



# WWF: Safeguarding biodiversity with technology

Nature is our life-support system. From the air we breathe to the water we drink, nature provides the essentials we rely on for our survival and well-being. These immense benefits to humanity, estimated to be worth around US\$125 trillion a year, are only possible if we maintain a rich diversity of wildlife. To achieve this, the work of the World Wildlife Fund for Nature (WWF) is grounded in science.

By Samuel Luke Winfield, Linda Xu

## Spanning the scientific spectrum

**W**WF draws on biology, hydrology, oceanography, and the social sciences to advance cutting-edge conservation tools and methods, connect natural and social systems, and tackle emerging threats. According to Lo Sze Ping, CEO of WWF China, we're currently consuming the resources of 1.75 planets. This, he says, is clearly unsustainable and urgent action is needed.

Biodiversity is one of the key indicators of the health of the environment, and the numbers aren't looking good. For example, the number of fresh water species has decreased by 81% percent in the last five decades. So how can technology be used as a tool for protecting biodiversity? This is one of the questions that Lo set out to answer at HUAWEI CONNECT 2019.

## Why does biodiversity matter?

When people think of biodiversity, they might first picture a tropical rainforest thousands of miles away, bustling with myriad species of animals, plants, and insects, but this is far removed from daily life. However, biodiversity is the complex web of life that sustains us all and none of us live in isolation from nature – it is the “infrastructure” that supports all life on Earth. Protecting biodiversity isn't just about saving animals or habitats; it's about providing sustainable access to food and water. And it's about helping us cope with the worst effects of climate change.

Lo believes that biodiversity is closer to home than many people are aware. “It's not just for the beauty of it,” he says. “We live on this planet, we rely on the surfaces provided by our ecosystem.” Far from being limited to distant tropical regions, he says biodiversity affects the very food we eat. “Think about agriculture,” continues Lo. “For healthy agriculture and land that produces enough food for all, it has to be biodiverse.”

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— Lo Sze Ping, CEO, WWF China

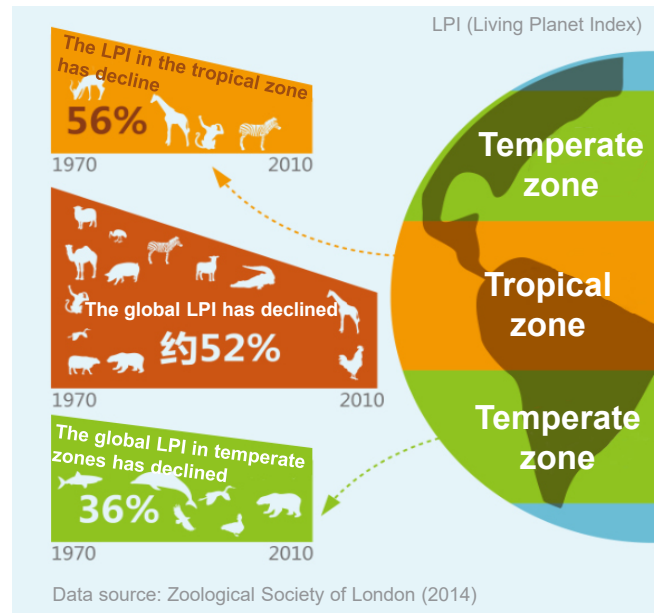




## Biodiversity

1970 – 2012

- The number of terrestrial species decreased by 38%.
- The number of freshwater species decreased by 81%.
- The number of marine species decreased by 36%.



## Promoting awareness is essential

A major role of WWF is to promote awareness about the importance of protecting the environment. “In the last five decades,” says Lo, “WWF has worked across the planet, in more than 100 countries promoting awareness, for decision makers or business leaders or the public, about the beauty and the necessity of keeping nature intact and healthy.” Lo believes that protecting the environment is something that requires cooperation between the public and private sectors, as well as the research community. “We support many companies,” highlights Lo. “We work with local communities in doing what they can, doing their best to keep our environment healthy.”

## The role of technology and AI

Protecting the environment is a mammoth task that requires more than just willingness from governments

and industry. Technology is key. “Two, three decades ago,” adds Lo, “The introduction of infrared camera traps significantly helped conservationists around the world. In China in particular, it helped increase understanding the activities and distributions and changes of animals living in the protected area.” So technology has already been helping to support conservationists for decades. And according to Lo, many of the photos we see of pandas and tigers are actually taken by these infrared camera traps, which automatically take a photo when an animal walks past. This is clearly far more effective and efficient than requiring a human to sit and wait for one of these rare animals to emerge, which could potentially take weeks or even months.

Despite technology having already made great progress in terms of protecting the environment, Lo believes there’s still a lot of room for improvement such as “improving the infrared trap cameras to ‘monitoring system 2.0’ with the latest ICT technology. Think about if

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the infrared trap camera transmits photos instantly to a monitoring center and maybe even to an application on a mobile phone.”

He also believes that AI has the potential to be a major contributor. “We can also use, for example, AI technology to help us differentiate and constantly count the number and variety of birds in a particular location,” continues Lo. “And then we can monitor the changes over time, which would really help us to better monitor the migratory situation of birds.” Other potential AI applications include tracing the origins of the fish that arrive on our plates, and better locating rangers who are patrolling parks, keeping them safe as well as helping better collect data.

## Teaming up with Huawei

As well as helping to monitor and potentially protect wildlife, Lo believes technology is key to inspiring the public. “Photos and videos help to communicate with and inspire the public about these animals, and protected areas,” he says.

“Huawei and WWF worked together in Italy recently, capturing the sound of communication between whales under water and translating them into musical notes,” states Lo. “People can listen to the music of

whales communicating with each other, and connect emotionally with the animal.” A big role of WWF is to spread the awareness of environmental decline, and Lo believes that inspiring the public by using technology is an effective way to do this.

## TECH4ALL

Huawei’s TECH4ALL project aims to expand the benefits of digital technology to everyone, everywhere through a digital inclusion strategy that focuses on three areas: technology, applications, and skills. One of the initiative’s four domains focuses on the environment and using innovative technologies to help NGOs protect and conserve ecosystems. And Lo believes that TECH4ALL is a concept that closely aligns with the values of WWF. “WWF envisions a future where people live in harmony with nature, so there’s a lot of similarities,” he says. “And with TECH4ALL, the ‘ALL’ for us means the planet. Humans share this finite planet and its limited resources with other species.” Lo believes that humans have a responsibility to share the planet with all other life forms, thereby ensuring biodiversity. “And, to this end,” he says, “TECH4ALL also means technology that ensures we have a healthy planet for future generations.” 