BUTTERFLIES INVASION: METAPHOR FOR PERVASIVE ENVIRONMENTAL DISORDER IN BARBARA KINGSOLVER'S FLIGHT BEHAVIOR

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Abstract

The environmental grassroots activists and the creative writers have been consistent with the crusade to change the way people perceive and treat the environment, as they have commitment to exposing the factors that keep the relationships with the environment and the health environment in great dangers. This article, however, examines Barbara Kingsolver's Flight Behavior, and it probes the ecological implication of butterflies' invasion in the novel. The theory of ecocriticism is used to foreground the study while an eco-critical method is adopted in the analysis. The study shows that the sudden relocation of the swarm of butterflies in the novel is an ominous sign of climate change which portends great biological dangers to every species in the natural environment. It is the view of the writer that natural phenomena like butterflies and birds can be relied upon in making projections of the environment. The analysis also reveals that man is not the only creature that suffers under severe ecological degradation; animals are equally caught in the same web. This shows that when the environment is safe, both the human and non-human are likely to reap from the bounties of the environment. It goes further to show that what affects man in the environment equally affects animals for they are members of the same environment.

Keywords: Invasion, pervasive, disorder, environment, butterflies.

Introduction

The increasingly worsening living environment and the serious global ecological crises are some of the identifiable factors

that give birth to and encourage the flourishing of eco-literature. Similar to the human responses to ecological situations in Africa and Asia, the tasking responsibility of exposing environmental degradations and their effects are equally undertaken by creative writers from other continents of the world. This growing spate of environmental despoliations has been repeatedly condemned by creative writers who use the tools and techniques of creative literature. Creative writers feel extremely anxious and everything within their literary proficiency for the protection of the environment from much pressure. The pressure in the ecosystem forces changes on the event of things in the universe and there are changes in the cultural patterns of the global community. Uyanne, Onuoha, and Osigwe confirming the seeming pressure in the ecosystem argue that, "the evolving globalization...and attendant industrialization have the entire human population in the web of scotching pressures" (106). Reviewing the growing spate of global climate change and its attendant effects, Bambang Yuniarto believes that, "the portrait of environmental damage is now affecting the social, economic, and political life of the society" (271). It is also his view that "there are changes in cultural patterns of society in adjustment with the changing nature of life, agrarian pattern gradually changes to a pattern of industry, natural pollution causes increased health care cost...." (271) It is however worthy to remark that the current global change in climate is affecting almost everything that concerns man's habitation of his physical environment. Obviously, the climate change has led to the reduction of biological diversity and the general health of the environment, and this is as a result of the ways through which the physical environment has been compromised by man. Butterflies represents different things in different cultures and in most cases, it represents change and some people see its presence in strange environments as hopeful or tragic sign depending on what has befallen such society.

Everything in the planet and the animal kingdom in Renee Kemper's view "is built to survive, adapting to its circumstances to preserve life at all costs. So, within nature, there is no shortage of metaphors for personal change. One of these metaphors is the butterfly." (1) Kemper's argument above supports the contention that the presence of the monarch butterflies numbering up to 15 million on the Turnbow's farm is a sign of a sick world. To further demonstrate what the butterfly invasion portends, Marina Rose hints that, "if a butterfly's flap could cause a tornado or for all we know, could prevent one as well similarly, should we make even the smallest of changes in our lives, or take action or not as we move through the constant and even present cycles in life, we will never know how much these seemingly insignificant moments contribute to altering who we are and shaping our own personal destinies". (2) Marina bolsters the argument further that the butterfly, "is yet another profound metaphor for the constant threads of cause and effect in life that sometimes appear obvious in retrospect, but remain elusive and obscure in the moment" (2). From the expression above, one can at best, see the butterfly invasion as a teacher, and can at least be relied on making environmental policies that affect man. Throughout the novel under our study, Ovid Bryon's scientific discovery speaks to a philosophical one, demonstrating the innumerable interconnections that not only shape nature, but each of our lives

In her commitment for a safer environment, Barbara Kingsolver, disconcerted with the global warming and climate change and uses *Flight Behavior as* a decoy for attention to the looming disaster. *Flight Behavior* is a thought provoking novel about the scientific, financial, and psychological complicatedness of climate change and the ability of the author to put these silent, charmingly colourful butterflies at the centre of the calamitous discourse is nothing short of scholarly. *Fight Behavior* enjoys transnational readership and a lot of have be said and written about the novel. To Robin Mckie, *Flight Behavior* "is an impressive work. It is complex, elliptical and well-observed...it is a story steeped in biblical metaphor: the butterflies transform the land as if 'trees have turned to fire, a burning fire" (2). Robin's contention above succinctly point to the fact that Kingsolver carefully uses the migratory species as a way of calling attention to a looming

disaster in such a way that natural phenomena can be relied on in making environmental prognoses. In lending credence to Robin's prediction above, Kingsolver through Ovid insists that the presence of the migrant butterflies is "a bizarre alteration of a previous pattern"(228). Truly, as a metaphorical presentation of abnormal situation, climate change in the novel is given wings. To stretch it further, Ron Charles believes that, "the book's success stems from Kingsolver's willingness to stay focused on a conflicted young woman and her faltering marriage, while a strange symptom of the degraded environment overwhelms her remote Tennessee town." (1) Ron maintains further that Kingsoler, "illustrates that climate change denial, which strikes so many intelligent people as ignorant or self-destructive, is often a defense mechanism against overwhelming despair...flight behavior tries to illuminate the mysterious interplay of the natural world and our own conflicted hearts." (2) It is glaring from the surveys of most of these global literary minds that Kingsolver's Flight Behavior succeeds in using butterflies; a part of nature, to call attention to a looming global environmental catastrophe.

Heller Mcalpin is of the opinion that in Flight Behavior, "a colony of butterflies and a young woman have both deviated from their optimal flight paths, a story Kingsolver uses to take on global warming..." (1) He maintains further that "the butterflies have gone from their normal wintering sit in Mexico because of pollution and climate change and it's questionable whether they can survive the cold this far north. Freakish, ruinous rains, flooding and unexpected snowstorm provide a sinister backdrop to Kingsolver's absorbing tale (2). Heller's views above, further demonstrates the truism that the strange visit of the butterflies portends danger to the global environment. Heller is also of the impression that it may not be out of place to rely on the migratory species like the butterflies and birds in making projections that have to do with nature, since there is a scientific conjectures backing it. To confirm this, Heller maintains that, "Kingsolver doesn't sugarcoat the sobering facts of climate change...with a scientific attention to detail and a writer's compassion for a diverse array of people, Flight Behavior tracks a young woman whose life morphs and takes a flight just as learns about the very real problems of the world in which she spreads her new wings". (2)

Metaphor has become a commonly used word both in the literary circle and other nuances of human discourses. It is, therefore, not the intention of the present writer to dwell on what metaphor is or not, rather, the writer points at a swarm of butterflies as a possible metaphor for environmental disorder. Metaphor enables us to see something from a novel perspective, and perspectives according to Esa, "have" a dual character: it may reveal something new, but also hide something else."(21). Esa argues that metaphor is "a medium of exchange" or a 'messenger of meaning" (21).

Theoretical Framework

To properly evaluate the dynamics of global ecological issues raised in the novel, the researcher engages the theoretical exposition of ecocriticism mainly because of its commitments to environmentalist philosophy, and partly because of Jelica Tosic's stance that, "ecocriticism is concerned with the relationship between literature and environment or how man's relationships with his physical environment are reflected in literature" (43). As a theory, ecocriticism shows how the works of writers concerning the environment can play a major part in solving real and pressing ecological concerns. Ecocriticism is a multidisciplinary field which has one leg on literature and the other on ecology. According to Cheryll Glotfelty it, "has one foot on literature and the other on land; as a theoretical discourse, it negotiates between the human and the nonhuman" (xix). The term ecocriticism is coined in 1978 by William Rueckert in his essay, "Literature and Ecology: An Experiment in Ecocriticism".

Textual Analysis

Metaphor can be seen as a deliberate departure from literal language, hence a literal language may be discerned and processed by the hearer. Oftentimes, metaphors are used when language users want to show the case of non-litralness in meaning. Richard and Schmidt are of the view that, "metaphors are important means by

which words carry both cultural and semantic meanings, that have accumulated overtime". (201) Kenneth Burke defines metaphor as "a device for seeing something in terms of something else. It brings out the thisness of that, or thatness of this."(19) Reinforcing Burke's expression above, this article, attempts to investigate the implications of the sudden convergence of the swarm of migratory butterflies in a strange environment and to further show that the presence of the butterflies is a pointer to some looming natural disaster. To successfully engage in this investigation, the writer applies the 'thisness' of the butterflies' gang up in the novel to relate the 'thatness' of the declining global environment. Arguably, the true wonder of migration, some scholars claim, is that it is instinctive. It is the belief of some scientists that migratory birds and butterflies are imbued with instinctive wisdom regarding the season, but give man the ability to discern the times and seasons within their natural habitats. The internal clock in these migratory species no doubt, triggers in them, the urge to return to their summer breeding grounds. From the foregoing description, it is the belief of the writer that by closely observing some natural phenomena, one can easily interpret some changes in biosphere, and also work towards averting any threatening danger thereof.

Dellarobia Turnbow, a forlorn housewife in Tennessee cashes in on the appearance of monarch butterflies on the mountain on her family's piece of land to give expression to and be contented with life. Restless and discontented with life. Dellarobia flirts with a young man in her town, and as she walks up to the mountain to meet with his new found love she sees a swarm of butterflies estimated about fifteen million in number. The sight of the strange creatures puts her out of countenance and while describing the scene of the butterflies' gang up, Dellarobia reveals that: Every tree on the far mountainside was covered with trembling flame, and that, of course was butterflies. She had carried this vision inside herself for so many days in ignorance, like an unacknowledged pregnancy. The fire was alive, and incomprehensibly immense, unbounded, uncountable an

congregation of flamed-colored insects... Air filled with quivering butterfly light...the drooping branches seemed bent to the breaking point under their weight. (53)

Unable to stop thinking about what she saw, Dellarobia is given another chance to explore the phenomenon when Cub's father, Bear Turnbow, agrees to let a logging company have access to the mountain. Dellarobia convinces her husband and in-laws to explore the mountain further, to make sure logging is really what they want to do. Dellarobia calls attention to climate change and to stress the implication of logging the mountain, she argues that, "they can't log that mountain...it could be something special up there" (44). When the Turnbow family all walk up the mountain, the sight that seemed so much unreal turns out to be very much of this realm, portending not divine benevolence but incredible disaster. So bad, "the butterflies were a symptom of vast biological malignancies, and all nicer bets were off" (386), this is as the miracle of the monarchs turn to "a fine disaster" (369). Tiny creatures with flamed-colored wings are encrusting the Turnbow's trees: about fifteen million monarch butterflies, alighting to spend the winter in southern Appalachia, far from their usual Mexican migration spot. Climate change has no doubt, chased them north, possibly too far. Explaining to Cub of the possible reason of the monarchs' invasion, Dellarobia recounts what she has learned from Ovid that "they all here for the winter, and they shouldn't have, because the winter's too cold here. But they came because of things being too warm" (259). As news spread, the discovery brings the Turnbows attention, first from within their community, then from all over the region and country. Dellarobia is visited by the family of a girl in Preston's class (Preston is Dellarobia's son) at school. The family, who emigrated from Mexico, tells her that monarch butterflies used to spend the winter season in their community, but after a flood and mudslide, both the family and the butterflies were forced to find a home elsewhere. This is the first indication Dellarobia has of the greater implications of the monarchs' presence.

Dellarobia is visited by a scientist named Ovid Byron, who has studied the migratory patterns of monarchs for the length of his career, and sees their inexplicable roosting in Tennessee, miles away from their usual routine, as ominous sign of climate change. Ovid sets up a full lab with assistants to study the butterflies in the Turnbow's barn, but often finds the local narrow-mindedness about science and global warming to be mind-boggling. As Ovid persuades Dellarobia about the reality of climate change, and the risk of flooding and mudslides that logging would bring to their property, Dellarobia readily agrees with her mother-in-law, but Cub is harder to convince about global warming's dangers, particularly to farmers. The butterflies come through a strange, mild winter and begin to make movements toward living their usual migratory schedule. But after a week of spring-like weather a sudden and deep snowstorm makes Ovid and Dellarobia certain that the monarch population is lost. Yet as the world thaws again, Dellarobia witnesses some fraction of the butterflies resuming their flight patterns.

Globally today, most people live in pretence and the fantasy that all is well with the ecosystem, abandoning the struggle for a safe biosphere to a selected few to champion and affirming this fact, Kingsolver argues that "Hester wasn't the only one living in fantasyland with righteousness on her side; people just did that, this family and maybe others. They built their tidy houses of selfimportance and special blessing and went inside and slammed the door, unaware the mountain behind them was aflame" (22). But on the contrary, the truth according to Kingsolver is that, "the frontiers of this world are already broken...the environment is got assigned to the other team" (322). Addressing the global climate change, Kingsolver through Ovid Bryon, the renowned scientist laments that: We are seeing a bizarre alteration of a previously stable pattern," he said finally. A continental ecosystem breaking down. Most likely, this is due to climate change. Really I can tell you I'm sure of that. Climate change has disrupted this system. For the scientific record, we want to get to the bottom of that as best we can, before events of this wintry destroy a beautiful species and the chain of evidence we might use for tracking its demise. It's not a happy scenario. (228-9)

Despite the fact that the butterflies' invasion on Tennessee is seen by some villagers as, "God's work" (54), "lord's business" (55), "the tenth wonder of the world", and to some as, "a gift" (101), the butterflies gang up is "a sign of something", perhaps a sickness of nature (171). The butterfly invasion on Tennessee means different things to different people. The worrisome scenario is not about the gang up per se, the worry is in what actually brought them in the first place considering the fact that it has not happened before in Tennessee. Kingsolver captures the frustration and worries of the people about this sudden butterflies' gang up thus: 'Think about it,' Dellarobia insisted. "How do they find this one place thousands of miles away, where they've never been before? ...The butterflies can't just go out and get a new brain. Why did they even come here?" Her friend got the message, and kept quiet. "I mean, what in the world would make that happen now, when it never did before? Maybe it's something we ought to be worried about. (191-2)

It is obvious that the butterflies are in a wrong address; they have been tricked to a place they are not supposed to roost as a result of man's unfriendly activities on the environment. When man rises against nature, he is left to grapple with catastrophic effects. The dangerous implication of the presence of the butterflies lies in the fact that they are in the wrong place and Kingsolver recounts that, "some deep and terrible trouble had sent the monarchs to the wrong address, like the protesters themselves. The butterflies had no choice but to trust in their world of signs...." (245). It may not amount to any accident of hypothesis for anyone to think that these strange species in an strange environment is a harbinger of a sick environment that needs urgent global attention.

Because of global warming and climate change that are threatening the global environmental peace, the butterflies move in search of safety and survival. Their unfortunate presence has become worrisome as people develop mixed feelings about their

beauty. Kingsolver maintains that, "if these were refugees of a horrible misfortune, there could be no beauty in them" (143). A growing body of evidence shows that the sudden relocation of butterflies portends looming danger, and to be sure about the whole fuss, Cub asks to know, "what persuaded the butterflies off their track" (260)? Kingsolver, through Dellarobia explains that "there is more to it than just these butterflies; a lot of things are messed up. He says it is due to climate change" (260). In the statement above. Dellarobia refers to Ovid who is renowned in the flight behaviours of the migratory butterflies. Affirming that the butterfly invasion may have been propelled by climate change and global warming; Kingsolver through the researcher-scientist Ovid. explains that, "new weather patterns affect everything in the migratory pathways...it has become too warm at the Mexican roosting sites. With climate change the whole forest moves up those mountain slopes...." (349) Ovid Bryon further explains what is not good about the presence of the butterflies in Tennessee and maintains that, "their ordinary home in Mexico was changing, trees getting cut down, and climate zone warming up, much too quickly for their liking... animals losing their homes, because of people being a bit careless" (355).

Kingsolver nonetheless, performs the whistle blowing function in her drive to save man from the looming dangers of global warming and climate change. Man must take proactive actions to avert this environmental disaster if he must continue to exist on the planet earth because according to Kingsolver, "it will only take a few degrees of change, global average, to knock our kind out of running" (279). This, according to Kingsolver is because, "living systems are sensitive to very small changes" (279). Despite the ecological treachery of these monarch butterflies, their beauty sways everyone in Tennessee, except the scientist-researcher, Ovid Byron who sees the gang up of the swarm of monarch butterflies in town as, "evidence of a disordered system" (365). He further states that the butterflies' gang up is a problem with the environment. To Ovid, the butterflies' gang up is "a pervasive environmental damage" and "a biological system

falling apart along its seam" (365). To make it clearer, Ovid the researcher-scientist who has invested more than twenty years in the study of migratory patterns, reveals to Tina Ultner the journalist that the butterflies invasion is as a result of "unseasonable temperature shifts, droughts, a loss of synchronization between forages and their host plants" (365), and according to him, "everything hinges on the climate" (365). Despite the fact that some environmentalists contend that burning fuel puts greenhouse gases into the atmosphere, and that burning carbon puts carbon in the air, Ovid Byron reveals that "all the coal that has ever been mined, that's carbon. All the oil wells, carbon, again! We have evaporated that into the air. What's in the world stays in the world, it does not go poof" (365-6). This may have been Ovid's subtle way of revealing some of the activities that contribute to global warming.

The present global biological system is gravely telling on every aspect of the environment and it has given the natural environment as "a made – over world" (413). As stated earlier, living systems are affected by little change, and Kingsolver reminds the reading public of the effects of climate change on the entire ecosystem. She argues that: The elephants in drought-stricken Africa, the polar bears on the melting ice, were "as good as gone," they said with infuriating resignation as they worked through what seemed to be an early autopsy on another doomed creature. *Gone*, as if those elephants on the sun-bleached pain were merely slogging out the last leg of a tired journey. The final stage of grief. (246)

It is observable from the statement above that man is not the only creature that suffers under severe ecological degradation; animals are equally caught in the same web. This shows that when the environment is safe, both the human and non-human are likely to reap from the bounties of the environment. It goes further to show that what affects man in the environment equally affect animals for they are members of the same environment. Women in Kingsolver's *Flight Behavior* are seen mobilizing support for the survival and sustenance of the monarchs. In their campaign for the

sustenance of the depleting ecosystem, some group of girls from England camped on the mountain knitting monarch butterflies out of old sweaters so as to save the butterflies. Kingsolver recounts it that: They saw us on the news and came to do a sit-in against the logging, and now it's a sit-in about global warming. They sit up there all day and knit little monarch butterflies out of a recycled orange yarn. They hang them all over the trees. It looks kind of real." ... "They told me they have this campaign of asking people to send in their orange sweaters, to help save the butterflies. For these girls to rip up, and knit with. They're getting boxes and boxes of sweaters, that much I can tell you. Anything with 'butterflies' in the address comes to our house. (299-300)

Kingsolver, through the activities of these eco-defender girls, subtly mobilizes support for the knitting of the environment together instead of working towards its nakedness and to show this she writes that, "Women Knit the Earth" (300). She stretches further that, "the forest-dwelling women appear in the photos too, arms around each other, flashing peace signs, citizens of their own cheerful universe despite their full awareness of its unraveling" (341). It is another strategy the author uses in inviting everyone to unite for the safety of the failing environment. They receive accolades from all over the world thus; "Go knitters, stop global madness, we love you; Go ladies, green and clean..." (340) Kingsolver also draws attention to an emerging "whole new earth" and the unfortunate fact that human beings are scared to face up to bad outcome. To buttress this point, Kingsolver writes, "for God's sake, man," Ovid nearly shouted, "the damn globe is catching fire, and the islands are drowning. The evidence is staring us in the face. Dellarobia's scalp burned with rage and bewilderment" (231). Global warming has changed the global weather condition as unending rainfall continues to prompt many questions than it provides answers to. "What do you think of this weather? Should we start building an ark"? (161) Revealing further on the ceaseless rainfall and its effect in Tennessee as a result of climate change, Kingsolver holds: That's the kind of December they were having. It fell on them in sheets and gushes, not normal rain anymore but

water flung at the windows as if from bucket. At times it came through the screens, visibility zero and gusts of air seemed to burst from the ground, swirling the deluge around clouds of spray. Groundwater was rising everywhere. The front yard became a flat, grassy pool... but this was winter, the dead of it...the rain made her want to bawl. For days without cease it had lashed the window casings and seeped under the kitchen door...The times seem biblical... (123)

This excerpt keeps one wondering why in a severely dry season, the heaven opens its fover to pour water everywhere in such quantity that is obviously too much for the earth to contain. The picture Kingsolver paints here shows that the quantity of the rain water surpassed the survival needs of plants and animal lives. When people receive such bizarre treatment from a disordered weather, it means something is overtly wrong with the entire ecosystem. To buttress this fact, Kingsolver believes that the interesting thing here is that, "every kind of weather is intensified by warming" (280). Indeed, the unrelenting rainfall is an announcer of a failing environment, and to capture it aptly, Kingsolver reveals that "this last week of rain had stacked up more layers of crazy on folks who had lost whole harvest and the better part of their minds to a year drizzle. Water torture, they were calling it on the radio" (336). The tragedy here is double as the heavy rainfall affects not only the quality of harvests, but also the state of minds of the villagers. Buttressing further on the effects of the water torture, Kingsolver maintains that trees "lost their leaves early in the unrelenting rain. After a brief fling with coloration they dropped their tresses in clumps like a chemo patient losing her hair" (49). In trying to convince her husband, Cub who seems to be doubtful about the everything happening around them that the unrelenting rainfall is not just ordinary, Dellarobia explains and queries "...about all the rain we had last year? All those trees falling out of the ground, after they'd stood a hundred years. The weather's turned weird. Cub. Did vou ever see a year like we've had"? (260) Kingsolver also draws attention to other signs that affirm the congregation of the butterflies as a sign of climate

change on the globe. In her usual whistle-blowing manner, she laments that: Hurricanes reaching a hundred miles inland, wind speeds we've never seen. Deserts on fire. In Mexico we are seeing the inferno. Texas is worse. Australia is unimaginably worse – a lot of the continent is in permanent draught. Farms abandoned forever. She pictured orchards like the Cooks' dying on the other side of the world, for the opposite reason. Rain being sent to the wrong places, in the wrong amounts. (278)

From the excerpt above, it shows that the living system is affected by a little and when this change occurs, it affects every aspect of the physical environment, both human and non-human alike. One can only imagine the ecological disaster which has set some parts of Kingsolver's world on fire as a result of heat while some parts are seriously battling with ceaseless downpour. Explicating further on the dangers of climate change to mankind, Kingsolver, posits that "summer's heat had never really arrived, nor the cold in its turn, and everything living now seemed to yearn for sun with the anguish of the unloved. The world of sensible season had come undone" (49). Indeed, there is a lesson to be learned from the sudden butterflies' gang up. It is however, no doubt that the butterflies are grave symptom of vast ecological malignancies and man is however, persuaded by Kingsolver to consider the following pieces of advice if he must save the planet: Use less fossil fuel to relieve the damage of carbon emission to the planet... Bring your own Tupperware to a restaurant for leftover, as often as possible... Carry your own Nalgene bottle instead of buying bottled water... Try to reduce the intake of red meat in your diet... Switch your light bulbs to CFLs. Upgrade to energy efficient appliances...Buy a low-emission vehicle, and finally fly less. (326-8)

It is delightful to note from the excerpt above that Kingsolver did not just disclose the threatening dangers of climate change, but she also moves a step further to recommend solutions to the man-made problems she identified. What this means is that the global environmental crises confronting mankind is avoidable only if man adheres to the suggestions listed above by the novelist.

Conclusion

A growing body of evidence in the novel demonstrates that the sudden relocation of the throng of butterflies portends looming danger, to mankind. Barbara Kingsolver's Flight Behavior draws attention to climate change and its biotic effects which tax the humankind to adjust his ways against the biosphere. It is a brilliant intersection of global environmental crisis with the day-to-day lives of the working people which plays an important role in bringing to light, the impact of global warming on earth. The novel no doubt, is a dispassionate invitation to mankind to be part of the crowd that cares for the environment and the global environmental peace. If world events and environmental policies continue on the present course, mankind may once again have himself faced with a tragic choice of saving himself or the nature that threatens to stop nurturing. Since writers have begun to sensitize the public on environmental tragedies, they will at least strive to save mankind from the worst holocaust. The investigation reveals that the sudden relocation of the swarm of butterflies in the novel is an ominous sign of climate change which portends great biological dangers to every species in the natural environment. The study also shows that natural phenomena like the butterflies and birds can be relied upon by mankind while making forecasts about the environment. The analysis also reveals that man is not the only creature that suffers under severe ecological degradation; animals are equally caught in the same web. This shows that when the environment is safe, both the human and non-human are likely to reap from the bounties of the environment. It goes further to show that what affects man in the environment equally affects animals for they are members of the same environment.

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