

Unit 1

The Diversity of *WHERE*

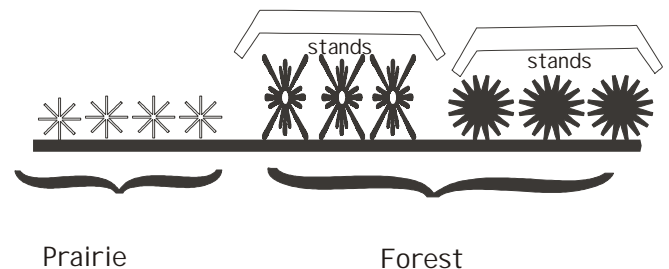
Diversity always occurs within some geographic area. We can talk about the variety of things in a given square foot or acre, or we can study the places where a certain forest type occurs. The unit of “where” can be even larger, such as a biome or continent, or even the entire biosphere. **The bigger the area, the more difficult it is to assemble the data to make an accurate assessment.**

A geographic unit often used in considering biodiversity is the **natural community**, defined as all the plants and animals that occur in an area that has a fairly uniform composition of living things and is fairly distinct from the surrounding areas.



As an example, if there is a block of forest adjacent to a pasture, we would probably find the natural community of the forest to be different from that of the pasture, and would describe them separately. If the forest itself varies significantly, we may decide there is more than one natural community within it.

For example, there may be a pine stand and a white oak stand and a red oak stand in the forest. Each of these will probably be a distinct **biotic community**. Ecologists sometimes use this term “**stand**” as a shorthand for “biotic community,” sometimes in the same sense that foresters use it, to mean a forest with a more or less uniform composition of trees.

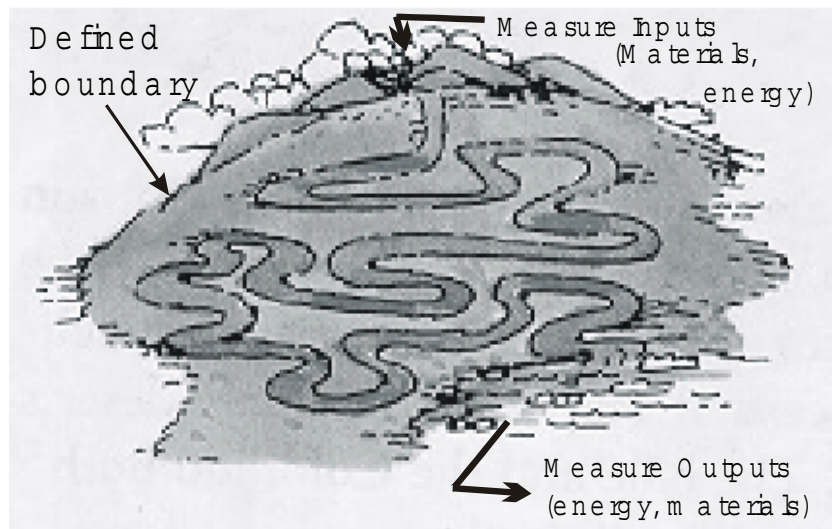


Unit 1

The Diversity of *WHERE* continued

A popular but often misunderstood geographic unit is the **ecosystem**, a system of interacting biological and physical components. An ecosystem is made up of living things and their environment. As ecologists use the term, it should be more or less distinct and more or less independent of adjacent ecosystems. We should be able to define a boundary around it and measure the inputs and outputs (usually of energy and material) across the boundary.

A watershed or drainage basin is a good example of an ecosystem. In a watershed, we can define inputs, in the form of precipitation and atmospheric deposition, with some transport by animals, and the outputs to be carried by the watercourse at the bottom of the watershed, with some transport by animals too.



An important unit of area that is similar to ecosystem but more general in definition is the **landscape**. Generally, a landscape is a fairly extensive area that is made up of multiple natural communities and conditions. An ecosystem is often a landscape but a landscape can be any arbitrary unit of area we define. It may include several ecosystems or parts of ecosystems. In popular usage, it is everything we can see from a given place. In our studies of biodiversity it is a very useful term, but we need to define the particular landscape we are referring to when we use it.