

MARYLAND DEPARTMENT OF NATURAL RESOURCES

WILDLIFE AND HERITAGE SERVICE

WILDLIFE MANAGEMENT PLAN

For

IDYLWILD WILDLIFE MANAGEMENT AREA

15 YEAR VISION PLAN

Location

Northeast of Federalsburg, Maryland

In

**Caroline County
Maryland**

On Approximately

3,577 acres

Prepared by:

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July 2017

Introduction

The Maryland Department of Natural Resources, Wildlife and Heritage Service (WHS) is responsible for the management of approximately 123,530 acres of State property. These areas designated as “Wildlife Management Areas” (WMA) encompass 61 separate tracts of land and are located in 21 of the 23 counties in the State. They range in size from just a few acres to well over 29,000 acres, and support most, if not all, of the major habitat types found throughout Maryland. These properties make up a significant portion of the Department’s land holdings of approximately 483,453 acres.

In 1942, the State of Maryland acquired five properties totaling 520 acres in southeastern Caroline County. The land was posted non hunting, fenced and was known as the Idylwild Refuge. This area was to be used for demonstrating wildlife management habitat improvement practices and natural production of wildlife species to populate the surrounding habitats.

The original properties, which became Idylwild WMA, were purchased with Pittman-Robertson Federal Aid in Wildlife Restoration (PR) funds. This 1937 federally enacted legislation provided a reliable source of funding to state wildlife agencies through distributing the proceeds from an excise tax collected on the sale of sporting arms and ammunition. This funding source provided the financial foundation upon which most modern wildlife agencies have been constructed. Several additional land purchases were made over the years as funding and additional land parcels became available, bringing the current total acreage for Idylwild WMA to 3,577 acres.

In 2015, a planning team of WHS other DNR staff was selected to establish long-term goals and visions for the management of this property. A planning process was initiated with the development of a 15-year Vision Plan as the outcome. Once the Vision Plan is approved, WHS will develop a five-year work plan that coincides with our five-year work plan for the Federal Aid Grant time period.

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 of the State’s wildlife resources through hunting and other wildlife-dependent recreation.”

The Goals of the WMA system are:

- To maintain, enhance or protect sustainable and diverse wildlife populations.
- Create, enhance or protect appropriate habitats, natural communities and ecologically sensitive areas.
- Conserve rare, threatened and endangered species by protecting the habitats that support them.
- With a focused emphasis on hunting, provide wildlife-dependent recreation on areas with minimal capital improvements or other development.
- Provide a venue to educate citizens on the value and needs of wildlife and plant communities through outreach, demonstration and sound management.

I. Physical Description

Idylwild WMA is located in southeastern Caroline County near the Md/Del state line approximately 1 mile north of Federalsburg, Maryland between State Route 306 and Smithville Road (See attached Boundary Map). The surrounding landscape is a rural setting with forestland interspersed with agricultural fields and small rural communities. This 3,577 acre tract is approximately 80 percent dominated by mixed hardwood/pine forests and bottomland hardwood forests along the Marshyhope Creek. The other 20 percent consists of agricultural fields, early successional fields, old gravel pit ponds, and a greentree impoundment. Idylwild WMA includes varying soil types ranging from sand dunes to moist soils subjected to seasonal saturation.

Topography, Soils, Hydrology and Climate

Caroline County is located in the Atlantic Coastal Plain. Most of the county is between 40 and 60 feet above sea level. The highest point at 75 feet is about 1 mile southwest of Templeville. The lowest, 5 feet, is at Choptank. Changes in elevation are generally gradual, but in some places there are ridges and ravines. Drainage is entirely into the Chesapeake Bay. Most of the county is drained by the Choptank River and its tributaries, but a small area in the southeastern part is drained by the Marshyhope creek, one of the chief tributaries of the Nanticoke River. Because the main rivers are tidal streams, and because most of the county is nearly level or gently sloping, the overall drainage is somewhat slow. Caroline County was created in 1774 from parts of Dorchester and Queen Anne's Counties. The county derives its name from Lady Caroline Eden, wife of Maryland's last colonial governor, Robert Eden.

Caroline County has four general soil associations; Sassafras-Galestown-Fallsington association, Sassafras-Fallsington-Woodstown association, Fallsington-Woodstown-Sassafras association, and Pocomoke-Fallsington association. These are listed from mostly well excessively drained to poorly/very poorly drained soils. The humid temperate climate of Caroline County has caused most of the soils to be strongly weathered, leached, acidic, and to be comparatively low in fertility. The soil material is weathered to a great depth, because it has been exposed to climatic forces for a fairly long period of geologic time. Most of the soils in Caroline County formed from sediments transported by water, but some of the sediments were transported by wind and some by ice floes carried by glacial ice melt water. The texture of the deposits varies from coarse gravel to fine clay. Caroline County is mostly level or gently sloping. Generally, the slopes are less than 5 percent but there are small areas that have slopes of 5 to 10 percent. Most of the soils in the county have evident horizonation. The exceptions are some of the alluvial soils and some soils on dunelike formations that developed from almost pure quartz sand.

Caroline County has a humid, semi continental climate. Winter is mild, and summer is rather hot. Spring and fall are the most pleasant seasons. Most of the weather systems are eastward moving consequently the influence of the Atlantic Ocean is slight. In summer the temperatures are sometimes lowered by cool air from the water. In winter the winds from the northeast are raw and uncomfortable, and bring much of the precipitation. The Appalachian Mountains and the waters of the Chesapeake Bay have a moderating effect on the cold air from the northwest. The hottest time of the year is late July, when the average maximum afternoon temperature is between 88 and 89 degrees. The coldest time is at the beginning of February, when the average minimum is about 25 degrees. Precipitation is fairly evenly distributed throughout the year. Rainfall is more variable and less dependable in summer than in winter. Local thunderstorms are common in summer. During these showers, as much as 2 or 3 inches of rain may fall in one area within a few hours, but few miles away only a few drops may fall. In winter, precipitation occurs in the form of general storms that cover large areas. Droughts are most likely to occur in summer and rainfall maybe unequal in distribution. The annual snow fall is 10 to 20 inches, but the amount varies from year to year.

II. Capital Improvements

House

There is a small house (approximately 950 square feet in size) on Idylwild Wildlife Management Area, 3348 Houston Branch Road, Federalsburg, Maryland 21632. This building quite possibly transferred with one of the original land purchases in 1942, and may be the caretaker's residence as noted in historical USFWS Federal Aid inspection reports from the 1950's. Over the intervening years it is believed that this building has also been used intermittently as a field office, an operational house, and a rental home. This structure will continue to be used in this manner.

Barn / Shop

Behind the small house at 3348 Houston Branch Road, there is an equipment storage yard (approximately 0.3 acres in size) enclosed by a chain link fence. Within the storage yard, part of the original barn still stands, as the attached pole shed extension to the original building collapsed in the winter of 2003 after a moderate snowfall.

In FY2016, funding to remove the dilapidated original barn and construct a replacement workshop / storage building was secured through DNR's Engineering and Construction Services via Critical Maintenance funds. The current plan seeks to construct a 30' x 75' pre-engineered metal building within the same enclosed equipment storage yard. This building will have a 50-foot wide, 3-sided pole shed section with a CR-6 compacted surface for storing equipment and implements out of the weather. The remaining 25-foot wide section will be fully enclosed and constructed to serve as a workshop, and will include a concrete floor, an overhead garage door, a couple of windows, and 100 amp electric service to supply all lighting, outlets, and receptacles.

III. Unique or Sensitive Areas

Rare Plants and Animals

Inland Dune and Ridge Forest/Woodland is a rare plant community that is represented at Idylwild. Typical vegetation includes shortleaf pine (*Pinus echinata*), southern red oak (*Quercus falcata*), and water oak (*Q. nigra*) in the canopy and blueberry (*Vaccinium* spp.) and huckleberry (*Gaylussacia* spp.) in the shrub zone. This community developed along Marshyhope Creek over an extensive sand sheet, termed the Parsonsburg Sand, which covers most of lower Delmarva. The Marshyhope sand ridges are the northernmost extension of the Parsonsburg Sand. The combination of nutrient-poor and excessively well-drained sandy soils, and generally higher elevations created conditions for fire-prone plant communities. While the forested areas are typically species-poor, plant species diversity reaches its peak in recently cleared or burned tracts where rare species such as sheep laurel (*Kalmia angustifolia*), sundial lupine (*Lupinus perennis*, Threatened), hairy snout bean (*Rhynchosia tomentosa*, Threatened), or sandyland blue-eyed grass (*Sisyrinchium arenicola*, Endangered) have responded to an increase in sunlight, more abundant areas of open sands, and, concomitantly, reduced leaf litter. More common species also increase in diversity and cover; these include grasses such as little bluestem (*Schizachyrium scoparium*) and panic-grasses (*Panicum* spp.), and several native species of lespedeza (*Lespedeza* spp.) and tick-trefoil (*Desmodium* spp.). Additionally, species that are more commonly associated with barrens in western Maryland occur, including low-growing woody shrubs such as oneflower hawthorne (*Crataegus uniflora*), New Jersey tea (*Ceanothus americanus*), and Carolina rose (*Rosa carolina*).

Idylwild also holds remnants of fens (presumably once more widespread) in the vicinities of the Marshyhope Ponds. These communities are characterized by accumulated layers of organic matter and sphagnum moss, typically accompanied by subsurface flow of ground water. These wetlands vary from open sedge-dominated wetlands to shrub thickets. Typical species include silvery sedge (*Carex canescens*), Atlantic sedge (*C. atlantica*), threeway sedge (*Dulichium arundinaceum*), and carnivorous plants such as spoonleaf sundew (*Drosera intermedia*); open water zones may contain several species of bladderworts (*Utricularia* spp.). Several abandoned sandpits near the creek also have remnant bog-type habitats supporting low nutrient herbaceous plant communities. All of the ponds provide habitat for many species of plants and animals. Those sandpits that nearly dry-up by midsummer provide saturated sandy conditions favorable for bog-like formation where orchids, sedges, and insectivorous plant species dominate small areas. This unusual assemblage of plants includes several species of “carnivorous” bladderworts (*Utricularia* spp.), including the tiny terrestrial zig-zag bladderwort (*U. subulata*) and the more common free-floating plant humped bladderwort (*U. gibba*) that may dominate the pond surface in early summer. Adding to the area’s diversity are occurrences of rose pogonia (*Pogonia ophioglossoides*), yellow-eyed grass (*Xyris* sp.), and occasional thickets of sheep laurel. Many odonates also use these ponds for breeding, including the rare sphagnum sprite (*Nehalennia gracilis*); several bluet damselflies including attenuated bluet (*Enallagma daeckii*), burgundy bluet (*E. dubium*), blackwater bluet (*E. weewa*), and vesper bluet (*E. vesperum*); and Maryland’s smallest dragonfly, the elfin skimmer (*Nannothemis bella*, Endangered). Other rare dragonflies found along Marshyhope Creek and its tributaries include the sparkling jewelwing (*Calopteryx dimidiata*), mocha emerald (*Somatochlora linearis*), and Selys’ sundragon (*Helocordulia selysii*, Threatened).

One of the most intact examples of floodplain hardwood forest occurs in the Marshyhope Creek Wildland. This community is dominated by green ash (*Fraxinus pennsylvanica*), which will be extensively altered by the emerald ash borer (*Agilus planipennis*), a highly destructive introduced pest. Associated tree species include black gum (*Nyssa sylvatica*), red maple (*Acer rubrum*), swamp white oak (*Quercus bicolor*), and, nearer the channel, river birch (*Betula nigra*). Typical understory species include fringetree (*Chionanthus virginicus*), swamp dogwood (*Cornus foemina*), and winterberry (*Ilex verticillata*). Sandy bluffs on either side of the creek are dominated by thick stands of mountain laurel (*Kalmia latifolia*) and may contain loblolly pine (*Pinus taeda*), beech (*Fagus grandifolia*), white oak (*Quercus alba*), southern red oak, and mockernut hickory (*Carya tomentosa*). The herbaceous layer of the bottomland is lush and diverse including several species of smartweed (*Persicaria* spp.), sedge, and large colonies of ferns; rare species include the bog fern (*Thelypteris simulata*, Threatened). Many floodplain terrace communities in other parts of Maryland are seriously threatened by invasion of non-native, weedy species. In contrast, this floodplain is nearly weed-free. Following the snakelike course of the creek for several miles from Federalsburg to Delaware, this floodplain forest is among the best examples of this community type remaining on the Delmarva Peninsula. Studies indicate the dominant vegetation here is different from other floodplain forests in the state--suggesting this may be a unique natural community. Scattered floodplain pools, pockets of muck, small seeps and old oxbows occur on the terrace. Many larger trees on the terrace display wide spreading trunk bases (buttressing), evidence of the frequent flooding that scours the area. In appearance, these plant communities are more akin to a Piedmont or Upper Coastal Plain stream system.

Idylwild Wildlife Management Area comprises the majority of the Idylwild Important Bird Area (IBA) site. This area was recognized as an IBA by Audubon Maryland-DC due to its importance for Forest-Interior Dwelling Species and shrubland species, as well as a number of at-risk species. The floodplain forest on the WMA provides excellent habitat for Forest Interior Dwelling bird species (FIDS) such as scarlet tanager (*Piranga olivacea*), black-and-white warbler (*Mniotilta varia*), prothonotary warbler (*Protonotaria citrea*), ovenbird (*Seiurus aurocapillus*), and wood thrush (*Hylocichla mustelina*), where 16 species of FIDS breed regularly. Bald eagles (*Haliaeetus leucocephalus*) also nest within the WMA. The 776-acre bobwhite management demonstration area of young pine woodland and oldfield habitats supports good numbers of shrubland birds such as prairie warbler (*Setophaga discolor*), yellow-breasted chat (*Icteria virens*), and field sparrow (*Spizella pusilla*) as well as a northern bobwhite (*Colinus virginianus*). This site holds one of the few

remaining populations of whip-poor-will (*Antrostomus vociferous*) on Maryland's Eastern Shore - more than 20 calling birds have been heard here.

Marshyhope Creek and its associated habitats form an important wildlife corridor providing access for the free flow of both plants and animals within their natural habitat. The creek and ponds also provide breeding, nesting, and feeding habitat for resident waterbirds, aquatic mammals, migratory waterfowl, and songbirds. Some of the "riffle" areas of the creek support native freshwater mussels, an indication of high water quality. The riparian habitats also support such area-sensitive mammals as river otter (*Lutra canadensis*) and American mink (*Neovison vison*), and a variety of reptiles and amphibians. Vernal pool habitats (small, seasonally flooded wetland depressions) surrounded by mature forest 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. Management practices that protect vernal pools, including forested buffers, are needed to maintain and, in some cases, restore these aquatic habitats. The creeks and ponds within Idylwild are also important habitats for a variety of rare freshwater fish species including longnose gar (*Lepisosteus osseus*), mud sunfish (*Acantharchus pomotis*, In Need of Conservation), banded sunfish (*Enneacanthus obesus*), swamp darter (*Etheostoma fusiforme*, In Need of Conservation), and glassy darter (*E. vitreum*, Threatened). In the vicinity of the confluence of Houston Branch on the east side and Sullivan Branch on the west side Marshyhope Creek is highly braided with multiple side channels during spring flows. These channels and the main stem often contain large colonies of American bur-weed (*Sparganium americanum*), which, when submerged, is lax and colonizes the stream bottoms, providing valuable spawning habitat for blueback herring (*Alosa aestivalis*).

Historical / Cultural

Contained within the Idylwild WMA is a settlement and cemetery of the family of Richard Phillips, an African American who earned his freedom for himself and for his descendants through his service in the American Revolutionary War. He was born in 1754 and purchased 40.5 acres of land near Federalsburg known as "Dispute" after the Revolutionary War. There are remnants of the foundations of some of the homes from this community and stone markers in the cemetery, in the southern part of Idylwild WMA near the Federalsburg town boundary.

In 1779, Solomon Bartlett applied to the Maryland Provincial Government for a certificate of survey and patent for 18.5 acres which ran across Marshyhope Creek. He created an earthen dam and ponded water to power a gristmill and sawmill. This was known as the Exeter Mill. Later, the dam was raised and secured with heavy hewed timbers by John Elliott to create more water power to increase operation of the mills. The dam was wide enough to allow for horse and wagons to cross the Marshyhope to provide access to the mills. The 200 acre lake that was created was known as Idlewild Lake. In 1935 after several days of continuous rainfall the dam failed and the lake was lost. There are still remnants of the dam and timbers in and along the Marshyhope Creek.

State-designated Wildland

In 1971, the Maryland State Legislature passed the Wildlands Protection Act. Under this law, the legislature can protect certain publicly owned areas and thus preserve them for future generations. The Maryland Wildlands Preservation System is the state's counterpart to the federal government's National Wilderness Preservation System, and consists of those properties owned and managed by the Maryland Department of Natural Resources which are designated as State Wildlands by the Maryland General Assembly.

Maryland Wildlands are areas of land and water that have retained their wilderness character or contain rare or vanishing species of plant or animal life, or similar features worthy of preservation. Wildlands may include unique ecological, geological, scenic and contemplative recreational areas.

In 1997, part of Idylwild WMA was designated as a Wildland. The Idylwild Wildland is 570 acres in size, located along the Marshyhope Creek stream bottom and its tributaries. State-designated Wildlands are managed for passive recreation only, including hiking, hunting, fishing, bird watching, and nature interpretation. They provide for protection of threatened and endangered species, preserve unique ecological communities and rare habitats, and allow for wilderness research and primitive recreation.

IV. Recreational Use

Public hunting will be the primary use of this property. The pursuit of forest game species, such as white-tailed deer (*Odocoileus virginianus*) and Eastern wild turkey (*Meleagris gallopavo*) will provide the majority of hunter use days on the area. Mourning dove (*Zenaida macroura*) hunting opportunities and opportunities for upland game, such as Eastern cottontail (*Sylvilagus floridanus*), Northern bobwhite (*Colinus virginianus*), and American woodcock (*Philohela minor*) will be encouraged through habitat management. Waterfowl hunting opportunities are available in the creeks, crop fields, and the managed impoundments. Hunting opportunities will be provided for the physically challenged in the designated Disabled Accessible Public Hunting Area, where a Universal Disability Pass Permit is required. Trapping for furbearers is permitted on the area through a managed system. The trapping privileges are awarded through an annual sealed bid process. Opportunities for a number of other popular recreational activities, such as bird watching, hiking, fishing, horseback riding, canoe/kayaking and outdoor photography will be available for the outdoor enthusiasts.

In accordance with Federal Aid in Wildlife Restoration guidelines, only wildlife dependant recreation will be promoted or allowed on this particular area.

V. Long-Term Goals for this WMA

Historically, Idylwild WMA was managed initially as a refuge and demonstration area for upland wildlife habitat management practices. As the size of the WMA increased, so did the diversity of habitats that collectively came together and now represent the unique nature of this property. Management partnerships with other DNR entities have helped recognize, record, protect, and conserve sensitive resources, while strengthening habitat management initiatives to support conservation and recreational goals.

The long-term goals for this WMA include:

- Establish, maintain and manage public access for recreational use and resource protection.
- Conserve, restore and protect sensitive habitats, rare, threatened and endangered species and old growth forests.
- Promote hunting and trapping opportunities for forest game, waterfowl, furbearers, upland game, and migratory game bird species.
- Enhance or maintain diverse habitats with a focus on native species. This will center on maintaining a mix of early successional herbaceous openings, areas containing early successional woody growth, and

stands of mixed hardwoods of various ages that will be allowed to reach maturity or continue as old growth.

- Control and monitor invasive species populations as warranted on the property.

These goals provide long-term direction for the management of this property consistent with the Statewide Mission and Goal Statement for Wildlife Management Areas. Area specific goals and strategies have been developed for each Habitat Management Unit (HMU). HMUs are areas of the WMA that are identified by a planning team using biological, geographic and cultural criteria such as similar habitats types, natural/manmade boundaries, access issues, etc. to break down the WMA into smaller areas for management purposes. The success of management activities and progress toward HMU goals will be evaluated periodically and activities adjusted as appropriate.

VI. Acquisition

Idylwild WMA currently encompasses approximately 3,577 acres and the initial tracts were purchased in 1942 with Pittman-Robertson Federal Aid in Wildlife Restoration (PR) funds. The current potential to increase this acreage is predicated on the Department's policy of working with willing sellers, available funding, and Program Open Space priorities. The planning team has made the recommendation to pursue the acquisition of parcels adjacent to Idylwild WMA as they become available and if they provide wildlife habitat that supports the goals and objectives of the Vision Plan or improve operational efficiencies such as simplifying existing boundaries or improving access.

VII. Habitat Management Units

During June 2015, a Wildlife & Heritage Service planning team was formed to initiate the wildlife management area planning process for Idylwild WMA. To assist with development of specific goals and objectives for the property, HMU's were delineated based on factors including vegetative cover, sensitive species, present land use and other factors (see attached HMU Map). The delineation of these HMU's was then used to facilitate development of site-specific habitat management objectives and strategies for each unit. Each HMU is titled according to a key wildlife habitat description from the Maryland State Wildlife Action Plan (2015). Descriptions of each key wildlife habitat type can be found at:

http://dnr.maryland.gov/wildlife/Pages/plants_wildlife/SWAP_home.aspx

Habitat Management Unit # 1 Agriculture, Managed Grassland, and Managed Successional Forest

Description:

HMU 1 encompasses agricultural fields, managed grasslands, and managed successional forests consisting of approximately 315 acres. Approximately 83 acres are currently leased for farming and are typically planted in corn, soybeans, or winter wheat. The remainder of the acreage is found in field complexes and forest openings, primarily around the perimeter of the property. Various early successional habitats have been established and maintained with a focus on upland game species. Hedgerows, brushy woodlots, native grass plantings, fallow fields, and annual food plots are included in this HMU.

HMU Goal:

The goal of this HMU is to create, maintain, and/or enhance early successional habitats that benefit a variety of game species including Mourning dove, white-tailed deer, Northern bobwhite, American woodcock, Eastern cottontail, and Eastern wild turkey. A primary focus of this HMU is to provide habitat of sufficient quality and quantity to ensure that Northern bobwhite persist and, if possible, increase in number on the WMA. Management in this unit should also provide habitat for a suite of non-game birds, mammals, and pollinators that share similar habitat requirements.

HMU Objectives:

- To provide food and cover for species which require early successional habitats.
- To provide high-quality hunting opportunities for popular game species.
- Ensure that management activities do not harm the ecological integrity of the area.

HMU Strategies:

- As appropriate, establish shrub cover, native grasses, legumes, and food plots via planting or natural regeneration.
- Manage and maintain early-successional habitats via prescribed fire, mechanical methods, or selective herbicides as required depending on the conditions.
- On lands leased for agriculture, make efforts to ensure that appropriate crops are planted and managed to compliment other habitats.
- Plant crops such as sunflower and wheat and manage as appropriate to provide high-quality dove hunting opportunities.
- Conduct annual maintenance to access roads, parking areas, and signage.
- Monitor for invasive species and conduct control efforts as needed.
- Maintain naturally-vegetated buffers of at least 100 feet on each side of streams.

Habitat Management Unit # 2

Coastal Plain Oak-Pine Forest

Description:

HMU 2 totals approximately 1874 acres and is primarily comprised of closed-canopy upland mixed pine and hardwood forest. Stand ages vary but most are 40+ years old. Dominant tree species include loblolly pine (*Pinus taeda*), Virginia pine (*P. virginiana*), red oaks (*Quercus rubra*, *Q. falcata*, *Q. coccinea*), black oak (*Q. velutina*), white oak (*Q. alba*), red maple (*Acer rubrum*), and sweet gum (*Liquidambar styraciflua*). Understory vegetation is generally sparse but some areas contain American holly (*Ilex opaca*), sassafras (*Sassafras albidum*), and ericaceous vegetation such as blueberry (*Vaccinium*) and huckleberry (*Gaylussacia*). The combination of deep, excessively well-drained and nutrient poor sands created conditions for plant communities that are fire-prone and generally have high cover of nitrogen fixing herbs. Fire-tolerant pine species include pitch pine (*Pinus rigida*), pond pine (*P. serotina*), and shortleaf pine (*P. echinata*); fire tolerant oaks include blackjack oak (*Quercus marilandica*). This HMU harbors various uncommon or rare plant species that are unique to xeric sand ridge plant communities that have a history of regular fire (e.g., sundial lupine, hairy snoutbean, and sheep laurel).

HMU Goal:

The goal of this HMU is to increase plant diversity and improve habitat quality for target species while restoring the characteristics of the rare natural community called Inland Sand Dune and Ridge Woodland. Initial management will focus on decreasing canopy cover, thereby increasing the amount of sunlight reaching the forest floor, promoting native plant establishment and oak regeneration, and improving forest health. Prescribed burning will be utilized extensively to minimize undesirable tree species and encourage rare forb and shrub species. Many wildlife species will benefit from management in this HMU, including Northern bobwhite, Eastern cottontail, white-tailed deer, American woodcock, Eastern wild turkey, and a variety of non-game species.

HMU Objectives:

- To increase plant diversity and improve habitat for target species.
- To provide a demonstration site showcasing the use of silviculture and prescribed fire to meet habitat and ecological restoration goals, and to inform land managers about how to best to manage upland forests in the future.
- To provide access to high-quality hunting opportunities for popular game species.
- Ensure that management activities do not harm the ecological integrity of the area.

HMU Strategies:

- Where deemed appropriate, conduct commercial timber harvests. Thin stands to levels that will significantly decrease canopy coverage, reduce undesirable species, and increase future plant diversity (approximately 20-60 ft² residual basal area). Target tree species (blackjack oak, shortleaf pine, pond pine, and pitch pine) and snags should be retained. Sand hickory (*Carya pallida*) trees should be retained when possible, especially larger trees. Remove water oak (*Quercus nigra*), sweet gum, and red maple, as they are early invaders in these fire-dependent systems.
- In areas where few or no target trees are present (e.g., pure Virginia pine stands), nearly complete overstory removal should be considered.
- Where commercial harvests are not profitable or feasible, consider the use of non-commercial mechanical methods to remove undesirable vegetation.
- In some areas, utilize prescribed fire alone in an attempt to develop a more desirable and natural stand condition over time.
- Monitor sites annually to determine the most appropriate management strategies following the initial treatment. Prescribed fire will likely be the primary management tool, although mechanical removal and selective application of appropriate herbicides may be considered.
- Where practical, establish management blocks in a quasi-experimental manner. Vary rates of tree thinning and post-harvest management techniques among blocks within reasonable limits.
- Establish a monitoring protocol to assess the vegetation and target wildlife response to various treatments and share results with managers of public and private lands.
- Conduct annual maintenance to existing access roads, walking trails, parking areas, and signage.
- Monitor for invasive species and conduct control efforts as needed.
- Make efforts to ensure that timber harvests are conducted with minimal negative impacts such as noxious weed introduction or excessive soil disturbance.
- Maintain naturally-vegetated buffers of at least 100 feet on each side of streams and a 300-foot forested buffer around vernal pools.

Habitat Management Unit # 3

Coastal Plain Floodplain

Description:

HMU 3 totals 1113 acres and is primarily comprised of closed-canopy bottomland hardwoods. The dominant tree species of this riparian habitat are green ash, red maple, sweet gum, and sycamore (*Platanus occidentalis*). The area consists of the Marshyhope Creek and its floodplain. This area is characterized by forested wetlands, “cripples”, and small hammocks of land. Vernal pool habitats (small, seasonally flooded wetland depressions) in this HMU provide critical breeding and year-round habitat for a number of frog and salamander species. Management practices that protect vernal pools, including forested buffers, are needed to maintain and, in some cases, restore these aquatic habitats.

HMU Goal:

- The goal of this unit will be to maintain, create, and/or enhance forested habitats that benefit a variety of plant and wildlife species.

HMU Objectives:

- Maintain a well stratified, diverse, mature forest that provides habitat to insure long –term viability of plant and wildlife species. The end result for this HMU is to allow the forest to mature into an old growth forest condition.

HMU Strategies:

- Active management is not required to allow the forest to mature; therefore no active management is needed or required for this HMU but activities that promote old growth forest conditions should be considered where applicable.
- Monitor for invasive species and conduct control efforts as needed.
- Maintain maximum riparian habitat along tributaries of the Marshyhope Creek.
- Maintain a minimum 300 foot forested buffer around vernal pools.

Habitat Management Unit # 4

Artificial Wetlands- Gravel Ponds

Description:

HMU #4 totaling 275 acres, located in the northern section of Idylwild WMA, is dotted with a series of abandoned sand and gravel pits that are adjacent to Marshyhope Creek. The property formerly owned by Interstate General has been radically altered over five decades prior to State acquisition by surface mining and stockpiling and processing of extracted materials. However, over time the vegetation on the site is undergoing natural succession, becoming an unusual habitat which is a part of the surrounding forest yet topographically quite different from anything occurring naturally in the area. There are about twenty ponds on site. Most of the pits contain water year-round, and some connect to Marshyhope Creek during high water events. The size, shape, depth and aquatic habitats vary greatly. Water quality varies as well; some of the smaller pits provide naturally acidic aquatic environments (pH 4-5). Over time, these acidic ponds have been colonized and become strongholds for rare fish species that formerly occurred in the backwaters and sluggish areas of naturally acidic, free-flowing blackwater streams. As many Eastern Shore streams became ditched, less acidic due to farming

practices, and non-native predatory fish were introduced, these rare blackwater specialists were eliminated. Today, these small ponds provide critical refugia for these species. MDDNR's Resource Assessment Service developed a set of strategies to maintain and enhance their populations.

The shallow water of some pond shorelines have accumulated deep layers of organic matter and sphagnum moss that in some instances have formed extensive floating mats. These bog-like areas support a number of unusual plants including carnivorous species such as sundew and bladderworts and other species with bog-affinities such as rose pogonia (the northernmost population on the Eastern Shore). The character of these sites varies from open sedge-dominated fens to thickets of low shrubs and small trees such as highbush blueberry (*Vaccinium corymbosum*), water-willow (*Justicia americana*), and red maple. Growth of trees is limited by the permanently saturated conditions as well as beaver activity, but some areas are becoming forested wetlands.

HMU Goal:

- Protect and enhance the water quality of the ponds and Marshyhope Creek while providing habitat for rare and common plant and animal species.
- Provide recreation in the forms of hiking, canoe/kayaking, nature photography, bird watching, hunting, and fishing.

HMU Objectives:

- Create buffers of at least 100 feet around smaller ponds and the Marshyhope Creek and control illegal use of ATV's in those areas to prevent sedimentation and erosion which could impact populations of rare plants and developing bog communities.

HMU Strategies:

- Ensure that all MDNR personnel working within the Idylwild WMA are aware of these extant populations and their critical habitat; summarize location information, descriptions of potential impacts, and provide this information to all necessary personnel working within Idylwild WMA.
- Prevent removal of trees and other vegetation in the riparian areas surrounding each pond and its feeder streams.
- Prevent spraying of pesticides (known or suspected of injuring aquatic animals and plants) in or adjacent to critical habitats.
- Ensure that all future land cover removal activities (e.g. access road improvements) in areas adjacent to these ponds are conducted in a way that minimizes disturbance to these critical habitats.
- Cease traditional fish management activities by Fishing and Boating Services in these small ponds (stocking of largemouth bass and bluegill) for sport fishing.

The largest pit is deep, clear, and not nearly as acidic. As a result it does not support the same rare species as the smaller ones. It is inhabited by largemouth bass (*Micropterus salmoides*), bluegill sunfish (*Lepomis macrochirus*), black crappie (*Pomoxis nigromaculatus*), chain pickerel (*Esox niger*), white perch (*Morone americana*), yellow perch (*Perca flavescens*), common carp (*Cyprinus carpio*), gizzard shad (*Dorosoma cepedianum*) and eastern mud minnow (*Umbra pygmaea*) and is a popular fishing area. Limited fisheries management activities are conducted there by MDDNR Fishing and Boating Services, Freshwater Fisheries Division, to enhance fishing opportunities.

VIII. Appendix

Rare, Threatened, and Endangered Species at Idylwild WMA.

Key Wildlife Habitats and Natural Communities at Idylwild WMA.

Location & Boundary Map.

Topographic Map.

Soils Map.

Habitat Management Unit Map.

Appendix 1. Rare, Threatened, and Endangered Species at Idylwild WMA				
Common Name	Scientific Name	Global Rank¹	State Rank¹	State Legal Status
Plants				
Eastern straw sedge	<i>Carex straminea</i>	G5	S1S2	
Coastal butterfly-pea	<i>Centrosema virginianum</i>	G5	S2	
Common wintergreen	<i>Chimaphila umbellata</i>	G5	S3	
Smooth Tick-trefoil	<i>Desmodium laevigatum</i>	G5	S3	
Few-flowered witchgrass	<i>Dichanthelium oligosanthes</i>	G5	S2S3?	
Sheep laurel	<i>Kalmia angustifolia</i>	G5	S3S4	
Silky lespedeza	<i>Lespedeza stuevei</i>	G4?	S3	
Sundial lupine	<i>Lupinus perennis</i>	G5	S2	Threatened
Rose pogonia	<i>Pogonia ophioglossoides</i>	G5	S3	
Hairy snout bean	<i>Rhynchosia tomentosa</i>	G5	S2	Threatened
Sandyland blue-eyed grass	<i>Sisyrinchium arenicola</i>	G5?	S1	Endangered
Shining nutrush	<i>Scleria nitida</i>	GNR	S1	Endangered
Rough dropseed	<i>Sporobolus clandestinus</i>	G5	S2	
Gritty hedge-nettle	<i>Stachys aspera !</i>	G4?	S1	Endangered
Bog fern	<i>Thelypteris simulata</i>	G4G5	S2	Threatened
Fibrous bladderwort	<i>Utricularia striata</i>	G4G5	S1	Endangered
Zigzag bladderwort	<i>Utricularia subulata</i>	G5	S3	
Animals				
Mud sunfish	<i>Acantharchus pomotis</i>	G5	S2	In Need of Conservation

Great purple hairstreak	<i>Atlides halesus</i>	G4G5	S1S2	Threatened
Sparkling jewelwing	<i>Calopteryx dimidiata</i>	G5	S2	
Eastern whip-poor-will	<i>Antrostomus vociferus</i>	G5	S3S4B	
Common Name	Scientific Name	Global Rank¹	State Rank¹	State Legal Status
Festive tiger beetle	<i>Cicindela scutellaris</i>	G5	S3	
Northern lance	<i>Elliptio fisheriana</i>	G4	S3	
Attenuated bluet	<i>Enallagma daeckii</i>	G4	S3	
Common Name	Scientific Name	Global Rank¹	State Rank¹	State Legal Status
Burgundy bluet	<i>Enallagma dubium</i>	G5	S1	
Vesper bluet	<i>Enallagma vesperum</i>	G5	S3	
Blackwater bluet	<i>Enallagma weewa</i>	G5	S2	
Bluespotted sunfish	<i>Enneacanthus gloriosus</i>	G5	S3S4	
Banded sunfish	<i>Enneacanthus obesus</i>	G5	S2	
Swamp darter	<i>Etheostoma fusiforme</i>	G5	S2	In Need of Conservation
Glassy darter	<i>Etheostoma vitreum</i>	G4G5	S1S2	Threatened
Selys' sundragon	<i>Helocordulia selysii</i>	G4	S2	Threatened
Longnose gar	<i>Lepisosteus osseus</i>	G5	S2?	
*Little brown bat	<i>Myotis lucifugus</i>	G3	S1	
Elfin skimmer	<i>Nannothemis bella</i>	G4	S1	Endangered
Sphagnum sprite	<i>Nehalennia gracilis</i>	G5	S2	
*Tricolored bat	<i>Periomyotis subflavus</i>	G2G3	S1	
Coppery emerald	<i>Somatochlora georgiana</i>	G3G4	S1	
Mocha emerald	<i>Somatochlora linearis</i>	G5	S3S4	
Treetop emerald	<i>Somatochlora</i>	G4	S1	

	<i>provocans</i>			
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*Probable occurrence based on presence of suitable habitat and nearby records

!Status change proposed

¹Explanation 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.

GNR: Global rank not yet assessed.

? Indicates uncertainty that may span 2-3 ranks as defined above

State rank qualifiers:

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

¹Explanation of global (G) and state (S) ranks:

G1/S1: Critically Imperiled – G1 At very high risk of extinction due to extreme rarity (often 5 or fewer occurrences), very steep declines, or other factors. S1 Critically imperiled in the state because of extreme rarity or because of some factor(s) making it especially vulnerable to extirpation from the state; generally with 5 or fewer occurrences state-wide, and/or covering less than 50 ha (124 ac) in aggregate; or covering a larger area but highly 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. S3 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, 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.

GNR/SNR: Not Ranked – GNR Global status has not yet been assessed. SNR State status has not yet been

Appendix 2. Natural Communities and Key Wildlife Habitats at Idylwild WMA.						
Key Wildlife Habitat	Ecological Community Group	Community Type	Community Type Common Name	Grank ¹	Srank ¹	USNVC Code
Coastal Plain Floodplain	Coastal Plain - Piedmont Bottomland Forest	Liquidambar styraciflua - Liriodendron tulipifera / Linder benzoin / Arisaema triphyllum Forest	Coastal Plain / Piedmont Small-Stream Floodplain Forest	G4	S4	CEGL004418
Coastal Plain Seepage Swamp	Coastal Plain - Piedmont Acidic Seepage Swamp	Acer rubrum - Nyssa sylvatica - Magnolia virginiana Forest	Southern Red Maple - Blackgum Swamp Forest	G3?	S3	CEGL006238

assessed.

GNA/SNA: Not Applicable – GNR A global conservation status rank is not applicable because the community type is not a suitable target for conservation activities. In such cases, typically the species in the community are of domestic origin or the ecosystem is non-native, for example, ruderal vegetation, a plantation, agricultural field, or developed vegetation (lawns, gardens, etc). SNA A conservation status rank is not applicable because the community type is not a suitable target for conservation activities. Examples include community types of cultural, ruderal, planted, modified, managed, invasive, and/or non-natural vegetation.

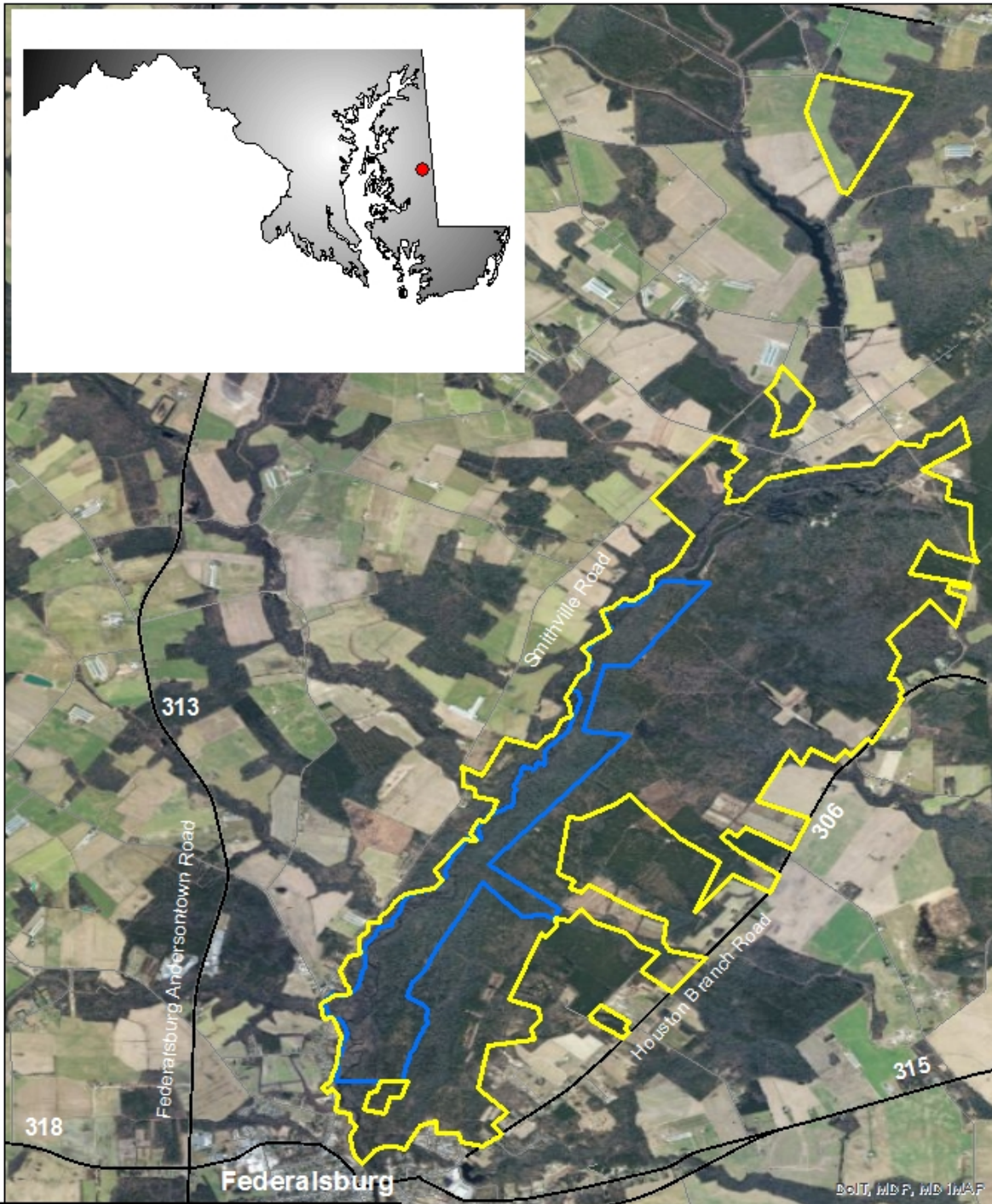
G#G#/S#S# Range Rank - The actual rank of the element is within the range specified by the numbers; however, the exact status of the rarity of the element is uncertain. For example, G2G3 indicates that the rank may be either G2 or G3 and S2S3 indicates that the rank may be either S2 or S3.

Coastal Plain Floodplain	Coastal Plain - Piedmont Bottomland Forest	Acer rubrum - Fraxinus pennsylvanica / Saururus cernuus Forest	Chesapeake / Piedmont Red Maple / Lizard's-tail Swamp	GNR	S4	CEGL006606
Coastal Plain Oak-Pine Forest	Inland Sand Dune and Ridge Woodland	Pinus virginiana - Quercus falcata - Carya pallida Forest	Inland Dune Ridge Forest	GNR	SNA	CEGL006354
Coastal Plain Oak-Pine Forest	Inland Sand Dune and Ridge Woodland	Quercus (alba, velutina, stellata, falcata) / Carya pallida / Carex pennsylvanica Woodland	Hardwood Inland Dune Ridge Forest	G1	SNR	CEGL006954
Coastal Plain Oak-Pine Forest	Oak-Heath Forest	Quercus alba - Quercus falcata - (Carya pallida) / Gaylussacia frondosa Forest	Northeastern Coastal Plain Mixed Oak / Heath Forest	G4G5	S4	CEGL006269
Artificial Impoundment and Wetland	Semipermanent Impoundment	Decodon verticillatus Semipermanently Flooded Shrubland	Swamp-loosestrife Shrub Swamp	GNR	S5	CEGL005089
Managed Successional Forest	Successional/Modified Terrestrial Forest	Pinus taeda / Liquidambar styraciflua - Acer rubrum var. rubrum / Vaccinium stamineum Forest	Early- to Mid-Successional Loblolly Pine Forest	GNA	SNA	CEGL006011
Managed Successional Forest	Successional/Modified Terrestrial Forest	Pinus taeda - Liquidambar styraciflua Semi-natural Forest	Mid- to Late-Successional Loblolly Pine - Sweetgum Forest	GNA	SNA	CEGL008462
Managed Successional Forest	Successional/Modified Terrestrial Forest	Pinus taeda - Quercus (alba, falcata, stellata) Successional Coastal Plain Forest [Provisional]	Loblolly Pine - (White Oak, Southern Red Oak, Post Oak) Successional Coastal Plain Forest	GNR	SNA	CEGL004766
Managed Successional Forest	Successional/Modified Terrestrial Forest	Pinus taeda Planted Forest	Loblolly Pine Plantation	GNA	SNA	CEGL007179
Managed Successional Forest	Successional/Modified Terrestrial Forest	Liquidambar styraciflua Ruderal Forest	Successional Sweetgum Forest	GNA	SNA	CEGL007216


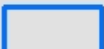
? Inexact or Uncertain - A question mark added to a rank expresses an uncertainty about the rank in the range of 1 in either way on the 1-5 scale; for example, a G2? rank indicates that the rank is thought to be G2, but could be G1 or G3, and a S2? Rank indicates that the rank is thought to be S2, but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

IDYLVILD WMA

LOCATION MAP



Legend

-  WMA BOUNDARY
-  WILDLANDS BOUNDARY

0 0.5 1 2 3 4 Miles



MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

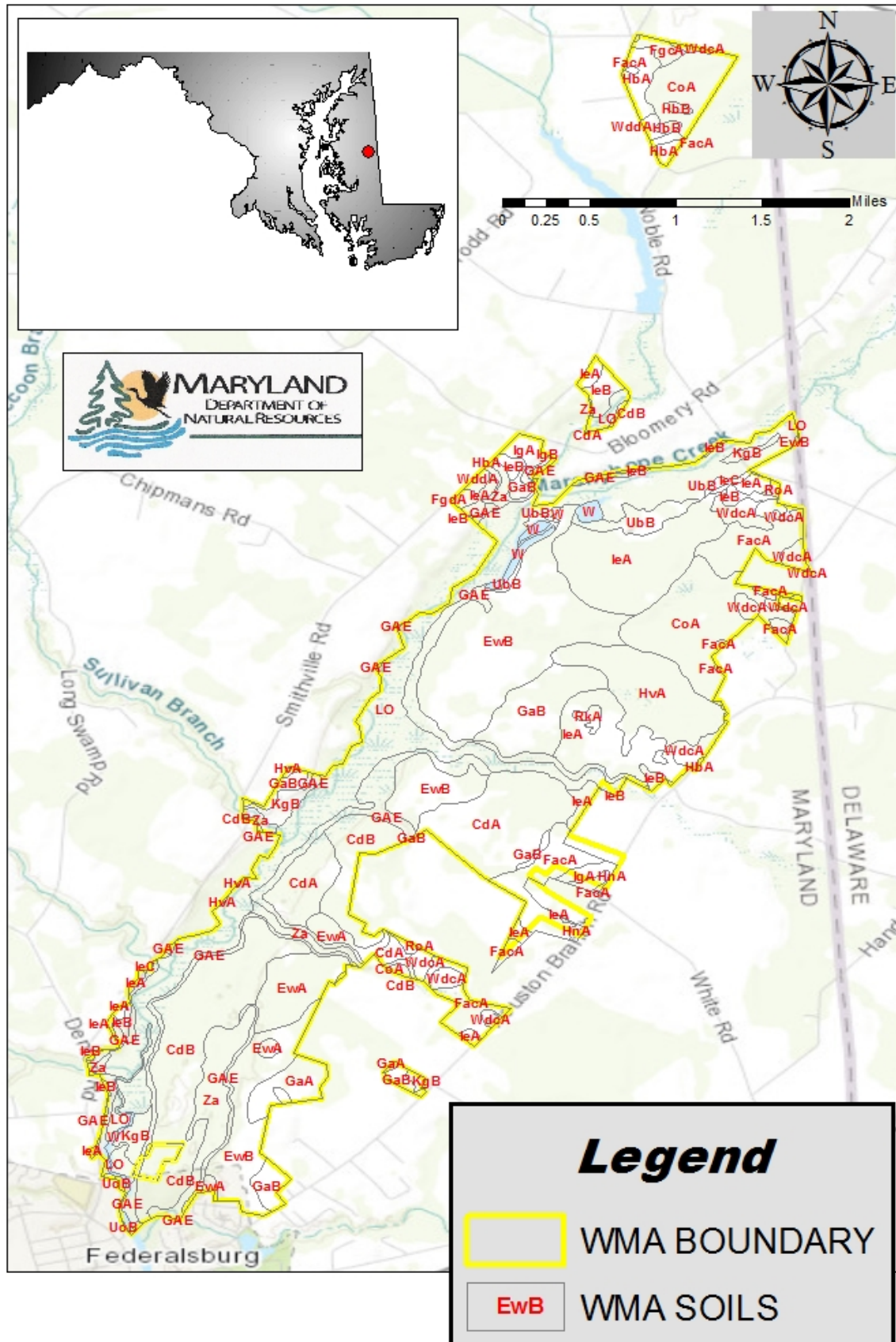


TOPO MAP



IDYLWILD WMA

SOILS MAP



IDYLVILD WMA

