



Jane Franklin Dance

Woods and Wilds

I. Introduction

The purpose of *Woods and Wilds* is to depict through movement and dance an exploration of the outdoors. Interdependence, constant change, niche, habitat are described through narratives and movement and connected to Science SOL's. Audience volunteers partner with company dancers during two samples.

Reacting to the environment with a sense of wonder
Landscapes foreground and background – who lives there?
Horizon and the edges of space
Sounds of insects at night

II. Habitat: the organism's home

Many different species may share the same habitat. Habitats don't exist in isolation.

. A **habitat** is the actual location in the environment where an organism lives and consists of all the physical and biological resources available to a species.

Kinds of habitats

Any place where organisms live is by definition a habitat. Your backyard, an empty lot, an agricultural field, a pristine mountain wilderness—all these are habitats for some group of organisms.

Habitat Features

Habitats have many features or factors that are important to the organisms living there. Conveniently, we can divide habitat factors into two major groupings, *physical factors* and *biotic factors*. Physical factors are elevation, steepness, slope direction, soil type, and water availability. Biotic factors include all the other species that occur in the habitat.

III. Niche: the organism's role

. A **niche** refers to the way in which an organism fits into an ecological community or ecosystem. In the 1950's G. Evelyn Hutchinson devised a rigorous and quantitative concept of niche that incorporated both place and functional elements and has remained the standard niche model for over thirty years. Prior to Hutchinson the niche was a rather nebulous concept defined only by words; that is, niches could not be measured. Hutchinson's new idea not only allowed a way to measure niches but also a way to compare niches of two or more species.

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A **fundamental niche** represents a species' potential to use available resources and exists in the absence of predators and competitors (a rare event)

In the real world, a niche is limited in extent by the presence of interactions with other species and is termed the **realized niche**.

IV. General Principles of ecology

- Ecology focuses on the biological scales of the individual organism as well as larger scales, including populations, communities, ecosystems, and the biosphere.
- Essentially all species, including wildlife, in ecological systems are dependent upon other species for their existence.
- In spite of this interdependence, the organisms within ecological systems nearly always act to maximize their individual fitness, not to benefit the population, community or ecosystem.
- Constant change is a commonality of all levels of organization in ecology.
- Ecosystems are altered by human manipulations of the environment and these changes are often irreversible.

Rachel Carson, writer, scientist, and ecologist, grew up simply in the rural river town of Springdale, Pennsylvania. Disturbed by the profligate use of synthetic chemical pesticides after World War II, Carson warned the public about the long term effects of misusing pesticides. In *Silent Spring* (1962) she challenged the practices of agricultural scientists and the government, and called for a change in the way humankind viewed the natural world. Carson was attacked by the chemical industry and some in government as an alarmist, but courageously spoke out to remind us that we are a vulnerable part of the natural world subject to the same damage as the rest of the ecosystem.

John Muir (April 21, 1838 – December 24, 1914) was one of the first modern preservationists. His letters, essays, and books telling of his adventures in nature, and wildlife, especially in the Sierra Nevada Mountains of California, were read by millions and are still popular today. His direct activism helped to save the Yosemite Valley and other wilderness areas. The Sierra Club, which he founded, is now one of the most important conservation organizations in the United States. His writings and philosophy strongly influenced the formation of the modern environmental movement.

VII. Follow-up

http://artsedge.kennedy-center.org/content/2180/2180_craftslandscape_vocab.pdf

Landscape, foreground, background

<http://artsedge.kennedy-center.org/content/2177/>

Hand sculptures
Spatial arrangements

Vocabulary

<http://marinebio.org/Oceans/Conservation/Moyle/ch6.asp>

- *Populations* are interbreeding groups of individuals of the same species, generally living in the same contiguous habitat.

- *Communities* are interacting populations of different species.
- *Ecosystems* are comprised of both the biotic (living) and abiotic (non-living) factors in a given area; they contain both the broad biological community and all the physical processes (such as weather, soil, hydrology, nutrients, energy flow etc.) that influence that community.
- The *biosphere* is global in scale, and includes all the biological and physical processes that allow for and influence life on Earth.
- Higher scales of organization contain smaller scales (e.g., a given community contains populations of various species), yet all scales also possess properties that are unique to that scale and that cannot be deduced from properties of included scales. For example, the nature and strength of interactions among two species of meadow mice cannot be fully explained even with the most sophisticated models of their population dynamics. Thus, many interactions at the community level are emergent properties of communities.

RESOURCES

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Gilbert, Anne Green. *Teaching the Three Rs Through Movement Experiences.* Englewood Cliffs, NJ: Prentice-Hall, Inc, 1977.

Mirus, Judith; White, Elena; Bucek, Loren E.; Paulson, Pamela. *Dance Education Initiative Curriculum Guide.* Minnesota Center for Arts Education, 1996.

<http://marinebio.org/Oceans/Conservation/Moyle/ch7.asp>

Chapter 7: Niche and habitat

» Conservation Home / Essays on Wildlife Conservation

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