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How to Preserve Nature through Poetry: Ecopoetry of W. S. Merwin

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Abstract— *This study aims to deconstruct W. S. Merwin's poetry through the lenses of ecopoetry and ecopoetics. By analyzing how specific poems of W. S. Merwin has poetically manifested the situations of the natural and environmental situations, the study aims to prove that preservation of endangered species and other societal impacts can become the outcome and output of poetry that embraces the preservation of nature and environment. The study looks at various aspects of Merwin's poetry that can be described as ecopoetic and ecocritical. Next, the study relates the various poetics of Merwin's poetry with actual environmental acts and situations that have taken place. By observing how these two variables, ecopoetics and the actual environment, the study aims to prove the importance of ecopoetry in not only the realms of literature but also in real life situations.*

Key words— Ecopoetry, Ecology, W. S. Merwin, Endangered Species, Environment, Endangered Species Act (ESA).

Suppose a new species, stronger, smarter, more dominant than humans infiltrated our world, destroyed our habitats (our cities and towns), and scattered us in various inhabitable regions of the world. When we attempt to enter their new settlements, where our homes used to be, in search of food and shelter from the elements, they killed us, seeing us as intruders on what used to be our land. Our presence is deemed a nuisance and we are systematically hunted and exterminated. They abuse our resources until there is scarcely enough for our survival and because they are smarter, stronger and bigger than we are, we're powerless to fend off their dissemination. How many of your friends and family members do you think would survive? How many of the over more than seven billion humans that currently inhabit the Earth do you think would live to tell the tale of the conquerors of man? This is the peril facing countless wildlife species on a daily basis. Unlike us, however, they are powerless to fight back or even speak out against their oppressors. They are at the mercy of our whims, and, unfortunately, our greed. This is the type of stirring imagery produces by the alliterative prose of W.S. Merwin in the collection entitled "*Rain in the Trees*". This text will analytically discuss several of these poems, specifically *Coming to the Morning*, *The Salt Pond*, *Savanarola*, *Witness*, and *Empty Water*, first discussing Merwin's biographical background and then presenting his interpretation of the extinction of species through excerpts from his poetry and interviews as well as views on how this circumstance should be resolved.

Born in New York City on September 30, 1927, William Stanley Merwin was the son of a Presbyterian minister and reared in Union City, New Jersey and Scranton, Pennsylvania (Merwin). His mother grew up an orphan and lost her brother later as well as her first child while his father hailed from an austere and unyielding environment (Poets.org). Merwin began writing hymns during his childhood and was a scholarship student at Princeton University, where he encountered and befriended other literary greats such as Galway Kinnell, R.P. Blackmur, and John Berryman, who was Blackmur's teaching assistant (Poets.org). Following his graduation from Princeton in 1948, Merwin's first collection, *A Mask for Janus* was published in 1952 and it was nominated by W. H. Auden for the Yale Series of Younger Poets (Poets.org). While living in the South of France with his second wife Dido, Merwin observed the harsh dissolution of their marriage between Sylvia Plath and Ted Hughes as their close friends as well as the subsequent suicide of Plath (Poets.org). In 1976, Merwin moved to Hawaii, where he married his current wife, Paula, in 1983 and they settled in a home that Merwin designed and built in Maui, surrounded by acres of tropical palm tree forest he painstakingly restored on devastated and depleted land ravaged by erosion, logging, and agriculture (Merwin). The rigorous practice of Buddhism and passionate dedication to environmentalism that Merwin devoted himself to in Hawaii has profoundly influenced his later work, including *The Compass Flower* published in 1977, *Opening the Hand* published in 1983, and *The Rain in the Trees* published in 1988, as well as his novels, such as *The Folding Cliffs*, a novel-in-verse drawing on the history and legends of Hawaii (Poets.org). Currently, Merwin holds merit for publication of more than 20 books of poetry as well almost the same number of books of translation, and he is a former Chancellor of the Academy of American Poets with tenure as a Poetry Consultant to the Library of Congress, being appointed as the Library of Congress's seventeenth Poet Laureate Consultant in Poetry in 2010 (Poets.org).

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W S Merwin many aspects of his connection with all aspects of nature within many of the poems in this collection, such as the phrase: "the sea remembering all of its waves" from *Coming to the Morning* (Merwin). Within marine ecosystems, the sudden removal of large quantities of biomass, as occurs with large-scale commercial fishing, can have detrimental effects on the aquatic life, as can the introduction of invasive species through transferal via ships (Bolster 2006, 169-170). Biodiversity is speculated to have significant bearing in the success of the integration of invasive species (Stachowicz, Fried, Osman, and Whitlatch 2002, 2575). Research has demonstrated a correlation between marine plant density and biodiversity and the native species' ability to resist invasion from nonnative invasive aquatic plants (Capers, Selsky, Bugbee, and White 2007, 3135). It is postulated that the more native species there are, the less habitat space is available, which severely limits the niche space open for occupation by the new or invasive marine plants (Capers, Selsky, Bugbee, and White 2007, 3135). However, invasive species are most likely to be found in communities with the highest native species population, which creates a paradox that no matter how specious an ecosystem, native species do not resist invasion (Capers, Selsky, Bugbee, and White 2007, 3135).

Marine ecosystems are highly codependent and very vulnerable to changes. As ships traverse the numerous oceans and seas, they also transfer various marine wildlife that have attached to the ship's hull, which can introduce invasive predatory species to various ecosystems through this transference (Bolster 2006, 568). Feral nonnative species can easily decimate the population of a native prey species once introduced into an established ecosystem (Pangle, Peacor, and Johannsson 2007, 402). This is most succinctly illustrated by the collapse of the marine ecosystem of the Black Sea due to the invasion of jellyfish and the closing of the Grand Banks cod fishery due to severe population decline from wanton overfishing (Bolster 2006, 568). The hardiness of the invasive species and susceptibility of the ecosystem are strong determining factors in foretelling the successful establishment of the invasive species within the ecosystem they have been introduced to (Stachowicz, Fried, Osman, and Whitlatch 2002, 2575; Marchetti, Moyle, and Levine 2004, 584).

The removal of trees also causes animals to suffer a loss of habitat and breeding grounds, necessitating the intervention of conservationists, whom attempt to relocate the endangered animals to simulated habitats (Nilsson, 2010). Many of these animals are specifically adapted to live in only these environments and the loss of their habitat would eventually lead to their extinction due to the loss of their breeding grounds (Nilsson, 2010).

Even though consumption of the Earth's resources is a natural and expected action, the devastation, misuse, abuse, and destruction that results from such exploitation is a side effect that needs to be corrected. Three million tons of toxic chemicals are spewed into the air by American factories and over a half billion tons of solid hazardous waste materials are dumped at various facilities every year (Facts about Pollution, n.d.; Our Pollution, n.d.). Seventy-three different pesticides have been found in groundwater and more than one hundred active pesticide ingredients cause cancer, birth defects and gene mutation (Our Pollution, n.d.). Although species extinction is a natural phenomenon, it is usually a gradual process, completely unlike the extraordinarily high rate of fifty thousand species per year that we are currently experiencing, which is one hundred to one thousand times greater than normal (Olson, 2005; University, 2002). The prolific and wanton destruction of vital habitats is doing irreversible damage to the biodiversity this world enjoys and requires strong and immediate action to halt further environmental destruction and, perhaps, reverse or repair some of the harm man has done to the Earth.

The Endangered Species Act (ESA) is the only law that protects our nation's wildlife from the threat of extinction due to the encroachment of man into their ecosystems, the threat of poaching and over-hunting, the unnatural introduction of invasive species, human induced global warming, and the numerous other threats humanity poses to the environment and the many species that depend on the diverse ecosystems that populate our amazing planet (Easton, 2009, p.66). However, many supporters feel that not enough is being done to enforce the ESA as it is written.

Humans do not follow the same growth curve as other species because humans are the dominant species in this environment. We are also one of the few species that have sex for reasons other than procreation. This allows our numbers to increase even when the resources necessary for population growth are scarce or unavailable, which is not a phenomenon frequently found in nature. In nature, animals have natural predators and the huge human problem, which keeps their numbers under control. Humans have no natural predators and the only threat to our populace is us. However, our technological advances and improvements in medical provisions have combined to extend the human life expectancy.

Furthermore, humans should strive to preserve a representative sample of all biomes or aquatic zones, primarily since many of the recent (past century) extinctions and habitat destructions have not been the

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result of natural selection, but the result of human destruction (Cunningham and Cunningham). Also, many species of plant, animal, and insect life have specific environmental purposes, such as specific birds that help pollinate flowers and insects that help decompose dead matter. The extinction of such animals could have a catastrophic effect on the human populace. The extinction of large, predatory animals would also be disastrous since it is these animals that keep the small animal populations in check. Removal of such species, such as foxes, would cause an overabundance of these small animals, such as rabbits, which would bring a myriad of other problems for humans, such as farmers, when these animals begin to destroy their crops.

While natural selection acts differently on different species in differing habitats, the extinction of one species may signal the impending extinction of another, closely related species, which might be prevented (Cunningham and Cunningham).

The current rate of extinction is one hundred to one thousand times greater than normal, averaging one extinction every twenty minutes (Ashall). Similar mass extinctions have only occurred five times in history and scientists believe it took the earth millions of years to recover and regain the biodiversity it previously had. Scientists fear the current low levels of biological diversity may become a permanent state of being due to the vast amounts of habitats being destroyed (Cunningham and Cunningham). It is vital to the survival of humanity that we closely monitor and attempt to prevent the further losses of vital (and all life is vital) biodiversity in all our environments through the preservation of habitats. This impression is demonstrated in the passage "white gulls riding a knowledge older than they are" from *The Salt Pond*, indicating the longevity of the knowledge inherent in the species of animals, many of which have heritably outlived the humans invading their habitats.

An invasive species is "any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem" (Fed. Regist. 64(25):6183-86). The presence of foreign flora and fauna can disrupt pre-established routines in the ecologic cycle of the native species and cause severe population declines. Enumerating the fiduciary impact of nonnative invasive species on ecosystem services is important to the development of effective policies and practices to regulate and manage invasive species (Cook et al. 2007, 1832). Quantitatively assessing the potential impact of an invasive species prior to their proliferation within the ecosystem provides a basis for determining what level of prevention or how much should be spent to maintain a service under threat is warranted as well as who is responsible for and should bear the cost for this response (Cook et al. 2007, 1832). Invasive species are currently recognized as the causes of significant financial disruption to the U.S. and global economies (Cook et al. 2007, 1832). In the United States alone, it is estimated that 79 species have caused $97 billion in damage between 1906 and 1991 (Cook et al. 2007, 1832). However, it must also be acknowledged that all invasive species are not foreign to the ecosystem and that native invasive species can cause as much harm as foreign species, as is demonstrated by human interactions with their environment (Foster and Sandberg 2004, 179).

Invasive species tend to be characterized as organisms that can reproduce in large numbers or disperse their offspring over large distances, are adaptable, and aggressive, which is a great descriptor of the human populace (Robbins 2004, 141). This ability puts humans at a distinct advantage over other life forms since they are able to adapt to any climate and do not necessarily practice niche conservation. Species that practice conservatism have climatic tolerance limits that confine them to specific geographic ranges (Wiens and Graham 2005, 521). These aspects of niche conservatism have an abundance of important consequences for ecology, evolution, and conservation biology in addition to the economic significance and numerous dangers invasive species present to biodiversity and the functioning of ecosystem services (Cook et al. 2007, 1832). An example would be crop pollination, which is recognized as a key ecosystem service provided by biodiversity, and has an economic value that has yet to be accurately quantified, but is significantly felt with diminished crop yields when the service is interrupted (Cook et al. 2007, 1832). The differentiations in possible perspectives by which invasive species can be viewed reflect the diversity of the populaces and their cultural distinctions (Foster and Sandberg 2004, 179).

The consistent natural shifts in geographical domains of indigenous species prevents the development of any specific timeline regarding the progression of an invasive species in any specific ecological environment and makes it almost impossible to reverse an "invasion" since intervention is primarily only successful when conducted prior to the specie's integration (Foster and Sandberg 2004, 180). This makes the maintenance of relevant ecosystem services challenging should a species of nonindigenous or native flora or fauna become invasive and disrupt a vital functionality of an ecosystem, particularly if the encroaching species is native to the area, as they would already be deeply integrated into the

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ecological structure (Cook et al. 2007, 1839). In the instance where the species has climactic tolerance limits, nature may successfully expel the invader through natural climate changes, as in the case of seasonal weather changes (Wiens and Graham 2005, 521). However, an invading species has the potential to cause significant ecological and economic damage as long as their presence remains and can potentially cause permanent alterations to the ecosystem they have invaded. Biosecurity describes preventative measures employed to establish barriers for the purpose of preventing the intrusion and proliferation of invasive species, including the natural landscapes, native flora and fauna, and the ecosystem services and quality of life they provide (Maynard and Nowell, 1). Stable ecosystems are maintained through the fragile balance of the interactions and symbiotic relationships that exist between the various plants, animals, and insects, which can easily be disturbed or decimated by the introduction of invasive species into the environment, causing severe environmental and economic damage that can certainly result in the extinction of the entire ecosystem. Biosecurity attempts to utilize preventative measures, like barriers, to prevent the intrusion and proliferation of invasive species (Maynard and Nowell, 1).

Many feel that the elimination of one species to conserve another is counterproductive to the spirit of conservation and seek alternative remedies to shooting the barred owls, as has been proposed. In the poem *Empty Water*, Merwin discusses the disappearance of a native species in the passage: "I miss the toad; who came all summer; to the limestone; water basin; under the Christmasberry tree; imported in 1912; from Brazil for decoration; then a weed on a mule track; on a losing; pineapple plantation; now an old tree in a line; of old trees" (Merwin). This conflict has challenged endangered species preservation attempts and highlighted the need for alternative and more comprehensive conservation methods, especially since human encroachment, deforestation, and habitat destructions through the removal of trees causes animals to suffer a loss of habitat and breeding grounds (Nilsson). Many of these animals are specifically adapted to live in only these environments and the loss of their habitat would eventually lead to their extinction due to the loss of their breeding grounds (Nilsson). Annihilation of millions of acres of vital rain forest and the natural habitats of indigenous species, acid rain and greenhouse effects caused by pollution, eutrophication (nitrogen and phosphorous pollution), loss of soil productivity, landfills, hazardous wastes, and irradiation are just some of the many ramifications of the disastrous activities that many people deem vital to humanity's survival and pollute and destroy the natural ecosystems of millions of plants and animals (Chertow).

Human encroachment on wildlife environments can cause biological invasions that can have strong ecological effects on native communities by altering ecosystem functions, species interactions, and community composition that have lasting impacts on the native species population dynamics and their overall fitness, which also affect their evolutionary path (Lau 2008, 1023). These can include plants and animals, but also microorganisms like bacterial strains and viruses that are not native to the region or area and human introduction causes or is likely to cause harm to the economy or the environment, or harms animal or human health (The National Invasive Species Council (NISC) 2005, 1). Although most introduced species are not harmful, this classification is still encompasses all types of invasive organisms and makes a clear distinction between non-native (or alien) species and invasive species (NISC 2005, 1). As human populations increase, their need for land also increases and this need is often met by removal of native plant life from the area to allow humans to plant farms and use the land for other purposes, despite the fact that many of humanity's essential needs, like air to breathe and fresh water, are supplied by the natural environments destroyed by encroachment. Humans have also introduced numerous plants, animals, and microorganisms into our natural ecosystems that have effectively caused premature species extinctions and altered the life cycle of the entire environment by changing the dynamics of the interactions of the remaining species.

When ecosystems are altered, changed, or destroyed, animals that practice niche conservatism are effected the most because their behavioral patterns have been ingrained through generations and they are often the least able to adapt (Wiens and Graham 2005, 519). Species that profligate only within certain abiotic and biotic environs can easily be strongly affected by the invasion of a competing species, as demonstrated earlier with the barred owl, and as is apparent when humans usurp the habitats of various species, many of which become extinct due to their inability to adapt or evolve (Wiens and Graham 2005, 520; Lau 2008, 1023). Invasive species frequently require the same living conditions as the native flora and fauna, which determines their ability to flourish within the new environment (Seabloom et al. 2006, 1338). However, the perturbation to the natural environment caused by the assimilation of these nonnative species has the ability to cause tremendous economic problems for those in the affected areas. Invasion by weedy and exotic plants can cause farmers or florists much distress as they struggle to permanently

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remove the undesirable plants and can be very expensive in terms of removal costs, loss of crops, and loss of profit (Seabloom et al. 2006, 1338).

The consistent destruction of the environment and Merwin's inherent disgust with such actions is expressed in the passage from *Savanarola*, "Unable to endure my world and calling the failure God, I will destroy yours" (Merwin). The U. S. Congress first passed the Endangered Species Preservation Act to protect worldwide endangered species in 1966 and the first protected species were listed in 1967 (The Endangered, 2010). This action was necessitated by the alarming rate at which various species of plant and animal life was disappearing from innumerable ecosystems worldwide. Some advocates for change argue that the ineffective wording of the ESA dissuades private landowners from cooperating with conservation efforts out of fear of the consequences that would follow a discovery of an endangered species or habitat on their land (Adler, 2008). Other limitations, such as inadequate funding and the lengthy process necessary to get an animal listed as endangered or threatened, makes it obvious to supporters that there is ample room for improvement within the boundaries of the ESA (University, 2002).

However, it is the position of many critics that the entire law is flawed and should be completely rewritten (Easton, 2009, pp.67-68). It is their view that the ESA, as it is written is ineffective and unsuccessful in its attempts to protect wildlife based on how many species have been removed from the list due to recovery (Easton, 2009, pp.67-68). Much controversy also surrounds the cost of aiding species whose populations are so severely diminished that they no longer have the genetic diversity to sustain a full recovery (van der Does, 2010). Currently, there are not many laws enacted to protect our nation's flora and fauna from the effects of pollution and wanton destruction. Some of the current laws regarding wildlife in the United States are The Bald and Golden Eagle Protection Act, The Convention on International Trade in Endangered Species (CITES), The Endangered Species Act, The Lacey Act (injurious wildlife), The Marine Mammal Protection Act, The Migratory Bird Treaty Act, and The Wild Bird Conservation Act (Laws, 2010).

These various policies are intended to act as one unified body, forming a cohesive web of conservation and preservation to protect diverse bionetworks everywhere from the disastrous machinations of humanity. However, recent injunctions made in 2007 during the Bush administration have weakened the ESA and given individual states the power to circumvent federal review and make their own decisions concerning land development (Aspen, 2010; Adler, 2008). Furthermore, critics insist that the ESA has a harmful effect on the species it tries to protect by preventing private landowners from modifying their property without proof that the intended changes would, indeed, harm the species (Annett, 1998; Adler, 2008). The ESA also permits the Federal Government to confiscates property on which listed species are present without reimbursing the owners for the land, which provokes landowners to preemptively destroy any suitable habitats, thereby removing endangered species' from their land (Annett, 1998; Adler, 2008). Another valid complaint is the ill-defined interpretation of the word "harm", which allows for sweeping judicial interpretation that often costs private landowners undue financial loss (Annett, 1998).

Didacticism is a philosophy that emphasizes instructional and informative qualities in literature and other types of art. As many of the poems in the subject book of poetry speak deeply of the damage being done to the environment by human negligence, there is much didacticism present in Merwin's work. His views are further discussed in this excerpt from his interview with Ed Rampell of *The Progressive:*

> "Q: Is our current economic system sustainable?
>
> Merwin: This is a subject that's liable to get very dark, so I don't know how far you want to pursue it. I'm very pessimistic about the future of the human species. We have been so indifferent to life on the whole that it will take its toll. It's not just the polar bears that are having a hard time; what we're doing is gradually impoverishing and poisoning the whole of the rest of life. Thirty years ago, when I was at [Oregon State University,] Corvallis, where there's a big biology department… and one of the zoologists, a molecular biologist, said: 'We're losing species a week.' My jaw dropped; he said, 'It's not getting better.' Of course, when you lose a species, that's lost; you never see it again.
>
> This is part of a structure in which every species is related to every other species. And they're built up on species, like a pyramid. The simpler cell organisms, and then the more complicated ones, all the way up to the mammals and birds and so forth.

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> We call it 'developing upward'… The whole thing depends on every part of it. And we're taking out the stones from the pyramid.
>
> Q: The constant extraction from nature... in order to profiteer, without replenishing what has been taken.
>
> Merwin: That's right. And of course now – 30 years later – we're losing a species every few seconds. We cannot put them back. If we change our mind and say, 'Oops, we made a mistake' – it's too late. This is the world we live with…" (Merwin).

Another point of contention for critics is the apathy shown for nongame species (van der Does, 2010). Since these species are not traditionally hunted, it is assumed that they are not endangered, yet these animals also suffer from habitat loss, disease, and predation (van der Does, 2010). Some critics have even found fault with the name, insisting that the bill leads people to believe that animal welfare is placed above that of humanity (van der Does, 2010). In light of the recent oil spill in the Gulf of Mexico, critics are clamoring for changes to be made to the ESA (Keim, 2010). According to federal reports, the Minerals Management Service (MMS) eluded their duty to permit the National Environmental Policy Act (NEPA) to evaluate the environmental impact of the waivers it was granting, allowing oil companies to drill without acquiring the necessary permits from the ESA (Keim. 2010). Although the MMS has approved over 346 drilling plans since January, 2009 without approval from the ESA, it is suspected these permits would have still been granted, as the ESA regulates denial of permits based on acts that are "reasonably certain to occur" and, although it has happened thirty-six times between 1992 and 2006, a blown wellhead is still not considered a reasonably certain event (Keim. 2010).

Unfortunately, the majority of those in conflict with the ESA do not realize that, in order to sustain an environment suitable for humans, we must sustain numerous viable, diverse ecosystems for wildlife. These bionetworks are vital natural resources we need to survive. They produce innumerable products we rely on for life and sustenance, such as clean air and fresh water. Instead of constantly increasing the amount of space we consume, we should be increasing the amount of natural habitats we preserve. Each year, hundreds of acres of rainforest are destroyed and with it, thousands of species of plants and animals, many of which had been and will remain undiscovered. It is estimated that there are millions of species of plant and animal life on this planet that we have yet to encounter and catalog. Strengthening the wording of the EPA and closing all the loopholes within the document would put ironclad laws in place to protect the many vital wildlife habitats and refuges and the many animals, including humans that depend on them.

In the short piece entitled *Witness*, Merwin discusses the ravages of forest destruction in the passage: "I want to tell what the forests; were like; I will have to speak; in a forgotten language", which is the entirety of the poem (Merwin). Many opponents of the ESA are actually proponents that simply want to enable the ESA to satisfy the public's wish to protect endangered species while simultaneously respecting the rights of property owners by implementing beneficial changes to accomplish this end. A few constructive suggestions include firmly identifying and staunchly interpreting the intended and implied meaning of what constitutes harm to a threatened species, which would allow landowners that wish to make beneficial changes to their land that pose no threat to present wildlife populations to do so. Other suggestions include compensating property owners for seized land and mandating that the Department of Interior agencies only utilize unbiased scientific methods in their decision-making process. The spirit of these proposed changes is that landholders be made partners of the government in this preservation effort rather than the enemy (Annett, 1998). This could deter landlord's propensity for developing, destroying, and not cooperating with habitat and wildlife preservation and might serve as stimulation for landowners to help rather than undermine conservation efforts (Adler, 2008).

The factual aspect that some species reproduce much more rapidly than do others, like fast breeding plants or rodents, can easily cause a major disruption to any ecosystem they are introduced into that is not their natural domain (Robbins 2004, 141). The effects of these nonindigenous species on the native species, communities, and ecosystems in which they invade can cause severe economic impacts and also prove detrimental to the biodiversity of the areas they invade and proliferate within (Sakai et al. 2001, 306). The invasion of exotic species creates additional competition for food, space, habitat, and other necessities of life between these new species and the native flora and fauna (Fridley et al. 2007, 3). When new species are introduced into an established ecosystem outside of their native domain, the lack of natural predators allows for the proliferation of this species above the reproductive capabilities of the naturally occurring wildlife that have an established position within the food chain. Despite the disruptive properties of the numerous forms of flora and fauna that

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have become invasive, there are both positive and negative aspects of their proliferation that has been observed (Fridley et al. 2007, 3; Floerl, Pool, and Inglis 2004, 1724).

The earth's ecosystems are comprised of complex systems of ecological environments that have developed over billions years. The plants, animals, and insects within each ecosystem are interconnected in symbiotic relationships that leave each element dependent upon the other. The delicate balances established within each ecosystem cannot be altered without compromising the stability of the entire ecosystem (Sakai et al. 2001, 308). Even slight changes in the environment can significantly upset the symbiotic relationships established between the various life forms within the ecosystem and effectively demonstrates the conflict between invasive species and native species (Sakai et al. 2001, 308). Unfortunately, humans frequently harm the environment through encroachment and by introducing species not indigenous to the area that become invasive through rapid reproduction due to the lack of any natural predators and conditions similar to their natural environment (Foster and Sandberg 2004, 178).

The concept of environmental management is commonly regarded as the administration of an organization's activities, business, or companies that have or can have an impact on the environment (Ashall, 2010). The growing concern regarding environmental pollutants and creating a sustainable environment has led to numerous global sustainable initiatives, but often plans are developed that are inconsistent in their focus and scope, and do not fully address vital sustainability issues, which prevents the plan from being effective in successfully achieving the intended goals (Lachman, Pint, Cecchine, & Colloton, 2009). In order to address the issues of inconsistence, it is essential that organizations installations create an environmental management system (EMS), which establishes long term goals that address the mission, community, and environmental issues developed through a strategic planning process. This includes identifying suitable renewable energy sources, like solar or wind, and solving the problematic issue of finite amounts of land available for development and human habitation (Sustainable, 2011).

Environmental devotees insist that only strengthening the ESA through the addition of disaster planning amendments and the granting of additional funding geared towards enforcement and relief staff for the already overburdened NOAA and USFWS, whom are currently responsible for implementation of the ESA (Keim. 2010). Currently, the majority of funding allotted is currently utilized to fight legal action implemented by corporations looking to thwart endangered species regulations and continue land development (Aspen, 2010). While the statutory maximum fine for killing an endangered animal is $3,500 for first and second infractions and $13,000 for the third, supporters feel these fines are not steep enough and do not present much of a deterrent to potential offenders (Alo, 2010). Maximum statutory fines for possession of, delivery, carriage, transport, selling or shipping of illegally taken endangered species range from $500-$4,000, $2,000-$15,000, and $7,500 for first, second, and third infractions and wounding, injuring, hunting, or capturing an endangered species can warrant maximum penalties of $2,000, $4,500, and $10,000 for first, second, and third offenses (Alo, 2010). Even with the fines and penalties imposed upon those caught violating the laws enumerated within the document; some researchers estimate that a distinct species of plant or animal becomes extinct every twenty minutes (University, 2002).

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