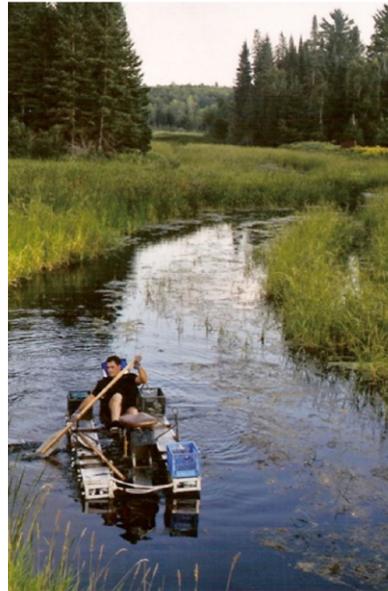


LEAP LAB

The Science of a Sustainable Future

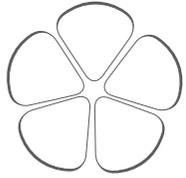


AN AFFINITY FOR LIFE

An art and science exhibit about the human relationship to nature

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„Ones affinity for life is a mixture of experience, and for me it began with catching snakes in my youth, the atrocities of war in Kuwait, working in zoos for years, rafting rivers and dinosaur hunting in the desert. It is very personal, primordial, and inescapable. Without nature I would surely wither away.

This exhibit asks, „why do we need nature?“ And invites the visitor to reflect on their own path.”

Marcus Eriksen, PhD

BIOPHILIA

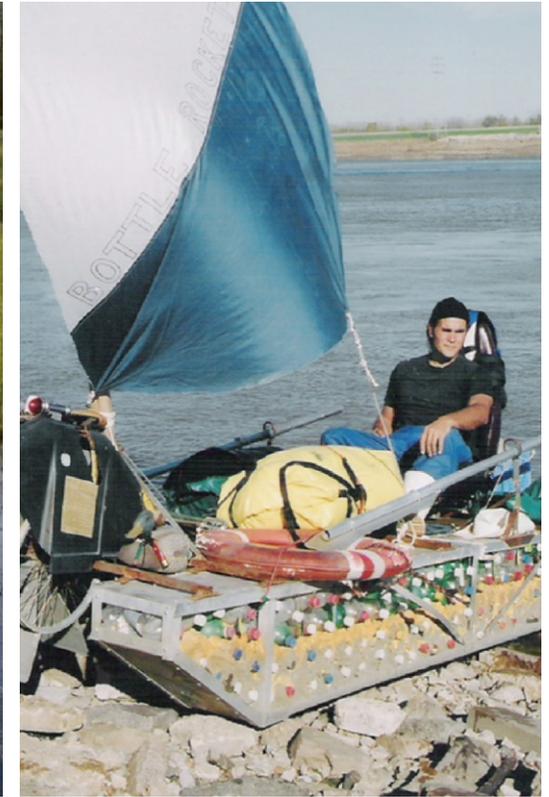
Biophilia, a term coined by E.O. Wilson, describes the human affinity for life and lifelike processes. Human nature is intimately connected to other living things. It shapes our living spaces, structures our communities, and offers a sense of well-being. We long for nature when it is absent.

The exhibit pieces here were created by Marcus Eriksen, reflecting a personal relationship to nature, and are presented in the context of the nine Biophilia values described below.

Value	Definition	Function	Exhibit
Naturalistic	Satisfaction from direct experience with nature.	Curiosity, outdoor skills, mental/physical development	Bottle Rocket
Ecologicstic/Scientific	Systematic study of function, structure and relationship in nature	Knowledge, understanding, observational skill	Steel Triceratops
Aesthetic	Beauty of Nature	Inspiration, Harmony, Peace	Landscape Preference
Symbolic	Use of nature for metaphorical expression, language	Communication	Oak Limbs and Roots
Humanistic	Emotional attachment, "Love" for nature	Group bonding, companionship	Kuwait Arthropods
Moralistic	Strong Affinity, Spiritual reverence, ethical concern for nature	Order and meaning in life, kinship and affiliational ties	Stained Glass & Bones
Dominionistic	Mastery, control and dominance of nature	Mechanical skills, ability to subdue	Casts of Captivity
Negativistic	Fear, aversion, alienation	Security, protection, safety	Print
Utilitarian	Practical and material exploitation	Physical survival	Print

MISSISSIPPI RIVER RAFT

NATURALISTIC BIOPHILIA



The Bottle Rocket, made with 232 2-liter plastic bottles, a car seat from a junked Ford Mustang, and a bicycle transformed into a paddlewheel, journeyed 2000 miles down the Mississippi River in 2003.

The 5-month journey down the river, camping under stars, experiencing wildlife in its natural state, exemplified the beneficial experience and satisfaction from direct contact with nature.



STEEL/REAL DINOSAUR

ECOLOGISTIC-SCIENTIFIC BIOPHILIA

Using steel salvaged from damaged oil tanks near a triceratops dinosaur excavation site, a life-size skeleton (30'x8'x12') was recreated. The real bones were then put into the sculpture in their correct place. What's "real" and "steel" are distinct to the viewer, prompting curiosity about the missing bones.

While many museums recreate whole skeletons from replicas or blending few skeletons together, here we acknowledge the missing parts. It's a field of science called "taphonomy", the study of the biological and geological forces of death, decay, transport, fossilization, and erosion.

"The ecologicistic experience of nature involves recognition of organizational structure and complexity. This ecological insight has probably conferred distinctive advantages in the meeting and mastering of life's physical and mental requirements – including increased knowledge, the honing of observational and recording skills, and the recognition of potential material uses of nature through direct exploitation and mimicry."

"The scientific experience of nature, in contrast to the ecologicistic, involves a greater emphasis on the physical and mechanical functioning of biophysical entities as well as a related stress on issues of morphology, taxonomy, and physiological processes. Despite this restricted emphasis, often divorced from direct experiential contact with nature, the scientific outlook shares with the ecologicistic an intense curiosity and fascination with the systematic study of life and lifelike processes."
(The Biophilia Hypothesis, Kellert & Wilson, 1993).



CASTS OF CAPTIVITY

DOMINIONISTIC BIOPHILIA

Bronze faces, hands and feet of 16 different birds, mammals and reptiles are chained together and preserve their post-mortem expressions. The animals died in captivity in zoos.

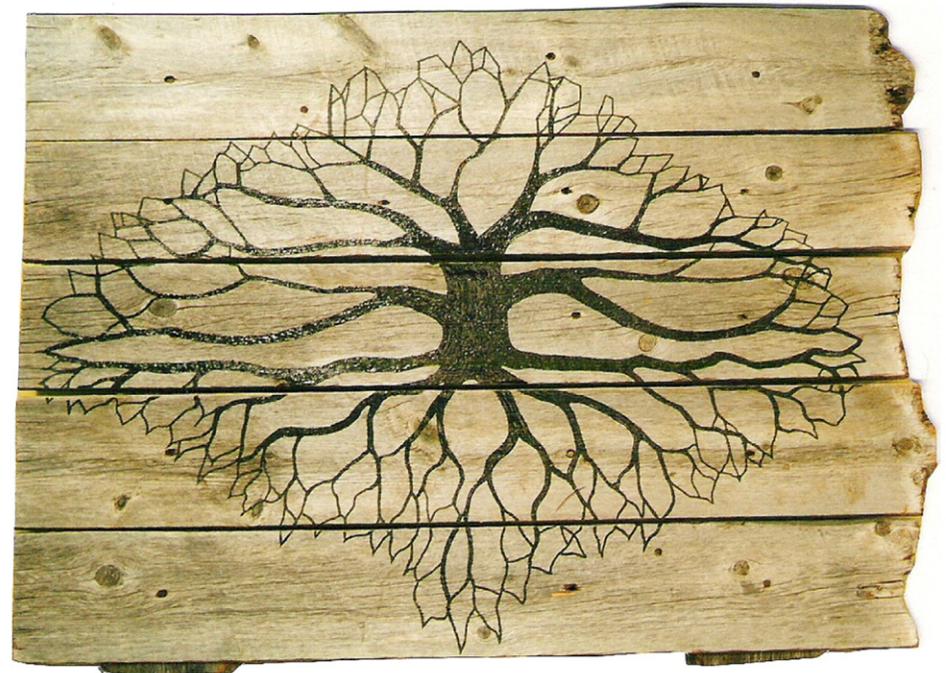
Historically, zoos were collections of animals kept for human curiosity, affinity and dominance, perpetuating myths about man over beast. Today, zoos are conservation-oriented and animal-centered, recreating animal environments and managing Species Survival Plans. The modern zoo, realizing modern threats to biodiversity, has necessarily evolved to conserve and educate, recognizing that conservation is self-preservation.

"The dominionistic experience of nature reflects the desire to master the natural world. This perspective may have been more frequently manifest during earlier period of human evolution; its occurrence today is often associated with destructive tendencies, profligate waste, and despoliation of the natural world."
(The Biophilia Hypothesis, Kellert & Wilson, 1993).



METAPHOR and MEANING

SYMBOLIC BIOPHILIA



The 'TREE' as metaphor exists in almost every culture. The silhouette of a tree with its roots and limbs exposed is a common metaphorical symbol used to show interconnectedness, from family ancestry to evolutionary relationships. Complex ideas are often difficult to articulate, leaving symbolism to tell a thousand words. Images from nature sometimes tell it best.

"Nature, as a rich taxonomy of species and forms, provide a vast metaphorical tapestry for the creation of diverse and complex differentiations."

"A limited indication of the symbolic function is reflected in the finding that animals constitute more than 90% of the characters employed in language acquisition and counting in children's pre-school books."

(The Biophilia Hypothesis, Kellert & Wilson, 1993).

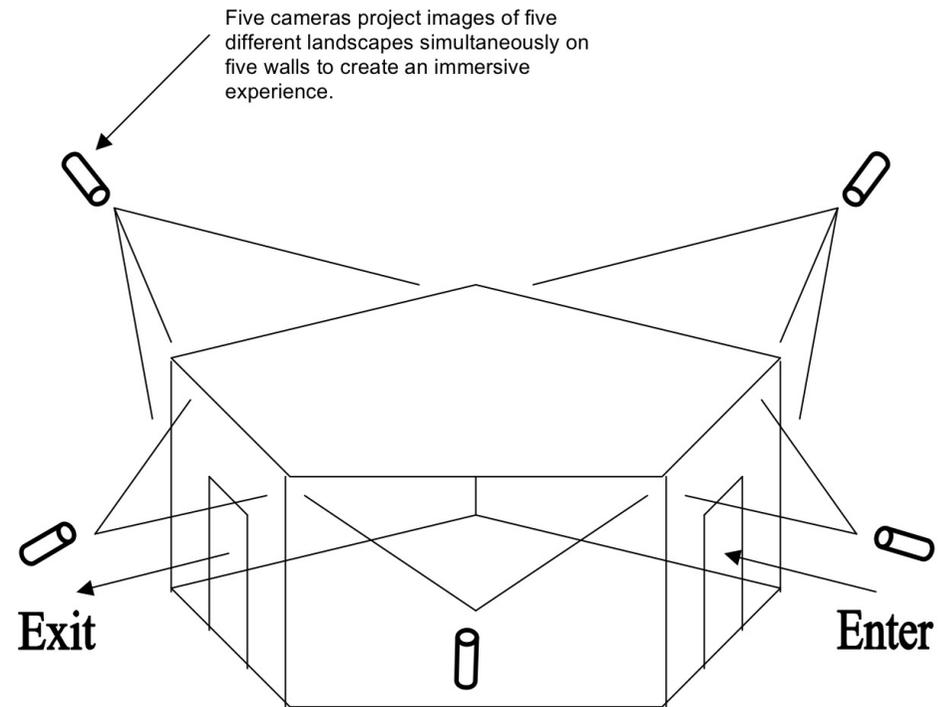
LANDSCAPE PREFERENCE IMMERSION STUDY

AESTHETIC BIOPHILIA

The viewer is immersed in 5 different landscapes projected one at a time on the inside walls in a 5-sided room. After viewing a rainforest, savanna, grassland, desert and woodland forest, the viewer is asked to choose the "right place". Earlier studies indicate that people have a preference for savannah habitats, regardless of age, gender or culture.

Evolutionary psychologists debate over whether this savanna preference is a genetic memory or a reflection of perceived threats and benefits. Some past responses to the exit question "Why did you make your choice" have been: trees hide snakes and lions, there's shelter or water present, my animals or I can or cannot find food.

Visitors to this exhibit will instantly be able see how their responses to the two questions compare to everyone else.





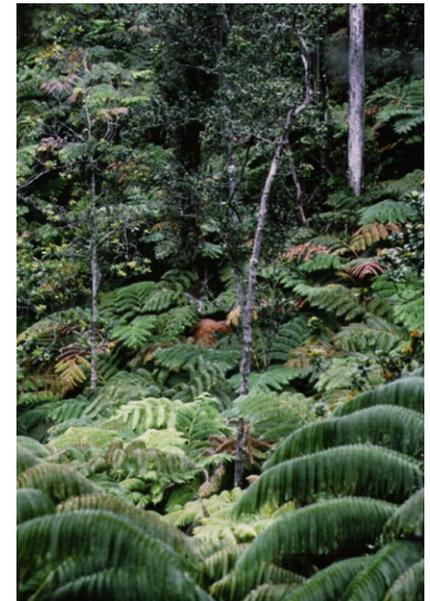
1. Savanna Landscape



4. Grassland Landscape



2. Desert Landscape



5. Rainforest Landscape



3. Pine Forest Landscape

"The aesthetic response could reflect the human initiative recognition of reaching for the ideal in nature: its harmony, symmetry, and order as a model of human experience and behavior. The adaptational value of the aesthetic experience of nature could be further associated with derivative feelings of tranquility, peace of mind, and related sense of psychological well-being and self-confidence. The aesthetic response to varying landscapes and species may also reflect an intuitive recognition of the greater likelihood of food, safety, and security associated with human evolutionary experience."

(The Biophilia Hypothesis, Kellert & Wilson, 1993).

WAR IN BLOOM

HUMANISTIC BIOPHILIA

During the 1991 Persian Gulf War, a battalion of U.S. Marines occupied a hill outside Kuwait City surrounded by burning oil wells and the rusted exoskeletons of destroyed tanks and abandoned dead Iraqi soldiers.

Among this destruction there was life: scorpions, camel spiders, beetles, spiny-tailed lizards, and a small purple flower that grew one week after the war ended. This beautiful, resilient flower sprouted, bloomed and went to seed, all according to its own ancient clock. The living desert piqued our curiosity, entertained us, garnered respect, and perhaps for some of us, it thwarted seeds of despair.

A camel spider and two scorpions, collected during the war, are preserved in a large specimen jar along with the Kuwait Liberation Medal earned by the sculptor. The jar is surrounded by painted steel flowers.

"The humanistic experience of nature reflects feelings of deep emotional attachment to individual elements of the natural environment. This focus, like the aesthetic, is usually directed at sentient matter, typically the larger vertebrates, although humanistic feelings can be extended to natural objects lacking the capacity for reciprocity such as trees and certain landscapes or geologic forms."

(The Biophilia Hypothesis, Kellert & Wilson, 1993).



STAINED GLASS AND BONES

MORALISTIC BIOPHILIA

A century-old church window presents images of nature in stained glass. Real cross-sections of fossil and modern bone are aligned across the middle of the window. Evolutionary lineages are laid out with red glass. The image of the sun reigns above, while the moon rises from below. Life on earth thrives between them. The cross-section of bones from left to right are: human, mammoth, fossil crocodilian, Tyrannosaurus rex and a modern ostrich.

Religion draws from nature for symbolism, anthropomorphism, and sometimes natural elements are deities themselves. Religion serves nature by providing the rudiments of a conservation ethic, as in the Christian ideal of Eden. Religion and nature, in a symbiotic way, give each other value.

"The moralistic experience of nature encompasses strong feelings of affinity, ethical responsibility, and even reference for the natural world. This perspective often reflects the conviction of a fundamental spiritual meaning, order, and harmony in nature. Such sentiments of ethical and spiritual connectedness have traditionally been articulated in poetry, religion, and philosophy, but today they can even be discerned in the modern discourse of scientific language."

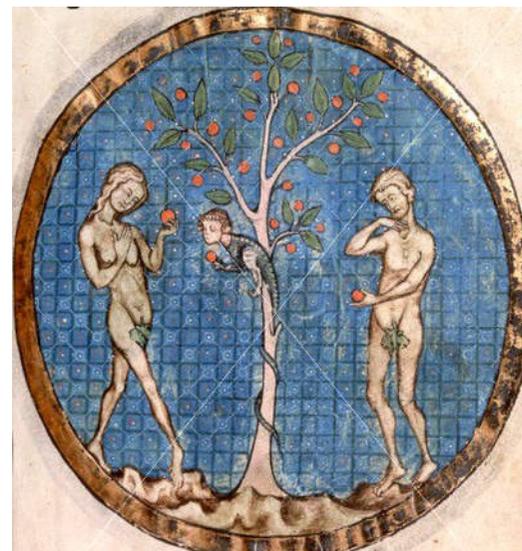
(The Biophilia Hypothesis, Kellert & Wilson, 1993).



NEGATIVISTIC BIOPHILIA

From Medusa to King Tutankhamun's headdress, tombstones and battle flags, the serpentine form represents elements of fear or danger. The snake brings mortality to Adam and Eve in the bible. Ouroboros from Greece depicts a snake eating its tail representing nature's endless cycle of death and recreation. We experience both a fear and fascination with the elements of nature that cause us harm, from poisonous plants, to predators and even severe weather. We are often drawn to see danger, perhaps as an intuitive means of rapidly learning how to avoid it.

"The negativistic experience of nature is characterized by sentiments of fear, aversion and antipathy toward various aspects of the natural world. The human inclination to fear and avoid threatening aspects of nature has been particularly associated with reptiles such as snakes and arthropods such as spiders and various biting and stinging invertebrates. A predisposition to fear and avoid such creatures and other harmful elements of nature may have conferred some advantage during the course of human evolution resulting in its statistically greater prevalence."
(The Biophilia Hypothesis, Kellert & Wilson, 1993).



UTILITARIAN BIOPHILIA



Clothing



Medicine



Shelter



Textiles



Tools



Food

"The material exploitation of nature is perhaps the most obvious and widespread means by which humans benefit from other living things as the fundamental basis for human sustenance, protection and security. Despite our desire to free ourselves from a direct, or 'primitive', dependence on nature, our use in more profoundly complex than ever."

"Wild living diversity contributes to modern civilization in food production, textiles, building materials, medicines, and many other uses, including industrial and technological development. Harvested wild fisheries consumed globally exceed the production of food from domestic animals. Hardwoods continually taken from old-growth forests wherever they exist around the world. Nearly half of all medicines owe their discovery to wild nature."

(The Biophilia Hypothesis, Kellert & Wilson, 1993).



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