The historian Lynn White in his seminal *Science* (1967) publication nearly a half century ago suggested that the roots of the contemporary environmental crisis lie in our values and our culture that largely support assumptions such as: 1) a fundamental difference separating humans from nature; 2) humans as inherently superior to the natural world; and, 3) people having the right to exercise control over the natural world relatively unrestrained by an ethical concern for the rights of natural objects, although bound by moral obligations to treat nature well to the extent that it affects ethical relations among people. White concluded that the resolution of the current scale of environmental destruction would necessitate a basic change in our values and ethics toward the natural world.

Many critics have taken exception to various White claims, citing more benign and conservation-oriented traditions in Western culture and in modern society (Dobel, 1977; Farley, 2002; Moncrief, 1970; Passmore, 1974). Still, I believe his thesis is mainly correct and an appropriate diagnosis of the current challenge – i.e., we will not effectively resolve the scale of our contemporary environmental crisis until we have fundamentally altered our values and ethical relations to the natural world. Clearly, important and progressive change has occurred in perceptions of nature during the past half-century, resulting in improved treatment and stewardship of aspects of the natural environment. I believe these changes, however, continue to be limited, selective, and insufficiently effective and comprehensive. Moreover, our society continues to rely mainly on expansion in scientific knowledge, new management technologies, and legal and
regulatory controls to address our environmental problems. The overall inadequacy of this approach is suggested by, despite impressive gains and improvements, few major environmental challenges having been resolved and, indeed, many appearing to be demonstrably worse. More than ever I would support White’s diagnosis that a basic shift in values and ethical relations to the natural world will be required not only to mitigate and avoid various environmental woes but, as importantly, to enhance our physical and mental well-being, which is contingent upon the quality of our relational ties to the natural world. Less this vision seem hopelessly unrealistic, I would suggest that such a change is not only possible but practical, and can occur far more rapidly than generally assumed, as I hope to illustrate later in this chapter.

I want to suggest, however, that the emergence of values that give rise to and sustain a new ethic toward the natural world will need to be based on a greatly expanded understanding of human self-interest and biological dependence on the natural world, although recognizing the particular human capacity to exercise choice and free will in choosing our values and ethical relations. By contrast, I believe the articulation of an environmental ethic that relies on assumptions of a rigid biological and narrow utilitarian dependence on the natural world, or an infinite capacity to construct seemingly right relationships to nature, will ultimately be unsustainable, unconvincing, and worse, misguided. What is suggested here is a biocultural perspective, one that views human values and ethical relations toward the natural world as bounded by the biological requirements of our species but greatly shaped, influenced, and mediated by individual and cultural learning and experience.

To elucidate this position, I need to place this biocultural perspective within the context of two basic ethical arguments or positions, although since I am not trained as an environmental ethicist, you will need to be tolerant of my crude delineations of these positions. The biocultural perspective of environmental values and ethics advanced in this paper roughly falls within the so-called utilitarian or instrumental ethical viewpoint, although, as will be seen, in a somewhat new and greatly expanded sense. The utilitarian perspective roughly argues that an environmental action is morally just or right if it contributes to the greatest good for people now and
into the future. Thus, environmental objects or subjects rather than being a moral end in themselves are the means to a human end – e.g., just or ethical treatment advances human justice, goodness, fulfillment, happiness, physical and mental well-being, and so on. By contrast, a so-called rights-based or biocentric ethic suggests that environmental objects or subjects are a moral end in themselves, possessing intrinsic or inherent value independent of how they may or may not advance human interest, benefit, or well being. This position regards nature as morally valuable simply because it exists and is the recipient, for example, of our love and affection, appreciation of its beauty, or the spiritual qualities it may evoke independent of its utility.

A utilitarian or instrumental environmental ethic has often been associated with harm and injury to the natural world that diminishes human material security and physical well-being. For example, extinguishing a species or causing pollution is viewed as morally reprehensible because it damages the utility that might be derived from, for example, eventually exploiting the biogeochemistry inherent in any biotic form, or because it potentially inflicts injury to human health, often among the most vulnerable such as children and the poor.

I regard this depiction of utilitarianism as more precisely a narrow utilitarianism that may be useful but ultimately is an inadequate basis for advancing a meaningful, accurate, and relevant environmental ethic, for several reasons. One, most species and habitats don’t currently yield and probably never will generate much material advantage, and environmental pollution (with the exception of global climate change) affects only a relatively small percentage of people and typically can be remedied through technical rather than ethical means. Second, people can in most circumstances advance an equally compelling narrow utilitarian ethic that argues for the elimination of a species or the occurrence of some form of pollution to protect the needs of people and society. Third, the seeds of destruction may be sown in any ethical calculus that promotes the value of only a fraction of the natural world, suggesting the expendability of the rest depending on compelling human circumstances. Fourth, a narrow utilitarian ethic offers only a partial and inadequate understanding of human biological dependence on the natural world for advancing human physical and mental well-being.
Before elucidating this last point, which is the basis for the ethic advocated in this paper, I want briefly to indicate why I believe an intrinsic rights or biocentric ethic is also equally flawed in generating a convincing and pragmatic environmental ethic. The basic problem of a biocentric position in extending moral worth and standing to the natural world is that it offers little practical guidance and convinces few. For example, how does one from this perspective choose between species or, more importantly, between human welfare and the well-being of species or nature more generally? A biocentric position offers limited assistance in situations where an ethic is most needed – i.e., not the choice between good versus bad but between competing and compelling goods. Additionally, a biocentric ethic, by being indifferent to the preferences and needs of most people, convinces few and is, therefore, politically unrealistic and untenable. I do not want to deny the possibility that in an ideal future an enlightened humanity could be swayed by a biocentric or rights-based environmental ethic. For the moment, I wish to defer its consideration for several reasons, including the following:

1) A biocentric ethic is difficult to demonstrate and prove.

2) This perspective possesses only a limited ability to convince the environmentally ambivalent and/or non-committed.

3) This ethical position is marginally practical or politically relevant in rendering difficult policy choices.

4) There is so much more to learn about the human tendency to value nature and how it contributes to human physical and mental well-being.

This last point brings us back to the biocultural position advanced in this paper, based on a greatly expanded understanding of human biological self-interest influenced and mediated by culture, learning, and experience. This perspective can be viewed as a sort of environmental ethic of the middle way lodged somewhere between a narrow utilitarianism and a rights-based biocentric position, although I recognize that in these matters one cannot be a little pregnant. Still, I want to suggest that a broad utilitarian-based ethic can encompass many of the arguments traditionally advanced to rationalize and support a biocentric environmental ethic such as
nature defended as a source of affection, love, beauty, and spiritual inspiration. I will, thus, offer an environmental ethic based on an understanding of human biology and culture that connects human physical and mental well-being not only to material and commodity advantage, but also to a host of equally compelling benefits people derive from their inclination to value nature for its aesthetic, emotional, intellectual, moral, and other qualities. This environmental ethic, in other words, marries a narrow instrumentalism with critical aspects of a rights-based or biocentric perspective. It represents a position occasionally articulated by others such as, for example, Edward O. Wilson (1993: 37), in making the ethical case for conserving biological diversity:

“What humanity is now doing [by the large-scale loss of biological diversity] will impoverish our descendants for all time to come. Yet critics often respond ‘so what’? The most frequent argument is one of material wealth at risk. This argument is demonstrably true but contains a dangerous flaw – if judged by potential value, species can be priced, traded off against other sources of wealth, and when the price is right, discarded…. The species-right argument…, like the materialist argument alone, is a dangerous play of cards…. The independent-rights argument, for all its directness and power, remains intuitive, aprioristic, and lacking in objective evidence…. A simplistic adjuration for the right of a species to live can be answered by a simplistic call for the right of people to live…. In the end, decisions concerning preservation and use of biodiversity will turn on our values and ways of moral reasoning. A sound ethic… will obviously take into account the immediate practical uses of species, but it must reach further and incorporate the very meaning of human existence…. A robust, richly textured, anthropocentric ethic can instead be made based on the hereditary needs of our species, for the diversity of life based on aesthetic, emotional, and spiritual grounds.” (emphasis added)

The case here for a greatly expanded instrumental environmental ethic hinges on relating values such as material utility, aesthetics, emotional connection, spirituality, and more to human biology as
well as to the particular capacity of people to exercise choice and free will in constructing personality, culture, and society. In making this ethical argument, I will invoke the concept of biophilia (Wilson, 1984; Kellert and Wilson, 1993; Kellert, 1997), which can be simply defined as a complex of weak biological tendencies to value nature that includes material, aesthetic, emotional, intellectual, spiritual, and other basic dependencies on the natural world that contribute to human physical and mental well-being. Because biophilia is viewed as an inherent tendency, it is fundamentally rooted in assumptions regarding human biology and evolution and, in effect, an argument for an ethic of care and conservation of nature based on long-term individual and collective self-interest. As the biophilic tendency to value nature is regarded as a weak inherent inclination, it assumes these affinities for the natural world must be learned, although as genetically encoded features, they can be taught relatively quickly. In other words, the biophilic values are highly shaped, mediated, and conditioned by experience and culture. Thus, biophilia is a biocultural construct where the inherent tendency to value nature is greatly influenced by human choice, creativity, and free will. Because the biophilic values depend on learning and experience, they are potentially expressed in both adaptive and maladaptive ways.

Nine biophilic values or inherent tendencies to impute worth and importance to the natural world have been identified (Kellert, 1996, 1997). Reflecting the influence of learning and culture, each value is highly variable among individuals and groups, but as expressions of human evolution, reflect a range of physical and mental benefits when adaptively revealed. All the biophilic values confer advantages, but being reliant on learning and social support can be potentially distorted and dysfunctionally expressed. The nine values, thus, reflect the richness of the human dependence on the natural world for fitness and security, and when collectively revealed, constitute a web of relational dependency so pronounced that an ethic of care and concern for nature may emerge from a profound realization of self-interest.

It would take far more space than available to detail all nine values and the various ways they may potentially contribute to human well being. For illustrative purposes, five of these values will be briefly described: specifically, a utilitarian value that most closely embraces
the narrow instrumental basis for an environmental ethic, as well as four others – the aesthetic, scientific, humanistic, and moralistic values – often associated with a rights-based or biocentric position because of their focus on appreciating nature as a source of knowledge, love, beauty, and spirituality. Before proceeding, one-sentence definitions of all nine values and frequently observed adaptive benefits are noted in the table below.

Table 1 Typology of biophilic values of nature

<table>
<thead>
<tr>
<th>Value</th>
<th>Definition</th>
<th>Function</th>
</tr>
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<tbody>
<tr>
<td>Aesthetic</td>
<td>Physical attraction and appeal of nature</td>
<td>Harmony, security, creativity</td>
</tr>
<tr>
<td>Dominionistic</td>
<td>Mastery and control over nature</td>
<td>Physical prowess, self-confidence, mastery skills</td>
</tr>
<tr>
<td>Humanistic</td>
<td>Emotional bonding with nature</td>
<td>Bonding, cooperation, companionship</td>
</tr>
<tr>
<td>Naturalistic</td>
<td>Exploration and discovery of nature</td>
<td>Order, meaning, connection</td>
</tr>
<tr>
<td>Moralistic</td>
<td>Moral and spiritual relation to nature</td>
<td>Curiosity, exploration, discovery</td>
</tr>
<tr>
<td>Negativistic</td>
<td>Fear and aversion of nature</td>
<td>Safety, protection, awe</td>
</tr>
<tr>
<td>Scientific</td>
<td>Systematic and empirical study of nature</td>
<td>Knowledge, understanding, critical thinking skills</td>
</tr>
<tr>
<td>Symbolic</td>
<td>Nature in language and expressive thought</td>
<td>Communication, mental development, analytical skills</td>
</tr>
<tr>
<td>Utilitarian</td>
<td>Material and physical exploration of nature</td>
<td>Physical sustenance, material productivity, survival skills</td>
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A utilitarian value reflects the human inclination to affiliate with nature for its material and commodity advantage. The term is somewhat misleading since all the biophilic values are viewed as advancing human welfare. People have always recognized the natural world as an indispensable source of physical sustenance and security. Despite this ancient reliance, modern society often views the domestication of the wild as a measure of progress reflected in industrial agriculture and related large food surpluses, an abundance of technically produced consumer goods, relative physical health achieved through suppressing other organisms, and the massive
transformation of natural into human-made buildings and landscapes integral to urbanization. This belief in progress as the measure of our material independence from nature is an illusion. People continue to depend largely on the natural world as an irreplaceable source of food production, medicines, building supplies, and other essential areas of commodity production. Moreover, this utilitarian reliance will expand greatly as a consequence of rapid advances in systematics, molecular biology, and bioengineering that all portend a revolution in new product development. Additionally, people rely even more basically on various ecosystem services such as decomposition, pollination, oxygen and water production, and others to sustain life. Apart from these obvious sources of material advantage, people obtain a host of physical and mental rewards from nurturing their physical dependence on nature in the absence of necessity. They pursue a variety of harvesting activities because these pursuits nourish their ability to extract with skill a portion of their needs from the land. Beyond the material gains, they also reap physical fitness, feelings of independence and self-sufficiency, and self-confidence.

A scientific value reflects the human desire to know the world with understanding and authority. This tendency occurs among all cultures because it has facilitated the development of intellectual and cognitive capacities through systematic study and observation. The natural world provides an extraordinary array of opportunities for sharpening critical thinking skills and problem-solving abilities. Empirically and methodically examining nature builds capacities for acquiring knowledge and understanding, as well as sharpens analytical and evaluative aptitudes. Other contexts exist, especially in modern society, for advancing these cognitive abilities, but contact with nature provides an especially stimulating and almost always accessible means for nurturing intellectual competence, especially in the young and developing person. Moreover, simply by chance, the knowledge gained from intellectual pursuits pursued independent of their immediate utility often yield tangible and practical gains over time. In exploring the mysteries of nature people expand their realization of how much they can benefit from comprehending even a fraction of the extraordinary complexity of the biophysical world.

An aesthetic value reflects the human appreciation of nature as a source of physical attraction and beauty. Few experiences in people’s
lives exert as consistent and powerful an impact as the aesthetic appeal of certain features of the natural world. Even the most insensitive person would likely be unable to resist feelings of attraction to certain aesthetically compelling elements in nature no matter how fitfully expressed. Studies in various cultures have demonstrated a consistent and widespread inclination to respond to the attractiveness of certain landscapes, species, and other features of the natural world (Ulrich, 1993). Yet, a tendency exists to undervalue the significance of our aesthetics of nature. Even the well-known environmentalist, Norman Myers, has remarked (Myers, 1979: 46), “the aesthetic argument for [environmental conservation] is virtually a prerogative of affluent people with leisure to think about such questions.” Yet, it appears that an aesthetic value of nature occurs universally among humanity and is, thus, genetically encoded, reflecting a tendency that developed evolutionarily because it yielded a variety of functional benefits.

What might be some elements of this adaptive significance? Recognizing beauty in nature can engender an awareness and appreciation of balance, symmetry, harmony, and grace. Unity and order observed in natural features inspire and instruct, offering a kind of quasi-design model and template, where through mimetic adaptation, analogous qualities of excellence and refinement can be captured in human life. Aesthetic preference for certain natural features can also be linked to the enhanced likelihood of achieving safety, sustenance, and security. People across the globe typically favor landscapes with clean and flowing water, that enhance sight and mobility, that possess bright and flowering colors, and other features which over time have proven instrumental in human survival (Heerwagen and Orians, 1993; Hildebrand, 2000; Ulrich, 1993). At a very basic level of experience, the aesthetic appeal of nature reflects being attracted or drawn to the most information-rich environment people will ever encounter (Wilson, 1984). Through this attraction, people engage their sense of wonder, curiosity, and imagination and, as a consequence, increase their capacity for exploration, discovery, and creativity, all adaptive capacities in the struggle to survive and thrive.

A humanistic value reflects the ability of the natural world to provoke human affection and emotional attachment. This occurs
through the companionship of other animals, but also through special fondness for certain plants and landscapes. These feelings of emotional attachment offer people opportunities for expressing and experiencing intimacy, relationship, connection, and sometimes a feeling of kinship. By contrast, isolation and aloneness represent heavy burdens for most people. With rare exceptions, people crave the companionship and affection of others, and affiliating with other species, even plants and landscapes, can provide an important source of trust and relationship. Bonding with others can be a significant pathway for cultivating the capacities for cooperation and sociability, especially functional for a largely social human species. People covet responsibility for others and gratefully receive their affection and allegiance. Caring and being cared for by another creature and, more generally, by nature provides opportunities for expressing affection and building a sense of affiliation and fondness. These feelings accrue under normal circumstances, but become especially pronounced during moments of crisis and disorder. The caring and intimacy of other life is often mentally and physically restorative, whether expressed in the giving and receiving of flowers, contact with companion animals, or the experience of gardens, seashores, and other habitats.

A moralistic value reflects nature’s ability to be a source of moral and spiritual inspiration. The philosopher Holmes Rolston remarked (Rolston, 1986: 88): “Nature is a philosophical resource, as well as a scientific, recreational, aesthetic, or economic one. We are programmed to ask why and the natural dialectic is the cradle of our spirituality.” This spiritual insight is often derived from the perception of a seeming similarity that unites life despite its extraordinary diversity, reflected, for example, in some 1.4 million classified and an estimated 10 to 100 million extant species (Wilson, 1992). Despite this remarkable variability, most people recognize living creatures as often sharing analogous circulatory and reproductive features, parallel bodily parts, and common genetic structures. The perception of this unity and connection suggests an underlying order that often provides a cornerstone for spiritual and moral belief. Discerning universal patterns in creation intimates that at the core of human existence exists a fundamental logic, order, perhaps even harmony and goodness. Faith and confidence are nurtured by recognizing an
underlying unity that transcends and mutes our individual separation, isolation, and aloneness.

Five of nine biophilic values have been briefly described here. Each value reflects weak genetic tendencies or prepared learning rules to affiliate with the natural world that developed over evolutionary time because of their proven instrumental significance in advancing human physical and mental well-being. The nine values collectively reflect the richness of the human reliance on nature as a basis for adaptive fitness and security. Together, they provide the basis for an environmental ethic rooted in a greatly expanded realization of self-interest that encompasses a conventional utilitarian understanding of material and commodity advantage, but also the functional importance of nature as a source of beauty, love, intellect, spiritual inspiration, and more. When these values are functionally expressed, they comprise a web of relational dependency that rationalizes and supports an ethic of care and responsibility for the natural world. Yet, this is a difficult achievement. It requires the functional and adaptive expression of most if not all of the nine values, none so weakly evident as to be atrophied or so strongly evident as to be inordinately exaggerated. Each value represents one string of relationship to nature that need occur in a balanced and adaptive fashion; a powerful ethic toward the natural world depends on most if not all occurring in what can be called “right relationality.” To add to this complexity, legitimate variation occurs among individuals and cultures as a consequence of developing these weak tendencies, although the adaptability of this variability is bounded by human biology, underscoring again the biophilic values as biocultural phenomena.

Before concluding, I would like to offer a brief illustration of how significant changes in the nine values can lead to profound shifts in ethical relationships and policies toward the natural world. This historic example supports three important points in this chapter. First, it suggests that an expanded appreciation for nature can foster equally radical changes in ethical and moral relations. Second, it reveals how changes in values and ethics can trigger pronounced shifts in legal and regulatory policies. Third, it suggests that such a transformation in values, ethics, and policies can occur in a shorter time period than often presumed, suggesting the practical significance of an ethical strategy as a basis for advancing significant environmental change.
This historic illustration involves profound changes in values, ethics, and policies toward large cetaceans during the latter half of the 20th century. Like all examples, there is danger in losing sight of the general point in examining the specific case. So, please keep in mind, it matters little if you are interested in whales or whether or not you agree or disagree with current policies toward this creature. This case is offered to illustrate the relationship between values, ethics, and policy, and how pronounced shifts in all three can occur in a surprisingly brief and relevant period of time.

This will be a cursory review unable to examine in detail the historic decline and recent uneven recovery of many cetacean species. The most obvious cause of the decline of the great whales was their excessive commercial exploitation with, as recently as 1960, whales comprising approximately 15 percent of the world’s so-called fish catch (Kellert, 1996; Lavigne, Scheffer, and Kellert, 1999). The endangerment of most whale species was fueled by assumptions regarding their inexhaustibility and the relatively easy product substitution of one species with another. Additionally important factors in their decline were large capital equipment expenditures, large and reinvested surplus profits, absent property rights in the open ocean, a tendency to manage all species alike, ineffectual regulatory practices, the enormous efficiency of new harvesting and processing technologies and, of course, widespread scientific ignorance. Underlying and motivating all these factors were a narrow set of exaggerated values that rendered the excessive and often cruel exploitation of whales both morally justifiable and ethically acceptable. These creatures were, in effect, viewed and treated from the perspective of three values – an exaggerated utilitarianism, an inordinate desire to master and dominate them, and a tendency to see these animals as monstrous fish. Most people by the 20th century, of course, recognized that whales were not fish but they continued to treat them in this way.

Important attitudinal changes in values and perceptions toward large cetaceans mainly occurred following World War II. These changes, probably not coincidentally, happened in parallel with the rise of the modern conservation movement, prompting Gilbert Grosvenor, then head of The National Geographic Society, to observe (1976: 721), “The whale has become a symbol for a new way of
thinking about our planet.” A sense of impending catastrophe loomed as the world contemplated the largest creature the planet had ever known being knowingly eliminated. The marine biologist Kenneth Norris (1978: 320) proclaimed, “No other group of large animals has had so many of its members driven to the brink of extinction.” Significant advances in marine science following World War II also resulted in vastly expanded assumptions regarding the advanced intelligence, social behavior, and communication abilities of whales. These creatures suddenly seemed far less like fish and, indeed, more like people, this perceptual shift fostered by almost mythic depictions in popular music, literature, and film (Toles, 2003). Highly popular captive aquarium displays, and the development of a major whalewatching industry generating more than one billion dollars annually and involving more than three million participants, further reflected a change from consumptive to non-consumptive uses and values of whales. These changes in attitudes and behaviors fueled major shifts in policy, most particularly the passage of the revolutionary U.S. Marine Mammal Protection Act in 1972, and major regulatory shifts in the International Whaling Convention.

The motivation and political will behind these profound changes were fundamental shifts in values relating to whales which eventually rationalized a new ethic toward the welfare of these creatures. The post-war period witnessed the dramatic rise of aesthetic, humanistic, naturalistic, scientific, and moralistic values, and a corresponding decline in utilitarian, dominionistic, and negativistic perspectives on whales. Aesthetically, large cetaceans were viewed as creatures of wonder and beauty; naturalistically, as the focus of outdoor recreational interest for millions to enjoy in the wild or in captivity; humanistically, as the subjects of strong emotional attachments and feelings of kinship and personal identification; scientifically, as highly complex and important biological organisms; and, moralistically, as subjects of pronounced concern for their suffering and preservation. In effect, a profound shift occurred in what can be called *valuational chemistry*, especially in nations such as the United States, Great Britain, and Germany. That other nations and peoples still viewed these creatures with a different set of perceptual and ethical lenses can be seen in the views of the following Norwegian whaling advocate (Kalland, 1995: 152):
“Rational discussions of whaling, a fishery which remains important for social, economic, cultural, and dietary reasons in some societies, is emotionally clouded by the popular conception of whales as a special class of animals. *This presumed ‘special’ nature of whales derives from a widespread belief that whales are intelligent, endangered, killed by methods that are cruel, and the products they provide are no longer needed.*” (italics added)

This pejorative reference to the emotional and seemingly irrational thinking of those who regard whales as a ‘special class of animals’ fails to note the ubiquity and logic of such attributions given certain value assumptions. One might take, as another example, the reaction among most people in our society to the suggestion that rather than killing and incinerating millions of surplus cats and dogs we treat them instead as edible protein, sending the meat to hungry millions in countries like North Korea and Somalia.

Independent of personal interest and opinion about whales, this case illustrates how radical shifts in values toward a component of the natural world can foster pronounced changes in ethical regard and regulatory treatment. The seminal development by Sydney Holt and Lee Talbot (1978) of fundamental principles for the management of wild living resources provides another example of how shifts in values and ethics toward cetaceans helped drive basic public policy. This case also reveals how radical shifts in values, ethics, and policies can sometimes occur in a surprisingly short period of time by comparison, for example, with the pace of policy shifts involving global climate change, the management of fisheries and commercial forests, or ecosystem protection. Indeed, this case may indicate that altering people’s values and ethics toward nature rather than being impractical and idealistic is a highly relevant strategy for advancing significant change in environmental policy.

**CONCLUSION**

This illustration and the theoretical framework that preceded it have sought to reveal how a bioculturally-based ethic rooted in inherent human tendencies to value the natural world can be both
demonstrated and related to major policy change. Limited information has been provided regarding how biophilia and associated values constitute varying strands of relationship between people and the natural world that may confer significant physical and mental benefits. Each value represents a vital thread of connection to an ethic of care and concern for the natural world based on a broad understanding of human self-interest. This environmental ethic relies less on feelings of charity, kindness, and altruism and more on a biocultural understanding of how individual and collective welfare can be advanced through a multiplicity of inherent ties to the natural world. People can see in their valuational connections to the natural world a moral posture of caring for the health and integrity of environmental systems that originates in a powerful realization of physical and mental well-being. Like Ishmael in *Moby Dick* (Melville, 1941: 294), they can recognize in their relation to nature: “The precise situation of every mortal that breathes; [how] he [or she], one way or other, has this Siamese connection with a plurality of other mortals.”

Our inherent values toward nature remain an unrivaled means for nourishing the human body, mind, and spirit. The values of biophilia represent the genetic substrate of an ancient evolutionary dependence, molded and shaped by human choice and free will, as individuals and groups through the agency of learning and culture engender the means for expressing their ties to the natural world in either adaptive or maladaptive ways. This biocultural complexity is suggested by the Pulitzer Prize winning biologist René Dubos when he remarked (1980: 126):

> “Conservation of nature is based on human value systems that rather than being a luxury are a necessity for the preservation of mental health. Above and beyond the economic reasons for conservation there are aesthetic and moral ones which are even more compelling. We are shaped by the earth. The characteristics of our environment in which we develop condition our biological and mental health and the quality of our life. Were it only for selfish reasons, we must maintain variety and harmony in nature.”

More poetically, the writer Henry Beston (1971: vi) arrived at much the same conclusion when he suggested more than half a century ago:
“Nature is a part of our humanity, and without some awareness and experience of that divine mystery man ceases to be man. When the Pleiades and the wind in the grass are no longer a part of the human spirit, a part of very flesh and bone, man becomes, as it were, a kind of cosmic outlaw, having neither the completeness and integrity of the animal nor the birthright of a true humanity.”

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Work Cited


It advocates a biocultural perspective, a response that views human values and ethical relations toward the natural world as bounded by species biological requirements, but shaped and influenced by individual and cultural learning and experience. Do you want to read the rest of this article? Request full-text. Citations (3). References (2). For instance, O'Bryhim and Parsons [25] determined that a person's knowledge of sharks could predict their potential behaviors toward shark conservation. Surveys can also be used to determine what variables may be causing the varying knowledge Ethics in agricultural biotechnology therefore encompass value judgments that cover the production, processing, and distribution of food and agricultural products. The Food and Agriculture Organization of the United Nations asserts that ethical values determine its reason for being these being the values for food, enhanced well-being, human health, natural resources, and nature (FAO, 2001). CAST (2005) notes that ultimately the goal of agricultural ethics is to discover or develop clear, noncontradictory, comprehensive, and universal standards for judging right and wrong actions and policies.... Many of the ethical issues that form part of the biotechnology debate can apply also to food and agricultural systems in general.