

Biodiversity: a Coat of Many Colors

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By Tass Kelso, guest contributor

“Biodiversity” is shorthand for “biological diversity”—a term covering a broad array of contexts from the genetics of individual organisms to ecosystem interactions. The daily news tells us of ongoing threats from the loss of biodiversity on global and regional levels as humans extend their influence across the face of the earth and into its sustaining processes. On a regional level, biologists look for measures of biodiversity, celebrate when they find sites where those measures are high, and mourn when they diminish; conservation organizations and, in some cases, legal statutes try to protect biodiversity, and communities often struggle to balance human needs for social infrastructure with desirable elements of the natural landscape.

What different meanings can biodiversity encompass, and why might we care about them? Some of these meanings may be purely practical. For example, biodiversity includes different genetic

strains: a particularly drought-tolerant plant, an animal that is resistant to a virus or pathogen that may jump to other species. History is rife with such plagues, and we know with certainty that our future well-being, from sustainable agricultural systems to human health, will depend on having a thriving bank of diverse organisms whose genetic wealth we may need to draw upon. Similarly, having many different species, the most common definition of biodiversity, may provide us with the raw materials of future foods or medicines or energy: economists speak of “opportunity costs” that may result from decisions that remove options or solutions for the future. At its highest level, biodiversity covers ecosystem processes. A functional ecosystem is one in a kind of balance where the interaction of parts, its species and processes, make it resilient to crisis and stable across time. Destabilized ecosystems create problems for human societies: we depend on their functional abilities to minimize floodwater, fires, or landslides, and to cleanse our



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groundwater or air. None of these processes are simple ones, so loss of biodiversity elements, from species to communities, may contribute ultimately to profound human costs.

To many, these concepts of biodiversity may seem abstract and relevant only to a future time—perhaps a distant future irrelevant to the here and now. Another more immediate and personal definition of biodiversity may help make sense of its importance for most of us. Biodiversity, even for those who know not a single name of a native organism, is all of those colors, shapes, and patterns that infuse our sense of home landscape. Here in the West, the landscape is grand and multi-faceted, a source of inspiration to artists and writers from the early exploring days, an economic draw to bring new citizens from the 19th century to the 21st. For those of us who call this home, the color, shape, and pattern of our natural landscape with its species and communities provide

underlying connections and reasons why so many of us want to live here. A uniform landscape holds far less appeal than one of rich texture. Our wild species, the true natives of the plant and animal kingdoms, shape the texture of this place: aspens against a fall sky, antelope across a grassland, trout in the stream, meadowlark song on a spring morning. In its simplest essence, devoid of scientific or economic contexts or abstract future potentials, biodiversity infuses a landscape with unique aesthetic characters that connect people to place, and connected citizens create communities that thrive. For this relatively simple reason, as well as the multitude of scientific and economic reasons, biodiversity does matter on a local and regional scale. Thus, biologists count and measure, conservationists reach into their pockets, and communities grapple with finding a balance between the imprint of development and the maintenance of natural elements, patterns, and processes.

