Land Use and Land Cover – Teacher's Guide

Resources supplementing the Land Use and Land Cover Lesson Plans

Land Use and **Land Cover** can be defined as *how land is utilized*. Examples include 'Park', 'Intermediate Density Residential', and 'Industrial'. **Land cover** is slightly different. A park, for example, could be a deciduous forest, a conifer forest, or a mixed forest, or some other type of natural or artificial ecosystem. The land use in this example is 'Park', while the land cover would be deciduous forest, conifer forest, or mixed forest. Similarly, an 'Intermediate Density Residential' land use would be considered one type of developed land use.

Keep it simple, as this can be confusing if complicated examples are used. Also keep in mind that there is some overlap between land use and land cover. For example, agricultural land use can also be agricultural land cover, if the type of agriculture is not defined in more detail."

There are many land use and land cover **Classification Systems**. State and federal natural resource management agencies, such as the U.S. Geological Survey in the Department of Interior, and the U.S. Forest Service in the Department of Agriculture, use what is referred to as the Anderson classification system or a modified version thereof data that has geographic location information associated with it.

Land Use Primer from the Consortium for Atlantic Regional Assessment

According to the following website: http://www.cara.psu.edu/land/lu-primer/luprimer01.asp
"In many instances, the terms Land Use and Land Cover tend to be exchangeable. However there are differences. Land use refers to how land is used by humans. In other words it refers to the economic use to which land is put. For example is the land being used for commercial purposes (stores, office buildings, apartments, etc.) or for industrial purposes (factories, assembly plants)? Or is the land being used for recreational or agricultural purposes?
On the other hand, Land Cover refers to the vegetation, structures, or other features that cover the land. For example, is the land covered by grass, by trees, by water, or by large buildings surrounded by a lawn?"

- **Encyclopedia of the Earth** http://www.eoearth.org/view/article/154143/
  This article:
  1) Defines Land Use and Land Cover
  2) Discusses the difference between how natural and social scientists define Land Use
  3) Discusses Causes and Consequences of Land Use / Land Cover change including:
     - Biodiversity Loss
     - Climate Change
     - Pollution
     - Other impacts
  4) Scientists, land managers and planners use different methods to study land use and land cover. This article discuses the following methods:
     - Remote Sensing
     - Geospatial Analysis
     - Driving Forces
     - Modeling
  5) Finally the article discusses the concept of 'sustainable' land management

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- **USGS Land Cover Trends**
  According to the following website: http://landcovertrends.usgs.gov/main/about.html
  "Land Use and Land Cover changes occur at all scales, from global to regional to local to microscopic ones. Changes can have dramatic, cumulative impacts. Due to the impacts on land management practices, economic health and sustainability, and social, and political processes, Land Use and Land Cover changes are of concern to a wide variety of stakeholders, scientists, and citizens."

- **Earth Observation Day Lesson from America View**
  "Land Use can be defined as *how land is utilized*. Examples include "Park", "Intermediate Density Residential" and "Industrial". Land *cover* is slightly different. A park, for example, could be a deciduous forest, a conifer forest, a mixed forest, or some other type of natural or artificial ecosystem. The Land Use in this example is "Park", while the Land Cover *type* would be deciduous forest, conifer forest, or mixed forest. Similarly, an "Intermediate Density Residential Land Use" would be considered one type of developed land use. Keep it simple, as this can be confusing if complicated examples are used. And keep in mind that there is some overlap between Land Use and Land Cover. For example, agricultural land use can also be agricultural land cover, if the *type* of agriculture is not defined in more detail."
  There are many Land use and Land Cover classification systems. State and federal natural resource management agencies, such as the U.S. Geological Survey in the Department of Interior, and the U.S. Forest Service in the Department of Agriculture, use what is referred to as the Anderson classification system, or a modified version thereof. Below are several examples of land use and land cover classification systems:

- **USGS uses the following land cover classification system**

  https://docs.google.com/viewer?url=http://landcover.usgs.gov/pdf/anderson.pdf)
  - Urban or Built-up Land
  - Agricultural Land
  - Rangeland
  - Forest Land
  - Water
  - Wetland
  - Barren Land
  - Tundra
  - Perennial Snow or Ice

- **Land Cover Trends USGS**
  However a group of researchers created the following categories with definitions on Land Cover. This website will give the definitions for a better understand of Land Cover.
  http://landcovertrends.usgs.gov/main/classification.html