

# Chapter 12: Environmental Sustainability



## ES: Introduction

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## ES: Discussion and Conclusion



## Background

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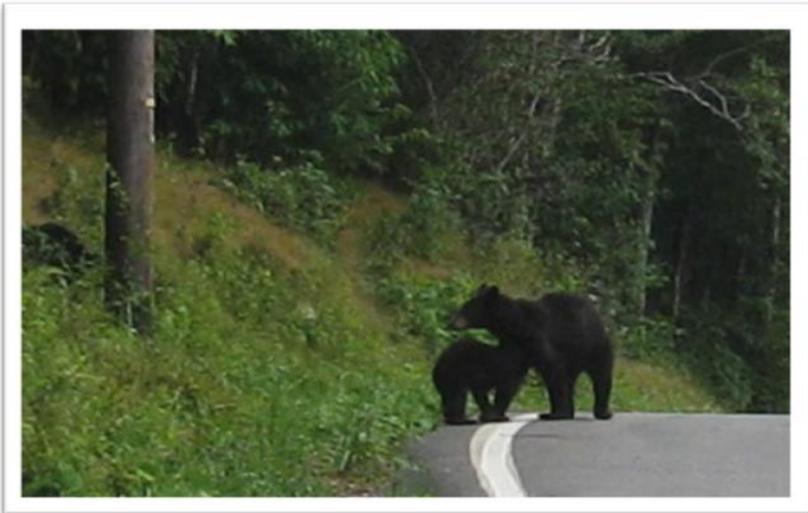
The Town of Beech Mountain is nestled high in the North Carolina Mountains amongst dense forests, streams and wildlife. The beautiful natural surroundings are an important part of life for Beech Mountain residents and visitors. Additionally, the mountain environment is home to essential natural resources that support both wildlife and the town. The close relationship between the built and the natural environments on Beech Mountain means that any development in the town directly impacts these vital natural resources. The quality of this relationship can be measured, managed, and improved through sustainable development practices. Sustainable development works toward the beneficial integration of the natural and built environment. This chapter will explain the town's goals, proposed policies, and recommended strategies to help ensure that Beech Mountain can continue to be a community that is aligned with nature well into the future.

## Goal ES.G1: Conserve natural surroundings and Open Space

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### Policy ES.G1.P1: The Town will Develop a Plan to Conserve Open Space.

Beech Mountain's natural environment and open space are important resources to the town, the community, and the abundant wildlife that live on the mountain. The town's surroundings are the underpinning for the tourism industry on the mountain. In order to conserve and protect these resources, the town will develop a plan that lays steps necessary for conservation. Having a plan of action will allow the town to conserve land in a way that benefits both the community and natural environment.



**Strategy ES.G1.S1: Prioritize land parcels for conservation**  
The land conservation plan should have an analysis that targets lots that are most appropriate for conservation. High priority parcels will include but are not limited to: environmentally sensitive areas, lots along trails, steep slopes, unbuildable lots, lots without utilities, and clusters of vacant lots.

**Strategy ES.G1.S2: Allocate funds to acquire land from private owners**  
The proposed plan will include an adjustment of the town's annual budget to allow for a small land acquisition fund. This funding would provide capital for the town to purchase land for conservation purposes. Land acquisition will be gradual, setting a long-term goal to conserve open space for future generations.



**Strategy ES.G1.S3:** Investigate programs for the purchase or transfer of development rights for conservation.

Property ownership can be conceptualized as a bundle of rights. These rights can be separated from one another and transferred between parties without the original owner losing ownership of the property. This severability of rights allows for a unique opportunity for Beech Mountain's land owners who hold their land for reasons other than prospective development.

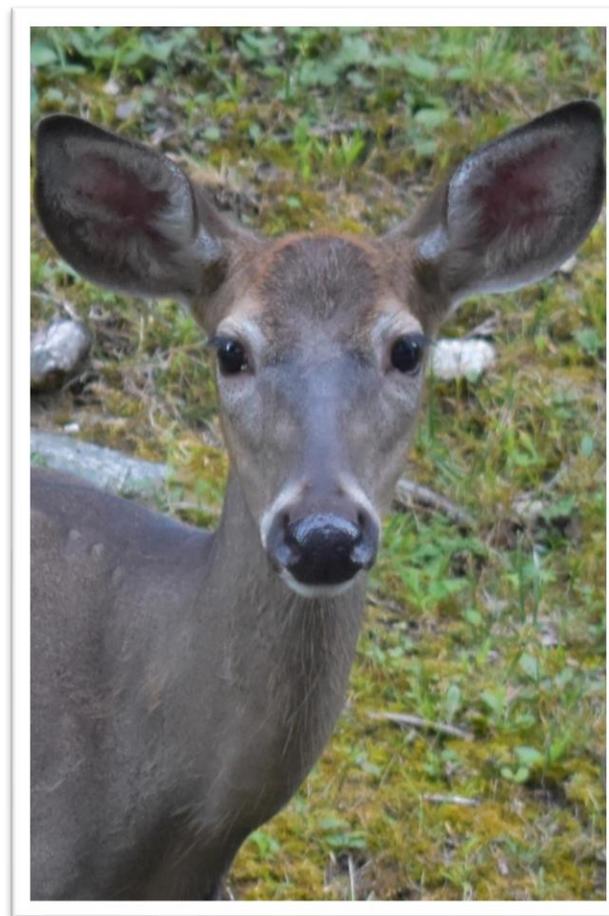
Beech Mountain Club membership requires land ownership on the mountain with current club dues paid. Some property owners have kept their undeveloped land for membership purposes. Keeping membership current increases the property value for future development and sale. In order to acquire Club Membership, residents who own property without club membership can buy vacant lots with current membership. Since many of these owners are not holding the land with an expectation of future development, an excellent opportunity for conservation on these lots exists.

While purchase of development rights or granting them to conservation organizations may be one option, the Transfer of Development Rights (TDR) may be another. These programs allow owners of high priority conservation land to trade their development rights for the development rights of a parcel in a neighborhood where the town is encouraging growth. Currently, North Carolina law is not receptive to these kinds of programs, but these laws are constantly changing, and TDR may be an option in the future.

**Strategy ES.G1.S4:** Serve as a catalyst for cooperation between community groups and land trusts.

A *Conservation Easement* is an agreement between the land owner and an organization that protects the undeveloped property from future development. The private owner retains ownership of the property but is unable to build. There are many options for conservation, and by working with land trusts such as the High Country Conservancy property owners can make an educated decision regarding their property. Incentives for this type of conservation include tax breaks for landowners who donate land or agree to these easements. The Town could encourage this type of conservation by:

- Sending letters to educate high priority land owners about conservation options and benefits
- Inviting local Land Trusts to host community workshops to promote conservation and education



## Goal ES.G2: Protect Beech Mountain's streams and water supply

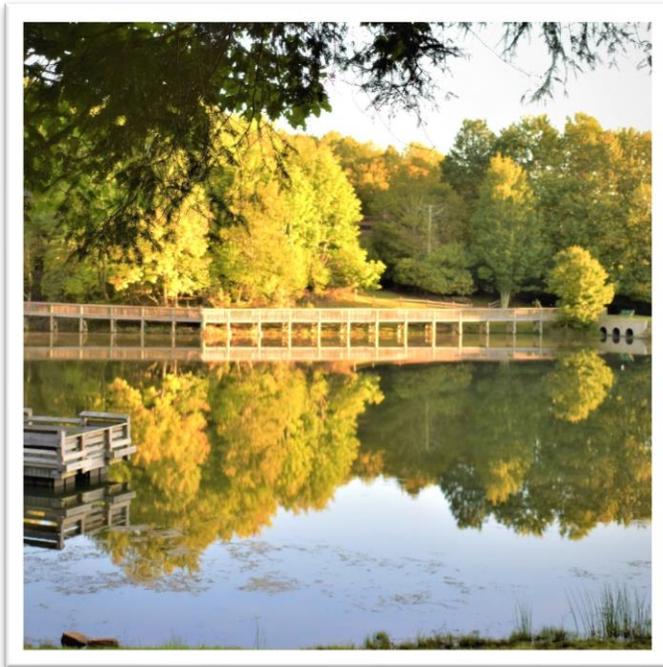
Water quality and availability are persistent issues in any mountain community. The relatively small water supply watershed on the mountain means that maintaining stream quality directly impacts the quality of drinking water. The Town's drinking water reservoir, Buckeye lake, has been threatened by drought several times over the past few years. The numerous streams also provide ecological and recreational assets. Conserving the water supply requires the cooperation of the community, developers and the town to ensure the availability of clean water on the mountain.

### Strategy ES.G2.S1: Improve watershed overlay district and buffer zones regulations

Water Supply overlay districts serve the purpose of maintaining a predominately undeveloped land use pattern. They restrict land uses and require developers to follow stricter building and construction practices. The current watershed overlay districts on Beech Mountain include:

- Buckeye Creek water supply watershed WS-II and WS-II critical area.
- Pond Creek water supply watershed WS-II critical area.

This plan recommends that Beech Mountain consider increasing the required riparian buffer distance for all-natural waterways. The current watershed buffer ordinance requires a distance of 30 feet between any structure and watercourse.



### Strategy ES.G2.S2: Promote water conservation within the community

During summer months, when the population is at its highest, the mountain's water supply is heavily stressed, and in the past, summertime droughts have brought the water supply to a dangerously low level. In April 2010, the Town of Beech Mountain developed a water shortage response plan that defines 5 levels of water shortage and details a plan for response in each successive stage. To encourage more judicious use of water, the Town should structure its utility billing in such a way that excessive use of water is penalized.

### Strategy ES.G2.S3: Continue to maintain and improve the town's water utilities

In 2011, Rothrock Engineering conducted a Water and Sewer study for the Town of Beech Mountain. While significant steps to improve this situation have already been made, the study estimated that Beech Mountain's water system has an estimated water loss of 59.19%- Currently, the approximate unaccounted for water is 47%, which includes hydrant flushing, leaks, and other unbilled uses of water. It is recommended that the town continue to repair and replace damaged components in a planned, appropriate manner. This is a large-scale project that will be completed over an extended time period and will follow Rothrock Engineering's utility improvement plan.



## Goal ES.G3: Limit the future development of geologically unstable areas and steep slopes

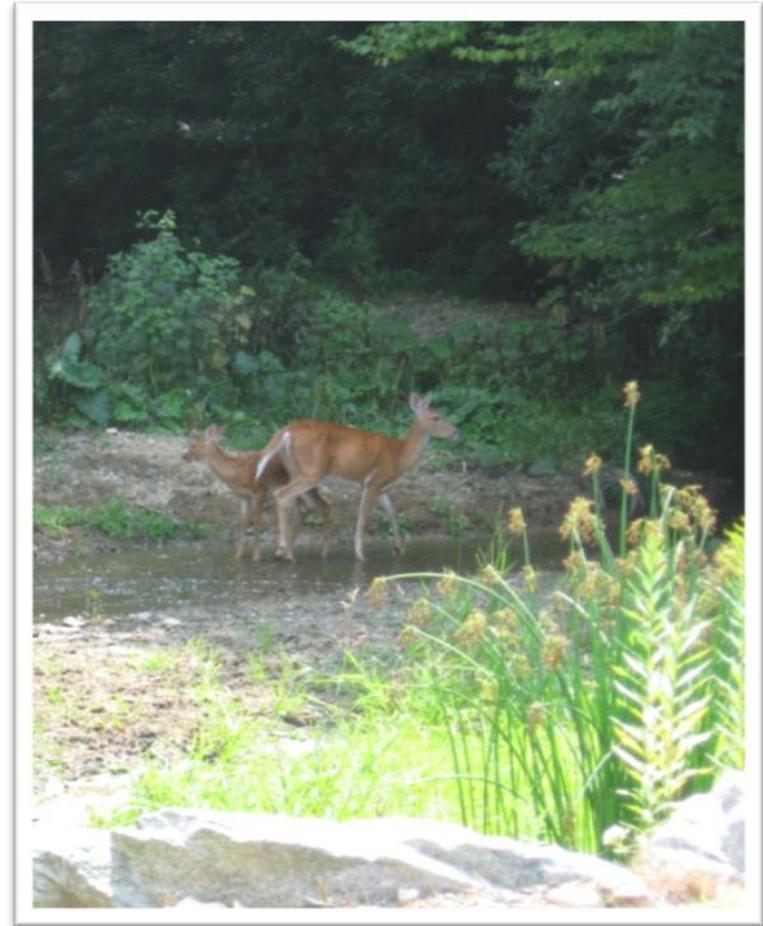
Landslides are an increasing threat across the High Country and development on steep mountainsides increases the susceptibility for a major landslide event. Despite the steep terrain on Beech Mountain, the current zoning code contains no restrictions for building on steep slopes. The North Carolina Geological Survey recently conducted an in-depth study of slope stability and landslide hazards for Watauga County. The product maps indexed the hazard level for potential landslides in the county. Many of Beech Mountain's steepest slopes were labeled as unstable or in the high threshold for instability. Without any guidelines or regulations for building on steep slopes, Beech Mountain could fall victim to a major landslide event.

**Strategy ES.G3.S1:** Identify hazardous slopes and create a steep slope overlay district

- Map areas with slope over 30% and areas that the NCGS identified as having high or moderate slide hazard
- Produce a steep slope overlay district that would enforce stronger regulations for building design and erosion control.

**Strategy ES.G3.S2:** Require stronger design standards for construction and erosion control in the steep slope district

- Provide guidelines for best development practices when building on slopes
- Require Geotechnical analysis for identified high-hazard areas
- Minimize site disturbance



## Goal ES.G4: Maintain the health and beauty of Beech Mountain's forest

The beauty of the Beech Mountain's forest supports economic sustainability and healthy property values. Our forest also provides food and cover for Beech Mountain's prolific wildlife. The healthy forest cover prevents erosion on steep slopes and helps maintain good water quality. Our trees provide privacy, serenity and improved quality of life for the town's residents.

To protect this wonderful asset the Town of Beech Mountain has taken multiple actions such as enacting a tree protection ordinance and becoming a "Tree City, USA". Nevertheless, there is much work to be done to maintain the health and beauty of Beech Mountain's forest.



### Strategy ES.G4.S1: Revise tree ordinance

The years since Beech Mountain's tree ordinance has been in affect have provided great insight into the administration of such an ordinance. Over this time period, more appeals to the Board of Adjustment have been sought over tree cutting violations than any other issue. Though there are many ardent supporters of the tree ordinance in its current form, there is much evidence that it could be improved.

One criticism of the tree ordinance is that it actually has some adverse ecological impacts. Restriction of tree cutting has created a dense canopy that can result in loss of species variety. It can also affect the natural life cycle replenishment of a forest when the canopy chokes out the undergrowth and prevents small trees from maturing. Finally, excessively dense forests can present increased fire danger.

If the Tree Ordinance is to be revised, major factors to consider in its redevelopment should be:

- Finding ways to protect the forest without overtaxing staff requirements
- Protecting trees without overburdening property owners
- Ensuring ecological stability of the forest
- Encourage planting and replanting of native species trees
- Encourage homeowners to engage in healthy forest practices

### Strategy ES.G4.S2: Follow recommendations of the Urban and Community Forest Master Plan

One way the Town can lead the way in promoting forest health is to take good care of its own trees. To this end, the Town had a Community Forestry Plan prepared in August 2009 by Hunter's Tree Service. The study included an overview of tree numbers, locations, variety, and the health of each species in the Town's public parks and lands. Its recommendations include:

- Tree species for future plantings- selection based on elevation
- Close interaction with a consulting forester whose work is focused on Beech Mountain's urban forest
- Further canopy analysis
- Recommended courses of treatment and care for nearly every tree on Town Property



## Goal ES.G5: Promote sustainable building practices

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Sustainable building practices and energy efficient building design are becoming more common as technology improves. By taking advantage of this trend, the Town of Beech Mountain can encourage developers to use sustainable building methods in order to produce more efficient homes. The US Green Building Council estimates that the slight increase in building costs that incorporates green building design are absorbed into lower utility bills and decreased maintenance costs in a relatively short period of time. Beech Mountain's cold winters make it a prime example of a location where efficient building design can have a very large impact.

### Strategy ES.G5.S1: Provide Leadership for sustainable building practices

Leading by example is a good way encourage sustainable building practices.

- Incorporating sustainable building practices in the towns buildings and new development
- Where possible, retrofit sustainable technologies on town-owned buildings
- Encourage energy efficient building site design, such as south-facing roofs and LEED construction technology

### Strategy ES.G5.S2: Promote the use of sustainable technology

- Remove regulation prohibiting green technologies
- Waive or reduce permit fees for the installation of sustainable technologies

Strategy ES.G5.S3: Provide incentives for private development that meets recognized standards for sustainability such as LEED, Energystar, etc.

- Leverage Building Permit Fees
- Waive or reduce permit fees for the installation of sustainable technologies



## ES: Discussion and Conclusion

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It is imperative that we take steps now to ensure that future generations can enjoy the natural surroundings that make Beech Mountain special. This chapter has outlined strategies to utilize and manage our land, our water and our resources in ways that conserve and protect them for those who come behind us.

