

On the southwest portion of this HMU, there is old unreclaimed strip mined property, conifer plantation, and a pond of about 2 acres surface area.

Access is available but very limited to many parts of this HMU. Invasive plant monitoring and control are critical on this HMU so that it does not serve as a source of introduction to other areas.

Unit Goal:

This particular unit will be managed to maintain the area in a mosaic of different age classes including early successional forest, older forest managed for mast production, and edge habitat. The scattered location of tracts in this unit with proximity to existing roads and parking areas, and its popularity with forest game hunters makes this unit well suited for young forest habitat. Game species such as American woodcock, ruffed grouse and white-tailed deer should benefit from improved cover, feeding and brooding areas.

Objective:

To maintain and improve early successional forest habitat.

Strategies:

Conduct a thorough and detailed forest analysis and incorporate forestry recommendations.

Complete surveys for rare, threatened, and endangered species; natural communities; and other species and habitats of concern. Incorporate findings into management decisions.

Conduct timber harvesting when and where appropriate to create a patchwork of older forests and seedling to sapling forest stands, taking into account early successional forest habitat created by disturbance agents such as gypsy moth, emerald ash borer, ice storms, fire, and windthrow.

Objective:

Maintain and create openings for herbaceous cover to serve as brood habitat.

Strategies:

Maintain woods roads and wildlife openings by rotational mowing to provide important brooding habitat for ruffed grouse and wild turkey poults.

Continue to daylight and maintain road edges in early successional cover by commercial and non-commercial methods, coupled with invasive plant control and avoiding impacts on Appalachian cottontail as areas are identified.

Expand and plant log landings and forest roads and skid trails to provide brood habitat and forage.

Monitor for threats from insects, disease, and especially invasive species. Use best management practices to avoid, minimize, and eliminate these threats.

Objective:

Continue to provide quality access for wildlife dependent recreation, especially for forest game hunting opportunities.

Strategies:

Conduct annual maintenance to access roads, parking areas, and sign boards.

Limit motorized access with seasonal gate closures to provide quality walk-in experience.

Where practical, construct access to better reach isolated areas of the HMU, with consideration of impacts to Appalachian cottontails.

Monitor for insects, disease, invasive plant species, and other negative impacts to stands and act accordingly.

Objective:

Maintain and, where possible, improve water quality and aquatic habitat biotic integrity.

Strategy:

Improve stream health by maintaining minimum 100 foot wide, no disturbance forest buffers when doing habitat management along all perennial and intermittent streams, seepage wetlands and springs; restore buffer conditions where needed.

Where practical, correct road drainage, erosion, and culvert problems where they exist using best management practices, as funding and permits are available.

Objective:

Avoid and minimize management impacts to rare, threatened, and endangered species, as well as natural communities and unique habitats.

Strategies:

Conduct, as needed, biological inventory, monitoring and research to identify priority areas and conservation needs for rare, threatened, and endangered species, natural communities and unique habitats.

HMU 2

Unit Description: Mesic Deciduous Forest, Dry Oak-Pine Forest

HMU 2 is a very large unit comprising approximately 2884 acres of forested habitat. This unit extends from the northern boundary near Dan's Rock Road to the southern boundary of the management area near Westernport. This unit is within the Dan's Mt. designated Wildland including the ridge-top outcrops and a significant buffer for this habitat that harbors a number of rare or threatened species including Allegheny woodrats. The unit also includes the steep East facing slope with various drainages and steep slopes. Many parts of this unit are very steep and rocky, which limits any potential opportunity for active management. There are 3 stands within the unit, totaling 167 acres, which are designated as "Old Growth Forest". These are primarily mixed oak stands.

Unit Goal:

This unit will be managed to maintain and enhance current forest conditions and allow the restoration of old growth forest through natural succession processes. Forest fragmentation will be avoided and, where possible, reduced to provide suitable habitat for species dependent on large, remote, and/or minimally fragmented forests and to minimize impacts from invasive species. Recreational hunting and birding opportunities will continue to be promoted within the unit.

Objective:

Protect and restore natural communities and unique habitats, including areas that support rare, threatened, and endangered species.

Strategies:

Conduct, as needed, biological inventory, monitoring and research to identify priority areas and conservation needs for rare, threatened, and endangered species, natural communities and unique habitats.

Monitor for threats that could negatively impact this forested ecosystem with particular attention to invasive species, severe gypsy moth outbreaks, deer over-browsing, and illegal ORV use. Use best management practices to avoid, minimize, and eliminate threats from invasive plant species, gypsy moth, and emerald ash borer, and work with Natural Resources Police to address illegal ORV use.

Avoid forest fragmentation and identify areas where fragmentation could be

reduced.

Regional Operations and Natural Heritage Program will pursue restoration of American chestnut in areas where it was once dominant using chestnut blight resistant genotypes. Focus initially on existing or potential habitat for Allegheny woodrat.

Regional Operations and Natural Heritage Program will consider reintroduction of fire to maintain oak-dominated and oak-pine forest communities.

Unit goal:

Provide emergency access for wildfire suppression and ambulance or medical response in a manner that avoids and minimizes impacts to this forested ecosystem.

Objective:

Develop a plan that provides for emergency medical access to the WMA, describes the conditions under which wildfire suppression is warranted, and in both cases, accomplish this in a way that avoids and minimizes impacts to natural resources.

Objective:

Maintain existing herbaceous openings and daylighted roads along the HMU boundary coupled with invasive plant control as indicated in Appendix 12.

Strategy:

Continue to mow and rotationally plant existing openings and roadsides while monitoring for invasive plants and controlling them as needed.

Objective:

Maintain and, where possible, improve water quality and aquatic habitat biotic integrity.

Strategy:

Improve stream health by maintaining minimum 100 foot wide, no disturbance

forest buffers when doing habitat management along all perennial and intermittent streams, seepage wetlands and springs; restore buffer conditions where needed.

When practical, correct road drainage, erosion, and culvert problems where they exist using best management practices, as funding and permits are available.

HMU 3

Unit Description: Mesic Deciduous Forest, Dry Oak-Pine Forest

This 3,039-acre HMU is entirely forested with the exception of a few small openings located at scattered locations throughout the unit. There are a number of small un-named tributaries, which originate in the unit and flow into the North Branch Potomac River. Much of this unit is associated with steep to moderately sloping lands. Most streams are intermittent or ephemeral with little or no surface flow during summer and dry periods. A few spring-fed streams, however, are perennial and typically have at least some year-round surface flows.

Along the mid- to upper east facing slope of this unit, generally between 1,500' and 2,200', are numerous "foreknobs" containing steep, dry oak-pine woodland communities dominated by chestnut oak (*Quercus montana*), table mountain pine *(Pinus pungens*), pitch pine (*P. rigida*) and/or Virginia pine (*P. virginiana*), often with dense ericaceous shrub vegetation (e.g., mountain laurel [*Kalmia latifolia*], blueberry sp. [*Vaccinium* sp.], huckleberry [*Gaylussacia* sp.]) and extensive talus and small rock outcroppings. It appears that these unique communities are the result of very acidic conditions resulting from the underlying soils and past recurring fire. Multiple foreknob barren areas likely meet the DNR criteria for old growth forest in this HMU.

There are approximately 11 small fields and road edge totaling approximately 8 acres that have been maintained by rotational mowing and seeding. These fields are scattered throughout the HMU. There is also approximately 25 acres of open powerline right-of-way that bisects the middle of the HMU from east to west.

Approximately 25-30 acres are represented by past clearcuts that appear to have been completed during the early 1980's. These former cuts are composed of pole sized trees, with an open understory. There are several small stands of aspen scattered within the unit, which have been maintained by regeneration and release. Also within the unit are

large areas of forest that have been impacted by gypsy moth defoliation and now have numerous light gaps, providing habitat for many species associated with early successional forest. Isolated light gaps scattered over large areas may contribute to mortality for species such as ruffed grouse, as habitat sinks where predators key in on prey, especially during seasonal dispersal.

Unit Goal:

This unit will be managed to maintain and enhance current forest conditions and allow the restoration of old growth forest through natural succession processes. Additional forest fragmentation will be avoided and, where possible, reduced to provide suitable habitat for species dependent on large, remote, and/or minimally fragmented forests and to minimize impacts from invasive species. This unit will be managed to maintain current forest conditions and allow the forest to progress to an older growth forest. Fragmentation of larger forest blocks should be minimized to support Forest Interior Birds and other species. Recreational hunting and birding opportunities will continue to be promoted within the unit. Current access, road maintenance should be continued. Existing wildlife openings should be maintained. Sensitive areas designated along the access roads should be protected as outlined by the Natural Heritage Program in Appendix 12 and minimal disturbance should occur when maintaining these access roads.

Objective:

Maintain high quality forested habitats and allow them to develop older growth forest conditions. Document old forest stands and possible additional old growth forest. Protect and restore natural communities and unique habitats, including areas that support rare, threatened, and endangered species.

Strategies:

Conduct, as needed, biological inventory, monitoring, and research to identify priority areas and conservation needs for rare, threatened, and endangered species, natural communities and unique habitats.

Monitor for threats that could negatively impact this forested ecosystem with particular attention to invasive species, severe gypsy moth outbreaks, deer over-browsing, and illegal ORV use. Use best management practices to avoid, minimize, and

eliminate threats from invasive species, gypsy moth, and emerald ash borer, and work with Natural Resources Police to address illegal ORV use.

Restore forest conditions along the new access road, with the exception of two newly developed wildlife openings, to minimize forest fragmentation, provide buffers for nearby old growth forest, improve forest connectivity, and reduce erosion. Elsewhere, avoid additional forest fragmentation and identify areas where fragmentation could be reduced.

Pursue restoration of American chestnut in areas where it was once dominant using chestnut blight resistant genotypes. Focus initially on existing or potential habitat for Allegheny woodrat.

Consider reintroduction of fire as a restoration and management tool particularly ridgetop areas, foreknob barrens, and other highly fire-prone communities.

Objective:

Carry out active management in a manner that protects and conserves rare species and natural communities.

Strategy:

Complete surveys for rare, threatened, and endangered species, natural communities, and other species and habitats of concern. Incorporate findings into management decisions.

Objective:

Maintain existing roads, using best management practices coupled with invasive plant control and considering impacts to Appalachian Cottontails as referenced in Appendix 12.

Strategy:

Maintain roads in current conditions by rotational mowing, grading and clearing on an as-needed basis, coupled with invasive plant control and avoiding impacts on Appalachian cottontail.

Objective:

Maintain existing herbaceous openings.

Strategy:

Continue rotational mowing on an annual basis.

Strategy:

Continue field border cuts along field edges.

Strategy:

Monitor for invasive plants and control as needed to maintain native habitats.

Objective:

Maintain and, where possible, improve water quality and aquatic habitat biotic integrity.

Strategy:

Improve stream health by maintaining minimum 100 foot wide, no disturbance forest buffers when doing habitat management along all perennial and intermittent streams, seepage wetlands and springs; restore buffer conditions where needed.

Where practical, correct road drainage, erosion and culvert problems where they exist using best management practices, as funding and permits are available.

HMU 4

Unit Description: Mesic Deciduous Forest, Early Successional Forest, Dry Oak Forest
HMU 4 comprises approximately 2,196 acres of mostly forested habitat. This HMU is along the Eastern most border of the WMA along the boundary and where access and prior disturbance are more prevalent. These areas are mixed oak forest in various age classes. Most stands are in the poletimber to large sawtimber size classes. There is limited acreage that is in a young forest age structure. There are approximately 15 herbaceous openings within this HMU that total about 11 acres and the powerline right-of-way. These openings and portions of the powerline have been maintained by annual rotational mowing and occasional seeding.

There are a number of localized areas that have experienced significant mortality from Gypsy Moth infestation. Also found scattered throughout the unit are pockets of aspen that have been maintained by regeneration cuts or released from competing vegetation. Because this unit has some of the only access points to the WMA it is a very popular hunting area for a variety of forest game species, with Ruffed Grouse, White-tailed deer, Wild Turkey, and Black Bear readily pursued.

Access is available but very limited to many parts of this HMU. Some of the trails are only 4 wheel drive accessible.

Unit Goal:

This particular unit will be managed to maintain the area in a mosaic of different age classes including early successional forest, older forest managed for mast production, and edge habitat. The scattered location of tracts in this unit with proximity to existing roads and parking areas, and its popularity with forest game hunters makes this unit well suited for young forest habitat. Game species such as American Woodcock, Ruffed Grouse, and White-tailed deer should benefit from improved cover, feeding, and brooding areas.

Objective:

To maintain and improve early successional forest habitat.

Strategies:

Conduct a thorough and detailed forest analysis and incorporate forestry recommendations.

Complete surveys for rare, threatened, and endangered species, natural communities, and other species and habitats of concern. Incorporate findings into management decisions.

Conduct timber harvesting when and where appropriate to create a patchwork of older forests and seedling to sapling forest stands, taking into account early successional forest habitat created by disturbance agents such as gypsy moth, emerald ash borer, ice storms, fire, and windthrow.

Objective:

Maintain and create herbaceous openings to serve as brood habitat for Ruffed Grouse and Wild Turkey.

Strategies:

Maintain woods roads and wildlife openings by rotational mowing to provide brood habitat for Ruffed Grouse and Wild Turkey poults.

Continue to daylight and maintain road edges in early successional cover by commercial and non-commercial methods coupled with invasive plant control and avoiding impacts on Appalachian cottontail.

Expand and plant log landings and forest roads and skid trails to provide brood habitat and forage.

Monitor for threats from insects, disease or invasive species.

Objective:

Continue to provide quality access for wildlife dependent recreation, especially for forest game hunting opportunities.

Strategies:

Conduct annual maintenance to access roads, parking areas, and sign boards.

Limit motorized access with seasonal gate closures to provide quality walk-in experience.

Continue to pursue additional access to better reach isolated areas of the HMU. Pursue opportunities for right-of-way easements, property acquisition with access, and the possibility of new road construction along the Northeast periphery of the WMA, utilizing an existing Capital Improvement Project request. Work to avoid potential impacts of invasive plants, fragmentation, and increased corridors for eastern cottontail movement as more distribution information on Appalachian cottontail becomes available.

Monitor for insects, disease, and other negative impacts to stand and act

accordingly.

Objective:

Avoid and minimize management impacts to rare, threatened, and endangered species, natural communities, and unique habitats.

Strategies:

Conduct, as needed, biological inventory, monitoring, and research to identify priority areas and conservation needs for rare, threatened, and endangered species, natural communities, and unique habitats.

Objective:

Maintain and, where possible, improve water quality and aquatic habitat biotic integrity.

Strategy:

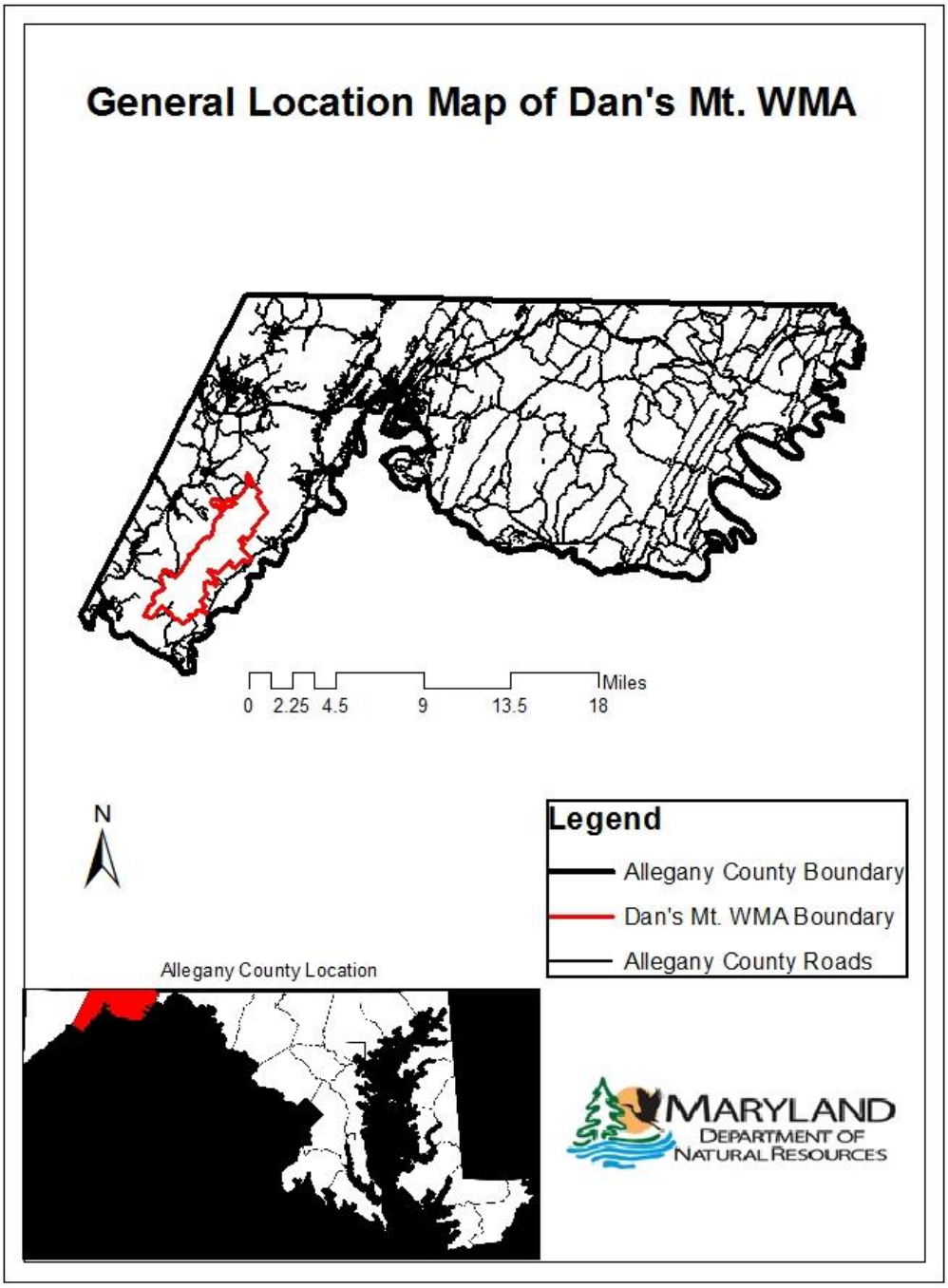
Improve stream health by maintaining minimum 100 foot wide, no disturbance forest buffers when doing habitat management along all perennial and intermittent streams, seepage wetlands and springs; restore buffer conditions where needed.

Correct road drainage, erosion and culvert problems where they exist using best management practices.

Appendix:

1. Map of Dan's Mt. WMA showing general location.
2. Aerial Photo
3. Topographic Map
4. Habitat Management Unit Aerial Photo

5. Habitat Management Unit Topographic Map
6. Designated Wildland Aerial Photo
7. Designated Wildland Topographic Map
8. List of rare, threatened or endangered species
9. List of Natural Community Types and Key Wildlife Habitats
10. Planning Team participants
11. Plan Status Checklist
12. Recommendations for Roadside Management


General Location Map of Dan's Mt. WMA
Miles
0 2.25 4.5 9 13.5 18
N
Legend
Allegany County Boundary
Dan's Mt. WMA Boundary
Allegany County Roads
Allegany County Location
MARYLAND
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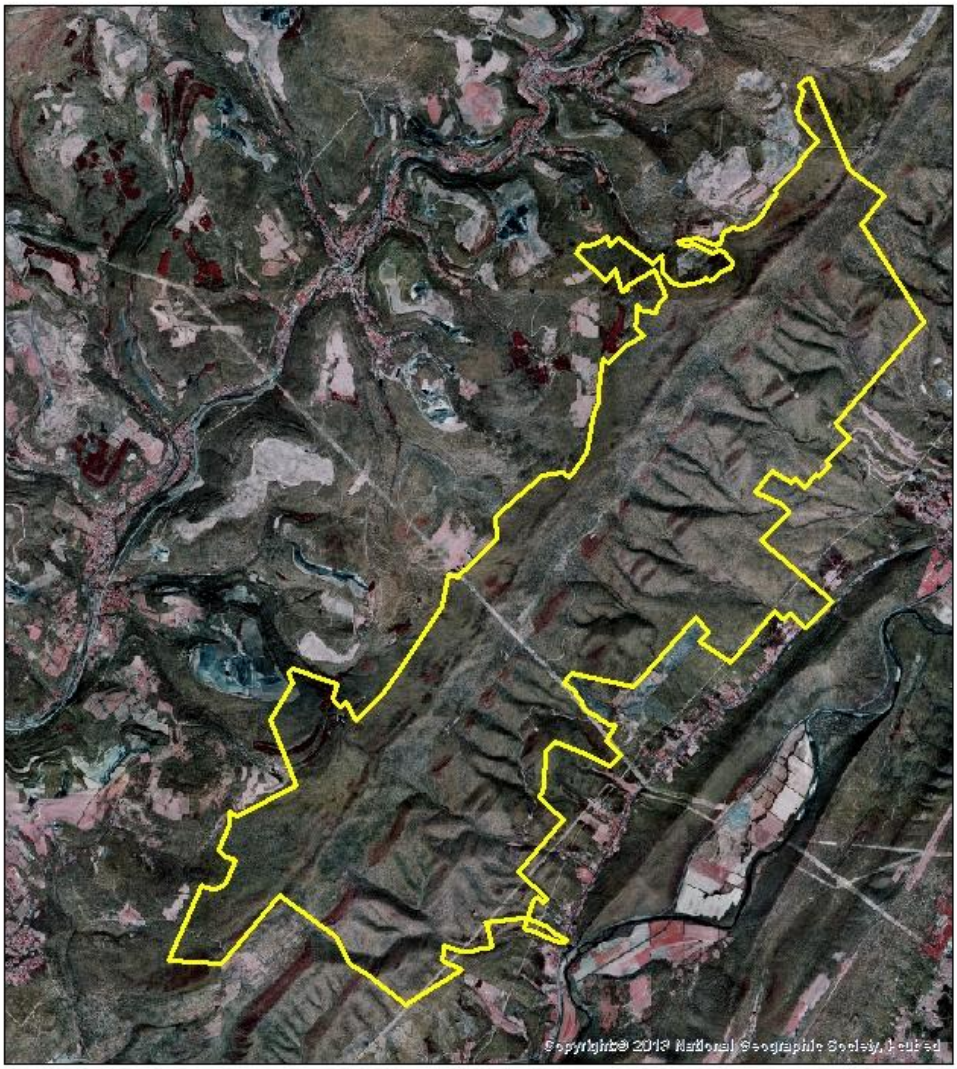
Aerial Photo Illustrating Boundary of Dan's Mt. WMA



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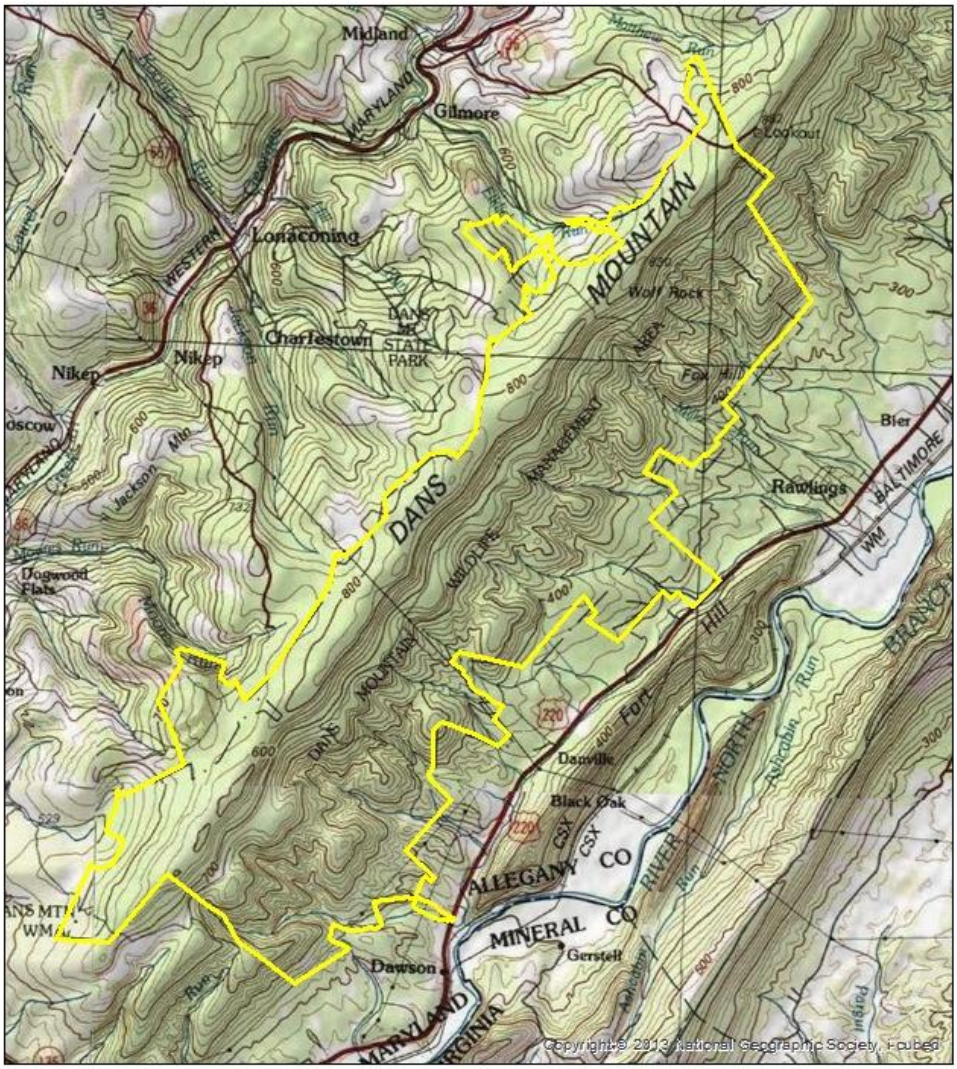
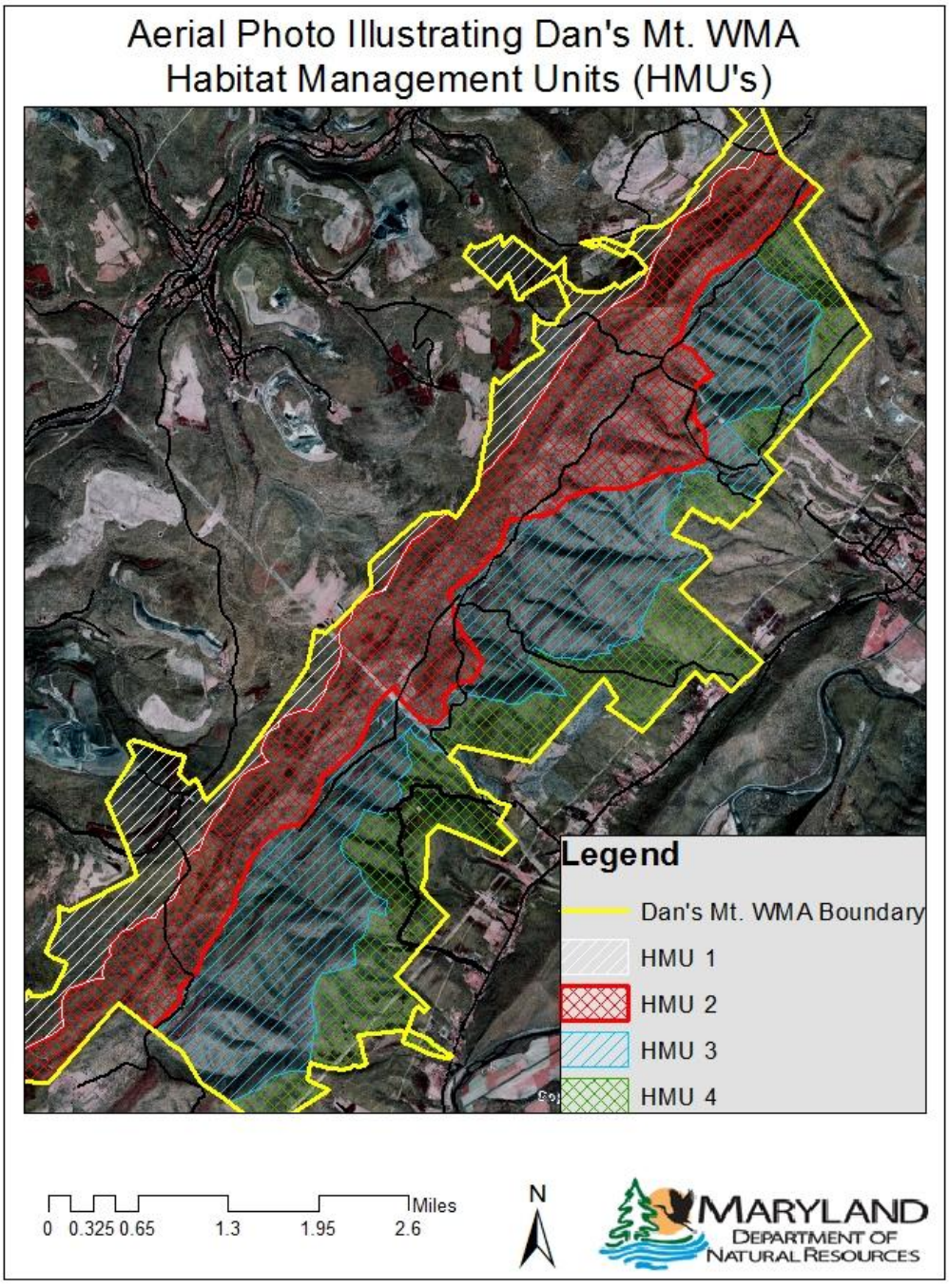
Topo Map Illustrating Boundary of Dan's Mt. WMA




Aerial Photo Illustrating Dan's Mt. WMA
Habitat Management Units (HMU's)
Legend
Dan's Mt. WMA Boundary
HMU 1
HMU 2
HMU 3
HMU 4
0 0.325 0.65 1.3 1.95 2.6
Miles
N
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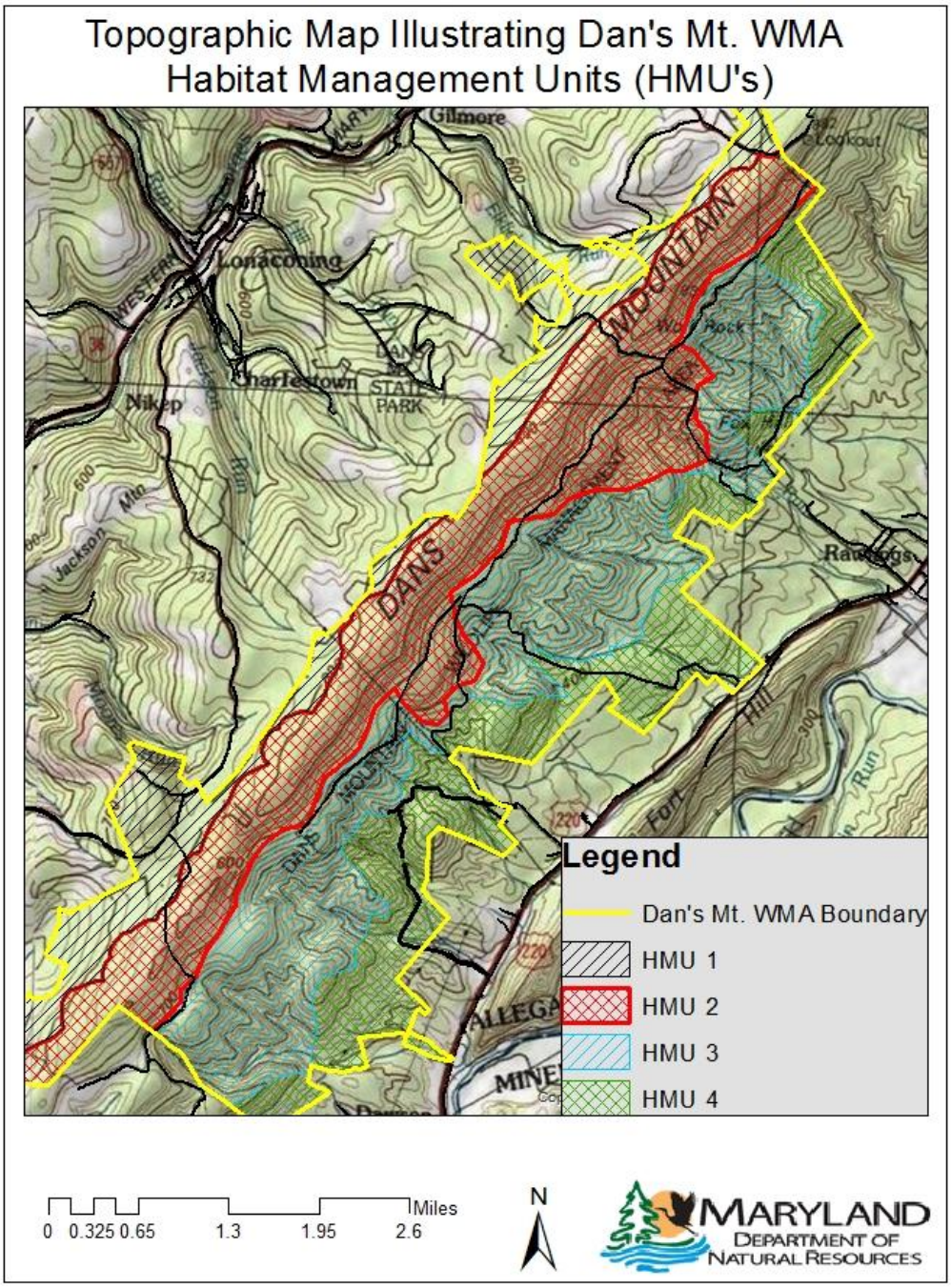
Topographic Map Illustrating Dan's Mt. WMA
Habitat Management Units (HMU's)
Gilmore
Lonaconing
Charlestown
STATE
PARK
Nikep
DANS
MOUNTAIN
Rawlings
Legend
Dan's Mt. WMA Boundary
HMU 1
HMU 2
HMU 3
HMU 4
0 0.325 0.65 1.3 1.95 2.6
Miles
N
MARYLAND
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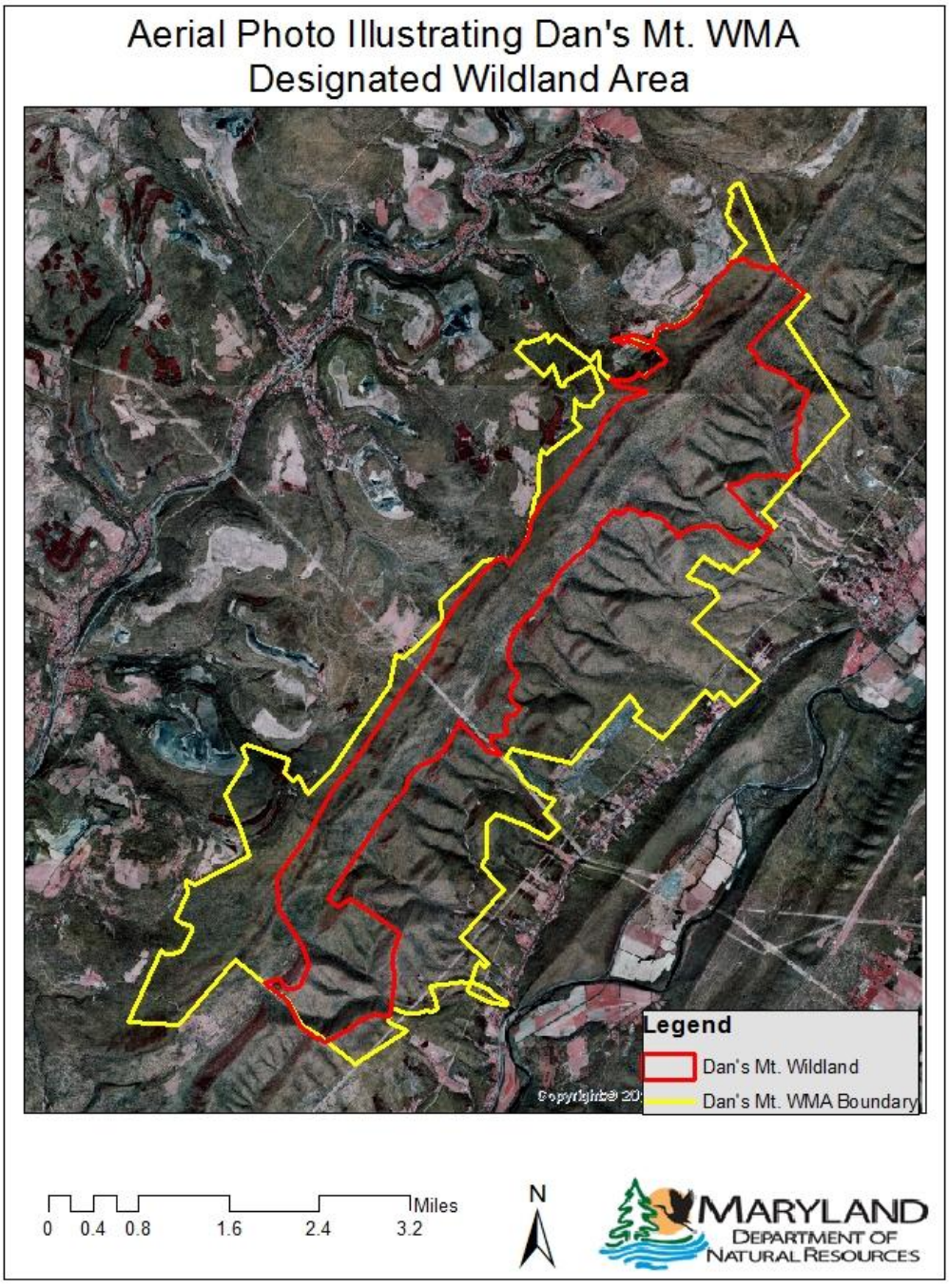
Aerial Photo Illustrating Dan's Mt. WMA
Designated Wildland Area
Legend
Dan's Mt. Wildland
Dan's Mt. WMA Boundary
Miles
0 0.4 0.8 1.6 2.4 3.2
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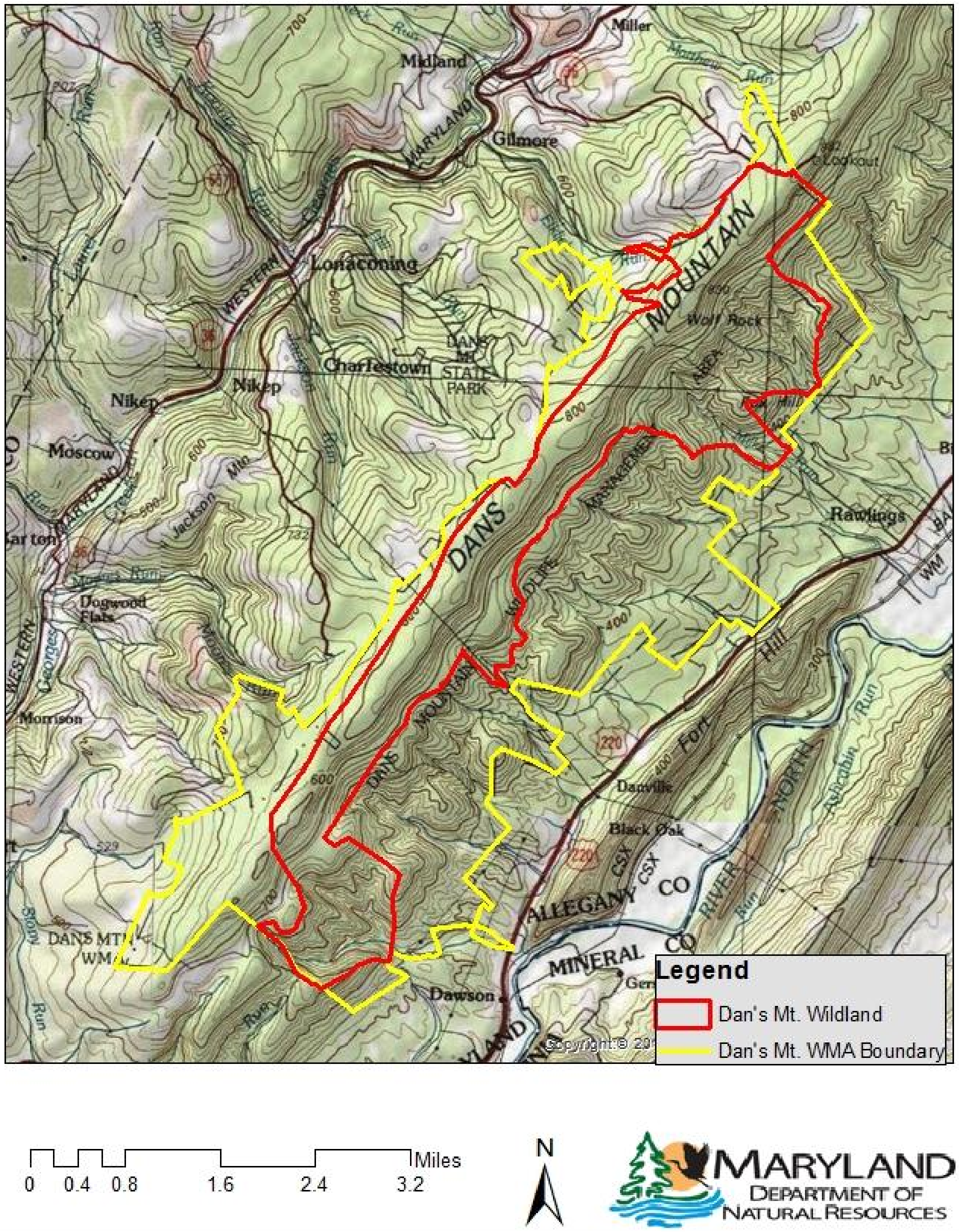
Topo Map Illustrating Dan's Mt. WMA Designated Wildland Area



MARYLAND DEPARTMENT OF NATURAL RESOURCES

Appendix 8. List of Rare, Threatened, and Endangered Species for Dan's Mountain WMA

Common Name	Scientific Name	Global Rank[1]	State Rank[1]	State Legal Status	Federal Legal Status
Plants:					
Climbing fumitory	*Adlumia fungosa*	G4	S2	Threatened	
Running serviceberry	*Amelanchier humilis*	G5	S1	Threatened	
Running juneberry	*Amelanchier stolonifera*	G5	S2		
Harebell*	*Campanula rotundifolia*	G5	S2		
American chestnut	*Castanea dentata*	G4	S2S3		
Giant-seed goosefoot	*Chenopodium simplex*	G5	S1	Endangered	
Standley's goosefoot	*Chenopodium standleyanum*	G5	S1	Endangered	
Roundleaf dogwood	*Cornus rugosa*	G5	S1	Endangered	
Butternut	*Juglans cinerea*	G4	S2S3		
American ginseng	*Panax quinquefolius*	G3G4	S2S3		
Black-fruit mountain-ricegrass	*Piptatherum racemosum*	G5	S2	Threatened	
Animals:					
Northern pygmy clubtail	*Lanthus parvulus*	G4	S2		
Gray petaltail	*Tachopteryx thoreyi*	G4	S3		
Wehrle's salamander*	*Plethodon wehrlei*	G4	S2	In Need of Conservation	
Timber rattlesnake	*Crotalus horridus*	G4	S3		
Sharp-shinned hawk	*Accipiter striatus*	G5	S2S3B		
Golden eagle	*Aquila chrysaetos*	G5	S1N		
Brown creeper	*Certhia americana*	G5	S3B		
Black-throated blue warbler	*Setophaga caerulescens*	G5	S3S4B		
Cerulean warbler	*Setophaga cerulea*	G4	S3B		
Blackburnian warbler	*Setophaga fusca*	G5	S3B		
Magnolia warbler	*Setophaga magnolia*	G5	S3S4B		
Winter wren	*Troglodytes hiemalis*	G5	S2B		
Golden-winged warbler	*Vermivora chrysoptera*	G4	S2B	In Need of Conservation	
Eastern small-footed myotis*	*Myotis leibii*	G3G4	S1	Endangered	
Little brown myotis	*Myotis lucifugus*	G3G4	S1		
Northern long-eared bat	*Myotis septentrionalis*	G1G2	S1	Threatened	Threatened
Allegheny woodrat	*Neotoma magister*	G3G4	S1	Endangered	
Tricolored bat	*Perimyotis subflavus*	G3G4	S1		
Appalachian cottontail	*Sylvilagus obscurus*	G4	S1	In Need of Conservation	

*Probable occurrence based on presence of suitable habitat and nearby records

[1]Explanation of global and state ranks:

G1/S1: Critically Imperiled/Highly State Rare—At very high risk of extinction or extirpation due to very restricted range, very few populations or occurrences, very steep declines, very severe threats, or other factors. Typically occurring in fewer than five populations.

G2/S2: Imperiled/State Rare—At high risk of extinction or extirpation due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors. Typically occurring in 6-20 populations.

G3/S3: Vulnerable/Watchlist—At moderate risk of extinction or extirpation due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors. Typically occurring in 21-80 populations.

G4/S4: Apparently Secure—At fairly low risk of extinction or extirpation due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.

G5/S5: Demonstrably Secure—At very low risk of extinction or extirpation due to a very extensive range, abundant populations or occurrences, or little to no concern from declines or threats.

G#G#/S#S# Range Rank - The actual rank of the element is within the range specified by the numbers; however, the exact status of the rarity of the element is uncertain. For example, G2G3 indicates that the rank may be either G2 or G3 and S2S3 indicates that the rank may be either S2 or S3.

State rank qualifiers:

B Breeding—Conservation status refers to Maryland's breeding population of a migratory animal.

N Nonbreeding—Conservation status refers to Maryland's non-breeding population of a migratory animal.

Key Wildlife Habitat	Ecological Community Group	Community Type	Community Type Common Name	Grank[1]
High Elevation Ridge Forest	Montane –Piedmont Oak Pine Woodland	*Pinus (pungens, rigida) - Quercus prinus / (Quercus ilicifolia) / Gaylussacia baccata Woodland*	Central Appalachian Pine - Oak / Heath Woodland	G4
Montane-Piedmont Oak-Pine Forest	Oak – Heath Forest	*Quercus prinus - Quercus rubra / Hamamelis virginiana Forest*	Central Appalachian Dry-Mesic Chestnut Oak - Northern Red Oak Forest	G5
Montane-Piedmont Oak-Pine Forest	Oak – Heath Forest	*Quercus prinus - (Quercus coccinea, Quercus rubra) / Kalmia latifolia / Vaccinium pallidum Forest*	Central Appalachian / Northern Piedmont Chestnut Oak Forest	G5
Montane-Piedmont Oak-Pine Forest	Oak – Heath Forest	*Quercus prinus - Quercus (rubra, velutina) / Vaccinium (angustifolium, pallidum) Forest*	Northern Appalachian Chestnut Oak Forest	G5
Cove Forest	Rich Cove Forest	*Acer saccharum - Fraxinus americana - Tilia americana - Liriodendron tulipifera / Actaea racemosa Forest*	Central Appalachian Rich Cove Forest	G4?
Basic Glade and Barren	Boulderfield Forest and Woodland	*Tilia americana - Fraxinus americana / Acer pensylvanicum - Ostrya virginiana / Parthenocissus quinquefolia - Impatiens pallida Woodland*	Central Appalachian Basic Boulderfield Forest (Montane Basswood - White Ash Type)	G3
Acidic Glade and Barren	Boulderfield Forest and Woodland	*Betula lenta - Quercus prinus / Parthenocissus quinquefolia Woodland*	Central Appalachian Acidic Boulderfield Woodland	G3G4
Acidic Glade and Barren	Boulderfield Forest and Woodland	*Lasallia (papulosa, pensylvanica) - Dimelaena oreina - (Melanelia culbersonii) Nonvascular Vegetation*	Central Appalachian Acidic Lichen Boulderfield	G5
Shale Barren	Shale Barren	*Pinus virginiana - Quercus prinus / Quercus ilicifolia / (Hieracium greenii, Viola pedata) Woodland*	Central Appalachian Virginia Pine / Sparse Herbs Shale Woodland	G3
Shale Barren	Shale Barren	*Quercus prinus / Quercus ilicifolia / Danthonia spicata Woodland*	Central Appalachian Chestnut Oak / Mixed Herbs Shale Woodland	G3

Appendix 9. Natural Communities and Key Wildlife Habitats at Dan's Mountain WMA

[1]Explanation of global (G) and state (S) ranks:
G2/S2: Imperiled —G2 At high risk of extinction or extirpation due to very restricted range, very few occurrences, steep declines, or other factors; S2 Imperiled in the state because of rarity or because of some factor(s) making it very vulnerable to extirpation from the state. Generally with 6–20 occurrences state-wide, and/or covering less than 250 ha (618 ac) in aggregate; or covering a larger area but threatened with destruction or modification.

G3/S3: Vulnerable — G3 At moderate risk of extinction or extirpation due to a restricted range, relatively few occurrences, recent and widespread declines, or other factors. S3 Vulnerable in the state either because rare and uncommon, or found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extirpation. Generally with 21–100 occurrences state-wide; or with a larger number of occurrences subject to relatively high levels of threat; may be of relatively frequent occurrence in specific localities or geographic parts of the state.

G4/S4: Apparently Secure— G4 Uncommon but not rare. Apparently secure, but with cause for long-term concern. S4 Uncommon but not rare, and usually widespread in the state. Some cause for long-term concern due to declines or other factors.
G5/S5: Secure— G5 Demonstrably widespread, abundant, and secure. Common, widespread, and abundant, although it may be quite rare in parts of its range, especially at the periphery; not vulnerable in most of its range. S5 Common, widespread, abundant, and secure in the state, and essentially ineradicable under present conditions.

G#G#/S#S# Range Rank - The actual rank of the element is within the range specified by the numbers; however, the exact status of the rarity of the element is uncertain. For example, G2G3 indicates that the rank may be either G2 or G3 and S2S3 indicates that the rank may be either S2 or S3.

? Inexact or Uncertain - A question mark added to a rank expresses an uncertainty about the rank in the range of 1 in either way on the 1-5 scale; for example, a G2? rank indicates that the rank is thought to be G2, but could be G1 or G3 and a S2? Rank indicates that the rank is thought to be S2, but could be S1 or S3.

Appendix 10 Planning Team Participants:

Special thanks to those who assisted with efforts to complete this comprehensive 15-year strategic plan:

Rick Latshaw, Habitat Manager, Wildlife and Heritage Service
Jim Mullan, Regional Manager, Wildlife and Heritage Service
Karina Stonesifer, Associate Director of Operations, Wildlife and Heritage Service
Harry Spiker, Game Mammal Section Leader, Wildlife and Heritage Service
Bill Harvey, Game Bird Section Leader, Wildlife and Heritage Service
Bob Long, Wild Turkey and Upland Bird Project Leader, Wildlife and Heritage Service
Gwen Brewer, Science Program Manager, Wildlife and Heritage Service
Jim McCann, State Zoologist, Wildlife and Heritage Service
Dan Feller, Natural Heritage Biologist, Wildlife and Heritage Service
John Wilson, Director, Land Acquisition and Planning
Alan Klotz, Regional Manager, Fisheries Service

Appendix 11 Plan Status:

__X__ Draft plan without input from WHS Planning Team for this WMA.
__X___Draft plan with input from WHS Planning Team incorporated.
_____ Draft plan approved by WHS Planning Team.
_____ Draft sent to Regional Team for review on _____.
_____ Final draft resubmitted to Regional Team for review on _____.
_____ Approved on _____.

Appendix 12 Recommendations for Roadside Management

Dans Mountain WMA Roadside Recommendations

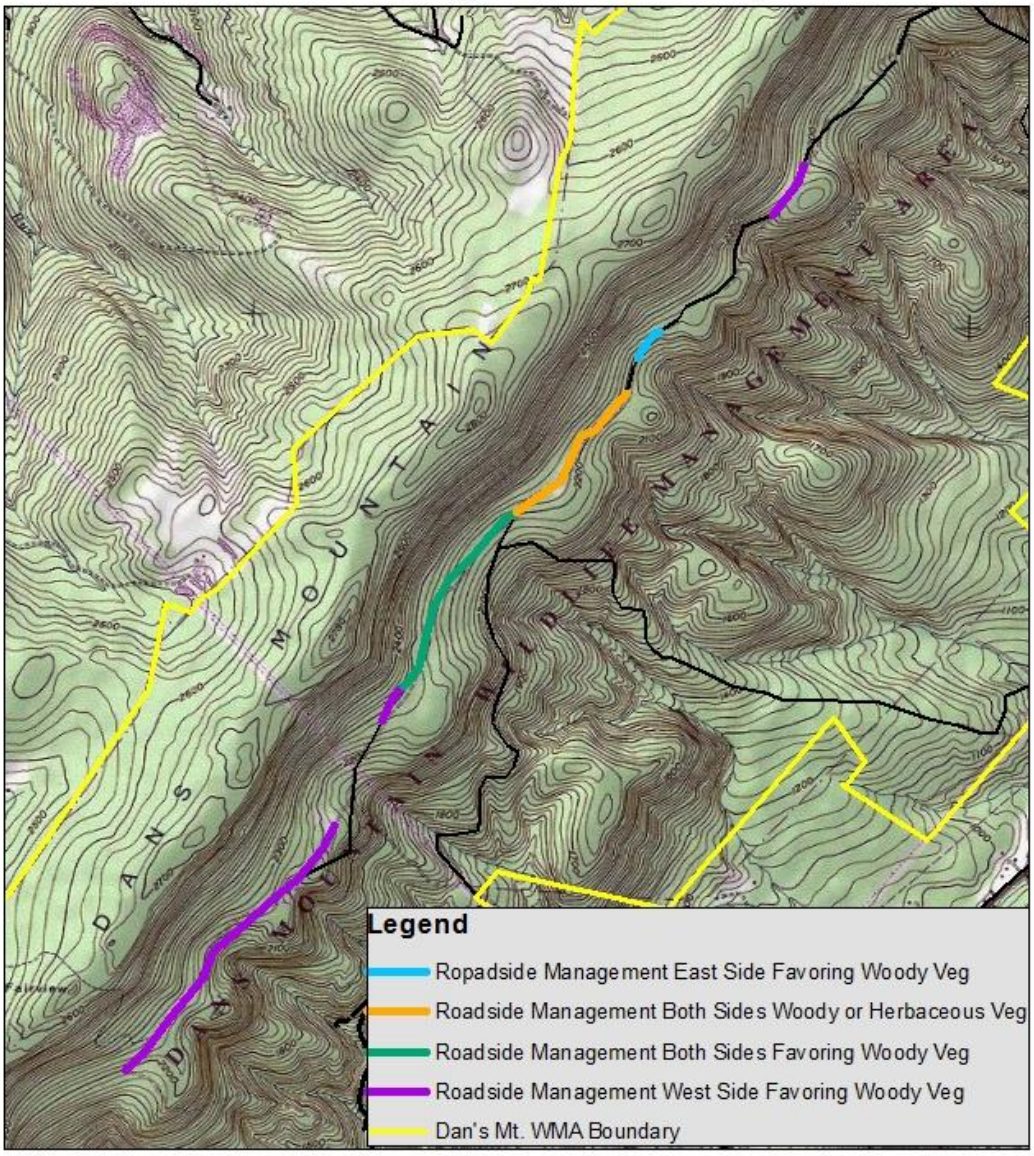
Six sections of road (Fig. 1) totaling 4.1 km in length (of 6.3 km total [65%] from the southern end to the road gate south of Water Barrel Spring) were identified where roadside management would probably not significantly impact nearby habitats and species of concern.

Of particular concern is (1) the creation of habitat conditions that would increase the likelihood of eastern cottontail dispersal into nearby areas with potential Appalachian cottontail habitat; (2) invasive plant encroachment, especially into nearby habitats of concern (e.g., old growth forest and other old (120-200+ year old) forest stands, foreknob barrens); (3) an increase in forest fragmentation and reduction in habitat connectivity between remaining areas of old growth and old forest, and (4) loss or degradation of older, uneven-aged forest habitat. The forms of management considered were daylighting and narrow ($\leq$ 33 m wide) strip cuts on one or both sides of the road. Below are recommendations for each road section:

1 - ~1478 m, south of transmission line. Limit management to the west side of road and favor woody vegetation (e.g., strip cut vs. herbaceous vegetation via daylighting).
2 - ~312 m, north of transmission line. Limit management to the west side of road and favor woody vegetation.
3 - ~1036 m, north of transmission line. Management is acceptable on either side of road, but favor woody vegetation.
4 - ~693 m, north of transmission line. Management is acceptable on either side of road.
5 - ~145 m, north of transmission line. Limit management to the east side of road and favor woody vegetation.
6 - ~391 m, north of transmission line. Limit management to the west side of road and favor woody vegetation.

With the exception of invasive plant control and possibly prescribed burns, active management along other parts of this section of road, including areas north of the road gate just south of Water Barrel Spring are not prescribed because of concerns regarding potential impacts to nearby habitats and species of concern.

Topographic Map Illustrating Dan's Mt. WMA Roadside Management Prescriptions



0 0.15 0.3 0.6 0.9 1.2 Miles

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MARYLAND DEPARTMENT OF NATURAL RESOURCES

Aerial Photo Illustrating Dan's Mt. WMA Roadside Management Prescriptions