
Conducting a Site Analysis

Background

Site analysis is a great way to involve students from the very beginning of the project. You can use these investigative activities almost anywhere. Students go through the entire restoration process when they analyze a site, help to choose the location for a natural area, design the natural area, plant it and study it. All of the site analysis activities that you do with your students can be represented on a final site analysis map. This map will help you determine what ecosystem to restore to your site and where to put it. The exact form a restoration takes can be determined by design considerations as well.

Native vegetation grew along a continuum of moisture, soil and light conditions. We often talk about a prairie community, but in fact no two prairies were exactly alike. They varied in species composition and arrangement. Likewise, no two woodlands were exactly alike but responded to the circumstances of soil, slope, location, and seed sources that created the conditions on that particular site.

Analyzing the restoration site will help you determine which part of the native plant continuum may have existed on the site before European settlement, which species could be on the site now, and other design considerations necessary for a successful restoration.

First, outline the physical area of the school grounds. Many schools already have site plans showing measurements of property boundaries and buildings. If you don't have such a plan, you have an excellent opportunity for students to measure and present a site map. In addition to mapping current conditions, collect maps of historical usage, which can include original surveys and plat books.

Next, students begin collecting site specific information. The site analysis data gathered will include information about the soils, physical objects such as buildings and hard surfaces, existing vegetation, slopes, aspect of slopes, traffic patterns, patterns of shade, views, and other characteristics such as predominating wind patterns, underground utilities, noise, and needs for supervision.

You can also find maps of soils that have been done on a county-wide level. These maps describe the general outline where soils occur and what the characteristics of the soils are. To fine-tune this information, you can have students collect soil samples, investigate them, and send them to soils labs for analysis. Once this soils information is on your site map, you can overlay the map with the other information.

The amount of slope and the direction (aspect) of the slope influence plant growth by affecting water capacity in the soil and sunlight available to plants. Plants that are adapted to hot dry conditions would go on steep south facing slopes; whereas, plants adapted to cool moist conditions would go on most steep north facing slopes. The erosion potential of the slope is determined by the types of soil present and the nature of the slope (long, gradual, steep, short slope). You can get help on the erosion potential of soils from agriculture extension agents or the U.S. Natural Resource Conservation Service.

Map all the existing vegetation on site, starting with trees and shrubs. Measure both the circumference of the trees and the extent of the branches. Once you have identified the existing vegetation, you will have guidelines for the potential species to introduce or to remove from the site.

Plants are adapted to different light conditions. Map shade from trees and buildings. Shade from buildings is different than shade from vegetation because it is solid and year-round. Shade from de-

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ciduous trees is usually dappled and nonexistent from fall to late spring. Some woodland plants that grow in dense woodlands would not do well in the shade of buildings because there is no sunlight available in the spring. Use math exercises to determine building and tree height, and to determine how the sunlight varies with seasons.

You will want to note traffic and use patterns as part of your site analysis. Locate play areas, sports fields, play equipment, and paths. Well-worn shortcuts or other traffic patterns are more easily accommodated than changed. Habits are hard to break, and people usually take the most direct route to a destination. This preference does not mean that all your paths should be direct. The goal of paths within a restoration is not to provide direct routes to a destination but rather to provide a feel for the restoration and for the teaching opportunities within it.

On your site analysis note any bad views that you might want to block, or consider screening the natural area from the outside. Note what vegetation is growing on the borders of the natural area. Also note any prevailing wind patterns that you want to soften with a vegetation screen.

Once you have maps analyzing the site, you can determine what plant communities will be suited to the site and will fit the educational and aesthetic goals you have set.

Earth Partnership for Schools site analysis activities:

1. Getting Acquainted with the School Site
 - Compass Basics
 - Mapping Your Schoolyard
 - Noting Notable Features
 - The Hidden and Informal Curriculum
 - Exploring Your Site Through Color, Texture, and Pattern
2. Existing Vegetation
 - What's Possible? Analyzing Existing Vegetation for Answers
 - How Do You Measure up? Measuring Tree Height
 - Measuring up Tree Size
 - How Tall Are You? Measuring up Plant Size
 - Woodland Layer Assessment
3. Topography and Soil
 - Topography: Measuring Slope
 - Soil Texture Feel Test
 - Infiltration Tests: Exploring the Flow of Water Through Soils
 - Soil Profile Investigations
 - Soils Studies: Living vs. Non-Living Examination