

## Scientists Warn and Call for the Protection of our Planet

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We have never been in the history of mankind as a species in such a moment and place. We have never faced such a challenge during our stay on this planet. Such a great mobilization of scientists from around the world has never happened before. At the end of 2017, an appeal of scientists to humanity (World Scientists' Warning to Humanity: A Second Notice) was published in the prestigious journal "Bioscience" [1]. The article was written by an international team led by William Ripple, distinguished professor in the College of Forestry at Oregon State University. The warning was signed by 15,364 representatives of the science from 184 countries. Eminent scientists Jane Goodall, E.O. Wilson, and James Hansen are among those who have cosigned the warning. The appeal has so far been supported by another 4,483 scientists. It has been translated into 16 languages. It is a kind of warning against the negative consequences of people's actions. The message is strong and expressive: humans had pushed Earth's ecosystems to their breaking point and were well on the way to ruining the planet.

The text of the warning refers to the message from 1992 under the same title, which was signed by more than 1,700 scientists, including the majority of the living Nobel laureates. At that time, these concerned professionals called for immediate action to stop the destruction of the natural environment. If we do not do that, they warn us that we will threaten the earth's biosphere, and that humanity, which is part of this biosphere, will prepare an inevitable misfortune. Twenty-five years after the first warning for "humanity" appears another, whose message is even more dramatic.

According to experts, today the environmental situation is much worse than 25 years ago and almost all problems identified then increased. Uncontrolled consumption of limited planet resources leads to dramatic changes. Since 1992, the amount of available drinking water in the world per capita has dropped by 26%. We've put 2 billion more humans on this planet since 1992 (that's a 35% increase) and at the same time we observed a nearly 29% collective reduction in the number of mammals, reptiles, amphibians, birds and fish in the world. By area, forests have declined by 2.8% since 1992, but with a simultaneous decline in forest health, timber volume, and quality. The new letter lists data showing a 75% increase in the number of oxygen-depleted zones in oceans since the publication of the first letter. The fishing industry has upped its efforts, but there has been a large drop in the harvest of wild-caught fish. The constant increase in carbon dioxide emissions and the associated increase in average temperatures are worrying. The authors estimate that all of the environmental remediation measures we have taken in 1992 are disappointing, with the exception of international efforts to stabilize the stratospheric ozone layer. CFC (chlorofluorocarbons) emissions are down by 68% since 1992, due to the 1987 UN Montreal Protocol. It has been identified as the only example of effective action for the planet and ourselves.

Scientists are appealing to all people and leaders to take action to reverse these negative trends. The signatories of the "warning" admit that both the scientific community, politicians, the media, business, and all people are not doing enough to fight for their planet. If this does not change, we face a catastrophic loss of biodiversity and countless human suffering. The authors of the "letter" believe that these trends can still be reversed and allow ecosystems to regain their balance. It

is very valuable that the authors also emphasize the need to change our personal behaviors, including drastically reducing our ecological footprint, the amount of resources we use. The authors propose 13 valuable steps necessary for humanity to achieve a level of sustainability, including:

1. Maintaining the good condition of ecosystem services by halting the conversion of natural habitats to arable fields or other transformed areas.
2. Restore native plant communities, particularly forests, and native fauna species, especially apex predators, to restore ecosystem integrity.
3. Establishing more terrestrial and marine reserves.
4. Introduction of legal solutions aiming at more effective protection of the environment.
5. Strengthening enforcement of anti-poaching laws and restraints on wildlife trade.
6. Counteracting food waste through better education.
7. Promoting a dietary shift toward plant-based foods.
8. Increasing outdoor nature education for children.
9. Massively adopting renewable energy and other "green" technologies.
10. Revise economic systems to reduce wealth inequality and account for the real costs that consumption patterns impose on our environment.
11. Expanding family planning and educational programs for women.

The prophetic "Warning to humanity" is a comprehensive diagnosis of the state of the biosphere and human civilization. This diagnosis is followed by diverse and effective steps that humanity must take on the road to building a sustainable society. Progress in some areas, e.g. a reduction in ozone-depleting chemicals, an increase in energy generated from renewable sources or the slower rate of deforestation in some regions shows that positive changes can be made. In their manifesto, the authors and co-signatories are hoping that the letter will ignite a wide-spread public debate about the global environment and climate. Will the world react to the "warning" from science representatives? Will politicians prove capable of taking

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effective action proposed by specialists from around the world? Will people understand that not taking necessary countermeasures mean catastrophic huge misery for them? Will we take this chance? *“Soon it will be too late to shift course away from our failing trajectory, and time is running out. We must recognize, in our day-to-day lives and in our*

*governing institutions, that Earth with all its life is our only home”* we read in the “warning”.

#### References

1. Ripple WJ, Wolf C, Newsome TM, Galetti M, Alamgir M, et al. (2017) World scientists' warning to humanity: A second notice. *Biosci* 67: 1026-1028.