Editorial

Dear authors, reviewers, and readers,

In the coming months, the Journal of Latin American Sciences and Culture will continue publishing world views from various scholars to stimulate further thinking and dialogue about the connection between humans, biodiversity, green development, the environment, science and technology, education, and culture.

For this issue, we have decided to share a story that might be familiar for some, and maybe totally new for others. The story that we are going to share tell us about a Quantum Ecological Miracle. We share this story because we think that small actions (quantum), can produce big effects. This is the case of the next story, where 14 wolves changed a whole ecosystem in the Yellowstone park.

A Quantum Ecological Miracle:

14 Wolves Restored a Whole Ecosystem in Yellowstone Park

The reintroduction of 14 wolves in Yellowstone during the 1990s brought many benefits to an ecosystem that deteriorated almost 80 years of their absence.1 This is what we call a Quantum Ecological Miracle (QEM).

The return of the wolves restored Yellowstone's natural balance. The balance in nature is delicate. A change in the structure of an ecosystem can generate several inconveniences. The disappearance and reintroduction of wolves in Yellowstone National Park, in the United States, is an example of this. In the early twentieth century, wolves were dramatically hunted within Yellowstone park and its surroundings, until they were eliminated. In 1926, the last gray wolf of Yellowstone was killed and then the imbalance began.2

The populations of species that were controlled by wolves began to grow excessively. One of them, the moose, became practically a pest within the limits of Yellowstone park.

As there were no carnivores, the increase in herbivores caused serious damage to the vegetation. Such was the situation, that in the 60s the administration of Yellowstone Park enabled and pushed the hunting of moose to try to contain its growth.

By the 70s it was thought that the situation was under control and that the moose plague had already subsided, so hunting was stopped. Over time, moose began to overpopulate the park again and the same problem happened. Hunting would no longer be an action to control and balance Yellowstone's ecosystem. That is why, in 1995, U.S. environmental authorities decided to reintroduce initially 14 gray wolves to the park.

Wolf packs adapted to the environment and reproduced. Over time, they managed to control the moose that destroyed the vegetation of the park. The behavior of moose changed. The moose stopped grazing always in the same places, especially on the shores of the rivers. The shrubs that tried to develop there began to grow remarkably, changing the landscape and benefiting other species.

Bears, pumas, and bison returned with the wolves. Birds that feed on the seeds of the park's plants began to roam Yellowstone again. In addition, while the moose population began to decrease, the population of grizzly bears (a subspecies of brown bears) also began to grow.3

Researchers at the universities of Washington and Oregon found that overgrazing of moose also caused damage to the availability of food for brown bears. Due to the predation of wolves, there began to be more availability of red fruits, which is what bears consume to gain weight before hibernation. Thus, the decimated population of brown bears in Yellowstone was balanced and over time grew. Since the arrival of the wolves in 1995, another benefit was also recorded within Yellowstone: the pumas began to repopulate the park, also accompanied by vultures and bison.

The reintroduction of wolves in Yellowstone is today considered one of the great and successful ecological experiments of recent years. The effects it had on the balance of life in the park surprised many researchers. It is also an example of how a man-made imbalance, such as the killing of wolves, can have serious consequences for an entire ecosystem.

After almost 100 years, wolves can call Yellowstone park "home". Through this Quantum Ecological Miracle (QEM), we can see how keystone species and trophic structures play a crucial role in community dynamics. Because we need this information to carry out successful reintroduction operations and effectively restore natural habitats for them to be sustainable in the future, we must comprehend all levels of the food chain and analyze the intricate trophic interactions that occur between them. We place a high value on efforts to restore and safeguard our beautiful ecosystems.

This Quantum Ecological Miracle (QEM) recalls some ideas referred to quantum mechanics, that deal with microscopic, atomic, and even subatomic particles. We highlight the importance of these small particles in macroscopic processes that happen in our daily life, in nature, at home and even in our bodies. Recent research suggests that a wide range of organisms may use quantum mechanics' unique properties to their advantage. Birds use it. A toaster machine, a fluorescent light, computers, mobile phones, biological compasses, transistors, lasers, GPS, and magnetic resonance devices are some examples of the manifestation of the small particles that produce such remarkable effects. In the same way, the QEM described above, points out how actions or numbers that seem small can produce big effects. It is in that sense that our multidisciplinary international team has developed a tool denominated The "Quantum Leap to Green Action (QLGA)" which aims to engage the public in a broader sustainability mission, and offers an opportunity to impact society in general and promotes commitment to action against climate change.

Climate change today represents a crisis in which man is losing the game; his fight has not been enough to stop the negative impacts on the planet. We are witnessing more and more catastrophic effects and fewer quantum miracles. Because the conservation of biodiversity, green development, energy efficiency, CO2 emissions reduction require innovative thinking, it is of great importance to learn how to effectively carry out biodiversity conservation in populated areas. That is why, the Journal of Latin American Sciences and Culture is promoting the "Quantum Leap to Green Action" (QLGA).4,5

QLGA can bring us closer to new paradigms of thought that encourage human beings to adopt behaviors in favor of climate change, reducing greenhouse gas emissions sustainably and cost-effectively to fulfill several SDG's goals.

QLGA in the family would begin by listening to the ideas of its members, especially children and young people, these ideas would continue to be communicated to distant members in meetings or through social networks and finally, the cycle would be closed with the wisdom of the ancestors that complement that legacy so important that it helps QLGA actions into the collective conscience.

QLGA through educational institutions includes a journey that begins with classmates, advances through teachers and continues through managers. The starting point will be those environmental projects that originate in the imagination of each group of students based on the results of the QLGA in the family, under the concept of innovation laboratories identifying needs and proposals

associated with the SDGs. These laboratories take advantage of the knowledge that the ancestors have left in the new generations and adjust to local environments to promote dialogue with citizens and the territory. The professors contribute their specialized knowledge to formulate the projects and the directives support these initiatives with their influences in the local regions.

QLGA around the world integrates the wills of all the countries that make each idea a reality, taking them to societies and especially vulnerable populations to raise awareness towards a better, sustainable, lasting, resilient world that defends the life of all species.

Finally, we would like to clarify that the ultimate goal is to stimulate debate and encourage all those interested in constructive dialogue to think about how to contribute more effectively to green science, green development, biodiversity and climate action from a multidisciplinary perspective.7-10 The success of the journal is due to the efforts of our international team of editors, board members, anonymous reviewers, authors, readers, and supporting staff. Tremendous efforts have been made to enable authors to make decisions on their manuscripts in a short time. We look forward to continuing our mission with you, our authors, reviewers, and readers, as we continue to serve the journal. Your suggestions, thoughts, and discussions on how we can move forward are always welcome.

On behalf of the JLASC Editorial Board, we invite you to contribute to the journal worldwide. The open-access nature of JLASC will allow more authors to make their research visible and will create opportunities for communication, mutual collaboration, and successful development.

Editorial Board (JLASC)

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