

MANAGEMENT PLAN FOR THE BINGHAM FOREST



View of Bingham Forest from ledges on Barker Mountain

**Prepared for the
Town of Bethel**

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Preparation of this Management Plan for the Bingham Forest was a broad-based effort involving the contributions of many individuals and organizations. The Bethel Conservation Commission provided able guidance and oversight throughout the process. In particular, Landon Fake, the commission's lead member on this project, spent many hours walking the Bingham Forest, talking with Bethel residents and offering knowledgeable advice. Sherman Small a forester with New England Forestry Consultants, Inc. prepared the Baseline Documentation for the Bingham Forest and provided important insights into forest management opportunities on the land. John Morton and David Lindahl of Morton Trails, a nationally recognized trails design firm, helped to create a vision for an ambitious trails network on the Bingham Forest. Bethel Town Manager, James Doar, was always available to help address the many challenges that arose in developing this plan.

The following organizations all made significant contributions to the planning effort:

- Bethel Area Chamber of Commerce
- Bethel Outing Club
- Bethel Water District
- Greenstock Snowmobile Club
- Mahoosuc Pathways
- Maine Attorney General's Office
- Maine Department of Inland Fisheries & Wildlife
- Maine Natural Areas Program
- Maine Rural Water Association
- Sunday River Resort

Last, but certainly not least, it is important to recognize the many citizens and businesses in Bethel who took the time to attend meetings, write e-mails, and talk on the phone to share their knowledge and ideas about the Bingham Forest. Their input reflects the strong public interest in the future of the Bingham Forest and was essential in shaping this document.

I. INTRODUCTION

In 1925, William Bingham II conveyed approximately 2,358 acres of land in Newry (acreage based upon town's tax records) along the Bethel/Newry town line, to the Bethel Water Company, the predecessor to the Bethel Water District. The "Bingham Forest", which encompasses the upper watershed of Chapman Brook, was conveyed by "trust deed" to the water company to provide the residents of Bethel with a safe drinking water supply. Chapman Brook served as Bethel's primary water supply until July 2007, when a localized torrential rain storm caused flash flooding of Chapman Brook resulting in severe erosion of the Chapman Brook drainage and damage to the drinking water supply infrastructure. After several months of effort to restore the use of Chapman Brook as Bethel's drinking water supply, the Bethel Water District elected to switch the town's primary water supply to subsurface wells.

The decision to abandon Chapman Brook as the town's primary drinking water supply led to deliberations between local and state interests over the future of the Bingham Forest. The deeds of trust included a directive that the land be conveyed to the State should Chapman Brook cease to be utilized as a public drinking water source. Ultimately these deliberations led to a consent order issued by the Oxford County Superior Court in December, 2010, that conveyed trusteeship of the Bingham Forest to the Town of Bethel. The Consent Order provided specific guidance as to future use and management of the Bingham Forest, most notably that the land be managed in a manner to preserve the opportunity for Chapman Brook to be used as an emergency water supply for Bethel if needed in the future.

The Consent Order identifies water quality protection, wildlife habitat protection, public recreation and sustainable timber management as allowable uses of the Bingham Forest and provides specific requirements for each of these uses. It also lays out planning directives to the Town of Bethel as follows:

- Preparation of a Baseline Documentation Report recording the condition of the property and its important natural resource attributes;
- Preparation of a Management Plan to guide the future management and use of the property; and
- Preparation of a Forest Management Plan to guide timber management activities on the property.

The Baseline Documentation Report was prepared by forester Sherman Small and adopted by the Bethel Board of Selectmen in September, 2012. This Management Plan, which includes the Forest Management Plan as an Appendix, fulfills the planning requirements as set forth in the Court's Consent Order. It is intended to provide the public, particularly the residents of Bethel, with a clear understanding of how the property will be managed in the coming years. Moreover, it provides Bethel's Board of Selectmen, and other town bodies, with guidance as to their management and oversight responsibilities.

Receiving trusteeship of the Bingham Forest represents a tremendous opportunity, as well as a significant responsibility, for the residents of Bethel. The property encompasses beautiful and varied terrain, including steep mountain cliffs, clean mountain streams with spectacular waterfalls, abundant wildlife habitat (including potential habitat for rare species), and expansive productive forests. Historically, the Bingham Forest has seen little public recreational use due to its management as a public water supply. However, it offers great potential for the creation of a trail system that would enhance Bethel's reputation as a top-notch outdoor recreation destination. Few, if any, towns in Maine have municipal properties of this size to manage in a manner that benefits the quality of life of its residents, the local economy and the region's natural ecosystems. One chapter in the history of the Bingham Forest has come to an end and a new one is now beginning. This Management Plan, which is based upon the ideas put forth by Bethel citizens, seeks to lay the foundation for that future.

II. PLANNING PROCESS

At their June, 2011 Town Meeting, Bethel residents ratified the Town's acceptance of the Consent Order. Following this action, the Board of Selectmen requested that the Bethel Conservation Commission take the lead in overseeing the development of the Baseline Documentation and the Management Plan for the Bingham Forest. The Conservation Commission held two public meetings in December 2011 and January 2012 to seek public input on future management of the Bingham Forest. A total of 31 people (other than BCC members) attended the meetings. The Conservation Commission also hosted a presentation with a representative from Kingdom Trails, a non-profit trails organization in East Burke, VT that has developed New England's premier mountain bike trail system.

Based upon a recommendation from the Conservation Commission, the Town, in May 2012, entered into a contract with Jerry Bley of Creative Conservation, LLC of Readfield, ME to prepare the Management Plan for the Bingham Forest. BCC appointed one of its members, Landon Fake, to be the liaison with Jerry Bley in the preparation of this plan. Development of this plan has involved the following activities:

- Numerous site visits to the Bingham Forest, many involving knowledgeable professionals to look at different management issues associated with the management plan;
- Meetings and communications with representatives of agencies and organizations in the fields of water quality, wildlife, recreation, economic development and timber management;
- Retaining the services of Morton Trails of Thetford Center, VT, a nationally recognized trails design firm, to assist in the evaluation of trail opportunities;
- Holding two forums of local recreation interests to provide input on trail-based recreation opportunities;

- Detailed discussions with the Bethel Water District regarding water quality issues and the management of the Water District's retained ownership immediately south of the Bingham Forest;
- Visiting Kingdom Trails and other facilities that have developed extensive recreational trail networks;
- Legal analysis of access rights to the Bingham Forest;
- Discussions with Sunday River officials regarding potential collaboration on recreational activities; and
- Meetings with other abutting landowners to discuss public access and other issues.

Discussions between the Town of Bethel and the Bethel Water District conducted as part of the Management Planning process led to negotiation of a memorandum of understanding between the two parties that is intended to result in the Town securing an easement over a 111-acre parcel of land owned by BWD along the Daisy Bryant Road adjacent to the Bingham Forest property along the Bethel/Newry line (see Appendix V). The easement will grant the Town rights to utilize the property for public access and recreation. While the BWD lands are not specifically covered under this Management Plan, the public recreation rights associated with the proposed easement are incorporated into the management recommendations for the Bingham Forest.

III. PROPERTY OVERVIEW

A detailed description and inventory of the Bingham Forest is provided in the Baseline Documentation Report prepared by Sherman Small and adopted by the Bethel Board of Selectmen. Portions of that report have been extracted and included below along with additional information.

Location: The Bingham property is located in the southern portion of the Town of Newry. The Bethel/Newry line forms its southeastern boundary and the Newry/Riley Township line its western boundary. The remaining boundaries are comprised of the height of land to the north and south. By road, the Bingham property is approximately four miles from Bethel Village.

Road Access to the Bingham Forest: Currently, the primary road access to the Bingham Property is from the south via the North Road and the Daisy Bryant Road. The Daisy Bryant Road is gated at the boundary of the Bethel Water District property about one-half mile from the boundary of the Bingham Forest. Historically, this road has been utilized for timber harvesting access to the Bingham Forest for harvest operations north of Chapman Brook. Timber harvests south of Chapman Brook have utilized access via the Chapman Hill Road with the permission of private landowners.

Roads on the Bingham Forest: There is a relatively limited network of woods roads (< 3 miles) on the property (see map in Appendix I) running up both sides of Chapman Brook. Historically, there was a bridge crossing of Chapman Brook connecting the two road systems. Generally speaking, the

roads are designed for winter (frozen ground) use and would need to be improved to allow for year-round travel.

Surrounding Landowners: With the exception of the Bethel Water District property, the Bingham Forest is surrounded by private land ownerships – the largest of which is Sunday River (CNL Income Properties) which abuts the Bingham Forest to the north and west. Other private landowners abutting the Bingham Forest include forest product companies and development interests. Several major conservation land holdings lie within a three mile radius of the Bingham Forest including the state-owned Mahoosuc Public Lands Unit (to the north and west), the White Mountain National Forest (to the south and west), and a state-held conservation easement on a large tract of private forest land (to the west).

Development and Lease Area: The only significant development on the property is located on 9.4 acres of land (comprised of three parcels) near the top of Barker Mountain which have been leased to CNL Income Sunday River, LLC since 1972 and are currently under a lease agreement that expires in 2028. This area includes ski lift structures, snowmaking equipment, sections of ski runs (and mountain bike trails in summer) and maintenance roads. Outside of the lease area the only known development on the Bingham Forest are woods roads (total of 7 acres), including the existing snowmobile trail, and their related structures such as culverts and bridges along with a dilapidated outhouse at a log landing.

Topography: The Bingham Forest covers a wide elevation gradient beginning at around 1000' above sea level near the Bethel/Newry town line and rising to approximately 2900' along the upper slopes of Black Mountain. Slopes on the property range from gently sloping to very steep, with the steepest slopes generally associated with lands along Chapman Brook and its tributaries and cliffs and ledge areas found at high elevations in the northern portion of the property. There are expansive areas of gentler slopes at all elevations within the watershed, though most notably along mid-elevations. These are areas that offer the best opportunities for trail system development.

Forest Resources: The Bingham property is predominantly forested with the exception of small areas of open ledges, non-forested wetlands, and man-made openings such as woods roads. According to an analysis prepared by forester Sherman Small, approximately 1,278 acres is comprised of softwood forest (54.2%), 908 acres of hardwood forest (38.5%), 156 acres of mixed wood forest (6.6%), along with 7 acres of woods roads and the 9.4 acres of leased ski area mentioned above (.7%). The land has been harvested periodically over the generations. The Bethel Water District harvested on a routine basis; however their harvests were limited in size and geography due to the restrictions included in the original Bingham deeds of trust and the desire to protect the public drinking water supply. The most recent harvests have occurred north of Chapman Brook including a harvest to salvage trees with extensive crown damage suffered in the 1998 ice storm.

A visual estimate of the forest resource (not a full timber cruise) conducted by Sherman Small in 2009 and updated in 2012 found stocking on the Bingham Forest to be approximately 15 cords/acre, which is about average for forests in the region, with spruce and fir comprising the largest component of

the forest resource. The inventory also provides the estimated timber value of the Bingham Forest (operable acres) of \$895,315 with about 56% of this value being derived from pulpwood and 44% from saw logs. A more detailed analysis of the forest resource can be found in the Forest Management Plan (Appendix III).

Water Resources: The most significant surface water resources on the Bingham Forest are the extensive network of streams comprised by Chapman Brook and its tributaries. It is estimated that there are at least five miles of perennial streams (which have water in all seasons) plus additional miles of intermittent streams which only flow part of the year. Due to the large elevation gradient, these streams are typically cascading waters with rapids and occasional water falls, some in excess of 50 feet in height. There are no lakes or ponds on the property, nor large wetland complexes. Two small high-elevation boggy areas have been identified on aerial photos but have not yet been field-checked.

The 2007 flood event resulted in major changes to the main stem of Chapman Brook (and a few sections of tributaries), most intensely to its lower section, including substantial erosion and bank-slumping, large numbers of trees and woody debris being deposited in the stream corridor, major movement of rocks and boulders, and some rerouting of the stream channel resulting from debris dams and channel alterations. Lingering effects of the flood continue, most notably continued erosion of exposed banks. The Maine Department of Health & Human Services determined that the storm event substantially increased the turbidity level of the brook beyond those permitted for public drinking water supplies that do not have a filtration system and speculated that the brook may not return to its previous water quality for a long time, if ever. The upper reaches of Chapman Brook and most of its tributaries escaped the extreme damage suffered on the lower elevations of the main stem.

Visual/Scenic Resources: The Bingham Forest is prominently visible from the Androscoggin River valley, providing the backdrop for the Town of Bethel when viewed from the south. Because of its topography and bowl-like shape, virtually all of the property is visible from a distance. In terms of scenic views from the Bingham Land, the most spectacular views are gained from the ledges on Barker Mountain and at locations along the ridgelines that define the boundary for much of the ownership. Views from lower elevations are far less common, usually dependent upon openings in the forest canopy resulting from natural or man-made activities.

Wildlife and Ecological Resources: With regards to the known wildlife resources on the Bingham Forest, it is important to acknowledge that there is limited information available. Wildlife and fisheries biologists from the Maine Department of Inland Fisheries & Wildlife (MDIF&W) and an ecologist from the Maine Natural Areas Program (MNAP) did conduct site visits to the property to assist with the planning process, however, no detailed wildlife inventories have been conducted on the property.

A MNAP report indicates that there is documentation of Spring Salamander, which has been designated as a Species of Special Concern by MDIF&W, in the lower section of Chapman Brook below the Bingham Forest. There is a reasonable potential that the species could also exist further upstream

on the Bingham Forest. Based upon existing information, the Spring Salamander is considered rare in Maine, but not rare enough to be considered threatened or endangered.

Chapman Brook and its tributaries above 1000' in elevation (which is generally the lowest elevation on the Bingham Forest) are considered potential habitat for the Roaring Brook Mayfly, which is listed as an Endangered Species in Maine. MDIF&W has a single set of riparian management guidelines that apply to both the Spotted Salamander and the Roaring Brook Mayfly (discussed below).

Chapman Brook and its tributaries support populations of wild Brook Trout, which have been historically fished by anglers. Wild Brook Trout is considered a prized Maine fisheries resource, though does not trigger specific land management restrictions. The wild Brook Trout populations found in the watershed are likely to be geographically isolated since the steep gradient of the streams generally prevents upstream movement of the fish. MDIF&W Regional Fisheries Biologist, Robert VanRiper, advises that water quality protection is the most important factor in maintaining these wild Brook Trout populations.

The highest elevations of the Bingham Forest, including sub-alpine softwood stands, offer potential habitat for Bicknell's Thrush, a bird that has been designated as a species of Special Concern in Maine and is being evaluated for potential federal listing as a Threatened or Endangered species by the U.S. Fish & Wildlife Service. No documented sightings of Bicknell's Thrush have occurred on the Bingham Forest. Similarly, MDIF&W Regional Biologist Robert Cordes identified two small high elevation areas from aerial photographs that could potentially be open bogs that provide habitat for Northern Bog Lemmings, a State Threatened Species. He recommended that the areas not be disturbed until they are field-checked.

There are no known active deer wintering areas on the Bingham Forest, however MDIF&W records indicate that there is a historic deer wintering area in the softwood stands along the lower reaches of Chapman Brook. Inspection by IF&W Regional Biologist Robert Cordes indicated that most, if not all, of the potential deer wintering habitat, lies on the Bethel Water District holdings and not the Bingham Forest. Other game species, including moose, bear, and upland birds frequent the Bingham Forest.

MNAP Ecologist Andrew Cutko conducted a site visit to the property in 2009 and did not identify any rare or exemplary natural communities on the Bingham Forest. In particular, Cutko sought old growth forests and while he found some areas that contain scattered individual old trees (>150 years old), he did not encounter "intact old growth or late-successional stands worthy of set aside from timber harvest." Cutko did note the intact condition of the property's riparian (stream-side) areas and suggested that they continue to be preserved.

Recreational Resources: The Bingham Forest has historically been managed as a public drinking water supply and therefor did not permit public vehicle access and was not promoted for outdoor recreational use. The Bethel Water District did permit hunting with permission, an opportunity that was

utilized by a handful of local residents each year. Others fished its streams for wild Brook Trout. In addition, the Greenstock Snowmobile Club, a local snowmobile club, has maintained a snowmobile trail that traverses both the Bethel Water District land and the eastern corner of the Bingham Forest, part of a trail connecting the Androscoggin River valley to the Sunday River valley. Outside of these permitted activities, past recreational use of the Bingham Forest has been non-authorized use by individuals including some “bootleg” ski trails down the backside of Sunday River used by adventure-seeking skiers. Now that the Bingham Forest is no longer being used as a primary drinking water supply, there is the opportunity to develop a range of outdoor recreational uses on the property.

IV. MANAGEMENT OBJECTIVES AND LIMITATIONS

A. *Bingham Deeds of Trust and Consent Order Directives*

The original deeds of trust that conveyed the property from William Bingham II to the Bethel Water Company in 1925 included detailed restrictions and provisions to ensure that the land would be managed as a public water supply. The Bingham deeds of trust also stated that if the land were ever abandoned as a water supply, then the land was to be transferred to the State of Maine to be forever held as a “public game preserve, bird or game sanctuary, public park, or State forest reserve.”

When the 2007 storm ended the use of Chapman Brook as a primary water supply, it placed the future of the property in limbo. Ultimately, the Bethel Water District, the Town of Bethel and the State of Maine deliberated an outcome that was presented in a Consent Order issued by the Oxford County Superior Court and agreed to by the parties. The Court used the legal doctrine of *cy-pres* to amend the terms of the original deeds of trust which could no longer achieve their primary purpose. The doctrine requires that the court seek to maintain the original intention of the trust in a manner that reflects current realities. The Court accomplished this by requiring that the Bingham Forest be managed in a manner to preserve its potential future use as an emergency water supply, while allowing for other uses contemplated in the original deeds of trust such as a wildlife sanctuary, public park and forest reserve.

The Consent Order lays out a hierarchy of land uses with water quality protection as the highest priority use. All other uses of the property must be done in a manner that will not compromise water quality and the potential future use of Chapman Brook as an emergency water supply. The Consent Order, however, does clearly call for multiple-use management of the property, including sustainable yield timber harvesting, wildlife habitat protection, and low-impact outdoor recreation.

The Consent Order provides very strong and extensive guidance on the development of this Management Plan and the related Forest Management Plan as expressed in the excerpt from the Consent Order on the following page.

**RELEVANT EXCERPTS FROM
BINGHAM CONSENT ORDER**

12. *The Town shall hire a qualified person to prepare a Management Plan, which the Town shall adopt and implement as soon as reasonably possible but in any event no later than two years from the effective date of this Consent Order. The Management Plan shall be updated from time to time, but not less than every 20 years, to reflect the then-current best available science, and shall conform to the following requirements:*
- a. *The Management Plan shall soundly plan for the protection of water quality in Chapman Brook and its tributaries; the conservation of significant wildlife habitat, as defined by the Maine Natural Resources Protection Act, 38 M.R.S §§ 480-A to 480-HH, as amended, and other locally significant wildlife habitat, including but not limited to deer wintering areas; and the preservation of the natural resource, recreational, and scenic qualities of the Bingham Land.*
 - b. *Management of the Bingham Land shall support multiple uses, including the conservation of scenic and natural resources, low-impact outdoor recreation, wildlife habitat, sustainable yield timber harvesting, and other uses consistent with management of the watershed for protection of the water quality of Chapman Brook and its tributaries.*
 - c. *The Management Plan may provide for public access on the Bingham Land, however, motorized public access shall be limited to snowmobiles. The Town shall not allow public access to the extent that it interferes with protecting the water quality of Chapman Brook and its tributaries.*
 - d. *Management of the Bingham Land may provide for timber harvesting, however, any timber harvesting must be carried out in accordance with a written Forest Management Plan, as set forth more specifically below, and which shall be made a part of the Management Plan.*
 - e. *Income generated from any timber harvest shall be used: first to pay the property taxes on the Bingham Land; and second to manage the Bingham Land in accordance with the Management Plan.*
13. *The Forest Management Plan shall be drafted and certified by a state-licensed professional forester. A written harvest prescription plan, drafted to conform with the Forest Management Plan and certified by a state-licensed professional forester, shall be required for each harvest. Timber harvests shall not exceed sustained yield levels, and shall be secondary to and compatible with management of the Bingham Forest as a natural area supporting and protecting water quality and quantity, while providing high quality wildlife habitat and low-impact public recreation. The Forest Management Plan shall define management practices that:*
- a. *Employ the highest standards for protection of water quality, and at a minimum, the Forest Management Plan shall include a one hundred foot no-cut buffer adjacent to Chapman Brook and all its perennial tributaries.*
 - b. *Maintain a healthy and biologically diverse forest that supports a full range of native flora and fauna, employing diverse silvicultural methods and rotation periods, including management for late successional forest components.*
 - c. *Protect sensitive resources, including scenic, riparian and high elevation areas.*
 - d. *Enhance wildlife values, as set forth below.*
14. *The Forest Management Plan shall enhance the wildlife values of the Bingham Land through:*
- a. *The retention of late successional trees (also known as forest legacy trees) to a minimum standard of five square feet of retained legacy trees per acre for every forty acres where trees, which are appropriate for retention as legacy trees, are present in the existing stand.*
 - b. *The retention of mast cull trees (including oak and beech), large diameter snag trees (dead or dying trees suitable for cavity nesters, bat roosts, invertebrate refuge, and fungi, moss and lichen grown medium), and live den trees, where "live den trees" means live cull trees at least 18 inches in diameter with existing cavities.*
 - c. *The restoration and maintenance, adjacent to Chapman Brook, of a two hundred and thirty-foot riparian wildlife management area, extending beyond the one hundred foot no-cut buffer adjacent to Chapman Brook set forth above, consisting of a well-stocked softwood forest, where "well- live stocked" means containing trees spaced widely enough to prevent competition yet closely enough to utilize the entire site, as recommended by the most current silvicultural guides issued by the United States Forest Service or its successor agency.*
 - d. *Adherence to the current deer wintering areas management guidelines, endorsed by the Maine Department of Inland Fisheries and Wildlife or its successor agency, where any deer wintering complexes are found to occur on the Bingham Land.*
 - e. *Adherence to the current state or federal management guidelines for any rare, endangered, or special concern species found to occur on the Bingham Land.*
 - f. *The retention and protection of vernal pool wetlands and vernal pool wetland buffers, in accordance with the current best management practices endorsed by the Maine Department of Inland Fisheries and Wildlife or its successor agency, and any other features beneficial to wildlife as may be recommended by a wildlife biologist.*

In developing this management plan, a number of questions arose as to the interpretation of certain elements of the Consent Order. Bethel's Town Manager wrote the Maine Attorney General's Office seeking clarification on a number of points. The response from the Assistant Attorney General indicated that the Town, as trustee of the property, had the authority to interpret the Consent Order in a responsible manner as follows:

... the Bingham Land is subject to a charitable trust, and as trustee of the land the Town has a fiduciary duty to manage the land in a way that provides for multiple uses while protecting the emergency water supply that is available by way of Chapman Brook. ...Your letter reports the Town's effort to thoroughly review the terms of the order so that an appropriate management plan may be drafted. In our view the trustee is acting properly. It is up to the trustee to answer the questions posted in the letter. As long as the trustee exercises the duties of care and loyalty we will not second guess the trustee's decision. Again it appears to us the trustee is acting properly and there is no need for us to get involved. [Full correspondence between Town and Attorney General is included in Appendix II]

Upon receiving this correspondence from the Attorney General, the Bethel Board of Selectmen approved the following interpretation of specific elements of the Consent Order. It is important to note that the Select Board did not endorse any of these activities, but simply stated that they are allowable under the Consent Order provided that all recreational development and timber harvesting activity is consistent with the protection of water quality and preservation of wildlife habitat:

1. The use of machinery for the construction and maintenance of new and existing trails and roads;
2. The construction of bridges over streams and other road and trail improvements;
3. The removal of trees within 100' of Chapman Brook and its tributaries for establishment and maintenance of stream crossings by logging roads and major trails (wide trails constructed with heavy equipment), as well as limited sections of minor trails (narrow trails constructed without heavy equipment or ground disturbance) where reasonable alternatives don't exist;
4. The use of mechanical equipment ("snow cats," snowmobiles, etc.) to groom snowmobile and Nordic ski trails;
5. Structures that are typical of a state park, such as covered picnic tables, rest rooms, information kiosks, warming shelters etc.;
6. Collection of user fees and donations to help cover the costs of recreational development and management; and
7. Vehicular access to a parking area and trailhead from which the public could embark upon non-motorized recreation activities.

B. Local Zoning and Land Use Restrictions

The Bingham Forest is currently zoned by the Town of Newry as a Protection Zone because of its historic use as the public water supply for the Town of Bethel. Newry’s Unified Development Review Ordinance (updated 12/19/11) defines the Protection Zone as follows:

The purpose of the Protection District is to provide protection for significant and vulnerable natural resources. These include areas above 2,700 feet in elevation from mean sea level and those areas within the Town of Newry used as municipal water supply.

While it is possible that the Town of Newry may want to reconsider its zoning of the Bingham Forest considering the fact that the land is no longer being used as a primary drinking water source, this Management Plan assumes that the current zoning will remain in place. The Town’s zoning restrictions do not significantly limit those uses permitted under the Consent Order with the possible exception of certain recreational uses that could be contemplated for the property specifically:

- “Campgrounds,” defined as “an area to accommodate two or more parties in temporary living quarters, including, but not limited to tents, recreational vehicles, or other shelters, for which a fee is charged,” are prohibited in this zone;
- “Land Based Recreation Activities, Equipment & Maintenance” (which includes trail systems) require Planning Board review and approval;
- “Commercial Recreation,” defined “as any commercial enterprise which receives a fee in return for the provision of some recreational activity including but not limited to: amusement facilities, racquet and tennis clubs, health facility, amusement parks, gymnasiums and swimming pools, shooting ranges, skiing, golf course, and the like,” are prohibited in this zone.

Depending on how the Town of Newry interprets its Unified Development Review Ordinance, the town of Bethel may need to ask for site plan review to pursue the recreational development contemplated in this plan. However, the Protection Zone was established to protect the Bethel water supply, which is also required under the Consent Order, so it would seem reasonable to expect that zoning issues can be resolved through cooperative planning efforts between the two towns.

C. Management Objectives Set Forth by Bethel Conservation Commission

At the beginning of the Management Planning process, the Bethel Conservation Commission, drawing upon the public input it had received, put forward set of objectives for the plan in addition to those prescribed by the Consent Order. They are as follows:

- I. *Land Use Objectives (in addition to those articulated in Consent Order)*

- A. *Conduct sustainable timber management providing revenue to support management of property.*
 - B. *Develop high quality non-motorized recreational trail network suited to the attributes of the land and recreation demands.*
 - C. *Allow for snowmobile trails that provide important links to regional trail systems.*
 - D. *Provide hunting and fishing opportunities.*
 - E. *Create easily accessible day-use opportunities such as picnicking.*
 - F. *Provide disabled access and recreational use opportunities.*
 - G. *Provide non-motorized access points to Sunday River Ski Resort and Sunday River valley.*
- II. *Community Objectives*
- A. *Provide uses that directly and indirectly benefit the local tourism economy.*
 - B. *Conduct forest management activities that contribute to the local forest economy.*
 - C. *Provide outdoor and environmental education opportunities for schools and other institutions.*
- III. *Management and Financial Objectives*
- A. *Have the property be managed in a manner that is self-supporting and does not create a fiscal drain on the Town.*
 - B. *Create a competent and efficient long-term oversight and management structure for the property.*

V. RESOURCE MANAGEMENT ISSUES & RECOMMENDATIONS

A. Water Quality

As stated above, the Consent Order gives top priority to protection of water quality with the goal of preserving the quality of Chapman Brook for potential future use as an emergency water supply. The Maine Department of Health and Human Services endorsed retaining Chapman Brook as a back-up water supply, citing Bethel Water District's 2007 storm experience as the type of disruption that can result when a water utility does not have a readily available back-up supply. While the Bethel Water

District Trustees have stated that the likelihood of utilizing Chapman Brook as a drinking water source again in the foreseeable future is small, it is the objective of this Management Plan to ensure that all activities on the property are conducted in a manner that will ensure continued clean water in Chapman Brook and its tributaries.

Preserving water quality on the Bingham Forest has important public benefits even if the Bethel Water District never needs to utilize Chapman Brook as a water source ever again. The measures prescribed to ensure high water quality (e.g. no-cut buffers, minimized water crossing, best management practices, etc.) mandate careful road and trail siting, construction and maintenance. These measures will also provide important benefits to fisheries and wildlife habitat. For example, MDIF&W's management guidelines for Roaring Brook Mayfly, Spring Salamander and wild Brook Trout recommend 100' buffers along streams – the same buffer required by the Consent Order to protect drinking water quality.

The interpretation of this restriction by the Bethel Board of Selectmen is that it is intended to prohibit timber harvesting operations within the 100' buffer, but does not prohibit necessary woods road or trail crossings of perennial streams and the buffer area provided that such crossings are minimized and are constructed to best management practices prescribed by the Maine Forest Service.

As part of the Management Planning process, inquiries were made with the Bethel Water District, Androscoggin River Watershed Council, and the Maine Rural Water Association, as well as with wildlife and forestry professionals regarding additional water quality protection measures that should be taken to ensure water quality protection. In addition, selected literature was reviewed on the subject. Based upon this research, a number of additional management practices are included in the recommendations below.

The 2007 flash flood damage to Chapman Brook, and to a much lesser extent some of its tributaries, is still very evident, most notably the eroded stream banks and clay slides (see photos in Baseline Documentation). Moreover, it is obvious that these areas are continuing to erode and add sediment to Chapman Brook. A July 12, 2007 letter from the Maine Drinking Water Program read as follows:

Recent weather events in Bethel have severely altered the course of Chapman Brook and caused drastic changes within the Chapman Brook watershed. The original impoundment contains 16 feet of sand, silt, rocks and trees, and the upper regions of the watershed appear to have suffered serious erosion and landslides, exposing layers of clay and silt. Until July 12, 2007, water in Chapman Brook was clear; however, the source is now full of clay, strongly affecting turbidity levels. The water quality diminished as a result of the events of July 12, 2007 and the source may never return to the pristine conditions existent before the storm.

This situation raises the question of whether any type of restoration efforts should be initiated to reduce the ongoing erosion and siltation of Chapman Brook. This question was put to the Bethel Water District Trustees and other professionals knowledgeable about watershed dynamics. The consensus of all those consulted was to not attempt any erosion control or restoration efforts. The reasons offered included the following:

- It was a natural event which probably has occurred at other times in the history of the Chapman Brook watershed.
- The worst damage has already occurred; conditions will slowly improve.
- It will stabilize itself within a few years.
- Trying to restore things could easily cause additional damage.
- Affected areas are too inaccessible.
- The cost would be exorbitant.
- The chance that Chapman Brook will be needed as an emergency water source in the near future does not warrant taking corrective action.

Water Quality Recommendations:

1. The Consent Order requires a 100' no-harvest buffer (measured horizontally) along perennial streams, but does not provide a definition for perennial streams. While it is standard practice to utilize USGS maps to identify these streams, it is recommended that the more-inclusive definition of a stream provided in Maine's Natural Resource Protection Act be utilized to designate perennial streams on the Bingham Forest that feed into Chapman Brook above the impoundment. This will significantly increase the mileage of buffered streams. Prior to a planned timber harvest, the harvest area should be inspected to identify all perennial streams.
2. Expand the 100' no-cut buffer to include areas where there are steep slopes and/or unstable soils that pose a serious threat to water quality particularly on the lower sections of Chapman Brook which include extensive steep slopes. Prior to a planned timber harvest, the harvest area should be inspected to identify all such areas.
3. Require that all forestry, stream crossing, and road building operations follow the practices specified in Best Management Practices for Forestry: Protecting Maine's Water Quality published by the Maine Forest Service.
4. Conduct all forestry operations on frozen ground unless there are special circumstances that call for a dry season (late summer/early fall) harvest, in which case extra precautions shall be taken to protect water quality.
5. Require that all trail construction, including stream crossings, follow reputable trail-building standards for the type of trails that are being built such as the U.S. Forest Service Trail Construction & Maintenance Notebook, the Appalachian Mountain Club's,

The Complete Guide to Trail Building and Maintenance, or the International Mountain Bike Association's, Trail Solutions: IMBA's Guide to Building Sweet Singletrack.

6. Require an annual inspection and maintenance plan for all trails and roads to identify erosion problems.
7. Prohibit all broadcast application (aerial or ground spray) of chemical pesticides anywhere on the property. Ground application of pesticides must be conducted in accordance with all label restrictions (with particular attention given to protecting surface waters) by a licensed applicator. The application of chemical pesticide should be restricted to uses to benefit the natural ecosystem (e.g. removal of invasive species) and protecting human health rather than for general land management purposes (e.g. brush control along roads or silvicultural treatments).
8. No restoration efforts of Chapman Brook are proposed at this time.
9. An annual water quality monitoring program should be established on Chapman Brook to monitor the improvement of water quality within the watershed.

B. *Wildlife Habitat*

As part of this Management Planning process, the best available information was sought from the Regional Fisheries and Wildlife Biologists at the Maine Department of Inland Fisheries & Wildlife as well as Staff Ecologist for the Maine Natural Areas Program. All gave generously of their time and expertise including site visits to the Bingham Forest. However, there has been no detailed ecological or wildlife survey of the property, inventorying the presence of wildlife species or important habitat features.

When considering the issue of habitat conservation, it is important to look not only at the specific features of a property, but also the landscape in which the property is located. For example, is it part of an important wildlife corridor, does it share an important natural community with a neighboring landowner, and are there other conservation properties in the vicinity? The key landscape issues to be considered for the Bingham Forest are as follows:

- The only adjacent “protected” land is the 111-acre Bethel Water District property abutting the SE boundary of the Bingham Forest (Newry/Bethel town line) along Chapman Brook.
- The existence of two large public conservation land holdings within three miles of the Bingham Forest. This includes the 45,000 acres of state conservation lands encompassing the Mahoosuc Public Lands Unit, Grafton State Park and associated state conservation easement lands and the 47,000-acre Maine section of the White Mountain National Forest (with an additional 700,000 acres across the border in New Hampshire).

- Within both of these state and federal conservation lands are substantial set-aside areas; a 10,000-acre ecological preserve in the state's Mahoosuc Unit and the 12,000-acre Caribou-Speckled Wilderness Area in the Maine section of the WMNF.
- Because the boundaries of the Bingham Forest were laid out based upon watershed considerations, with much of the boundary associated with heights of land, it has substantial ecological integrity as a unit. Natural communities are not fragmented by ownership lines except for the boundary along the lower elevations of the Chapman Brook watershed (Newry/Bethel line) and a small portion of the upper watershed along the Newry/Riley town line.

If, as recent data would indicate, climate change is a reality, then wildlife habitat management needs to take into account the transition of ecosystems over time and the resulting migration of plant and wildlife populations to suitable habitats. In a location such as the Bingham Forest, this phenomenon is likely to occur along elevation gradients. As temperatures rise, habitat types will shift in elevation. From a management perspective, the goal should be to provide viable corridors for this transition/migration to proceed. In the case of the Bingham Forest, the most obvious corridors would be Chapman Brook and its major tributaries as they rise through the watershed.

As described above, the Consent Order provides detailed wildlife habitat prescriptions to be followed on the Bingham Forest including directives on biodiversity, riparian habitat, late successional trees, mast trees (poor quality trees of certain species like oak and beech that produce valuable food for wildlife), snag trees (dead or dying trees that provide homes for a wide range of wildlife), den trees, deer wintering areas, rare and endangered species, and vernal pools. These requirements will ensure that a forester always plan a harvest with wildlife habitat as a top priority.

According to forest management planning work done by forester Sherman Small, at least one-quarter of the property (603 acres) will be placed off-limits to timber management due to steep slopes, unstable soils, and the designated 100' buffer on all perennial streams (see Forest Management Plan in Appendix III). This number will likely increase as more perennial streams are identified. When the 230' buffer along Chapman Brook (where limited harvesting is permitted) is considered, approximately 31% (736 acres) of the property comes under strict harvest limitations. Additional lands will likely be placed off-limits to harvesting as a result of pre-harvest planning that may uncover vernal pools or other significant resources that require special attention.

The extensive list of wildlife habitat protection requirements in the Consent Order substantially exceeds requirements under state and local regulations and meets or exceeds the guidelines for all of the noteworthy species that potentially may occur on the Bingham Forest. For example, the 100' no-harvest buffer on all perennial streams meets the management guidelines for the Spring Salamander and Roaring Brook Mayfly which may live on the Bingham

property. The issue of how much of the Bingham Forest to set aside from timber harvesting (resulting in reduced timber revenue to the Town) to benefit wildlife has been raised by both experts and lay-persons alike. This Management Plan seeks to balance wildlife and timber objectives by expanding the definition of perennial streams to be protected by a no-harvest buffer and establishing a 230-foot riparian habitat zone on a second stream (in addition to Chapman Brook), as recommended below.

Wildlife Recommendations:

10. Seek to have a qualified biologist (preferably through a collaboration with the state, university, or a non-profit organization) conduct a more detailed inventory of the Bingham Forest to identify any threatened, endangered or species of special concern on the property and any other significant wildlife and ecological features that require special management practices. If significant resources are discovered, adjust management practices accordingly to protect these resources.
11. Add a 230' riparian habitat management zone to a northern tributary of Chapman Brook (Consent Order only requires it on Chapman Brook) to provide contiguous wildlife corridors throughout the Bingham Forest that connect to the high elevation inoperable areas. (See map in Appendix I)
12. Conduct pre-harvest inspections of all harvest areas to identify vernal pools, perennial streams, and other significant habitat, flag protected buffer areas and mark required mast, snag and den trees as provided for in the Consent Order.
13. Involve a wildlife biologist in the development and review of any trail design plan to ensure that the proposed trail system does not adversely impact wildlife resources. In particular, ensure that any winter recreation trails avoid identified deer wintering areas and that trail construction within stream corridors be minimized.

C. Recreation

The size, unspoiled natural beauty, and varied terrain of the Bingham Forest offers limitless potential for a wide variety of outdoor recreation activities. While the Consent Order provides very specific direction on uses such as forest management, water quality protection and habitat conservation, it provides scant guidance on recreational use. Moreover, since the property has historically been off-limits to most recreational use, there is little historical use to draw upon. The Consent Order specifically states that recreational use must be non-motorized except for a snowmobile trail and that only “low-impact outdoor recreation” is permitted. The Consent Order does not define “low-impact”, however when one reviews other relevant definitions of “primitive recreation” (from LUPC Chapter 10 regulations) and “traditional non-intensive outdoor recreation” (from Land for Maine’s

Future model forest easement), the following activities are generally included: fishing, hiking, hunting, nature observation, picnicking, boating, cross-country skiing, snow-shoeing, bicycling, swimming, primitive non-commercial camping, and outdoor education and nature study.

Accepting this definition of low-impact recreation still leaves the question of how significant of presence should recreational use have on the Bingham Forest. Input from Bethel residents indicated strong interest and enthusiasm for developing a substantial trail network on the property for summer uses, most notably mountain biking, but also hiking, running, and horseback riding, as well as groomed Nordic skiing and snowshoeing in the winter. In turn, the Bethel Board of Selectmen adopted an interpretation of the Consent Order that would permit development of trail systems and related facilities provided that they did not adversely impact water quality or wildlife habitat.

Interest in creating a mountain biking trail system drew the greatest support from town residents. The terrain of the Bingham Forest is highly suitable for a wide variety of mountain biking trails. “Single track” trails are relatively inexpensive to build, lend themselves to (supervised) volunteer construction, and, when well-built and maintained, have very little visual or environmental impact. Mountain biking trails offer the best opportunity to attract visitors to the area in the off season when lodging, eating and other local businesses struggle. The desire for the economic benefits of trails was also expressed in public meetings. Kingdom Trails, a nonprofit trail network in a small town in Northeast Vermont, whose core mission is economic development, is a compelling model for this type of development. (See Appendix VI for more information). A combination of moderate single and double track trails would not compete with, but rather enhance Sunday River’s current downhill mountain biking operation and appeal to a wider population of bikers.

The Town of Bethel is currently working on a plan to link Angevine Park and Bethel village with off-road pathway. If successful, this would provide a trail connection between the Village Center and the Bingham Forest which would add to its attraction as a trail destination.

With these understandings in place, it was decided to retain the services of Morton Trails of Thetford Center, Vermont, a national recognized trails design firm that has designed and developed world class trail systems around North America including several in Maine. Morton Trails was asked to conduct a preliminary assessment of the recreational potential of the Bingham Forest and to provide a conceptual plan for a potential trail system (see its report in Appendix IV). While the work by Morton Trails is very preliminary in nature, it confirms the beliefs of local outdoor enthusiasts, that the Bingham Forest has tremendous potential for trail development. Development of a trail network that reflects the Morton Trails concept would add significant outdoor recreation opportunities for area residents and become a significant new outdoor recreation destination that could attract seeking trail-based recreation activities.

Morton Trails identified several distinctive features of the Bingham Forest that make it a desirable location for trail development, including:

- The Bingham Forest is a large undeveloped property allowing for creation and long-term security of a major trail network without having to deal with multiple private property owners and without man-made obstacles and interferences such as roads, driveways, fences and power lines.
- The property has the potential for lift-served access from the Sunday River side of Barker Mountain to provide access to the higher elevations of the property (preliminary discussions have occurred with Sunday River).
- The large elevation gradient offers varied trail experiences (and some challenges).
- The proximity to the Bethel community and the potential to create trail links from both Bethel and Sunday River to the Bingham Forest.

The preliminary conceptual design for a trail system on the Bingham Forest developed by Morton Trails envisions a network of trails for both summer and winter use with many, but not all, trails being utilized in both seasons. The Morton Plan calls for a system of “core” multi-purpose trails (14’ in width) interwoven with a broader network of narrower trails for mountain-biking, hiking, snowshoeing, etc. It is anticipated that the core trails will also be utilized for timber management access for harvest operations.

The Morton Trails’ plan includes a lower, middle and upper trail system, each sited in areas with moderate terrain that would allow trails for all ability levels. Access to the upper trail system (2100’ – 2300’ in elevation) would be via a Sunday River chair lift and access trail off of the back side of the mountain. This high elevation trail system has the potential for receiving early season and late season snow making it a potential training destination for Nordic ski teams from colleges and high schools throughout New England and for other hard-core Nordic skiers. The lift served access would also create a unique opportunity for cross-country skiers and mountain bikers of diverse skill levels (along with hikers) to access a 10 – 15 kilometer trail that winds its way down through the Bingham Forest, ending at the bottom of the property where they could be shuttled back to Sunday River.

The lower trail system (900’ – 1100’ in elevation) would be primarily located on lands owned by the Bethel Water District land in accordance with a recreational easement currently being developed between BWD and the Town of Bethel. This area is currently accessible via the Daisy Bryant Road. It would also be conducive to development of a day-use picnic area, trails suitable for disabled individuals, and an educational trail that examines the 2007 flood impacts.

The middle trail system (1400’ – 1700’ in elevation) could be accessed by a well-designed trail leading up from the lower trail system and down from the upper trail system. However, in order to make it available to the widest spectrum of users would require improving (and possibly re-routing) an existing woods road to provide public vehicle access to a parking area and trailhead. An alternative access route to the mid-slope area may be possible through cooperation with an abutting landowner.

Other trail opportunities present on the Bingham Forest include: a hiking trail loop that encompasses three scenic waterfalls on Chapman Brook and its tributaries; a hiking (and possibly

mountain-biking trail) that follows the height of land (and boundary) that defines the watershed; advanced back-country ski trails down the ledges of Barker Mountain; and a trail paralleling the snowmobile trail connecting from the North Road to the Sunday River Valley. It is anticipated that development of a trail system will be done in conjunction with developing roads and skid trails for timber management which can substantially reduce the cost of trail development.

The Greenstock Snowmobile Club plans to continue to maintain the existing snowmobile trail that traverses the eastern end of the Bingham Forest as provided for under the Consent Order. The Club has no intention of seeking permission for additional snowmobile use of the property in the foreseeable future.

Hunting has been a traditional use of the Bingham Forest by some local residents and support for continued hunting opportunities was voiced at the public meetings. Hunting use of the property has, and will continue to be, limited by the lack of vehicle access as most hunters, particularly deer hunters, want to be able to drive in close proximity to their hunting grounds.

The Consent Order allows for the existing lease to CNL Income - Sunday River to continue into the future. The ski area has made substantial capital investments on these lands which are integral to the operation of the ski area.

The development of any recreational opportunities needs to occur in concert with the other management objectives for the Bingham Forest. In particular, the development of any trail system or other facilities must be done in a manner that does not threaten water quality or significant wildlife habitat. This may result in having to choose less optimum routes for a trail or more expensive trail construction practices in sensitive locations.

The development of trails on the Bingham Forest needs to occur with an eye towards what will most benefit the people and economy of the Bethel region. In particular, the development of Nordic ski trails on the property should avoid direct competition with other Nordic ski centers in the area. Similar to developing mountain biking trails that complement Sunday River's operation, Nordic trails should seek to expand the market. Morton Trails, based upon their experiences around the country, has found that adding new recreational trail opportunities enhances the draw of tourism destinations such as Bethel, benefiting existing businesses. Currently, there is an effort underway to develop a non-profit cooperative venture among the area's cross-country ski areas. If successful, this would provide an avenue for incorporating Nordic skiing opportunities on the Bingham Forest into the surrounding community.

Recreation Recommendations:

14. Retain the services of a highly qualified trails design firm to work with town residents to develop a detailed long-term trails plan for the Bingham Forest. The plan should

provide a phased approach to trails development coordinated with the development of timber management roads and should incorporate the following priorities:

- a. Develop a significant mountain biking trail network; and
 - b. Initially develop a shorter, but high quality, multi-use trails that are easily accessed on the Bethel Water District to promote the use and support of the Bingham Forest as a recreation area.
15. Create a “spine” trail (similar to the “Bingham Adventure” trail in the Morton concept) that links Sunday River with the Bingham Forest and provides a multi –use trail from which other trails, including hiking, Nordic and single track can be accessed from. Work with Sunday River Ski Area to develop a plan for lift serve access to the Bingham Forest for both winter and summer uses in a coordinated and safe manner.
 16. Coordinate the development of the core trail system with development of timber management roads.
 17. Evaluate options for public vehicle access to a mid-slope parking area and trailhead including discussions with abutting landowners who may be willing to cooperate with the Town.
 18. Allow for continued hunting and fishing opportunities on the Bingham Forest.
 19. Work with existing cross-country ski centers in the Bethel area to develop Nordic trails on the Bingham Forest that will provide benefits to the whole community.

D. Sustainable Timber Management

The Consent Order calls for the forest on the Bingham Forest to be managed for “sustainable yield timber harvesting,” a term which refers to not cutting more timber than is grown on the property. The application of this term depends upon the timeframe utilized to balance harvest and growth. For the purpose of this Management Plan, the term sustainable yield timber harvest will apply over the 10-year life of the Forest Management Plan meaning that over the ten-year period, the planned harvest on the property will not exceed growth. There may be extenuating circumstances where there are valid silvicultural reasons for harvest to exceed growth within a ten-year period; for example salvage of wind-throw or response to a disease or insect infestation. In such cases, the forester will need to provide the silvicultural rationale for the additional harvest and explain when the balance between growth and harvest will be achieved.

Under the Consent Order, revenue from timber harvests can only be used to pay for taxes and other management costs related to the property including wildlife habitat management, water quality protection, forest management planning and infrastructure, and the development of recreational trails

and facilities on the property. It is anticipated that harvests will be spaced out over 3-5 year periods to be most cost-effective and to limit interference with recreational activities, particularly winter uses.

Timber management of the Bingham Forest is to be closely coordinated with recreational use of the property. Most importantly, the lay-out of timber management roads and skid trails should be done so that these roads and trails can also serve as the primary spine of a recreational trails network. Integrating the woods road and skid trail network can provide a cost-effective way to develop a trail network while also minimizing the cumulative impact of trails and roads on water quality and wildlife habitat. It is understood that building a woods road network that also serves recreational objectives is likely to cost substantially more than would be the case if the road system were only serving harvesting needs due to the siting and design requirements of a recreational trail network. Nonetheless, once in place, a well-designed system should be able to serve the Town's timber management and recreational objectives in a cost-effective way over the long-term.

The limitations on forest harvesting activities related to water quality protection and wildlife habitat protection are addressed in detail in other sections of this plan and will not be repeated here. While it will be important for the forester to consult with trail managers in developing a harvest plan for an area where trails are located, no specific buffers or standards are being proposed as part of this Management Plan. The many limitations imposed by the Consent Order on timber harvesting provide significant assurance that harvesting will be done in a responsible manner. As long as a harvest is planned and executed with a sensitive eye towards aesthetic impacts (understanding that a timber harvest does not always look good), conflicts with recreational users can be minimized. For example, logging yards can be established off of the road (trail) and screened from recreational users. It will be important to develop a strong working relationship with logging contractors so that they understand the special resources of the Bingham Forest and utilize harvesting practices designed to maintain those resources. Part of the recreational/educational experience on the Bingham Forest can include seeing how the property is being managed to support the local economy and the recreational infrastructure of the Bingham Forest.

Detailed forest stand information and proposed forest management activities are included in the Forest Management Plan found in Appendix III. The plan has been prepared by forester Sherman Small to be fully consistent with all of the recommendations of this Management Plan.

The forest products industry remains an important contributor to the local and regional economy. In managing the forests on the Bingham Forest, the Town should consider strategies that will most benefit residents and the local economy. Hiring local timber and road contractors and seeking to have harvested timber sold to mills and other end users in the region are just a few of the strategies that can be utilized to help ensure that dollars are kept in the local economy rather than siphoned off elsewhere.

Sustainable Timber Management Recommendations

20. Conduct pre-harvest assessments of all planned timber sales to ensure that all wildlife (e.g. identification of vernal pools) and water quality (confirming location of required buffers) considerations are addressed in advance of a harvest.
21. Develop a woods roads and skid trail network on the property in close coordination with trail planners to ensure the greatest possible dual use for recreation and timber management and ensure that these roads/trails are constructed to standards that serve both forest management and recreational objectives.
22. Develop strategies to ensure that timber management activities are conducted in a manner that benefits the local and regional economy while being fiscally responsible and not compromising other values of the Bingham Forest.
23. Maintain harvest and stocking information sufficient to determine that the property is being managed on a sustainable yield basis.

VI. MANAGEMENT STRUCTURE

In accepting the transfer of the Bingham Forest, the Town of Bethel has taken on a substantial legal and financial responsibility. The Consent Order which resulted in the land transfer places very high expectations and standards on the Town. If managed wisely, the Bingham Forest can provide immeasurable benefits to the Town and its residents for many years to come. However, without adequate oversight, the property could be mismanaged in a manner that results in legal and financial, and political conflicts.

The task of overseeing the management of the Bingham Forest is large enough and important enough that it should not be simply added to the responsibilities of an existing town body nor farmed out to an entity that is not a part of town government. It also is a multi-disciplinary task that requires a variety of expertise and stakeholders. With these considerations in mind, it is recommended that the Town create a Bingham Forest Authority, similar in structure to the Bethel Airport Authority, which would have the responsibility of overseeing management of the property. The Authority should be appointed by the Bethel Board of Selectmen and consist of five members with the goal of having members with expertise in the following areas: water quality protection (a slot to be provided to the Bethel Water District), recreation, timber management, wildlife, and the local tourism economy.

The Authority could elect to enter into contracts with individuals/firms to take on management responsibilities, most notably a forester. It could also seek out partnerships or contracts with

organizations, such as Mahoosuc Pathways, that may be interested in taking the lead on recreation initiatives. It is anticipated that administrative support will be provided by the Town Office staff.

Like the Airport Authority, the Bingham Forest Authority would answer to the Board of Selectmen, but would have general authority to manage the day-to-day affairs of the Bingham Forest in accordance with the Management Plan and the Forest Management Plan. The Select Board (and when appropriate Town Meeting) would be responsible for approving annual budgets and expenditures over a certain amount. The Authority would develop its rules of operation which would be approved by the Board of Selectmen. The Authority would work with the Town Manager in carrying out its functions.

VII. FUNDING FOR BINGHAM FOREST

A. *Costs*

The following categories of costs are anticipated for the Bingham Forest:

Initial and Future Planning Costs: The Town has advanced the funding necessary for the initial development of the Baseline Documentation, this Management Plan and the Forest Management Plan with the understanding that it will be reimbursed for these costs. The Management and Forest Management Plans will need to be updated periodically, typically once every ten years.

Property Taxes: The Town of Bethel will be required to pay property taxes on the Bingham Forest at the Tree Growth rate to the Town of Newry.

Forest Management Costs: Costs related to forest management include consulting forester fees, woods road construction and maintenance and other related forestry tasks. It may be desired to provide for these costs through timber harvest contracts whereby the forester receives a portion of the timber revenue.

General Property Upkeep: Other property maintenance tasks include boundary line maintenance, signage, waste disposal, and other related tasks.

Recreational Development and Management: This category would include development and maintenance of trail systems (including grooming of winter trails), public access roads, parking areas, trailheads, and kiosks; development of trail guides and maps; and any active management of public recreational use.

B. *Funding*

The expectation is that the Bingham Forest will be self-supporting, meaning that its operations will not rely on local property tax dollars. Potential sources of income include:

Timber Revenue: This Management Plan and the accompanying Forest Management Plan call for the majority of the property to be actively managed for sustainable timber

production which will result in an ongoing stream of income. Based upon forester Sherman Small's growth projections, the property should generate, on average, between \$15,000 - \$20,000 of timber annually though it is anticipated that harvests will likely occur every three to five years and income will vary with each harvest.

Grant Funding: There is significant potential for the Town, or its non-profit partners, to seek public and foundation grants to support various land management activities most notably the development of a recreational trails system and wildlife habitat and water quality protection projects.

User Fees: If a recreational trail system is developed on the Bingham Forest, there may be a future opportunity to collect user fees/donations to help cover the cost of recreational management.

Ecosystem Services Markets: Nationally, there is a developing marketplace for "ecosystem services," payments made to landowners who agree to manage their lands in a particular manner to achieve ecological objectives. The most well-known of these are "carbon credits" which are used to off-set pollution impacts related to climate change. As these markets develop, there may be an opportunity to enroll the Bingham Forest in a program that could provide an additional source of revenue to the Town.

Endowment: There is also significant potential for the Town, or its non-profit partners, to seek grants from foundations interested in William Bingham and his legacy that would establish a consistent and long-term source of money to manage the Forest for multiple uses.

While it is not the purpose of this Management Plan to provide detailed budget information, some overall observations can be made. Generally speaking, it can be expected that timber revenue should be sufficient to cover anticipated property expenses with the notable exception of recreational development and management. While timber revenue may be able to make a modest contribution to the development of a major recreational trail system (through collaborative development of roads and trails and some financial support), it should not be counted on as the primary source of the initial capital investments that will be needed to put major trail infrastructure in place.

VIII. IMPLEMENTATION PLAN

Taking trusteeship of the Bingham Forest represents both a tremendous opportunity and a sobering responsibility. Implementation of this Management Plan should seek a balance between pursuing the exciting options presented by the property and putting in place a solid administrative and financial structure that will serve the Town's interests over the long-term.

The following implementation plan covers the first three years following the adoption of this plan. While there will be a logical sequencing and priority for the proposed actions, the following list of actions is not intended to be presented in a particular order.

A. Administration of Bingham Forest

1. The Bethel Board of Selectmen should establish the Bingham Forest Authority (will require a Town Meeting approval) and appoint the initial Authority members.
2. The Authority should establish its operating procedures, retain necessary contractors (most notably a forester), and consider potential partnerships with non-profit organizations to assist with management of the Bingham Forest.
3. The Authority should communicate with the Newry Planning Board to fully understand how the land will be regulated under Newry's land use ordinances.
4. The Board of Selectmen and the Authority should complete negotiations with the Bethel Water District to acquire a recreational access and use easement across the 110-acre Water District property.

B. Water Quality Protection

1. The Authority should initiate an annual water quality monitoring program for Chapman Brook.
2. The Authority should establish an annual inspection program for all roads and trails to identify erosion concerns.

C. Wildlife Habitat Protection

1. The Authority should seek to find a qualified partner (university, state agency, etc.) to initiate a wildlife survey of the property to identify habitat for rare, threatened, and special concern species and other significant habitats such as vernal pools and deer wintering areas.

D. Recreation

1. The Authority should decide what arrangements and partnerships should be pursued to develop and manage recreation on the Bingham Forest.
2. The Authority, or its recreation partner, should retain a highly qualified trail design firm to develop a master plan for trails on the Bingham property.

3. The Authority, or its recreation partner, should develop plans for constructing the first component of the trail system on the Water District and lower Bingham Forest lands.
4. The Authority, or its recreation partner, should pursue discussions with Sunday River regarding cooperative management of recreational use across both properties.
5. The Authority should develop a hunting policy for the Bingham Forest.

E. Sustainable Timber Management

1. The Authority, working with its forester, should develop appropriate procedures for hiring timber contractor(s) that will ensure that those selected are highly qualified and demonstrate a clear understanding of the unique challenges of harvesting timber on the Bingham Forest.
2. An initial timber harvest should be scheduled preferably in a location that does not involve extensive coordination with development of recreational trails since the harvest may occur prior to the development of a master trails plan. Conduct recommended wildlife and water quality inspection of proposed harvest area.

F. Funding

1. The Authority should ensure that the proposed timber harvest is sufficient to reimburse the Town for its planning expenditures and its initial management expenses with the exception of the proposed recreational planning and development.
2. The Authority, and its recreational partner, should actively pursue foundation and other private funding opportunities to fund desired recreation initiatives and potentially establish a stewardship endowment for the Bingham Forest.

APPENDICES

Appendix I – Maps

Appendix II – Bingham Consent Order and Related Documents

Appendix III - Forest Management Plan

Appendix IV - Morton Trails Report

Appendix V - MOU between Town of Bethel and Bethel Water District

Appendix VI – Information about Kingdom Trails