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Ecological Resilience in Elise Paschen's Poems *"The Tree Agreement", "Aerial, The Wild Pine"* and *" Moss in April"*

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Abstract: *This research study aimed to examine the ecological resilience against the disruption in ecological networks in Elise Paschen's eco-poetry. The objective of this research delineated the investigation of the adaptive cycle. This adaptive cycle is responsible for ecological resilience and stability. The theoretical framework engaged in this qualitative research was Lance H. Gunderson's "Ecological Resilience—In Theory and Application" and C.S. Holling's "Resilience and Stability of Ecological Systems". The result proclaimed that anthropogenic activities and disturbing agents like harsh weather conditions create environmental changes. This environmental turbulence in the ecosystem generates ecological resilience that leads to adaptability, high stability, flexibility, and growth to recover and maintain the ecological balance after absorbing certain disturbances. The ecosystem goes through four phases to complete the adaptive cycle: exploitative, conservation, disturbance, and reorganization. In conclusion, the highly resilient ecosystem absorbs the accelerating exploitative ecological crisis through adaptation and reorganization.*

Key Words: Anthropogenic Activities, Adaptation, Ecological Resilience, Disturbance, High Stability

Introduction

C.S. Holling, a Canadian ecologist in 1973, coined the notion of resilience in the ecological discourse. Ecological resilience is an adaptive practice that tackles challenging circumstances that disturb the ecosystem. "Resilience in ecological systems is the amount of disturbance that a system can absorb without changing stability domains" (Gunderson, 2000, p. 435). Therefore, ecological resilience is beneficial as it absorbs disturbance shocks in the form of manmade activities or natural disasters. Hence, the ecosystem adapts to environmental change to avoid the complete collapse of an ecosystem and retain equilibrium after certain disturbances.

Elise Paschen is an American poet who uses narrative prose style in her poetry. She knits her words playfully, adding emotion and intensity and adding deeper layers of meaning to them. *Harvard Magazine* in "Poetic Paschen", authored by Craig Lambert, asserts that Seamus Heaney encouraged Paschen to refine and make revisions in her poetry. Paschen either writes in free verse or uses iambic tetrameter. Paschen poetry is filled with personal landscapes, and piercingly bitter-sweet moments are expressed. "*Infidelities* explores both the pleasures and hazards of eros, while the poems in *Bestiary* take animal life as both their ruling metaphor and, quite often, subject. Using traditional forms like the sonnet, villanelle, and even the ancient Eastern ghazal" (Lambert, 2011).

Literature Review

Lance H. Gunderson, in "ECOLOGICAL RESILIENCE—IN THEORY AND APPLICATION", explains Holling's understanding of the term resilience. It was first referred to as engineering resilience by Holling. This perspective has its foundation in engineering traditions that stress the design of systems with a single operational objective. This method supports the engineer's goal of producing ideal designs while also

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streamlining the underlying mathematics. The foundation of it is the idea that there is only one equilibrium, or steady state, which is known as global stability. If alternate operational states are real, precautions should be taken to prevent them. This notion of resilience is also often used in the domains of material engineering, control system design, and physics. The second kind of resilience concentrates on circumstances in which systems or networks are far away from a stable state and disturbances. However, it has the potential to force the system to change into a stability domain or behavioural regime. Resilience is the degree of disruption that a system can tolerate before undergoing a fundamental shift. That shift modifies the factors and procedures that control its behaviour is how resilience is assessed in this context. To differentiate it from engineering resilience, this idea is referred to as ecological resilience. An example is quoted to explain the mechanism of resilience. When the marble is shaken to a temporary location within the cup by disturbances and the ball is positioned at the bottom of the cup, an equilibrium is reached. The term engineering resilience describes features of the cup's design, such as the side inclination, which determines the return ball's descent time to the bottom. The concept of ecological resilience implies that several cups do exist, and the cup's top breadth is what's referred to as its robustness. This indicates strong ecological resilience since the ball may be moved across a wider region before shifting to a new stability zone. The capacity to adjust to and bounce back from disturbances, even when the system alternates between several stable states, is emphasized by ecological resilience.

Gunderson stresses how anthropogenic activities have challenged ecological resilience, which Holling calls an exploitative phase. Holling describes four phases where nature goes through various changes to complete the adaptive cycle. The first phase is exploitative, accelerated due to the colonization of affected lands. "During the exploitation phase, ecological resilience is high—the system can absorb a wide range of disturbances" (Gunderson, 2000, p. 430). The exploitative phase marks aggressive growth and production, paving the way for conservation. At this phase, the ecosystem can tackle different disturbances because of its high flexibility and resilience.

The second phase is the conservation phase, during which the ecosystem becomes stable. The growth of resources and energy generates a sense of competition and survival among the species. An ecosystem stabilizes during the conservation phase after experiencing disruptions. Energy and energy levels rise during this phase, promoting a time of development and recuperation. Competition between species increases with resource abundance, pushing adaptations that evolve and survival tactics. Through competition, organisms are forced to adapt to changing environmental conditions and make the best use of the resources at their disposal. The availability of resources and species interactions are balanced during the conservation phase, creating an ongoing balance where ecosystems support a variety of biological communities and operate efficiently. For environmental stability and resilience to be maintained over the long term, this stage is essential. However, at this phase, though resources have been accumulated, the stability of the ecosystem is not that strong. Any small environmental impact can lead to disruption and imbalance in nature. This reflects the vulnerability and fragility of the ecosystem.

The third phase is the disturbance phase, which breaks the existing structure because of natural disasters. All the stored energy and resources are released in this phase. "Disturbance agents such as forest fires, insect pests, or intense pulses of grazing suddenly release accumulated ecological capital" (Gunderson, 2000, p. 430). These disturbances cause abrupt changes that unleash built-up ecological capital. Even while these disruptions are initially harmful, they release stored biological material, nutrients, and biomass for regeneration. The replenishment of ecosystems is facilitated by the dispersion of ecological capital, which supplies vital resources for fresh growth and development. Ecosystems frequently see a spike in production and biodiversity following such disruptions when animals repopulate, and ecological processes resume. An essential component of ecological resilience, this cycle of devastation and regeneration allows ecosystems to adapt and flourish. After this destruction, various changes take place in the ecosystem to start regeneration in this phase of uncertainty.

The fourth phase is reorganization, going back to the first phase of exploitation to embark on another period of growth. This cycle continues to repeat to maintain ecological resilience and balance. "During the reorganization phase, a system becomes most vulnerable to changing stability domains" (Gunderson, 2000, p. 431). A system is more susceptible throughout the reorganization phase since it is going through a lot of changes. This phase, which comes after a disturbance, is defined by the way the system attempts

to adapt its structures and functions to the changing environment. The system is subject to fluctuations and swings between distinct stability domains as it restructures and adapts, resulting in increasing instability and uncertainty. The system is not entirely built into a new equilibrium, which creates a vulnerability. Continued realignments and changes might generate instability or even more disruptions. For the system to remain resilient and stable in the future, this transitional phase is essential. Though nutrients and resources are present in this phase, the ecosystem is weak in managing its control and growth due to disconnectivity.

C.S. Holling in "Resilience and Stability of Ecological Systems" discusses that when humans impact the ecosystem to fulfil their economic demands and provide for the expanding population growth, they disturb the ecological balance. Holling identifies and explores three main predator-prey models in ecological stability and resilience. The first model is simple, where the prey capture is directly proportional to the density of the prey. The prey consumption increases linearly, and the predator doesn't spend any time searching for prey. In the second model, instead of linear, a hyperbolic curve is seen here. The predator spends more time searching for the prey. However, in the last model, resilience is seen when the preferred prey population fluctuates and the predator switches to another prey. Henceforth, this model has the functional response in sigmoidal shape where the predator switches and looks for another prey.

Research Method

The research method used in this research study is qualitative in nature. It is solely based on textual analysis. The theoretical framework in this research study is Lance H. Gunderson's "ECOLOGICAL RESILIENCE—IN THEORY AND APPLICATION" and C.S. Holling's "Resilience and Stability of Ecological Systems". The primary source consulted for the research is text. Secondary sources include articles, books, journals, videos, and interviews. A bulk of reading materials are managed through browsing, narrowing down the relevant work, and filtering out unnecessary material. Note-taking and mind mapping have been done to record the required and relevant material. For meticulous discussion, ideas are paraphrased to avoid plagiarism.

Discussion and Analysis

In the opening lines of the poem "The Trees Agreement", the neighbor reflects anthropogenic behavior. He labels the Siberian Elm a weed tree. He emphasizes chopping it down. He continues grumbling, saying that Siberian Elm leaves are usurping his yard. A tree labeled as a weed is viewed as something that is not desired. It is seen as an encroacher and trespasser by the neighbor.

> The neighbor calls the *Siberian Elm*
> a "weed" tree, demands we hack
> it down, says the leaves overwhelm
> his property, the square backyard. (Paschen, 2020 line 4)

According to the neighbor, the presence of the Siberian Elm disrupts the stability and order of its neighborhood. Siberian Elm is treated as an outsider, growing and expanding its branches as if it is going against the norms. It is depicted acting as an intruder and occupier of someone's space. It is treated as a waste and a contamination spreading without any checks. From the neighbor's stance, it can be interpreted that the tree for him is some sort of a nuisance penetrating the human space. Therefore, neighbor believes measures need to be taken to root out and eradicate the Siberian Elm. However, the neighbor does not fathom the tree's potential advantages in cleaning the atmosphere and its pivotal role in maintaining an ecosystem. Here, neighbor behaviour reflects the unacceptable stability domain of the ecosystem. "Many of those systems are influenced by human activities, which has led to a confounding problem around ecological resilience" (Gunderson, 2000, p. 428).

Paschen uses descriptive imagery and describes what the neighbor looks like. He is in formal attire always in a collar and tie. The phrase collar and tie symbolize a person's connection with the corporate world. The corporate world is closely associated with capitalism.

> He's collar-and-tie. A weed tree? (Paschen, line 5).

Capitalism is already infamous for its extractive policies destroying the natural habitats for personal profits. Capitalists' quest for profit frequently results in a disregard for long-term ecological effects. Conservation initiatives and environmental standards are routinely neglected in favour of quick financial gains. Hence, natural resources are becoming commodities; their worth is now frequently determined by their economic usefulness rather than by their ecological relevance or the ecological benefits that they offer. "The greed of capital results in conflicts between material wealth and humanism, and struggle between tool rationality and ecological civilization. Under the action of capital, the natural ecological balance has been greatly damaged" (Zhang, 2013, p. 69). The turbulence in the ecological foundation must be addressed through climate diplomacy. This will ensure environmental conservation and resilience in preserving the habitats on the verge of annihilation, leading to an ecological crisis. This capitalism reflects the exploitative phase where natural resources are utilized without any constraints. The ecosystem bears the turbulence and tries to recover because of high flexibility and adaptability.

The poem creates tension when the speaker disagrees with the neighbor's perspective. The speaker resists the anthropogenic attitude by cherishing the tree for its valuable existence and benefit and forming a strong eco-network supporting human life. This creates the binary opposition of human versus nature. *The Guardian* in "Humans v Nature: Our Long and Destructive Journey to the Age of Extinction", authored by Phoebe Weston, argues humans have had massive consumption throughout the centuries. It has resulted in a great ecological decline. Colonial destruction of environmental habitats, world wars, and testing of nuclear weapons have galvanized the series of natural crises. Humans destroyed megafauna and distorted the concept of humans living in a harmonious relationship with nature. Population growth, excessive consumption, and destroying biodiversity have generated an ecological crisis. "Destroying biodiversity by chopping down forests also results in carbon being released, while climate change in the form of extreme weather, such as droughts and heatwaves, damages ecosystems" (Weston, 2022).

> He declares the tree "hazardous."
> We shelter under leaf-hoard, crossway
> for squirrels, branch house for sparrows, jays.
> The balcony soaks up the shade. (Paschen, lines 9-12)

The neighbour again complains about how the tree branches obstruct the view of buildings, subway tracks, and his yard. The neighbor's statement is ironic in nature. There is a concept of the Urban Heat Island Effect abbreviated as UHI. This means urban areas are warmer than rural areas. "When cities replace the natural land cover with high concentrations of heat-absorbing pavements, buildings, and other surfaces, the UHI phenomenon develops. It is also a type of air pollution that contributes to global warming" (Hajer et al., 2023, p. 3). Planting is suggested to beat the heat of urban areas. Trees create a cooling effect and provide shade that is beneficial in the summer season. "Most studies have been found to be consistent about the ability of trees to lower temperatures and improve human thermal comfort. Shade areas generated by trees reduce direct solar radiation" (Ruken Yaşlı et al., 2023, p. 39). Advocating for cutting off trees is sheer insanity. It is like deliberate calling for one's death. The neighbor acts as a disturbing agent to break the pattern of ecological resilience, persisting in removing the Siberian Elm.

The speaker again disagrees with the neighbor. Paschen has interestingly used the word "We" a plural pronoun suggesting the collective voice for the protection of trees and societal benefit against the personal benefit. The speaker values the wild barks of Siberian Elm claiming it as a shield for human protection against environmental degradation. The neighbor calls out the tree hazardous because it invades his space.

> The tree will stay. We tell him, "No."
> Root deep through the pavement, *Elm* (Paschen, lines 15-16).

From the neighbor's perspective, the tree is dangerous and unsafe, believing the tree's wildness is lethal and gruesome. "Many human activities shrink ecological resilience by attempting to control variability in key ecosystem processes" (Gunderson, 2000, p. 436). This creates a sharp binary opposition between individual desire and collective responsibility. The speaker continues to emphasize that the tree provides shade and a home for wildlife habitat. The birds' melodious chirping replaces the noise of the cars below. The speaker decides the tree will stay and tells her neighbor that Siberian Elm will not be cut down.

The protesting tone of the speaker highlights the conservation phase, stability, and ecological resilience against destructive values.

Meghna Roy, in "Developing a Sustainability Mindset through Nature Poetry", asserts:

The poem is a verbal tussle that takes place between the poet and her neighbour, who is bent upon chopping off the Siberian tree as it 'overwhelms' his property, but the poet, infused with an unflinching devotion towards the cause of afforestation, strongly opposes the man by reminding him that the tree is a home to many and destroying it would be a heinous act. (Roy, 2022. 576)

Likewise, in "Aerial, The Wild Pine", nature's resilience, adaptability, continuity of life, and interrelationship among the ecosystem are explored. In the opening lines of the poem, Paschen uses striking visual imagery to describe the bare grey cypress tree standing in a forest covered with frost and ice. The cypress tree symbolizes longevity and endurance because it can survive the extreme cold winters.

> The bare grey cypress
> in winter woods (Paschen, lines 4-5).

It emphasizes the ecological resilience of the cypress tree since its leaves are still vibrant green, and it is surviving the cold shock and gloominess of the winter season. Cypress trees are famous for their resilience and flexibility. These trees flourish in a variety of habitats, from arid regions to swampy wetlands. These few distinct qualities contribute to their resilience. "Cypress is relatively adaptable to a range of temperatures. Although it prefers dry, hot summers and mild winters, it can also tolerate more continental climates. Mature cypress can usually survive harsh winters" (Baldi et al., 2011, p. 79). Despite the biting cold weather acting as a disturbing agent, natural life continues to prevail. This indicates the potential of the ecosystem to adapt and thrive against catastrophic conditions. "Resilience determines the persistence of relationships within a system and is a measure of the ability of these systems to absorb changes of state variables, driving variables, and parameters, and still persist" (Holling, 1973, p. 17).

In the next stanza, Paschen mentions other various plant species present in the winter landscape. The wild pine, air plants, and bright flowers are close to the tree trunk. Their closeness reminds the gentle touch of nurturing through the use of tactile imagery. This vibrant closeness indicates the togetherness, connectivity, and support for each other's survival. This proximity emphasizes the presence of symbiotic relationships in nature.

> How they contour
> against the trunk (Paschen, lines 11-12).

In a symbiotic relationship, the natural elements support and preserve each other through interdependence. The symbiotic relationship as such of mutualism promotes ecosystem stability. These connections frequently support ecological stability, increase biodiversity, and improve environmental function. The resilience of an ecosystem often depends on these interconnected relationships. In this supportive system, plants and other organisms create a balanced environment together.

The poet, through the use of metaphor, describes the plants as creatures searching for light. Here, Paschen scrupulously defines the behaviour of plants. Their act of seeking light displays phototropism. Phototropism is essential for plants' survival as light carries out the photosynthesis process. It displays the delicate, tender nature of plants to ensure their survival. This reflects the conservation phase of the ecosystem to generate chemical energy from the light. Plants utilize this chemical energy for their developmental growth. In the flash, plants express and reveal their melancholic expressions. Their grief symbolizes their vulnerability as they are not immune to pathogen attacks. The pest symbolizes the disturbance phase, which inhibits plant growth. Despite this, they continue their growth in unfavorable circumstances. Through the use of metaphor, Paschen compares plants to acrobats who skillfully balance taking difficult acts, but their performance is full of life. This adaptivity of plants shows ecological resilience to meet their nutritious ends because of ecological changes.

In the following stanza, the speaker represents the predator-prey relationship, which shows the resilience of species in natural habitats. The poet describes a bird called a snail kite, trying to prey on an apple snail. Meanwhile, the snail kite glides over wetlands and the bird catches the apple snail with its

curved beak. The bird's action is violent and precise as it captures its prey. The poet draws the action of the bird while hunting its prey through the use of simile.

The poet compares how the snail kite beak acts like a trap door. It efficiently tears into the apple snail.

> Over the wetlands
> a *snail kite* skims
> tallgrass and then swoops
> to scoop the *apple*
> *snail* in curved bill. (Pasche, lines 21-25)

The cycle of life and death continues where predators like the snail kite rely on prey like the apple snail. It is a natural process that sustains ecological balance and resilience. This predator-prey relationship reflects the conservation phase. It helps in population regulation and competition so that one species doesn't assert dominance over the other species. Also, according to Holling's model of the predator-prey relationship, the snail kite preying of apple snails portrays that the availability of apple snails ensures the survival of snail kites, keeping each other population in regulation. To avoid the depletion of resources and to maintain the stability and balance in nature, competition is necessary. It emphasizes the conservation phase, which ensures nature's continuity, growth, and regeneration.

Paschen expands this idea and asserts the way a bud locates its place on a branch and a newborn receives nourishment from their mother.

> The way two beings
> create a space
> for one another—
> the bud to branch,
> tongue against the nipple. (Paschen, lines 31-35)

By equating natural processes with ecosystem flexibility, Paschen expands on the idea of resilience. She compares how a sprout finds its place on a tree branch and, similarly, a baby is dependent on its mother for sustenance. These are similar patterns in which ecosystems self-repair and regenerate. This comparison draws attention to the nuanced ways in which resilience functions in both complex ecological systems and biological beings. The position of a bud on a branch in nature is determined by both environmental and genetic programming. The bud has to locate itself in a way that will optimize its exposure to resources and sunshine while reducing competition from other buds or branches. Therefore, it ensures that the budding has the strongest possible opportunity of developing into a strong shoot. This competitive environment enhances the plant's general health. In a similar vein, a newborn's basic development is its reliance on a mother for care and sustenance. In addition to providing physical nourishment, the mother offers safety and nutritional opportunities, allowing the baby to develop and flourish. These organic processes serve as examples of more general resilience concepts. Resilience in both situations refers to striking an equilibrium between stability and adaptation. Both a newborn's healthy growth and a bud's ability to integrate into its branch are the result of complex relationships among organisms and their environment. This interaction makes sure that life goes on in spite of difficulties and adjustments. Similarly, ecosystems adapt and resurge themselves, ensuring their perseverance and resilience over time.

In addition, "Moss in April" by Elise Paschen also reflects the various patterns of ecological resilience. In the opening lines, the snowdrops, meaning early spring flowers, are sprouting among dead leaves. The speaker alludes to a condition of decadence and transition by pointing out the brown leaves that have fallen. The use of the first-person Pronoun "I" conveys a feeling of expectation, maybe for revitalization or transformation. The speaker is expressing a strong yearning for anything good as she longs for an indication of new life or optimism among the dead leaves. Scattered branches and leaves are commonly referred to as litterfall. Meanwhile, the decomposing organic debris on the forest floor is referred to as duff. The speaker seems to be looking through this covering of rubble in an attempt to find beauty or significance amid deterioration. By concentrating on nature, the speaker attempts to divert her mind from her thoughts, possibly from sorrowful sentiments.

Snowdrops among the dead,
the fallen brown – I wait
for any sign and crave,
through duff and litterfall, (Elise Paschen, lines1-4)

The snowdrops that are budding amidst the dead leaves represent the tenacity of life, demonstrating how fresh growth may come from ruin. This illustrates the notion of the reorganization phase, which states that ecosystems are capable of regenerating and supporting life even following a time of devastation or inactivity. The natural process of decay and rebirth is symbolized by the presence of litterfall, fallen leaves and twigs, and duff, or decomposed organic waste, on the forest floor. The ecosystem has resilience in that it keeps functioning and supporting life despite the buildup of dead material.

In contrast to the calm of the fallen leaves, the creek's movement, which is characterized as bouncing and turning around, depicts a dynamic and unpredictable flow. The water of the stream flows naturally in the direction of a bigger body of water, signifying a draw in that direction or an unavoidable voyage. A eureka moment is indicated when the speaker's gaze is attracted over the creek's bank. The speaker perceives something vibrant and bright that contrasts sharply with the surrounding scenery, much like a neon light. The brilliant patch is compared to an extended wing, which might refer to a bird flying and represent either freedom or an unexpected burst of beauty. The light greenish-blue hue, referred to as sea foam, adds to the scene's vividness. Pursuing the skip and swerve of the creek, the water's tug toward the lake, I spot across the bank. (Elise Paschen, lines 5-8) The creek's constant flow represents how ecosystems are dynamic and self-sustaining. The flow of water towards the lake is a symbol of continuity and the ecosystem's capacity to carry on with its functions in the face of alterations or disruptions. At the smallest scale, resilience is seen in the moss that grows beneath the branch of a silvery maple tree. In disturbed habitats, mosses are frequently early settlers, able to flourish where other plants would not. The concept of ecological resilience is reflected in this since mosses contribute to environmental stabilization, which eventually permits the flourishing of other types of life.

Impressed by the magnificence she has experienced, the speaker stands to gather what she is thinking. Marvelling expresses amazement or profound gratitude. The speaker implies that the moss offers solace and space for introspection by describing it as a luxuriant cushion that begs reflection. Little water streams, or rivulets, are absorbed by the moss, and this might represent cries or sentiments being absorbed and calmed by nature. The comparison between the streams of rain and tears may allude to sadness. The green moss is compared to a braided plaited bed, suggesting comfort and tranquillity.

My breath, to catch, to marvel:
lush cushion to contemplate,
bedding down rivulets
of rain, of tears. (Elise Paschen, lines 14-17)

The moss plays a crucial function in preserving ecological equilibrium by acting as a cushion to absorb rain and maybe symbolic tears. Mosses exhibit resilience by supporting the stability and well-being of the ecosystem by absorbing and retaining moisture, which helps to control the atmospheric conditions of the forest floor. Hypnos, the Greek deity of slumber, is invoked, and resting on the moss is suggested, highlighting the healing and consoling power of nature. The resilient moss offers a haven for relaxation and recuperation, symbolically implying that the tenacity of nature may also bring emotional and spiritual renewal.

Conclusion

The ability of an ecosystem to tolerate and bounce back from disturbances or perturbations without compromising its essential structures, activities, or systems is referred to as ecological resilience. By taking the entire discussion into account, this research explored the ecological resilience of the disruption in ecosystem networks in Eline Paschen's eco-poetry. The goal and purpose of this research study were to analyze the adaptive cycle responsible for ecological resilience and sustainability. The theoretical framework engaged in this qualitative research was Lance H. Gunderson's "Ecological Resilience—In Theory and Application" and C.S. Holling's "Resilience and Stability of Ecological Systems". The result

proclaimed that manmade activities and disrupting factors like severe weather conditions create environmental changes. This environmental turbulence in the ecosystem generates ecological resilience that leads to adaptability, high stability, flexibility, and growth to recover and maintain the ecological balance after absorbing certain disturbances. The ecosystem goes through four phases to complete the adaptive cycle: exploitative, conservation, disturbance, and reorganization. The constantly changing procedures that ecosystems go through to keep resilience and stability are described by the adaptive cycle. The first phase is exploitation, where ecosystems expand quickly during this first stage as species make use of the resources at their disposal to establish themselves. In the second conservation stage, species competition increases, and the ecosystem stabilizes, allowing for the effective use of resources and the establishment of equilibrium. The third is a disturbance, where outside forces, like pests or fires, upset this equilibrium, releasing stored resources and bringing about changes. In order to adjust to new circumstances, the last phase is reorganization; the ecosystem reorganizes, creating a new equilibrium. This cyclical procedure guarantees robustness and adaptation over the long run. Henceforth, the sustainable, resilient ecosystem absorbs the accelerating exploitative ecological crisis through adaptation and reorganization.

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