

How Does Local Land Use Planning Incorporate Land Conservation?

An assessment from New Hampshire



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Introduction

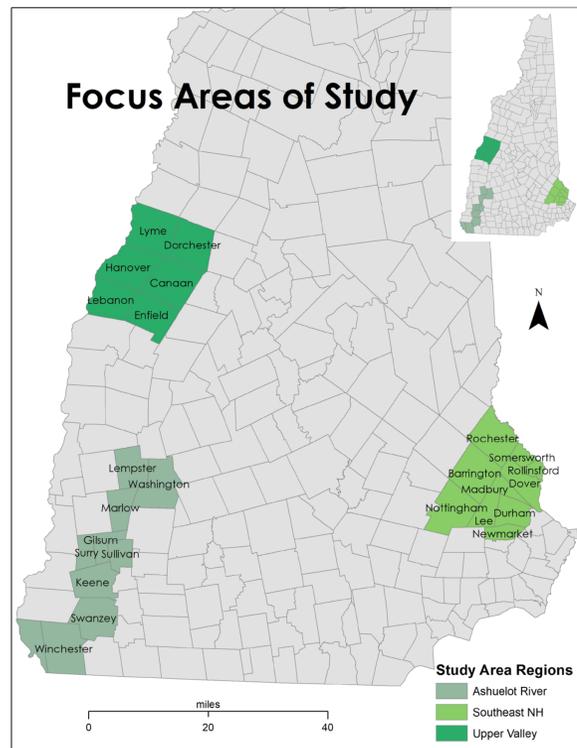
The development of land changes and impacts the landscape. Conservation science has long recognized that development can alter habitats and ecosystems in numerous ways. Better land use planning has been promoted as a remedy to reduce the impacts of development and protect our resources. In the United States, most development decisions are made at the local level by Planning Boards or Commissions and, therefore, it is at this scale where conservation principles need to be adopted. Despite calls for incorporating principles of ecology and conservation biology in land use planning (Stokes et al., 2009; Miller et al., 2008), there has been little research to assess the extent to which this has happened. This project investigates if, and how, New Hampshire municipalities are using the local land use planning process to conserve land, to preserve biodiversity, and to protect natural resources.

Methods

In consultation with The Nature Conservancy, New Hampshire Chapter, we picked three regions of New Hampshire for this study. A total of 25 municipalities were selected for analysis.

Master Plans, Subdivision Regulations, Site Plan Review Regulations, Zoning Ordinances, and Planning Board minutes from 2018-2019 were downloaded from municipal websites. These documents provide our data for this study which, to date, includes 288 documents. These documents have been loaded into NVivo 11 Pro, a qualitative research software tool, which we are using to assist in our analysis.

Project Map



Data Analysis

As of November 2019, we have used NVivo to conduct searches of 15 key words and phrases in 288 documents. We developed the words and phrases to search for in consultation with TNC and they represent common land use planning terms related to land conservation. These are shown in Table 1.

So far, our analysis involves assessing only the occurrence of the terms and not the context in which they occur. This winter, our analysis will involve coding, or classifying, the terms in order to explain how they are used in the documents. In addition, we will be reviewing each municipality to see if they establish good land conservation goals in the Master Plan, how they implement these goals in regulations, and how they apply them in their Planning Board work.

Class 6 Roads	Land Protection
Cluster Development	Open Space
Conservation	Protect
Conserve	Rare
Endangered	Scenic View
Green Space	Sensitive Land
Habitat	Wildlife
Land Conservation	

Preliminary Results

Our results are preliminary as we have additional documents to add to the data set and we have several additional quality control measures to run to ensure accuracy of all results. So far, we only analyzed the data for the occurrence of terms related to land conservation varies across planning documents. Figures 1-4 show that:

- **Master Plans:** All 25 municipalities in the study mention at least some of the terms. However, only 18 municipalities (72%) mention “land conservation” in their Master Plans.
- **Subdivision & Site Plan Review Regulations:** “Open space”, “conservation”, “habitat”, and “conservation” are mentioned the most in these regulations.
- **Zoning Ordinances:** “Open space”, “conservation”, “habitat”, “wildlife”, and “conservation” are mentioned the most in these regulations.
- **Planning Board Minutes:** Figure 4 shows the occurrence of terms in approximately 18 months of Planning Board minutes in only 6 of the 25 municipalities. These 6 communities are all in the Upper Valley Region of NH. Of these 6 communities, the Planning Board minutes in 2 of the communities never mentioned any of the terms and 1 mentioned “protect” only once.

Figure 1

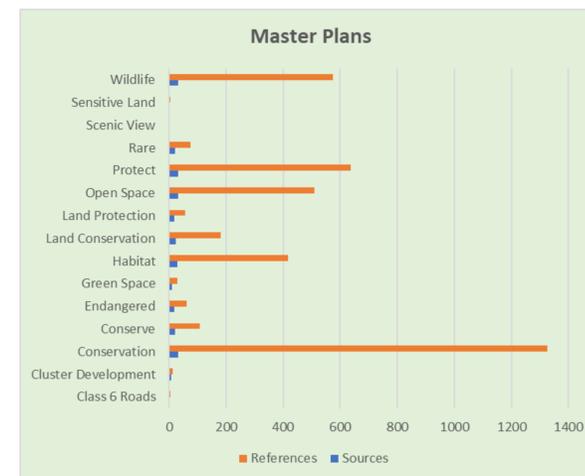


Figure 3



Figure 2

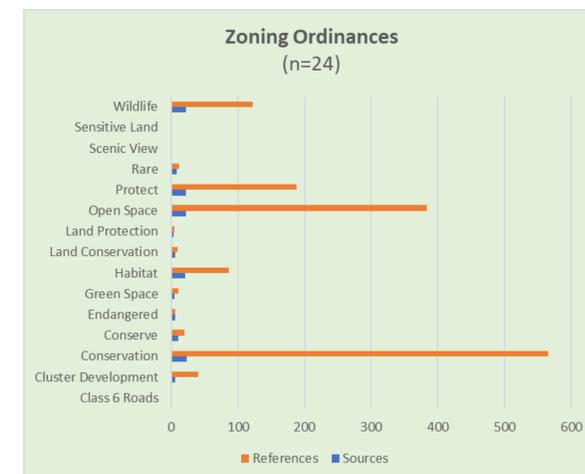
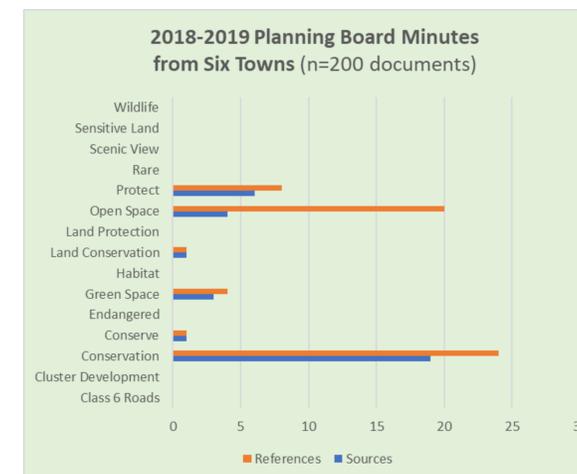


Figure 4



Next Steps

We have more work to do on this project. While the number of occurrences of land conservation related terms is interesting, it does not give the context in which they occur. In the coming months, we will be further analyzing the data and coding the terms into categories such as:

- **Action:** text containing definitive and actionable language;
- **Background:** text providing information about the term;
- **Mention:** text containing only brief or insubstantial language.

This analysis will help us to understand if, and how, common land conservation approaches and tools are used by municipalities in New Hampshire. It will illustrate Planning Boards’ application of generally accepted conservation methods in their work as represented in the their plans, regulations, and meetings. This project is a first step to understanding just how land conservation is incorporated into the land use planning process in New Hampshire communities. This information will help reveal how our local communities work toward conserving our land and resources.

References

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Stokes, D., Hanson, M., Oaks, D., Straub, J., & Ponio, A. (2010). Local land-use planning to conserve biodiversity: Planners’ perspectives on what works. *Conservation Biology*, 24(2), 450-460.

Acknowledgements

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