

Part I

What Is a Landscape?

Basic Concepts and Tools

This first module explores three distinct ways to identify, represent, and quantify a landscape. A landscape is an area that is heterogeneous in at least one aspect of interest. The concept of a landscape can include other ideas, an area that is very large in extent, or the inclusion of multiple different ecosystem types. In practice, however, landscape data are often derived from various geospatial data sources; thus, understanding the benefits, assumptions, and limitations of these diverse sources is fundamental to correct analysis of a landscape and interpretation of much of the published literature. The exercises in this module have no prerequisites, and by design, are meant to introduce the basic concepts of remote sensing to an audience with very little (or no) technical background in these topics. Chapter 1 explores the basic components of satellite imagery and how the sun's energy (the electromagnetic spectrum) can be converted into a representation of the Earth's surface (aka "a landscape"). Chapter 2 explores the special role of aerial photography—which has been in use since well before the advent of satellite imagery—in assessing long-term landscape change. Lastly, Chapter 3 introduces one of the newest and rapidly evolving ways to collect landscape-level data using crowd-sourced approaches that are amenable to citizen science. Depending on your background in geospatial technologies, we hope that this introduction to fundamental concepts helps you understand ways that maps are created and used to represent landscape information.