

## Introduction

### What are natural resources?

If we define natural resources in terms of values, in one sense they are the basic components of the environment that sustain the life and health of all creatures. In another, they are the riches of the natural world that sustain human economies and quality of life. Natural resources are the aquifers that provide our families safe drinking water. They are the hilltops, boulder-strewn woods, and tidal marshes where children first learn to explore the great outdoors, and where adults seek renewal and recreation. They are the open spaces and rocky ridges that shape our community's unique character and sense of place, while enhancing property values. Natural resources are fundamental to Guilford's heritage and quality of life.

### What is a Natural Resource Inventory and Assessment?

A Natural Resource Inventory and Assessment (NRIA) is a compilation of data, descriptions, and maps to document the natural resources of a given geographic area. An information baseline is established and built upon by continued observation and research. Key functions of the NRIA are:

- documentation of the geographical location of resources
- display and summaries of existing data
- assessment of natural resource functions, health, and their relative importance
- analysis of the inter-relationships between natural resources
- identification of the stresses and threats to their health and integrity
- provision of benchmarks against which future change can be measured
- identification of additional areas for further study
- incorporation of new or revised information.

An NRIA provides an indication of what resources are likely to exist on a particular site, how sensitive they are, and whether or not closer examination is needed. This NRIA can also guide landowners to a fuller understanding of the resources over which they have stewardship.

### Why does Guilford need a Natural Resource Inventory?

According to Guilford's *2002 Plan of Conservation and Development (POCD)*, the Town is committed to managing its natural resources and protecting them from harm. In order to do so there must be a detailed understanding of what resources exist, where they can be found, and how they relate to one another. An NRIA is a tool to bring about such understanding. Used properly it can enable land use decision makers to protect the integrity of natural resources while providing for compatible residential and commercial growth. The NRIA could also be used to enhance residents' understanding about the environment in which they live.

While the Connecticut Department of Environmental Protection (DEP) continues to be an indispensable source of natural resource information, this data is often lacking in detail useful at a local scale. An NRIA can fill this gap by focusing on the unique array of resources that characterizes Guilford. For the first time, the Town will have data from DEP and many other sources assembled in a single document, so that it can be easily cross-referenced and analyzed. With this information, our land use agencies can make decisions with greater wisdom and accuracy. The Town will also be able to more effectively refine its *Plan of Conservation and Development*.

### What are the goals of the NRIA?

This NRIA has been developed in order to:

- disseminate accurate and practical knowledge of our environment to both town officials and the public
- promote conservation of the Town's native plants, animals, and ecosystems

- identify those areas in which knowledge is lacking
- establish a framework and impetus for future study
- facilitate natural resource-based conservation and development planning

The ultimate goal of producing the NRIA is the maintenance of a healthy, functioning environment, and the preservation of Guilford's quality of life. It is the Conservation Commission's role to assist the Town in realizing these goals.

#### Who should use this document?

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Town Staff  
 Town Boards and Commissions  
 Non-governmental organizations  
 Developers  
 Landowners  
 Guilford Land Conservation Trust  
 Shoreline Outdoor Education Center  
 Teachers and students  
 Tourists and visitors

#### How is this document organized?

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The NRIA is divided into two documents: descriptive text and a separate Map Atlas (11x17 inches) that illustrates spatial data for each resource and combined data layers to show important relationships among them.

#### How were the maps compiled?

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The software in Guilford's Geographic Information Systems (GIS) assembles, stores, and manipulates spatial data and can help users analyze data for conservation and planning purposes. The GIS is located in the office of the Town Environmental Planner.

#### What is the Geographic Information System (GIS)?

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GIS software assembles, stores, and manipulates spatial data and can help users analyze data for conservation and planning purposes. The GIS located in the office of the Town Environmental Planner was used to produce most of the natural resource maps found in the Atlas. Many of the data layers used here were acquired from agencies (e.g, DEP, NRCS), while others were created specifically for this project.

#### How will this NRIA be updated and revised?

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One of the goals of the NRIAC is to provide a structure around which future investigators can organize incoming data and more detailed studies. This NRIA therefore includes a section in which known gaps in the data are listed on page 11, with suggestions about areas in which future efforts should be focused. The Conservation Commission will be responsible for organizing further studies, verifying information in the field ("ground-truthing"), and describing any changes in the resources over time.

Besides its paper form, this document will be available electronically. As new data is gathered, the GIS can update the maps found in this document. The Town website will be available to provide easy access to the NRIA by both the public and town officials. New or corrected information will promptly be made available to all land use agencies in Guilford.