

THURSTON HAWORTH RECREATION AREA MANAGEMENT PLAN

Prepared by:



MIDDLE PENINSULA CHESAPEAKE BAY PUBLIC ACCESS AUTHORITY

In cooperation with:



Virginia Coastal Zone
MANAGEMENT PROGRAM



Virginia Coastal Zone Management Program (Department of Environmental Quality)
National Oceanic and Atmospheric Administration
Dragon Run Steering Committee
The Nature Conservancy

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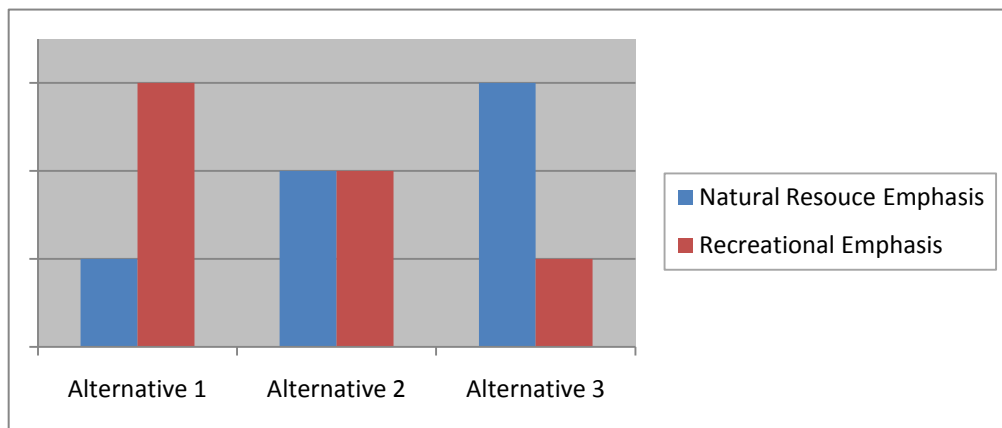
Executive Summary

The Thurston Haworth Land Management Plan (THLMP) provides guidance in managing the 167-acre Thurston Haworth Recreation Area in King and Queen County, Virginia. The Middle Peninsula Chesapeake Bay Public Access Authority (MPCBPA) purchased the Thurston Haworth Recreational Area with grants from the Virginia Coastal Zone Management Program at the Department of Environmental Quality, in order to protect coastal resources and provide public access within the Dragon Run watershed, a tributary of the Chesapeake Bay. The process of developing the plan was designed to give maximum consideration to input by stakeholders to include local government officials, private organizations, and concerned citizens.

Section One provides an overview of the property and describes the process leading to development of this comprehensive management document. MPCBPAA staff met with stakeholders early in 2008 and collected input about the types of activities envisioned on the site.

Ultimately, MPCBPAA staff devised three alternatives to address proposed uses and concerns with respect to management of significant natural and cultural resources and development of future recreational facilities.

Management Alternatives: Recreational vs. Natural Resource Emphasis



MPCBPAA staff articulated stakeholder input in this document by grouping suggested uses into three alternatives (for full report on stakeholder input, see Appendix 3). The emphasis of Alternatives 1-3 range from a focus on recreational usage and infrastructure development (Alternative 1) to a greater emphasis on natural resources preservation (Alternative 3). For instance, whereas horseback riding is a permitted use in all of the alternatives, Alternative 1 would allow for more intensive development of trail infrastructure to possibly include water troughs, jumps, and hitching posts. Additionally, more miles of trails could be constructed to

accommodate future horseback riders in the area, giving Alternative 1 a *recreational emphasis*. Conversely, Alternative 3 would provide the same or fewer miles of trails but offer no infrastructure improvements, allowing the user to experience his or her natural surroundings and giving Alternative 3 a *natural resource emphasis*.

After careful consideration of management alternatives, the Authority decided to blend Alternatives 2 and 3. A blending of alternatives is designed to offer balanced recreational use with conserving the area's unique natural and ecological characteristics. Specifically, this alternative seeks to increase multi-use recreational opportunities while protecting significant natural resources and improving land health.

The Authority plans to implement the following:

1. Establish recreational "use zones" to geographically separate activities that have a high potential for conflict and limit recreational access to conservation areas. Use zones include, but are not limited to hunting, hiking, horseback riding, and nature viewing;
2. Expand existing trail networks and create a limited number of new trails within these zones to establish linkages and accommodate compatible uses;
3. Install interpretive and directional signs and kiosks to enhance the recreational and educational experience of visitors and control visitation in high-use areas where there is an elevated potential for conflict;
4. Regulate maintenance of trails and facilities to enhance user experiences and minimize erosion;
5. Establish one or more multi-purpose, water access sites;
6. Establish larger "resource protection zones" and "special management areas" to demonstrate best management practices for managing timber and other natural resources in these areas, to include the re-planting of native tree and plant species and mixed-hardwood forests;
7. Protect wildlife and improve wildlife habitat by creating corridors and open areas for movement;
8. Maintain forested buffers along streams to preserve water quality and protect riparian resources; and

9. Identify areas that contain important riparian, wildlife, archeological, paleontological, or soil resources and limiting recreational usage in these areas.

Section Two describes objectives and management strategies for a number of recreational activities advocated by stakeholders, including horseback riding, biking, hiking, hunting, and education/interpretive activities. The section should not be interpreted to serve as a comprehensive recreational facilities plan, nor will all of these uses be permitted under the preferred management alternative. Rather, this section merely describes the range of recreational activities possible within the Thurston Haworth Recreational Area and articulates objectives and strategies for managing facilities designed to accommodate those activities.

Section Three contains appendices including the maps of the tract, the listing the names of stakeholders and the report on stakeholder input gathered during the meetings held in early 2008.

SECTION ONE: MANAGEMENT ALTERNATIVES AND ENVIRONMENTAL CONSEQUENCES

Introduction and Legislative Authorization

The Middle Peninsula Chesapeake Bay Public Access Authority (MPCBPAA) has prepared this Thurston Haworth Land Management Plan (THLMP) to provide guidance in managing the 167-acre Thurston Haworth Recreational Area located in King and Queen County in eastern Virginia. (Maps 1 and 2)

Management guidelines developed in this THLMP apply to the Thurston Haworth Recreation Area and do not address management of other Authority holdings or private lands. Virginia State Code, 15.2-6600 through 15.2-6625, known as the Middle Peninsula Chesapeake Bay Public Access Authority Act, directs the Authority to develop appropriate acquisition and site management plans for public access usage.

Establishment of the Middle Peninsula Chesapeake Bay Public Access Authority

In 2003, the Virginia General Assembly approved House Bill 619, creating the institutional framework for Middle Peninsula local governments to address public access on a regional basis and enabling the creation of the Middle Peninsula Chesapeake Bay Public Access Authority (MPCBPAA). The MPCBPAA began officially on June 13, 2003, upon the signing of the Operating Agreement by elected officials and local government administrators from member jurisdictions in the Middle Peninsula. These include the counties of Essex, Gloucester, King and Queen, King William, and Mathews and the towns of Tappahannock, Urbanna, and West Point. The MPCBPAA is a political subdivision that serves the public access needs of the encompassed communities along more than 1,000 square miles of the Virginia coastal zone. It was enabled to identify, acquire, and manage water access opportunities that could be used by the general public for passive and active activities. The MPCBPAA frequently partners with state and federal agencies, non-governmental organizations, and private citizens to promote land acquisition and the enhancement of public access in the Middle Peninsula region. Since its inception, the MPCBPAA has leveraged almost \$3 million for public access acquisitions and improvements.

The MPCBPAA recognizes that shorelines are high priority natural areas. As the Middle Peninsula becomes more densely populated and development along the waterfront intensifies, it is critical that localities conserve public access sites for all types of recreational activities. These activities associated with Chesapeake Bay rivers, embayments, tidal creeks, lakes, and marshes are vital to the citizens, economy, and natural maritime heritage of the Commonwealth. Sustainability and expansion of sites across the region are critical due to the scarcity of prime water access sites and the time required to develop new sites. The MPCBPAA continues to

acquire and manage fee simple or public access rights on parcels, such as the Thurston Haworth Recreation Area, thereby creating and/or enhancing access points to Middle Peninsula waterways.

Ecological Value of the Dragon Run Watershed

As one of the Chesapeake Bay's most pristine watersheds, the Dragon Run meanders approximately 40 miles through vast, untouched swamp forest and woodland communities (Belden et al. 2001). At 89,771 acres, it envelops remote portions of four Eastern Virginia counties – Essex, King and Queen, Middlesex, and Gloucester and is connected, by its creation of the Piankatank River, to the Chesapeake Bay (Dragon Run Steering Committee 2003a). The watershed is mainly undeveloped and composed almost entirely of expansive, privately-owned floodplains, baldcypress swamps, upland forest systems, and open agricultural fields. Approximately 80% of the watershed is forested, compared to a statewide average of less than 70% (Middle Peninsula Planning District Commission 2002; Dragon Run Steering Committee 2003b; Virginia Department of Conservation and Recreation 2003). Only about 15% of the watershed is open to agricultural uses; however, the majority of the Dragon Run is zoned for agriculture, with varying restrictions and allowances across county boundaries. Additionally, about 4% of the watershed is open water, and only 1% is urbanized (Middle Peninsula Planning District Commission 2002; Dragon Run Steering Committee 2003b; Virginia Department of Conservation and Recreation 2003).

The Dragon Run watershed plays an important ecological role as part of a 225,000 acre forested block between the Pamunkey and Rappahannock Rivers (The Nature Conservancy 2003). This block represents the largest relatively non-fragmented forest in the lower Chesapeake Bay (Belden et al. 2001). The Dragon supports five rare, natural communities, including the non-tidal baldcypress-tupelo swamp, tidal baldcypress-tupelo swamp, tidal baldcypress woodland, fluvial terrace woodland, and the tidal freshwater marsh (Belden et al. 2001; Fleming et al. 2001; Belden et al. 2003; Dragon Run Steering Committee 2003a, b; Fleming et al. 2006). The baldcypress-tupelo swamp represents the northernmost non-tidal and tidal occurrence of the natural community along the eastern coast of the United States (Belden et al. 2001; The Nature Conservancy 2001; Dragon Run Steering Committee 2003a, b). While harvest of mature baldcypress trees occurred historically, it is no longer active. As a result, many trees in the Dragon Run watershed range from 150 to more than 400 years of age.

The Dragon's habitat has been estimated to support between 14 and 25 state and globally rare plants and animals (Belden et al. 2001; Belden et al. 2003; Dragon Run Steering Committee 2003a, b). Rare plants include the cuckoo flower, cypress-knee sedge, yellow water buttercup,

pinebarren ticktrefoil, red turtlehead, and river bulrush (Belden et al. 2001; Fleming et al. 2001; The Nature Conservancy 2001; Belden et al. 2003; Dragon Run Steering Committee 2003a, b; Fleming et al. 2006). The piebald white tail deer, masked bobwhite, tiger salamander, great purple hairstreak, southern pitcher-plant mosquito, cypress sphinx, Selys' sundragon, blackwater bluet, fine-lined emerald, and robust baskettail are just some of the rare animals that have been observed in Dragon Run (Belden et al. 2001; The Nature Conservancy 2001; Belden et al. 2003; Dragon Run Steering Committee 2003a, b). The heavily-protected bald eagle, which was delisted from the Federal List of Endangered and Threatened Wildlife and Plants on June 28, 2007, also has been sighted frequently throughout the watershed.

In addition to rare natural communities, plants, and animals, the Dragon Run supports a diversity of freshwater and estuarine fishes, aquatic macroinvertebrates, and freshwater bivalves (McIninch et al. 2003). At least 45 fish species and 6 macroinvertebrate species have been recorded to-date. Based on his investigations of the watershed's aquatic communities, one researcher observed that the Dragon Run is a "100 year-old time capsule" similar to coastal plain streams of the Chesapeake Bay in the early 1900's (Garman 2003). If permanently protected as a non-fragmented ecosystem, the watershed will continue to support numerous plant and wildlife populations. Additional acquisitions, such as like the Thurston Haworth Recreation Area, are necessary to further conservation efforts by linking a network of currently-protected forest and swamp lands with acreage adjacent to them.

The importance of the Dragon Run watershed is supported by its identification as a high priority site for protection efforts in several comprehensive conservation plans. In "Natural Areas of the Chesapeake Bay Region: Ecological Priorities" (Jenkins 1974), a comprehensive report published by the Smithsonian Institute that ranked 232 areas in the Chesapeake Bay watershed based on their ecological value, the Dragon Run watershed was ranked second overall and first in Virginia due to its swamp forests, hardwoods, and organismal diversity. The Nature Conservancy, which at any point in time owns and manages between 500 and 4,000 acres in the watershed, designated the Dragon Run an "Aquatic Portfolio", a "10-Year Action Site", and a "Significant Conservation Area" with an abundance of native fish species and excellent water quality in "The Chesapeake Rivers Site Conservation Plan" (2001) and its "Chesapeake Bay Lowlands Ecoregional Plan" (2003). Additionally, the Virginia Conservation Lands Needs Assessment developed by the Virginia Department of Conservation and Recreation, Division of Natural Heritage, which identifies priority cores, corridors, and stream conservation units in Virginia, ranked 58% of the watershed as a priority area for habitat conservation. The Virginia Natural Heritage Program and NatureServe have classified Dragon Run as a high priority area for acquisition and protection. The "Virginia Outdoors Plan" also identifies Dragon Run as an exceptional area for outdoor recreation, particularly for its kayaking and canoeing opportunities and its abundance of natural heritage resources (Virginia Department of Conservation and Recreation 2007).

Recognizing the importance of the Dragon Run watershed locally and regionally, the Virginia Coastal Zone Management Program, the Dragon Run Steering Committee, and the Middle Peninsula Planning District Commission entered into a partnership to address the future of the watershed. From this collaboration, the Dragon Run Watershed Special Area Management Plan (SAMP) was developed in 2001. The Dragon Run SAMP advocates for a comprehensive approach to addressing the future of the watershed that balances land use regulations, voluntary agriculture and forestry program participation, education, outreach, and land conservation. Three of the four counties in the watershed have adopted the Dragon Run SAMP as an amendment to their comprehensive plans. Special zoning overlays are currently being developed for each county that will strengthen natural resource protection in the watershed.

Purpose of and Need for Action

The purpose of this THLMP includes developing a thorough, practical management document, for the public, that defines management policies and actions and describes management goals and objectives for the Thurston Haworth Recreation Area.

The planning process for the THLMP began on February 12, 2008 with the first of seven stakeholder meetings to discuss the strengths, weaknesses, opportunities, and threats for the Thurston Haworth Recreation Area. Stakeholders (identified in Appendix 2) were introduced to the Coastal and Estuarine Land Conservation Program (CELCP) at the National Oceanic and Atmospheric Administration (NOAA) and were asked to brainstorm a list of uses they would like to see or not see on the property, following established CELCP regulations. The guiding principle was the need to allow for a range of passive and low-impact uses associated with land- and water-based ecosystems while protecting the surrounding habitat core and maintaining traditional uses in the Dragon Run watershed. Staff incorporated the input from the stakeholders into a report shown in Appendix 3.

In addition to landowner stakeholders, the MPCBPAA received guidance from a variety of sources to assist in the development of the THLMP, including enabling legislation, CELCP federal guidelines, input from MPCBPAA members, resource experts, Dragon Run SAMP representation and land management agencies. This plan represents the collaboration and communication of many diverse groups including local citizens, non-governmental organizations, and a number of local, state, and federal government agencies.

Thurston Haworth Recreation Area History

According to the deed, the Thurston Haworth Recreation Area lies along the north line of State Route 608 in King and Queen County and contains 167.19 acres of land (Map 1). The property

has 1000 feet of roadside frontage, approximately 10 acres of which is suitable for rural residential development. Of its 167 acres, 69 acres are palustrine forested wetland and greater than 88 acres are raw timberland forest. Significant stream frontage also secures public access to the waterways within and adjacent to the Dragon Run. Historically, the site has been managed for commercial grade saw timber, primarily loblolly pine. The site is characterized by sandy, loamy soils with relatively level topography (Map 2). According to the “Soil Survey of King and Queen County, Virginia”, developed by the Natural Resources Conservation Service and the U.S. Department of Agriculture, in cooperation with Virginia Polytechnic Institute and State University (2007), the soils adjacent to the Dragon Run, in the flood plain, and further upland on the Thurston Haworth Recreation Area consist of an Emporia-Slagle-Rumford complex and a State Fine Sandy Loam. Both soil types are well drained, well suited for farmland, and moderately suited for woodland. Overall, they support forest growth dominated by loblolly pine, Virginia pine, sweetgum, southern red oak, and yellow poplar. The Thurston Haworth Recreation Area is located within a high priority habitat core and corridor, as identified in the Virginia Conservation Lands Needs Assessment, making it a priority for habitat conservation and acquisition.

Thurston Haworth Recreation Area Restrictions

The acquisition of all 167.19 acres of the Thurston Haworth Recreation Area was funded by a Coastal and Estuarine Land Conservation Program grant from the National Oceanic and Atmospheric Administration under the Coastal Zone Management Act of 1972, as amended. The grant was administered by the Virginia Coastal Zone Management Program at the Department of Environmental Quality and is subject to the terms of such grant. Specifically, the deed conveyed to the MPCBPAA contains the following language:

“This property has been acquired with funds from a Federal financial assistance award. Title to the property conveyed by this deed shall vest in the Middle Peninsula Chesapeake Bay Public Access Authority subject to disposition instructions from NOAA or its successor agencies. The property shall be managed for conservation purposes and shall be consistent with the purposes for which it was entered into through the Coastal and Estuarine Land Conservation Program. The Middle Peninsula Chesapeake Bay Public Access Authority shall not dispose of, encumber its title or other interests in, or change the use of this property without approval of NOAA or its successor agencies.”

Acquisition of the Thurston Haworth Recreation Area supports the MPCBPAA’s guiding principle to provide access opportunities to the waterways of Virginia’s Middle Peninsula. It also upholds the CELCP mission to protect coastal and estuarine lands considered important for their ecological, conservation, recreational, historical or aesthetic value. Additionally, conservation of the property supports the Virginia Coastal Zone Management Program’s

commitment to protect geographic areas of particular concern in the coastal zone, as well as the goals of the Dragon Run SAMP (see <http://www.mppdc.com/projects/factsheet2.pdf>) to protect the natural resources and maintain traditional uses, while protecting property rights. The Thurston Haworth Recreation Area will be managed in a manner that encourages long-term, passive and low-impact public access, resource protection, and sustainable traditional uses that adhere to CELCP federal guidelines. The following language in the CELCP Final Guidelines from June 2003 defines those uses which are or are not consistent with the purposes for which the Thurston Haworth Recreation Area was entered into the program:

“Activities that may be considered to be consistent with conservation purposes include: resource protection; restoration and enhancement, such as vegetative erosion control or restoration of natural water flow to the area; recreational activities, such as: hiking, hunting, and fishing; access for swimming, canoeing, kayaking; and research and educational activities. Construction of facilities on a minor scale, such as restrooms or boardwalks, to facilitate these activities and/or for the purpose of minimizing harm to coastal resources due to public access and recreation may be allowed depending on the proposed use of the property and the site environment.

Activities that are considered to be inconsistent include: active agricultural or aquaculture production; shoreline armoring or other hard erosion control structures; construction or expansion of roads, buildings or facilities except as noted above, or such facilities for active recreation as sports facilities, water parks, playgrounds, or similar uses.”

Management of the Thurston Haworth Recreation Area will be consistent with the CELCP Final Guidelines from June 2003 to protect the unique ecological characteristics of the property and the surrounding habitat core for the enjoyment of present and future generations. Adherence to CELCP guidelines will ensure that traditional uses in the watershed, such as fishing, hunting, and forestry management and current passive and low-impact recreational trends and opportunities are also maintained to the maximum extent possible.

Management Use and Alternatives

Through an integrated planning process involving stakeholder participation, the MPCBPAA staff developed several alternatives for managing the Thurston Haworth Recreation Area’s natural, cultural, and recreational resources. The ultimate objective of these alternatives is to preserve and protect the unique ecological characteristics of the Thurston Haworth Recreation Area for the enjoyment of present and future generations, while maintaining current recreational trends and opportunities to the maximum extent possible. Each alternative emphasizes a combination of proposed uses based on a thorough consideration of the following factors:

- The level of impact proposed uses and alternatives are likely to impose on the health and integrity of the area's natural and cultural resources;
- The potential for conflict between uses as well as the nature of the anticipated conflict;
- The extent to which alternatives and uses advance the guiding principles and resource protection concerns of the MPCBPAA, including, but not limited, to how well each fulfills the purpose of the Thurston Haworth Recreation Area acquisition and addresses the need for the project; and
- The extent to which alternatives and uses meet all local, state and federal laws and regulations controlling the use of the property.

The emphasis of each of the management alternatives is described in detail below and summarized in Chart #1. When considered as a whole, the emphasis of these alternatives, as well as the objectives and implementation strategies associated with them, reflect the range of uses to which the Thurston Haworth Recreation Area could be put. These uses range from intensive management of the area's natural resources to intensive and extensive development of recreational opportunities, meaning both the *type of facilities* developed and the *number of facilities* or *total acreage* devoted to a particular activity. For instance, whereas horseback riding is a permitted use in all of the alternatives, Alternative 1 would allow for more intensive development of trail infrastructure to possibly include water troughs, hitching posts and other equestrian amenities. Additionally, more miles of trails could be constructed to accommodate future horseback riders in the area, giving Alternative 1 a *recreational emphasis*. Conversely, Alternative 3 would provide the same or fewer miles of trails but offer no infrastructure improvements, allowing the user to experience his or her natural surroundings and giving Alternative 3 a *natural resource emphasis*.

Chart 1: Management Alternatives: Recreational vs. Natural Resource Emphasis

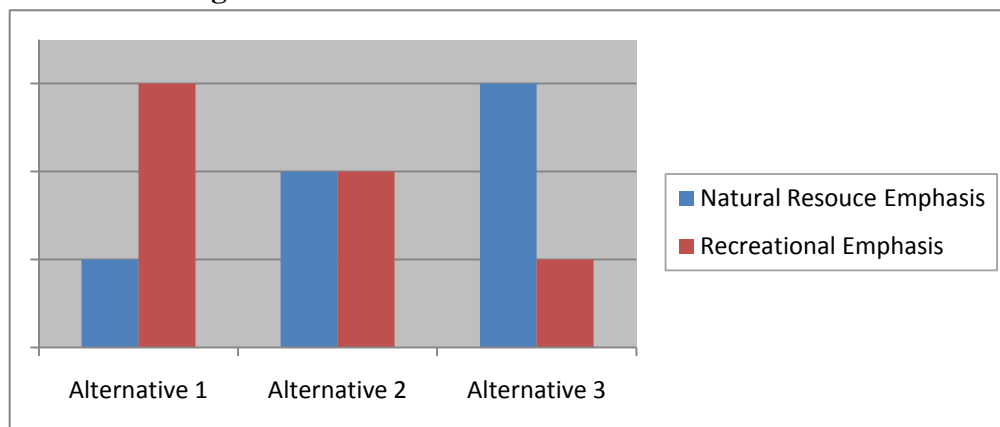


Chart 1 illustrates an important principle that guided the conception of these alternatives: Recreational opportunities vary inversely with natural resource management imperatives. Specifically, the emphasis of the alternatives, meaning the amount of land reserved for recreational purposes and/or the variety or recreational opportunities provided, decreases from Alternative 1 to Alternative 3 as natural resource management and environmental protection concerns are increasingly emphasized.

At first glance, Chart 1 appears to suggest that natural resource management and the provision of recreational opportunities are mutually exclusive. This, of course, is not necessarily the case. Although some recreational activities conflict with resource protection imperatives, other types of recreation enhance resource management strategies and vice versa. Nevertheless, these alternatives reflect the belief that only a certain number of activities and uses are possible within an area the size of the Thurston Haworth Recreation Area, and that small public lands cannot provide as many public benefits or meet as many expectations as larger holdings.

Description of Alternatives

The emphasis, objectives, and implementation measures for each of the alternatives are described below.

Alternative 1

Emphasis:

The emphasis of this alternative is to maximize multiple-use, recreational opportunities while conserving and protecting natural resources to the maximum extent possible.

Objectives:

Objectives for this alternative attempt to satisfy the increasing demand for a variety of recreational opportunities in the area. A variety of multi-use, recreational activities will be permitted except in specific areas where these activities conflict with the need to protect significant natural and cultural resources.

Recreational activities will be concentrated in certain areas or “zones” to limit conflict among user groups and mitigate dispersed recreational impacts. Traditional activities such as hunting, fishing, and hiking will be preserved and enhanced to give users a more enjoyable experience. Opportunities for additional activities such as mountain biking, horseback riding, limited-access paddling, and educational/interpretive activities will be created by improving existing facilities and developing new infrastructure.

A small number of “no impact” or “special management” areas will be identified to establish sound natural resource management practices and limit certain recreational activities that are incompatible with these practices. In addition, certain recreational activities may not be permitted within environmentally sensitive areas.

Implementation:

Implementation of this alternative will require the creation and expansion of recreational facilities to include the following actions:

1. Establishing recreational “zones” to geographically separate activities that have a high potential for conflict and limit recreational access to a small number of resource conservation areas;
2. Expanding existing trail networks and creating new trails within these zones to establish linkages and accommodate compatible uses wherever possible;
3. Installing interpretive, directional, and informational signs and kiosks to enhance the recreational and educational experience of visitors, demarcate site boundary to prevent trespass, and control visitation in high-use areas where there is an elevated potential for conflict;
4. Providing regular maintenance of trails and facilities, including access roads and parking lots, to enhance user experiences and minimize erosion;
5. Constructing one or more new boardwalks with kayak launch or similar feature to provide access the Dragon Run;
6. Establishing several “no impact zones” or “special management areas” to demonstrate best management practices for managing timber and other natural resources in these areas.

Alternative 2

Emphasis:

The emphasis of this alternative is to increase multi-use recreational opportunities while protecting significant natural resources and improving land health.

Objectives:

Objectives for this alternative attempt to balance the increasing demand for recreational opportunities with the need to conserve natural resources and restore areas that have been impacted by development. Resource management and recreational activities will be concentrated in certain areas or “zones” to minimize conflict and mitigate dispersed impacts to significant natural and cultural resources.

Traditional recreation such as hunting, fishing, and hiking will be preserved and expanded as long as they do not conflict with ongoing natural resource management activities. Additional opportunities such as horseback riding, mountain biking, limited access paddling, and environmental/interpretive activities will be created with a bias towards low- to moderate impact recreational uses.

This alternative will enhance the experience of visitors while limiting access to a larger number of “no impact” and “special management” areas as well as areas containing important species and natural communities. Active monitoring of land health and user impacts will be needed to determine if resource management activities and efforts to preserve the unique natural characteristics of the area are compatible with recreational usage of the Thurston Haworth Recreation Area. Monitoring will also determine the extent to which timber harvesting and multi-use recreational activities impact ecological resources.

Implementation:

Implementation of this alternative will require the expansion of recreational facilities and natural resource protection areas to include the following actions:

1. Establish recreational “use zones” to geographically separate activities that have a high potential for conflict and limit recreational access to conservation areas. Use zones include, but are not limited to hunting, hiking, horseback riding, and nature viewing;
2. Expanding existing trail networks and creating a limited number of new trails within these zones to establish linkages and accommodate compatible uses;

3. Installing interpretive and directional signs and kiosks to enhance the recreational and educational experience of visitors, demarcate site boundaries to prevent trespass, and control visitation in high-use areas where there is an elevated potential for conflict;
4. Providing regular maintenance of trails and facilities, including access roads and parking lots, to enhance user experiences and minimize erosion;
5. Construct one boardwalk with kayak launch or similar feature to provide access the Dragon Run;
6. Establishing larger “no impact zones” and “special management areas” to demonstrate best management practices for managing timber and other natural resources in these areas;
7. Protecting wildlife and improving wildlife habitat by creating corridors and open areas for movement;
8. Maintain forested buffers along streams to preserve water quality and protect riparian resources.
9. Monitoring for and managing invasive species on site

Alternative 3

Emphasis:

The emphasis of this alternative is to maximize the conservation of natural resources on the Thurston Haworth Recreation Area while maintaining recreational opportunities to the greatest extent possible.

Objectives:

The objectives for this alternative give natural resource considerations priority over the creation of multi-use recreational opportunities. Resource management practices will attempt to restore land health and preserve the natural character of the area while enhancing low-impact recreational opportunities.

Traditional recreation such as hunting, fishing, and hiking will be preserved but limited to areas where these activities are compatible with resource management strategies. Recreational usage of environmentally sensitive areas or areas where significant ecological resources exist will be restricted or prohibited. Educational and interpretive opportunities will be expanded to expose visitors to the unique natural and cultural characteristics of the Thurston Haworth Recreation Area and efforts to preserve the area for the enjoyment of future generations. A limited number

of opportunities for biking, horseback riding, and/or limited-access paddling may be created if evidence suggests that developing these new facilities will not significantly impact environmental resources or natural resource management.

This alternative will seek to educate visitors about resource management activities taking place in “special management” areas, environmentally sensitive areas, and places where land managers are re-establishing native, natural communities. Aggressive monitoring of environmental indicators will be needed to determine if resource management activities are improving wildlife habitat, preserving and enhancing water quality, and restoring the health of land impacted by development. Monitoring will also determine the extent to which traditional activities such as timber harvesting, hunting, and fishing affect biological diversity and wildlife populations, as well as the nature of those impacts.

Implementation:

1. Confining recreational activities to appropriate areas and restricting or prohibiting recreational access to environmentally sensitive areas by creating “recreation buffer zones”.
2. Maintaining existing trail networks and creating a limited number of new trails where appropriate to establish linkages and accommodate compatible uses;
3. Installing interpretive and directional signs and kiosks to enhance the recreational and educational experience of visitors, demarcate site boundaries to prevent trespass, and control visitation in high-use areas where there is an elevated potential for conflict;
4. Providing regular maintenance of trails and facilities to enhance user experiences and minimize erosion;
6. Encourage walking access to the water
7. Identifying areas that contain important riparian, wildlife, archeological, paleontological, or soil resources and limiting recreational usage in these areas.
8. Establishing “no impact” and “special management areas” throughout the Thurston Haworth Recreation Area to demonstrate best management practices for restoring land health in these areas;
9. Using a high percentage of native tree and plant species to restore areas impacted by development;

10. Protecting wildlife and improving wildlife habitat to the maximum extent possible by creating corridors and open areas for movement;

11. Maintain forested buffers along streams to preserve water quality and protect riparian resources.

12. Monitoring and managing invasive species on site

Environmental Considerations

None of the alternatives described above are inherently detrimental to the area's natural and cultural resources. Although Alternatives 1 and 2 offer some potential for impacts to natural resources by allowing for increased recreational use and some timber extraction activities, adverse effects can be controlled through implementation of sound management practices. In Alternative 3, timber removal and "thinning" operations will be limited to only what is necessary to conserve and best manage natural resources, and only low-impact recreational opportunities consistent with these objectives will be permitted.

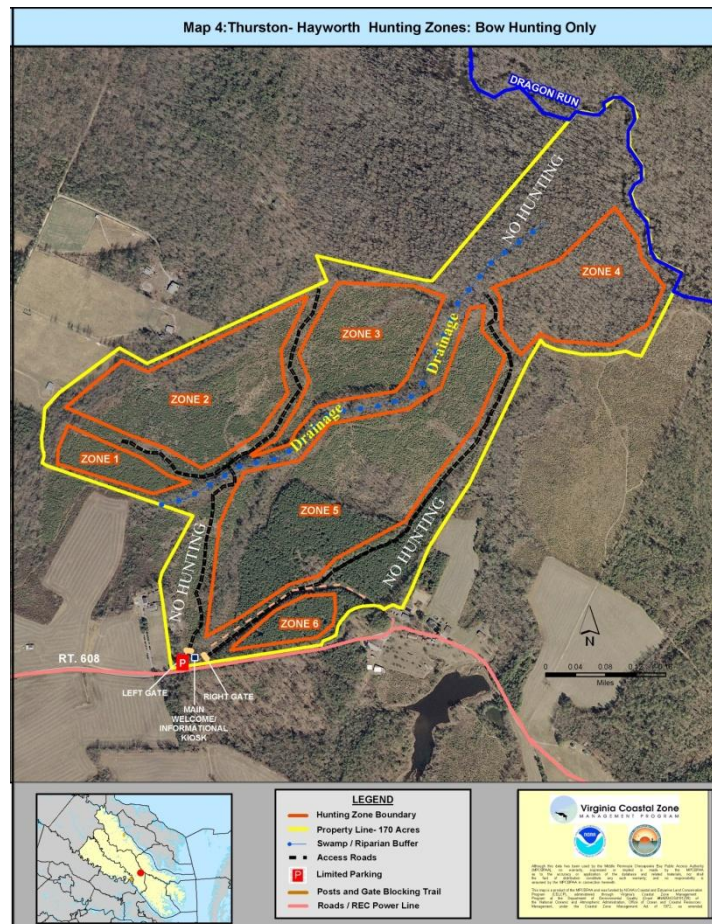
Nevertheless, the MPCBPAA shall implement active management practices to fully protect natural resources and minimize impacts associated with increased usage. As deemed necessary by the Authority, management practices will address issues associated with recreational usage such as on-site sewage disposal, trash pick-up at parking lots and trailheads, and maintenance of trails and facilities. Additionally, the MPCBPAA will seek to procure personnel and equipment from resources, such as the Coastal Program Technical Assistance and NOAA funds, to implement natural resource management strategies and conduct research. The condition of the area's natural environment will depend on how well these facilities are maintained and how effectively management tasks are carried out.

Selected Alternative

At the February 13, 2010, meeting of the Authority, the MPCBPAA discussed and weighed the merits of each of the alternatives. The Board carefully considered the emphasis, objectives, and implementation strategies for each alternative and considered input provided at an earlier stakeholder meeting by concerned citizens, resource specialists, and other interested parties. The MPCBPAA selected Alternative 2, but planned to implement when appropriate specific strategies from Alternative 3. This "blending" of Alternatives 2 and 3 allows the MPCBPAA to pursue an approach to land management that emphasizes specific conservation strategies and passive recreational activities to be determined as the implementation process evolves.

The Authority will:

1. Establish recreational “use zones” to geographically separate activities that have a high potential for conflict and limit recreational access to conservation areas. Use zones include, but are not limited to hunting, hiking, horseback riding, and nature viewing; At the October 2008 meeting of the Authority, an interim “use zone map was approved for bow hunting only”



Interim Use Zone Map: October 2008

2. Expand existing trail networks and create a limited number of new trails within these zones to establish linkages and accommodate compatible uses;
3. Install interpretive and directional signs and kiosks to enhance the recreational and educational experience of visitors and control visitation in high-use areas where there is an elevated potential for conflict;
4. Regulate maintenance of trails and facilities to enhance user experiences and minimize erosion;

5. Establish one or more multi-purpose, water access sites;
7. Establish larger “resource protection zones” and “special management areas” to demonstrate best management practices for managing timber and other natural resources in these areas, to include the planting of native tree and plant species and mixed hardwood forests;
8. Protect wildlife and improve wildlife habitat by creating corridors and open areas for movement;
9. Maintain forested buffers along streams to preserve water quality and protect riparian resources; and
10. Identifying areas that contain important riparian, wildlife, archeological, paleontological, or soil resources and limiting recreational usage in these areas.

The Middle Peninsula Chesapeake Bay Public Access Authority will cooperate with all appropriate local, state, and federal authorities and agencies to implement the preferred management system and ensure that the process is collaborative and establishes practices that are consistent with the goals of the Thurston Haworth Recreation Area acquisition.

SECTION TWO: OUTDOOR RECREATION OPPORTUNITIES AND MANAGEMENT

Introduction

This section describes the range of current and proposed recreational activities that may take place on the Thurston Haworth Recreation Area, as well as the objectives and strategies for managing these activities in the future.

Recreation Opportunities

The Thurston Haworth Recreation Area provides attractive settings for a variety of opportunities for passive and low-impact, dispersed, non-motorized outdoor recreation and nature appreciation. A number of natural attributes add to the attractiveness of the Thurston Haworth Recreation Area for visitors, including: natural beauty and tranquility; spectacular views, especially along the Dragon Run; unusual geological formations; variety in terrain, flora and fauna; and wildlife viewing opportunities. Recreational activities must be managed to ensure compatibility with wilderness conditions and to ensure uses are not detrimental to natural and cultural resources and are consistent with visitor expectations.

A detailed inventory of some potential recreational activities suggested by stakeholders is available in Appendix 3 of this document. This inventory includes activities such as walking, bicycling, horseback riding, bow hunting, fishing, paddling, educational outreach, scientific research, habitat management, and nature observation.

A survey of trails and facilities revealed that a number of unmarked and unmapped trails and routes used by local residents currently traverse the Thurston Haworth Recreation Area (Map 3). The existing informal trail system may be redesigned and enhanced to provide access to most of the property for low levels of use. However, concerns exist with respect to the ability of the informal trail network to sustain increased levels of use that could develop as a result of designating the area a public access site. Stakeholders have also voiced concerns about the potential conflicts between trail users including hikers, hunters, horseback riders, and mountain bikers.

In addition to the current recreational opportunities shown in Map 3, a number of facilities improvements should be made to accommodate proposed recreational activities and potentially expand current opportunities including horseback riding, hiking, mountain biking, hunting, fishing, and sightseeing.

Recreation Objectives

The following broad outdoor recreation objectives provide direction to the variety of possible recreation activities available to visitors:

1. Maintaining the remote, roadless, non-motorized wilderness qualities of the Thurston Haworth Recreation Area while allowing for a range of compatible, low-impact, public recreation opportunities that may be conducted from dawn until dusk. These may include activities such as walking, hiking, horseback riding, bicycling, fishing, paddling, nature observation, photography, educational outreach, scientific research, and habitat and wildlife management;
2. Ensuring that recreational uses are managed and monitored for potential impacts to the natural, cultural, and historic values of the site, including wildlife ranges and populations;
3. Conserving traditional uses of the Dragon Run Watershed, such as fishing, hunting and forestry;
4. Ensuring public access to these the Thurston Haworth Recreation Area is not pre-empted by future possible commercial recreation activities, such as leased hunting lands;
5. Enhancing visitor awareness and appreciation of the natural and cultural values of the Thurston Haworth Recreation Area, as well as recreational practices and user safety;
6. Ensuring that recreation uses and management of the property are compatible with conservation values, the surrounding ecosystem and habitat corridor, and the purposes for which the site was entered into CELCP. The MPCBPAA will collaborate with the Virginia Department of Conservation and Recreation and the Virginia Department of Game and Inland Fisheries to maximize the potential for a networked system of multi-use and single-use trails, while minimizing negative impacts to the surrounding environment from increased recreational usage. **The MPCBPAA reserves the right, should the surrounding ecosystem suffer abuse or discernable negative impacts from any recreational use, user or user group, to restrict or prohibit that use, user, or user group.**
7. Managing recreational activities to minimize conflicts between various user groups, to include prohibiting bicycle use on horseback riding trails and visa versa;
8. Providing educational materials on the public and private rights associated with using waterways and waterfront properties;

9. Ensuring that the public access site boundaries are demarcated effectively to prevent trespass on adjacent private properties; and
10. Providing accessible outdoor recreational opportunities for the disabled population when economically and logistically feasible.

Prohibited Activities

The following activities have been deemed to be prohibited either due to restrictions by the CELCP guidelines, hunting regulations or the MPCBPAA's overall objectives for the site:

- Active Agricultural Production
- Active Aquaculture Production
- Shoreline Armoring or Hard Erosion Control
- Construction or Expansion of Roads
- Construction of Buildings or Facilities (**Exceptions: Minor Infrastructure, such as Restrooms or Footbridges**)
- Construction of Playgrounds, Water Parks, Sports Facilities, or Similar Use Areas
- Leasing or Renting of the Property Unless Previously Authorized By the National Oceanic and Atmospheric Administration
- Target Shooting
- Any Form of Hunting Except For Archery (subject to Authority Change)
- Hunting During Non-Hunting Season (March–August Annually, Excluding About April 1–May 15 For Turkey Season)
- Camping
- Open Fires
- Use of Any All-Terrain, Off-Road, or Cross-Road Vehicle on the Property

Recreation Activities

This section describes activity-specific objectives and management strategies. The objectives and strategies for each of the recreational activities described below supports one or more of the broad objectives outlined in the preceding section.

Hiking and Nature Walking

Objective:

To ensure the continued use of the area for non-motorized public recreation and offer a primitive, informal backcountry trail network for high-quality hiking experiences in a wilderness setting

while protecting the natural environment from possible deterioration as a result of these activities.

Strategies:

- Permit public recreation opportunities that are non-motorized, including hiking and crosscountry skiing;
- Install signage or permanent blazes to demarcate trails effectively and discourage off-trail usage. Signage also may be established to mark the mileage along different trails and to inform travelers about trails where passive foot travel is the only permissible use, where access is limited or not permitted, or where other users, such as horseback riders or bicyclists, may be utilizing trail facilities;
- Maintain a pack-in/pack-out policy with all waste to protect the integrity of the local ecosystem and surrounding habitat corridor; and
- Maintain and improve foot trails to increase the capacity of trails to withstand long-term use and recover from disturbance;
- Use/enhance natural routes wherever possible when developing trail facilities, and limit superfluous cutting of vegetation to protect the habitat and minimize erosion;
- Ensure that all signboards provide information on the public/ private rights regarding trespass, hazards of recreating in an undeveloped nature of the area, site specific information (prohibited activities, user code of conduct, etc), and a site specific map.
- Potentially construct a small boardwalk and interpretive signage, leading out to the cypress knee swamp, which will provide educational opportunities and more effectively manage or limit access in a sensitive area of the property;
- Potentially develop a single use
- Encourage all visitors who walk dogs on the property to maintain them on a leash or within manageable calling distance. Visitors must remove all fecal matter produced by their canine when exiting the property.

Horseback Riding

Objective:

To provide recreational horseback riding so as to minimize impacts on the natural environment and wildlife habitat as well as minimize conflicts between certain user groups.

Strategies:

- Promote a traditional, local public recreational use that is non-motorized and passive to low-impact in nature;
- Potentially enhance established and create new multi-use trails and natural routes to provide an extensive trail network that affords excellent horseback riding opportunities;
- Provide sufficient parking space to accommodate vehicles towing horse trailers;
- Develop signage at trailheads to inform horseback riders about trails where horses are permitted;
- Potentially design and develop trails and other facilities to be used by recreational horseback riding groups so the potential exists for small group excursions;
- Limit the number of horses per group and/or the number of groups per season;
- Prohibit bicycle use on designated horseback riding trails to eliminate the potential for conflict; and
- Specify management activities and usage levels for horseback riding that includes (a) requirements for packing in weed-free, pellet feed for horses; (b) specifications for locating any permanent support facilities, such as corrals or loading/unloading facilities, outside of public access site boundaries; (c) a requirement to limit commercial horse use to designated trails and day trips, to the greatest extent possible; and (d) a requirement to establish mechanisms for monitoring the impacts of horse use on trail infrastructure.

Biking

Objective:

To permit bicycle use on the Thurston-Haworth Recreation Area multi-use trail system, while minimizing, to the maximum extent possible, environmental impacts associated with increased recreational usage and potential conflicts with other user groups.

Strategies:

- Restrict bicycle use to existing roads and designated areas and monitor for impacts;
- Develop signage to inform bikers about trails where bike use is permitted and sections of trails where hikers may also be using trail facilities;
- Adjust use levels or areas of use based on impacts over time; and
- Prohibit horseback riding use on designated bike trails to eliminate the potential for conflict.

Parking Facilities

Objective:

To provide adequate parking space and associated facilities at trailheads for recreational users.

Strategies:

- Post a sign-in sheet for all visitors to the property, which is accessible and visible and located adjacent to the hunting sign-in sheet. Develop parking area(s) and monitor use to determine future requirements parking facilities at trailheads;
- Provide sufficient parking space to accommodate school or church buses and vehicles towing horse trailers;
- Prevent vehicle access within area boundaries, except as provided for in the management plan with respect to (a) nature viewpoints for special observation and research; and (b) intensive recreation zones that may be required at a future date to accommodate special events; (c) accessible recreation opportunities for the disable population;
- Install restroom facilities and trash receptacles at parking areas to reduce environmental impacts associated with increased recreational usage; and
- Post signboards at parking areas to provide information on the public/ private rights regarding trespass, hazards of recreating in an undeveloped nature of the area, site specific information (recreation opportunities, prohibited activities, user code of conduct, etc), and a site specific map.

Recreational Guiding

Objective:

To provide an opportunity for ecologically-sound, guided nature tours that is consistent with the deed on the property, objectives of the MPCBPAA, and the purposes for which the Thurston-Haworth Recreation Area was entered into CELCP. Local ecotour guides, who are knowledgeable about and wish to protect the pristine nature of Dragon Run, offer the general public, especially school children, an opportunity to experience the watershed first-hand. Such experiences cultivate an understanding of and appreciation for the surrounding ecosystem; its conservation, historic, cultural, and aesthetic values; and its relationship to the Chesapeake Bay.

Strategies:

- Specific user agreements between the Guiding Service and the Authority must be developed and adopted by the Authority
- Develop a public access site use permit system that can be monitored closely by the MPCBPAA. It will offer a defined number of local commercial and non-profit guides the opportunity to provide nature tours of the Thurston-Haworth Recreation Area;
- Require that all guides develop a business plan that is compatible with the THLMP, that can be updated and approved on a periodic basis, and that is consistent with the CELCP Final Guidelines from June 2003, the deed to the property, and the mission of the MPCBPAA. The MPCBPAA reserves the right to require that a defined portion of the proceeds from a commercial tour be donated to the MPCBPAA for continued habitat management activities;
- Monitor the level of use by guided tours, the effects that guides and nature tour groups have on the local environment, and visitor experiences. Adjust the public access site use permit system, where applicable, to control environmental impacts from concentrated visitor use;
- Enforce a pack-in/pack-out policy with all waste to protect the integrity of the local ecosystem and surrounding habitat corridor; and
- Utilize, to the maximum extent possible, the certification format designed by Eastern Shore Community College (ESCC), and revise as needed to create a Dragon Run watershed-specific Certification. Require that all guides, who wish to provide nature tours on properties owned by the MPCBPAA, including Thurston-Haworth, successfully complete the certification curriculum. Additionally, mandate that all certified Dragon Run watershed ecotour guides take a recertification course every five years to ensure the viability of this industry, standards of service, sustainability, and quality.

Managed Hunting

Objective:

To provide the general public with safe and managed hunting opportunities for small and large game. At the October 2008 meeting of the Authority, Bow Hunting was authorized.

Strategies:

- Establish appropriate hunting areas for use during hunting seasons;
- Cooperate and consult with the Virginia Department of Game and Inland Fisheries to establish a system for managed hunting, including the creation of hunting “zones,” and to control access to active hunting areas during the hunting season;
- Prepare a Hunting Management Plan that can be used as a decision-making tool for managing public hunting opportunities;
- Require hunter registration with the MPCBPAA and post a hunting sign-in sheet at the entrance to the site;
- Establish signage to be used during hunting season at the entrance to the site;
- If funding permits, provide blaze orange vests during hunting season;
- Consider user group perspectives when designating hunting areas; and
- Subject all hunting activities to local, state and federal regulations.

Trail Use and Maintenance

Objectives:

To maintain the informal nature of the trail network within the area, thereby minimizing concentrated trail usage impacts.

Strategies:

- Prepare a trail inventory and trail management plan that can be used as a decision-making tool for managing public trail use; and
- Develop kiosks and signage to show users the location of different recreational trails and inform visitors of allowable uses on specific trails.

Ecosystem and Surrounding Habitat Corridor Protection

Aesthetic Value

Although not a recreational activity in the strictest sense, aesthetic values enhance the experiences of recreational users by improving scenery within and adjacent to area boundaries and increasing opportunities for visitors to experience solitude and quietness.

Scenery is fundamental to a visitor's experience on the property. As with forested areas, swamps, wetlands, and the Dragon Run, activities occurring adjacent to and around the Thurston-Haworth Recreation Area also contribute to the scenery. The MPCBPAA recognizes that development activities may occur on adjacent lands and may affect the viewscape and experiences of visitors to Thurston-Haworth. The MPCBPAA also acknowledges that resource development on adjacent properties may enhance the landscape of the Thurston-Haworth Recreation Area and protect the integrity of the local ecosystem and surrounding habitat corridor.

Objective:

To retain aesthetic features and natural resources within the local community and Dragon Run watershed to ensure the integrity and sustainability of the resources occurring on the Thurston-Haworth Recreation Area and to protect the rural, natural quality of the property.

Strategies:

- Work within local and regional land use planning processes to protect the natural, historic, cultural, and aesthetic values of the area directly adjacent to and in the vicinity of public access site boundaries. This includes reducing noise levels, managing for waste within property boundaries, and minimizing impacts on scenic values and water and air quality;
- Locate and design all public access site structures in harmony with the visual setting and the character of the surrounding natural landscapes;
- Work with local communities to plan public access site facilities, such that they align with the character and traditional uses of the area and blend with the natural setting; and
- Work with the public, government agencies, and non-governmental partners in the Dragon Run watershed to develop a visual landscape plan for lands adjacent to and outside of the public access site boundaries.

Habitat and Wildlife Management

Objective:

To protect the unique ecological characteristics, wildlife and plant diversity, and rural, undeveloped, non-motorized, pristine nature of the Thurston Haworth Recreation Area and the surrounding habitat corridor for the enjoyment of present and future generations. Monitoring the recreational uses on the property, as well as effectively managing and/or enhancing the natural resources, trails, and facilities currently established, will ensure the integrity and sustainability of the entire ecosystem. This section of the THLMP will briefly articulate a few strategies that the MPCBPAA may employ in its management of the habitat and faunal communities of the Thurston Haworth Recreation Area. It will identify appropriate local, state, and federal authorities and agencies, as well as regional non-governmental organizations, to help implement the selected management activities. Additionally, it will ensure that the process is collaborative and establishes practices that are consistent with the goals of the Thurston Haworth Recreation Area acquisition and the THLMP. Please note that the following list of partners, with whom the MPCBPAA looks to collaborate to implement the THLMP, is by no means complete. Furthermore, this section should not be interpreted to serve as a comprehensive habitat and wildlife management plan. The MPCBPAA looks to develop, at a later date, a separate plan with the input of the appropriate agencies that is compatible with the THLMP and can be used as a decision-making tool to manage the habitat and wildlife of the Thurston Haworth Recreation Area.

Strategies:

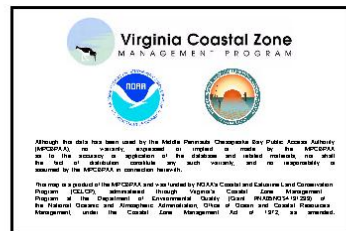
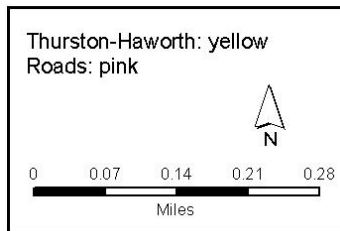
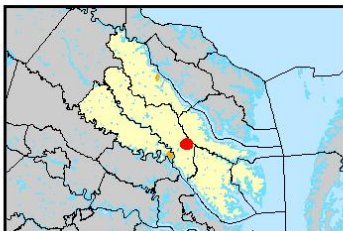
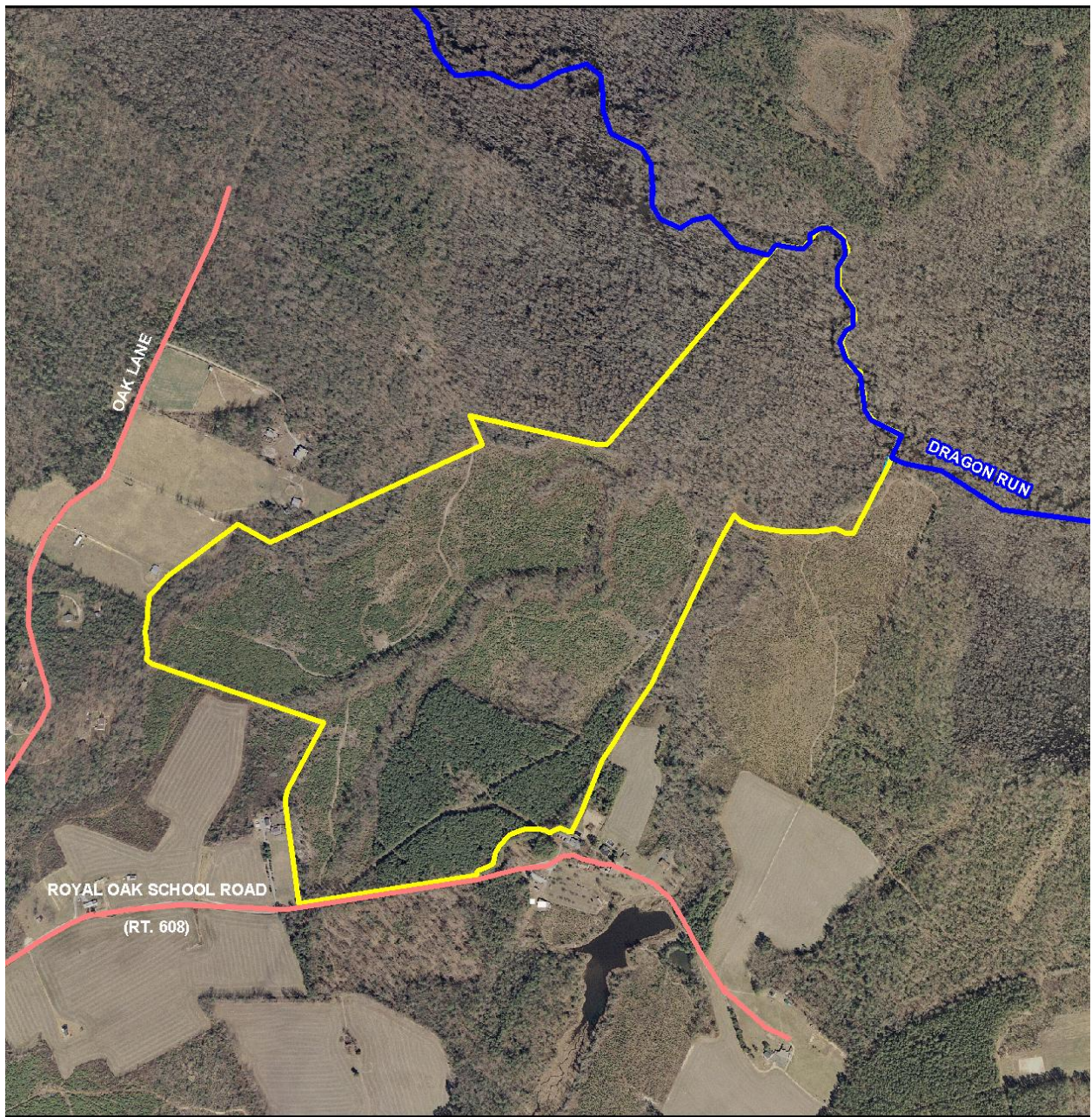
- Ensure that all trails and facilities developed protect the local ecosystem and surrounding habitat corridor;
- Develop “Special Management Areas” to demonstrate best management practices for managing timber and other natural resources on Thurston Haworth. These activities, which will be coordinated with VDOF, may include the re-planting of native tree and plant species and mixed-hardwood forests, thinning of timber stands and surrounding vegetation, and/or prescribed burns;
- Encourage a partnership with the Dragon Run SAMP, VIMS, or CBLAP to develop workshops that educate local government agencies, officials, non-governmental organizations, and the public in the Dragon Run watershed about the Chesapeake Bay Preservation Act, Chesapeake Bay Preservation Areas, Resource Protection Areas, and Resource Management Areas;

- Offer opportunities to VIMS, VDCR, USFWS, the Virginia Department of Environmental Quality, CBNERRVA, Virginia Department of Health, TRSWCD, and TRC&D to conduct water quality monitoring or other natural resource education/research on the site;
- Consult with VDCR to ensure effective management of native and migratory wildlife populations on Thurston Haworth. Identify any threatened or endangered species on the property and develop a collaborative management plan or recovery plan to ensure the protection of these organisms; and
- Monitor for invasive plant, insect, and/or faunal species on the Thurston Haworth Recreation Area. If appropriate, develop a management plan to control for growth and distribution of invasives.

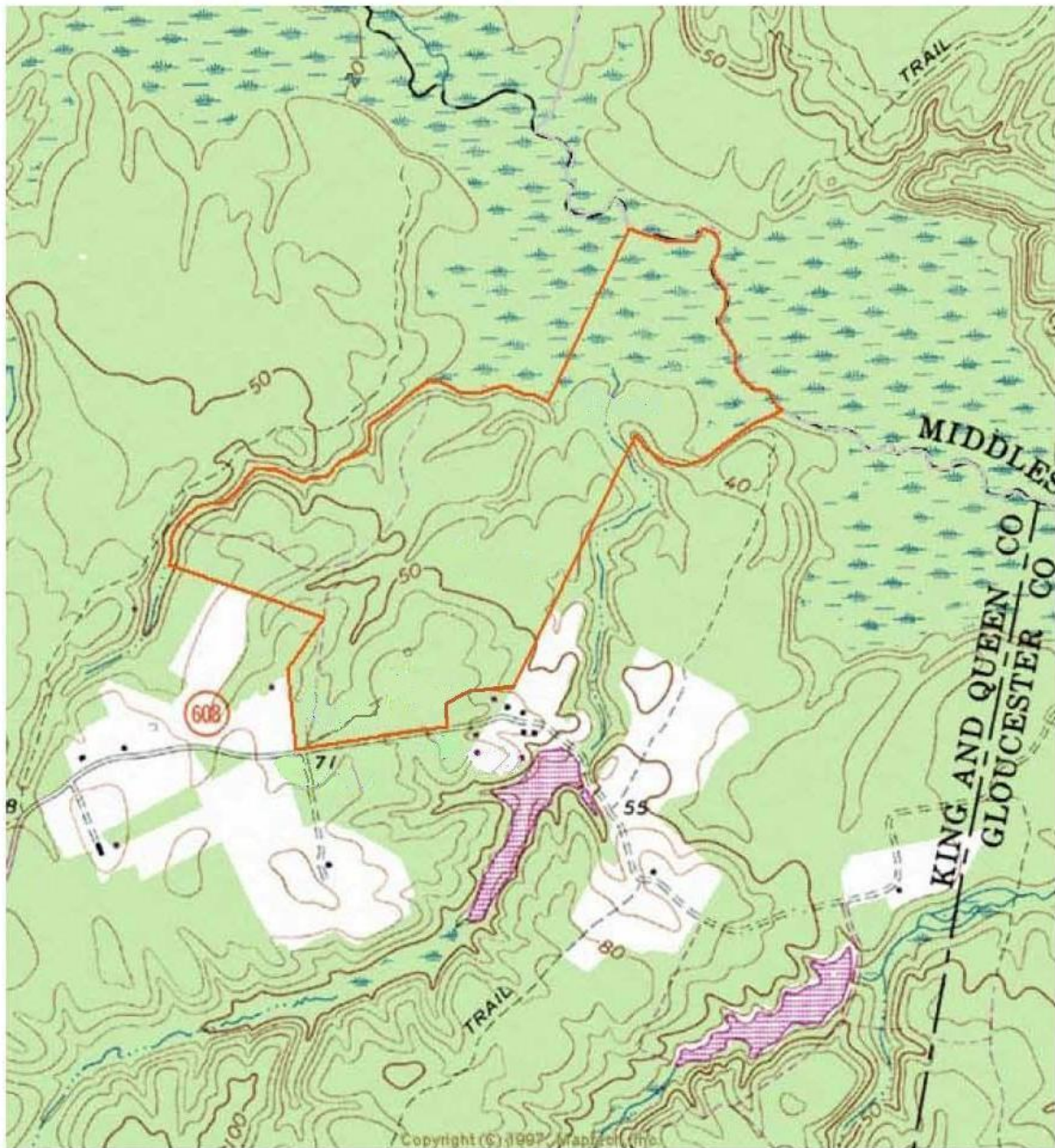
SECTION THREE: APPENDICES

Appendix 1: Maps

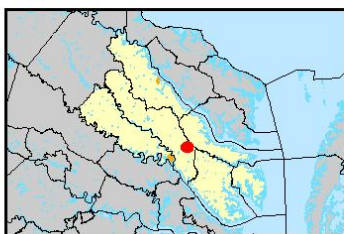
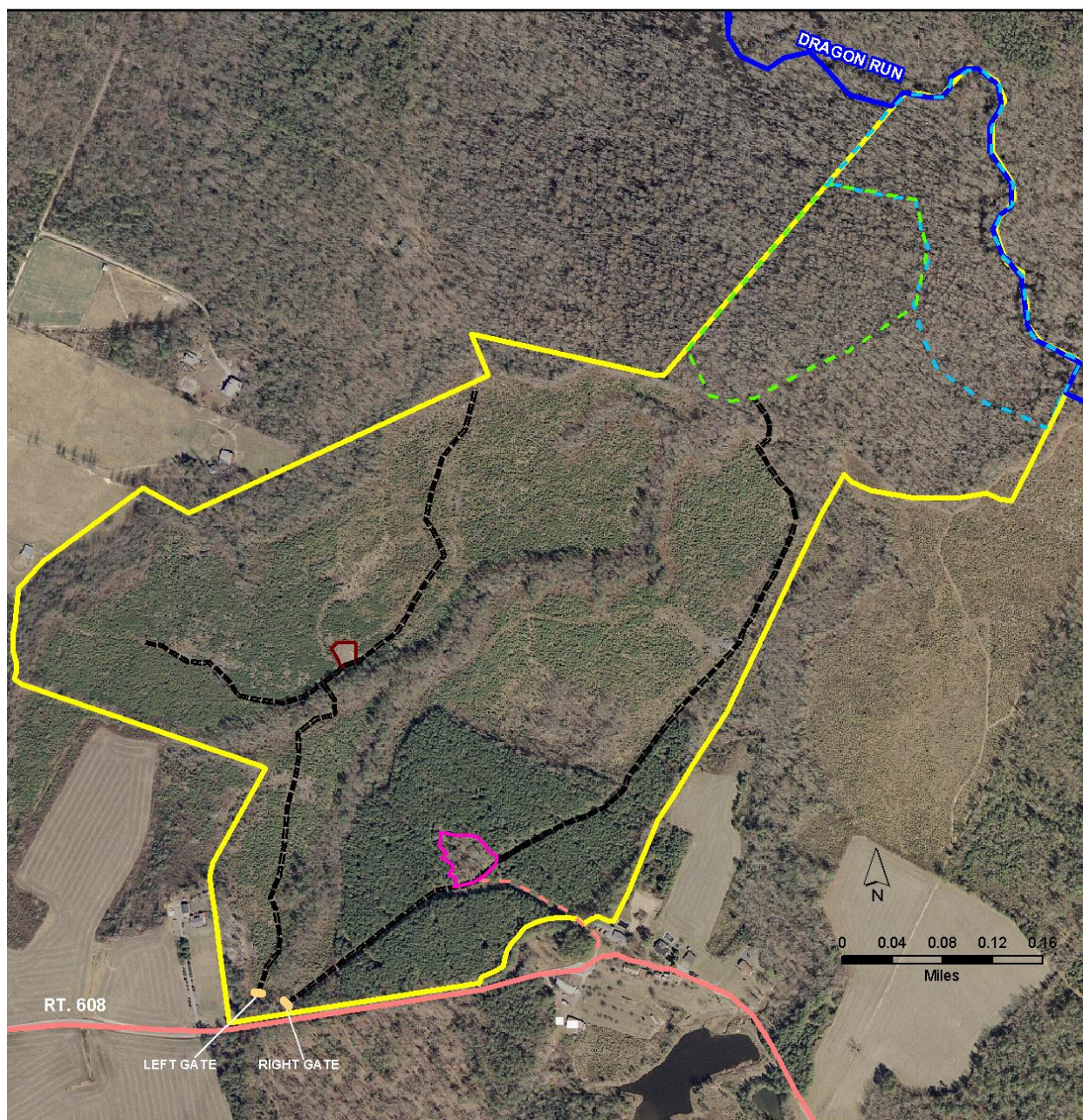
MAP 1: AERIAL IMAGE OF THE THURSTON-HAWORTH RECREATION AREA



MAP 2: USGS TOPOGRAPHIC MAP OF THE THURSTON-HAWORTH RECREATION AREA



MAP 3: THURSTON-HAWORTH EXISTING TRAILS AND FACILITIES



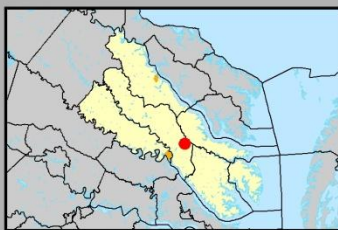
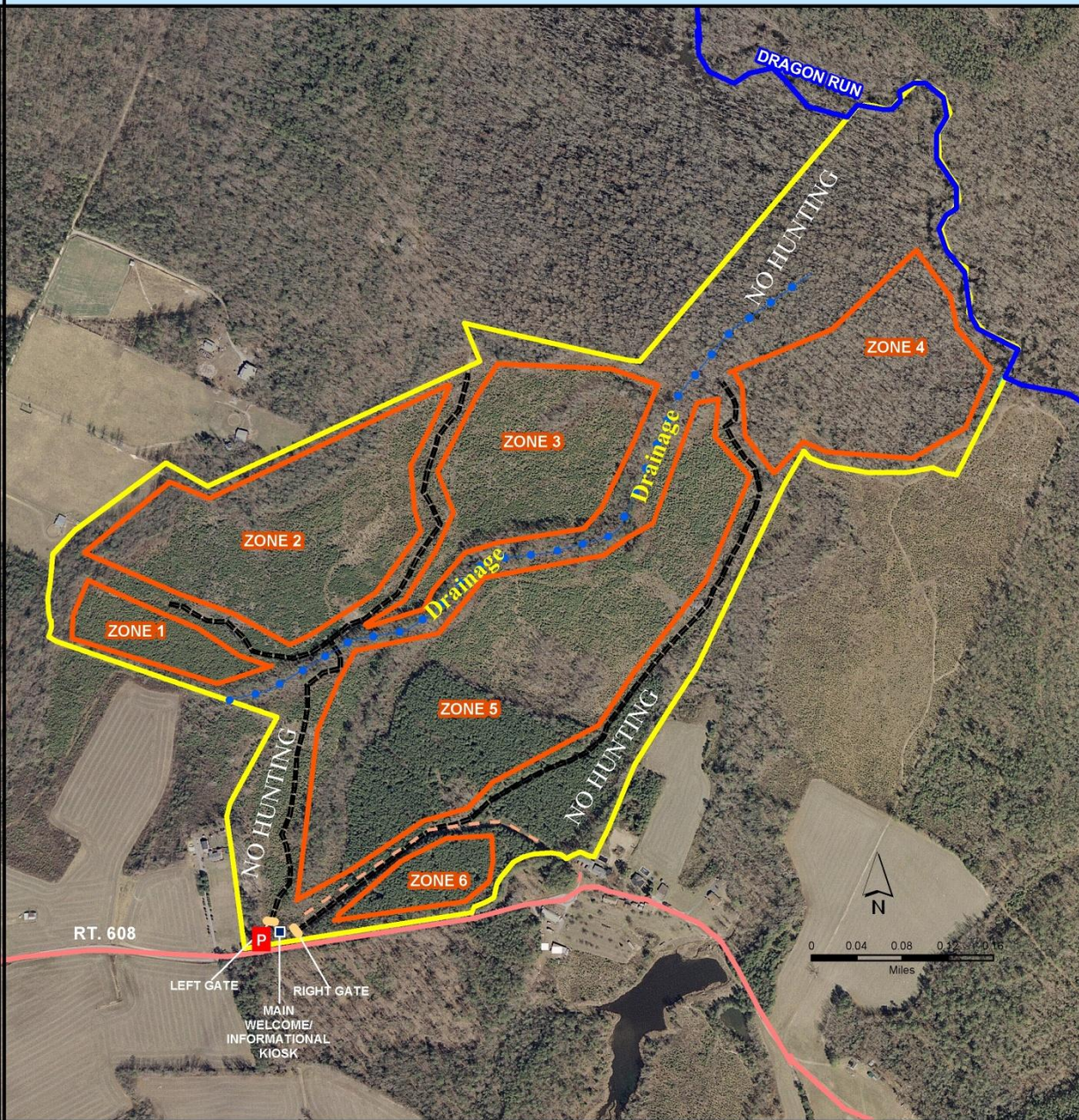
LEGEND	
—	Established Trails
—	Roads / Rappahannock Electric Cooperative Power Line
—	Entrance Gate
—	Former Home Site
—	Former Logging Deck
—	Swamp / Riparian Buffer
—	Cypress Knee Swamp

Virginia Coastal Zone MANAGEMENT PROGRAM


Although the data has been used by the Middle Peninsula Chesapeake Bay Public Access Authority (MPPCAA), no warranty, expressed or implied, is made by the MPPCAA as to the accuracy or reliability of the database and related materials, and the list of jurisdiction overlaps are not verified, and no responsibility is assumed by the MPPCAA in connection herewith.

This map is a product of the MPPCAA and was used by the Middle Peninsula Chesapeake Bay Public Access Authority (MPPCAA) in connection with the MPPCAA's Coastal Zone Management Program (CZMP). The CZMP is administered through the MPPCAA's Coastal Zone Management Program as the Department of Environmental Quality (DEQ) of the State of Virginia, Office of Ocean and Coastal Resource Management, under the Coastal Zone Management Act of 1972, as amended.



Map 4:Thurston- Hayworth Hunting Zones: Bow Hunting Only



LEGEND	
—	Hunting Zone Boundary
—	Property Line- 170 Acres
—	Swamp / Riparian Buffer
—	Access Roads
P	Limited Parking
—	Posts and Gate Blocking Trail
—	Roads / REC Power Line



**Virginia Coastal Zone
MANAGEMENT PROGRAM**

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This map is a product of the MPCBAA and is provided by NOAA's Coastal and Estuarine Land Conservation Program (CELEP), administered through Virginia's Coastal Zone Management Program of the Department of Environmental Quality (DEQ) and the National Oceanic and Atmospheric Administration, Office of Ocean and Coastal Resources Management, under the Coastal Zone Management Act of 1972, as amended.

Appendix 2: Stakeholders List**

Stakeholders in the land management plan development process (2008)

NAME	ORGANIZATION
Ron Hachey	Former King and Queen County Administrator
Pete McDuff	King and Queen County Board of Supervisors–Shanghai District
Cora Armstrong	King and Queen County School Board
Andy Lacatell	The Nature Conservancy
Kelly Price	Virginia Coastal Zone Management Program
Galon Hall	VA Department of Game and Inland Fisheries
David Slack	VA Department of Forestry
Willy Reay	Chesapeake Bay National Estuarine Research Reserve in Virginia at the VA Institute of Marine Science
May Sligh	VA Department of Conservation and Recreation
Lewis Lawrence	Middle Peninsula Planning District Commission
Sara Stamp	Dragon Run Special Area Management Plan Director
Mike Willis	Top Knot Hunt Club
Stacy Hammond	Top Knot Hunt Club
Bobby Fletcher	Shacklefords Hunt Club
Edward Milby	Shacklefords Hunt Club
Tom Gregory	Friends of Dragon Run
Teta Kain	Friends of Dragon Run
Margaret Gerds	Northern Neck Chapter of the Audubon Society
Christine Breddy	Middle Peninsula Trails Partnership
Angie Leigh	Middle Peninsula Trails Partnership
Nancy Paschall	Middle Peninsula Trails Partnership
Frank Herrin	Dragon Run Steering Committee
Robert Gibson	Dragon Run Steering Committee / Local Landowner
Charles Adkins	Local Landowner
Jeanette Adkins	Local Landowner
John Thurston	Local Landowner
Ernie Langston	Local Landowner
John Lindsey	Local Landowner
Laura Lindsey	Local Landowner
Jimmy Viars	Local Landowner
Juli Viars	Local Landowner
Nick Lalich	Local Landowner
Gary Neal	Local Landowner
Lori Neal	Local Landowner

****The stakeholders listed in this table have served an advisory role to the Middle Peninsula Chesapeake Bay Public Access Authority in the development of the Thurston-Haworth Land Management Plan. They have not approved the THLMP, nor does the fact that they are listed in any way constitute an endorsement by any of the individuals of the information contained herein.****

Appendix 3: Stakeholder Input Report

During early 2008, staff collected input from a variety of stakeholders regarding potential uses:

Foot Travel

Objective:

To offer a traditional, non-motorized backcountry network of single-use and multi-use trails for high-quality walking, hiking, cross-country skiing, and nature observation experiences, while protecting the natural environment, surrounding habitat corridor, and natural resources therein from degradation as a result of these passive and low-impact activities. The trail network will be designed, to the maximum extent possible, to accommodate users with special access needs.

Strategies:

- Use/enhance natural routes wherever possible when developing trail facilities, and limit superfluous cutting of vegetation to protect the habitat and minimize erosion;
- Maintain and improve foot paths to increase the capacity of trails to withstand long-term use and recover from disturbances;
- Install signage or permanent blazes to demarcate trails effectively and discourage off-trail usage. Signage also may be established to mark the mileage along different trails and to inform travelers about trails where passive foot travel is the only permissible use, where access is limited or not permitted, or where other users, such as horseback riders or bicyclists, may be utilizing trail facilities;
- Ensure that signage and kiosks provide information on the undeveloped nature of the area;
- Provide signage on the trails and public use guides attached to both the main welcome/informational kiosk by Route 608 and the all-visitor sign-in sheets in the parking lot that dictate appropriate user conduct when visiting a public access facility. Travelers by foot should use caution when accessing the trail system, be respectful of all other users on the property, and stop or slow down when approaching all non-foot traffic, including horseback riders and bicyclists. Additionally, walkers/hikers/etc. should remain alert when accessing the multi-use trails in order to avoid any animal fecal matter present;
- Develop one or more single-use trail(s) reserved for passive foot travel only. These trails will provide a setting that is free from conflict with non-foot traffic and fecal matter that may be deposited by horses on the multi-use trails;
- Potentially construct a small footbridge and interpretive signage, leading out to the cypress knee swamp, which will provide educational opportunities and more effectively manage or limit access in a sensitive area of the property;

- Maintain a pack-in/pack-out policy with all waste to protect the integrity of the local ecosystem and surrounding habitat corridor; and
- Encourage all visitors, who walk dogs on the property, to maintain them on a leash or within manageable calling distance. Visitors must remove all fecal matter produced by their canine when exiting the property. The MPCBPAA looks to provide informational brochures about the benefits of cleaning up after one's pet in the kiosk(s) at the property entrance.

Horseback Riding

Objective:

To provide recreational horseback riding opportunities, which are managed, to the maximum extent possible, to minimize impacts to the natural environment and potential conflicts with other users (foot travelers, bicyclists, bow hunters, etc.).

Strategies:

- Promote a traditional, local public recreational use that is non-motorized and passive to low-impact in nature;
- Enhance established and create new multi-use trails and natural routes to provide an extensive trail network that affords excellent horseback riding opportunities;
- Design multi-use trails and other facilities to be used for small group excursions on horseback;
- Provide sufficient parking in the lot at the entrance to the property, separate from the small, non-trailer vehicle area, to accommodate vehicles towing horse trailers. A comment drop box may be made available in the parking lot, so that the MPCBPAA can solicit feedback from the public about their visit to Thurston-Haworth, the established trail system and facilities, and any use conflicts that occurred;
- Develop signage at trailheads to inform horseback riders of trails where horses are permitted, sections of the property where horse access is limited or not permitted (such as the "Wildlife and Habitat Protection Areas" and in the Riparian Buffer), and trails where other users, such as nature observers, bicyclists, and hunters also may be present. Signage may be developed to caution all users on multi-use trails that horse manure may be present;
- Establish signage on the trails and public use guides at the entrance to the property that dictate appropriate conduct on the multi-use trails, especially when multiple conflicting uses, such as horseback riding, bicycling, and walking, are occurring concurrently. Horseback riders should use caution when accessing the trails, be respectful of all other users on the property, and stop or slow down, to the greatest extent possible, when approaching foot travelers and bicyclists; and

- Specify management activities and usage levels for horseback riding that include:
 1. Condition that all horses on the property be accompanied by a report of an official negative Coggins Test or negative Competitive Enzyme Linked Immunoabsorbent Assay (C-ELISA) Test for Equine Infectious Anemia (EIA), conducted within 12 months prior to the horse's visit to Thurston-Haworth. The report must be displayed in the front windshield of each rider's automobile and be available for inspection by MPCBPAA staff or a certified State Veterinarian (Virginia Department of Agriculture and Consumer Services veterinarian employed by the Commissioner of Agriculture and Consumer Services) upon request;
 2. Signage at the parking lot or in another location at the entrance to Thurston-Haworth to encourage riders to use an apparatus to collect horse fecal matter, such as a "Bun-Bag™", "Horse Diaper", or "Equidae Manure/Urine Catcher™". This may minimize impacts to the water quality of the Dragon Run and the local habitat. All horse fecal matter deposited in the parking lot must be removed immediately by the horse's rider. Horseback riders are also encouraged to move their horse's manure off of the trails during the ride in order to enhance the experience for all users of the multi-use trail system;
 3. Opportunities for horse manure composting in specific bins in the trailered-vehicle area of the parking lot. A well-maintained manure composting system serves a public benefit by creating a valuable, biodegradable fertilizer source for visitors to use, a potential revenue source for sustainable habitat management, and a more enjoyable experience for all who utilize the multi-use trail networks. Composting also serves an ecological benefit by (a) minimizing the volume of horse fecal matter on the property; (b) greatly increasing the temperature of the fecal pile, thereby reducing the growth of fecal coliform bacteria, flies, and parasitic worms that breed within separate fecal piles; (c) reducing odors produced by the manure; and (d) decreasing the volume of manure-contaminated runoff that can contaminate the pristine nature of the Dragon Run and local ground water supply;
 4. Stipulations to limit horse use to designated trails and day trips; and
 5. Requirement to establish mechanisms for monitoring the impacts of horse use on trail infrastructure.

Bicycling

Objective:

To permit bicycle use on the Thurston-Haworth Recreation Area multi-use trail system, while minimizing, to the maximum extent possible, environmental impacts associated with increased recreational usage and potential conflicts with other user groups.

Strategies:

- Maintain the passive to low-impact nature of bicycling by restricting the activity to existing and planned multi-use trails and natural routes;
- Develop signage to inform bicyclists about trails where bicycling is permitted, trails where access is limited or not permitted, and sections where other users, such as nature observers, hikers, horseback riders, and hunters may also use trail facilities;
- Establish signage on the trails and public use guides at the main entrance gates that dictate appropriate conduct on the trails when multiple conflicting uses, such as bicycling, horseback riding, and walking are occurring simultaneously in the same area. Bicyclists should use caution when accessing the trails, especially when horses are near; be respectful of all other users on the property; alert other users to their presence well in advance of contact; and stop or slow down when approaching other users; and
- Monitor for impacts to the surrounding habitat and wildlife communities, and adjust bicycling levels or areas of use based on impacts over time.

Paddling

Objective:

To develop one or more put-in site(s) at the land/water interface, which are accessible by land or water, that provide paddling and non-motorized boating experiences on the Dragon Run.

Strategies:

- Offer one to several put-in locations on the northeastern portion of the property, which borders the Dragon Run, to permit kayaking, canoeing, and other forms of non-motorized boating and paddling. Gasoline-powered motorboats will be prohibited;
- Clear downed vegetation directly adjacent to the land/water interface that may hinder paddler access to certain portions of the Dragon Run;
- Provide sufficient parking spaces in the lot at the entrance to the property, separate from the small, non-trailer vehicle area, to accommodate vehicles towing kayak trailers; and
- Monitor paddling usage over time and determine activity levels. If appropriate, the single-use trail for passive foot travel, which the MPCBPAA looks to establish from the northeast corner of the main-multi-use trail loop out to the Dragon Run, may be augmented to enhance access to paddlers, who will be hand-carrying their boats to the water. The trail will be designed, to the greatest extent possible, following established natural routes and to accommodate users with special access needs.

Bow Hunting

Objective:

To provide the general public with a safe and managed hunting opportunity for multiple game species. Currently, the only form of hunting that will be permitted on the property is bow. Early Archery Season lasts approximately October 1–November 15, and Late Archery Season runs approximately December 1–January 1. It is the responsibility of all bow hunters on Thurston-Haworth to contact the Virginia Department of Game and Inland Fisheries (VDGIF) to determine the exact dates of archery season annually. The MPCBPAA reserves the right, if appropriate, to expand bow hunting and the conceptual hunting zone system (Map 4) to include other forms, such as modern firearms or muzzleloading firearms.

Strategies:

- Cooperate and consult with the VDGIF to establish an appropriate system for managed hunting, which ensures access to bow hunting areas during early and late archery seasons is monitored effectively. This may include the creation of hunting “zones”, as outlined on Map 4, which will be designed to conserve the core ecosystem and surrounding habitat corridor. Each zone may be color-coded and trees at the edge of a zone painted with blazes to notify a user when he/she is crossing between zones;
- Consult with local bow hunters and hunt clubs when designing hunting zones and/or areas;
- Subject all bow hunting activities to local, state and federal regulations;
- Install signage in the parking lot, in the main welcome/informational kiosk by Route 608, and on the gates leading onto the property, which alert users when archery season is in effect. Also post a map in the parking lot, which indicates the location of each hunting zone on the property;
- If funding permits, provide re-usable blaze orange safety vests at both entrances to the parking lot to enhance user visibility on the property, especially during archery season;
- Create a hunter registration system, similar to the developed for the Browne Tract, which requires all bow hunters on the Thurston-Haworth Recreation Area, including those who have already registered to hunt the Browne Tract, to register with the MPCBAA and receive a unique hunter identification number. The MPCBPAA will provide each registered hunter with a welcome packet, which includes hunter safety rules and regulations and a map of the property with the general hunting zones defined;
- Post hunting sign-in sheets in the parking lot, which are accessible and visible, no matter which gate one uses to access the property. This will provide a hunter/hunting party the opportunity to sign up for a specific zone on a particular day. Zones will be established as a general guide for hunting areas. They may be color-coded and will be accessible on a first-come first-serve basis for all bow hunters and hunting parties. Bow hunting parties may consist of no more than three persons, and only one hunting party is permitted in each zone at any one time. Once a hunter establishes his claim to a specific zone, he may use it that day from dawn until dusk. However, if the bow hunter wishes to move to a different zone,

he will be required to return to the parking lot and sign back in to the new zone. This proposed system will geographically separate bow hunters and reduce possible conflict. It will also manage visitation in high-use areas, where an elevated potential for safety issues or conflict among different user groups exists, by ensuring that all users on the property know where hunting is occurring at all times. The MPCBPAA will monitor usage in each hunting area on a regular basis to determine the efficacy of the zone system, make changes to or improve the system where needed, and account for any conflicts that might arise; and

- Establish a food plot in each bow hunting zone. Depending on the vegetation planted, plots should provide a sustainable food source and foraging ground for different game species, including deer, rabbit, turkey, and quail. Defining the location of a food plot in each zone also will help manage the distribution of bow hunters on the property and will identify to other users where hunting may be expected to occur during archery season, depending on the game species the food plots are designed for. Only vegetation native to Thurston-Haworth and the Dragon Run watershed will be selected for growth in the plots.

Parking Facilities

Objective:

To provide adequate parking facilities for vehicles of all sizes, including those with trailers.

Strategies:

- Design a parking lot at the entrance to the Thurston-Haworth Recreation Area. The lot will have two entry points – one just inside the right gate and the other just inside the left gate. It will be divided into two clearly-marked sections: one for small vehicles without trailers and the other for larger vehicles, including school and church buses, which may or may not be towing trailers.
- Post a sign-in sheet for all visitors to the property, which is accessible and visible, no matter which parking lot entrance one uses. Monitor usage levels to Thurston-Haworth to determine future parking and trail facility requirements. Ensure that the all-visitor sign-in sheet is located adjacent to the hunting zone sign-in sheet but is easily distinguishable from it. Providing both sign-in sheets in the same area will ensure that all users on the property know at all times where and when hunting is occurring;
- Install wooden posts that traverse both the left and right paths of the main multi-use trail loop directly past the parking lot entrances. The posts will prohibit motorized vehicle access past the lot and reduce environmental impacts from such access. Users with special access needs should contact the MPCBPAA prior to visiting the property for more information; and
- Establish signage and/or a kiosk that provides information about the recreational opportunities offered on Thurston-Haworth; educates visitors about the unique natural and cultural characteristics of the area; and offers public use guides that dictate appropriate user conduct when visiting a public access facility. A comment drop box also may be made

available by the all-visitor and hunting zone sign-in sheets to encourage feedback from the public about their visit to Thurston-Haworth, the established trail system and facilities, and any use conflicts that occurred.

Ecotourism / Guided Nature Tours

Objective:

To provide an opportunity for ecologically-sound, guided nature tours that is consistent with the deed on the property, objectives of the MPCBPAA, and the purposes for which the Thurston-Haworth Recreation Area was entered into CELCP. Local ecotour guides, who are knowledgeable about and wish to protect the pristine nature of Dragon Run, offer the general public, especially school children, an opportunity to experience the watershed first-hand. Such experiences cultivate an understanding of and appreciation for the surrounding ecosystem; its conservation, historic, cultural, and aesthetic values; and its relationship to the Chesapeake Bay.

Strategies:

- Develop a public access site use permit system that can be monitored closely by the MPCBPAA. It will offer a defined number of local commercial and non-profit guides the opportunity to provide nature tours of the Thurston-Haworth Recreation Area;
- Require that all guides develop a business plan that is compatible with the THLMP, that can be updated and approved on a periodic basis, and that is consistent with the CELCP Final Guidelines from June 2003, the deed to the property, and the mission of the MPCBPAA. The MPCBPAA reserves the right to require that a defined portion of the proceeds from a commercial tour be donated to the MPCBPAA for continued habitat management activities;
- Monitor the level of use by guided tours, the effects that guides and nature tour groups have on the local environment, and visitor experiences. Adjust the public access site use permit system, where applicable, to control environmental impacts from concentrated visitor use;
- Enforce a pack-in/pack-out policy with all waste to protect the integrity of the local ecosystem and surrounding habitat corridor; and
- Partner with a local college or university in the Middle Peninsula, such as Rappahannock Community College, to institute an Ecotour Guide Certification Curriculum similar to that which is currently being developed by Eastern Shore Community College. Utilize, to the maximum extent possible, the certification format designed by ESCC, and revise as needed to create a Dragon Run watershed-specific curriculum. Develop an Ecotour guide logo for marketing use by certified guides. Once the Ecotour Guide Certification Curriculum is established, require that all guides, who wish to provide nature tours on properties owned by the MPCBPAA, including Thurston-Haworth, successfully complete the certification curriculum. Additionally, mandate that all certified Dragon Run watershed ecotour guides take a recertification course every five years to ensure the viability of this industry, standards of service, sustainability, and quality.

Special Access Opportunities

Objective:

To provide the general public opportunities to access Thurston-Haworth for certain passive and low-impact uses that otherwise would be prohibited due to the constraints imposed by the THLMP. These special access opportunities, which may include visitation to the property outside of the regularly-scheduled operating hours from dawn until dusk, will be regulated closely by the MPCBPAA and may require a specific permit. The MPCBPAA reserves the right to terminate any or all special access events that are not compatible with the conservation values of the surrounding ecosystem and habitat corridor or that are not consistent with the deed to the property, objectives of the MPCBPAA, or the purposes for which Thurston-Haworth was entered into CELCP.

Strategies:

- Provide opportunities for evening kayak excursions. These nighttime trips must be pre-approved by the MPCBPAA and may be led only by the MPCBPAA Board, its staff, or MPCBPAA-approved Dragon Run watershed nature guides. If and when an Ecotour Guide Certification Curriculum is established by the MPCBPAA, all guides, who wish to provide evening nature tours on Thurston-Haworth, will be required to successfully complete the certification curriculum; and
- Offer an educational “Evening Workshop Series” led by the MPCBPAA Board, its staff, or MPCBPAA-approved Dragon Run watershed nature guides. This series will introduce the public to different passive activities, such as moth watching, night photography, or meteor shower observation, that are conducted typically outside of the regularly-scheduled Thurston-Haworth operating hours of dawn until dusk.

Ecosystem and Surrounding Habitat Corridor Protection

Although not a recreational activity in the strictest sense, protecting the core ecosystem of Thurston-Haworth and its surrounding habitat corridor enhances the experiences of all users. This is accomplished by improving scenery within and adjacent to property boundaries, protecting the health and quality of the habitat and plant and faunal communities which comprise the Thurston-Haworth Recreation Area ecosystem, and by increasing opportunities for visitors to experience solitude and natural beauty in a wilderness setting.

Aesthetic Value

Scenery is fundamental to a visitor’s experience on the property. As with forested areas, swamps, wetlands, and the Dragon Run, activities occurring adjacent to and around the Thurston-Haworth Recreation Area also contribute to the scenery. The MPCBPAA recognizes that development activities may occur on adjacent lands and may affect the viewscape and experiences of visitors to Thurston-Haworth. The MPCBPAA also acknowledges that resource

development on adjacent properties may enhance the landscape of the Thurston-Haworth Recreation Area and protect the integrity of the local ecosystem and surrounding habitat corridor.

Objective:

To retain aesthetic features and natural resources within the local community and Dragon Run watershed to ensure the integrity and sustainability of the resources occurring on the Thurston-Haworth Recreation Area and to protect the rural, natural quality of the property.

Strategies:

- Work within local and regional land use planning processes to protect the natural, historic, cultural, and aesthetic values of the area directly adjacent to and in the vicinity of public access site boundaries. This includes reducing noise levels, managing for waste on property boundaries, and minimizing impacts on scenic values and water and air quality;
- Design all public access site structures in harmony with the visual setting and the character of the surrounding natural landscapes;
- Work with local communities to plan public access site facilities, such that they align with the character and traditional uses of the area and blend with the natural setting; and
- Work with the public, government agencies, and non-governmental partners in the Dragon Run watershed to develop a visual landscape plan for lands adjacent to and outside of the public access site boundaries, which are part of the habitat corridor.

Habitat and Wildlife Management

Objective:

To protect the unique ecological characteristics, wildlife and plant diversity, and rural, undeveloped, non-motorized, pristine nature of the Thurston-Haworth Recreation Area and the surrounding habitat corridor for the enjoyment of present and future generations. Monitoring the recreational uses on the property, as well as effectively managing and/or enhancing the natural resources, trails, and facilities currently established, will ensure the integrity and sustainability of the entire ecosystem. This section of the THLMP will briefly articulate a few strategies that the MPCBPAA may employ in its management of the habitat and faunal communities of the Thurston-Haworth Recreation Area. It will identify appropriate local, state, and federal authorities and agencies, as well as regional non-governmental organizations, to help implement the selected management activities. Additionally, it will ensure that the process is collaborative and establishes practices that are consistent with the goals of the Thurston-Haworth Recreation Area acquisition and the THLMP. Please note that the following list of partners, with whom the MPCBPAA looks to collaborate to implement the THLMP, is by no means complete. Furthermore, this section should not be interpreted to serve as a comprehensive habitat and wildlife management plan. The MPCBPAA looks to develop, at a later date, a separate plan that

is compatible with the THLMP and can be used as a decision-making tool to manage the habitat and wildlife of the Thurston-Haworth Recreation Area.

Strategies:

- Collaborate with the Virginia Department of Game and Inland Fisheries (VDGIF), the Virginia Department of Conservation and Recreation (VDCR), Virginia Department of Forestry (VDOF), U.S. Fish and Wildlife Service (USFWS), The Nature Conservancy (TNC), and the Dragon Run Steering Committee (DRSC) to ensure that all trails and facilities developed protect the local ecosystem and surrounding habitat corridor;
- Develop “Special Management Areas” to demonstrate best management practices for managing timber and other natural resources on Thurston-Haworth. These activities, which will be coordinated with VDOF, VDGIF, VDCR, and TNC, may include the re-planting of native tree and plant species and mixed-hardwood forests, thinning of timber stands and surrounding vegetation, and/or prescribed burns;
- Coordinate with VDGIF, VDOF, VDCR, USFWS, DRSC, TNC, Virginia Coastal Zone Management Program, Virginia Institute of Marine Science (VIMS), and potentially VDCR’s Chesapeake Bay Local Assistance Programs (CBLAP), Chesapeake Bay National Estuarine Research Reserve in Virginia (CBNERRVA), the Three Rivers Soil and Water Conservation District (TRSWCD), and the Tidewater Resource, Conservation, and Development Council (TRC&D) to identify areas, such as the cypress knee swamp and the riparian buffer adjacent to Dragon Run, that contain important riparian, soil, vegetative, or other natural resources. Establish “Wildlife and Habitat Protection Areas” to limit or prohibit recreational usage in these locations, while providing opportunities for habitat improvement projects;
- Encourage a partnership with CBLAP to develop workshops that educate local government agencies, officials, non-governmental organizations, and the public in the Dragon Run watershed about the Chesapeake Bay Preservation Act, Chesapeake Bay Preservation Areas, Resource Protection Areas, and Resource Management Areas;
- Collaborate with VDCR, USFWS, the Virginia Department of Environmental Quality, CBNERRVA, Virginia Department of Health, TRSWCD, and TRC&D to develop water quality monitoring opportunities on the Dragon Run;
- Consult with VDGIF, USFWS, VIMS, and the VA Department of Agriculture and Consumer Services (VDACS) to ensure effective management of native and migratory wildlife populations on Thurston-Haworth. Identify any threatened or endangered species on the property and develop a collaborative management plan or recovery plan to ensure the protection of these organisms; and
- Collaborate with regional representatives from VDGIF, VDCR, USFWS, VIMS, TNC, the Invasive Species Advisory Committee of the Virginia Invasive Species Working Group, and VDACS to monitor for invasive plant, insect, and/or faunal species on the Thurston-

Haworth Recreation Area. If appropriate, develop a management plan to control for growth and distribution of invasives.

Proposed Use List Matrix:

PROPOSED USE	TIME OF USE Y-yearly, S- seasonal	REVENUE POTENTIAL Y- yes	IMPACT ON RESOURCES L-low, M- med	POLITICAL IMPLICATIONS Y- yes
<i>Walking</i>	Y	Y	L	
<i>Hiking</i>	Y		L	
<i>Cross-Country Running</i>	Y	Y	L	
<i>Cross-Country Skiing</i>	S	Y	L	
<i>Horseback riding</i>	Y	Y	L-M	
<i>Dog Sledding</i>	S	Y	M	
<i>Bicycling</i>	Y	Y	L-M	
<i>Paddling</i>	S		L	
<i>Wading</i>	S		L	
<i>Fishing</i>	S		L-M	
<i>Hunting (archery)</i>	S	Y	L-M	Y
<i>Hunter safety</i>	S	Y	L	
<i>Nature / Wildlife Observation</i>	Y		L	
<i>Photography</i>	Y		L	
<i>Education/ School Groups</i>	S		L-M	Y
<i>Ecotourism / Guided Nature Tours</i>	Y	Y	L-M	
<i>How-to Workshops</i>	Y	Y	L	
<i>Special Access or Evening Events</i>	Y	Y	L-M	
<i>Scientific Research</i>	Y		L-M	Y
<i>Forest and Habitat Management</i>	Y	Y	M	
<i>Research Forest Practices</i>	Y	Y	M	Y
<i>Restoration of Species</i>	Y		L	
<i>Riparian Buffer Demonstration</i>	S		L	
<i>Water Quality Monitoring</i>	Y		L	
<i>Parking</i>	Y		L-M	

Appendix 4: References

- Belden A Jr., Chazel AC, Fleming GP, Hobson CS, McCoy KM (2001) A natural heritage inventory of the Dragon Run watershed, 2nd edition. Natural Heritage Technical Report 01-03. Virginia Department of Conservation and Recreation, Division of Natural Heritage (ed), Richmond, Virginia, 64 pp plus appendix
- Belden A Jr., Chazel AC, Hobson CS (2003) A natural heritage inventory of fourteen headwater sites in the Dragon Run watershed. Natural Heritage Technical Report 03-16. Virginia Department of Conservation and Recreation, Division of Natural Heritage (ed), Richmond, Virginia, 76 pp
- Dragon Run Steering Committee (2003a) Dragon Run watershed management plan. David Fuss, Middle Peninsula Planning District Commission (eds), Saluda, Virginia, 94 pp
- Dragon Run Steering Committee (2003b) The state of the Dragon Run watershed: status of natural resources. David Fuss, Middle Peninsula Planning District Commission (eds), Saluda, Virginia, 34 pp
- Fleming GP, Coulling PP, Walton DP, McCoy KM, Parrish MR (2001) The natural communities of Virginia: classification of ecological community groups, 1st approximation. Unpublished Report. Natural Heritage Technical Report 01-1. Virginia Department of Conservation and Recreation, Division of Natural Heritage (ed), Richmond, Virginia, 76 pp
- Fleming GP, Coulling PP, Patterson KD, Taverna K (2006) The natural communities of Virginia: classification of ecological community groups, 2nd approximation, Version 2.2. Virginia Department of Conservation and Recreation, Division of Natural Heritage website: http://www.dcr.virginia.gov/natural_heritage/ncintro.shtml
- Garman GC (2003) Aquatic living resources inventories in the Dragon system: Virginia Commonwealth University on-going activities. Dragon Run Natural Resources Symposium, Virginia Institute of Marine Science, Gloucester, Virginia, 11 February 2003
- Jenkins DW (1974) Natural areas of the Chesapeake Bay Region: ecological priorities. Center for Natural Areas, Ecology Program, Smithsonian Institution, Washington, D.C.
- McIninch SP, Garman GC, Smock L, Shuart W (2003) Preliminary aquatic living resources inventory. Virginia Commonwealth University, Center for Environmental Studies, Middle Peninsula Planning District Commission (eds), Richmond, Virginia, 69 pp
- Middle Peninsula Planning District Commission (2002) Dragon Run management framework. Anderson and Associates, Middle Peninsula Planning District Commission (eds), Richmond, Virginia, 28 pp
- Natural Resources Conservation Service (2007) Soil Survey of King and Queen County, Virginia. United States Department of Agriculture, Virginia Polytechnic Institute and State University (eds), Washington, D.C., 290 pp

The Nature Conservancy (2001) The Chesapeake Rivers Site Conservation Plan. Richmond, Virginia, 90 pp

The Nature Conservancy (2003) Chesapeake Bay Lowlands Ecoregional Plan. Richmond, Virginia, 240 pp

Virginia Department of Conservation and Recreation (2003) Virginia 2002 nonpoint source (NPS) assessment: landuse/area. Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation website: http://www.dcr.virginia.gov/soil_&_water/

Virginia Department of Conservation and Recreation (2007) Virginia Outdoors Plan. Virginia Department of Conservation and Recreation website: http://www.dcr.virginia.gov/recreational_planning/vop.shtml