

# Public submission

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3<sup>rd</sup> October 2024

Independent Planning Commission  
Suite 15.02, 135 King Street  
SYDNEY NSW 2000<sup>1</sup>

Dear Respected Members of the Independent Planning Commission,

Because of what we read below in the extract from this scientific paper, there is an urgent need to end native logging, to enable increased oxygen levels being available over the land masses.

In a peer reviewed scientific paper, Bulletin Math Biol (2015) 77:2325–2353

DOI 10.1007/s11538-015-0126-0

ORIGINAL ARTICLE Mathematical Modelling of Plankton–Oxygen

Dynamics Under the Climate Change

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We read in the Papers Abstract:

**Abstract:** “Ocean dynamics is known to have a strong effect on the global climate change and on the composition of the atmosphere. In particular, it is estimated that about 70 % of the atmospheric oxygen is produced in the oceans due to the photosynthetic activity of phytoplankton. However, the rate of oxygen production depends on water temperature and hence can be affected by the global warming. In this paper, we address this issue theoretically by considering a model of a coupled plankton–oxygen dynamics where the rate of oxygen production slowly changes with time to account for the ocean warming. We show that a sustainable oxygen production is only possible in an intermediate range of the production rate. If, in the course of time, the oxygen production rate becomes too low or too high, the system’s dynamics changes abruptly, resulting in the oxygen depletion and plankton extinction. Our results indicate that the depletion of atmospheric oxygen on global scale (which, if

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<sup>1</sup> <https://www.ipcn.nsw.gov.au/cases/2024/08/independent-forestry-panel>

happens, obviously can kill most of life on Earth) is another possible catastrophic consequence of the global warming, a global ecological disaster that has been overlooked”<sup>2</sup>.

In his recent TedX talk, Climate Scientist Johan Rockstrom tells us that “global warming is progressing much faster than originally calculated”<sup>3</sup>. Further, Johan Rockstrom, in that same talk says:

*“Ocean Temperature Anomalies What you see here is from 1980 until today, how gradually the ocean surface just gets warmer and warmer. It’s actually warming all the way down to 2,000 meters depth. This is well understood in science. It’s a deep concern. It’s well represented in the climate models. We understand it. Then suddenly in 2023, something happens. Temperatures just go completely off the charts”* (my italics).

There is an urgent need, therefore, to end native logging, to have increased oxygen levels available over the land masses, in the event of catastrophic failure of atmospheric oxygen produced in the oceans due to the photosynthetic activity of phytoplankton.

Notwithstanding the gravity of this situation, we do, however, have to exercise wisdom in how we go about sharing the information in the *Mathematical Modelling of Plankton* paper as this information could become both a youth suicide and a civil disobedience multiplier.

Australian Scientist, Professor Will Steffen et al. from the Australian National University (ANU) and Inaugural Director of the ANU Climate Change Institute, introduced The Planetary Boundary (PB) Concept in 2009. The aim of the Planetary Boundaries concept is to define the environmental limits within which humanity can safely operate. If, on the other hand we live beyond the

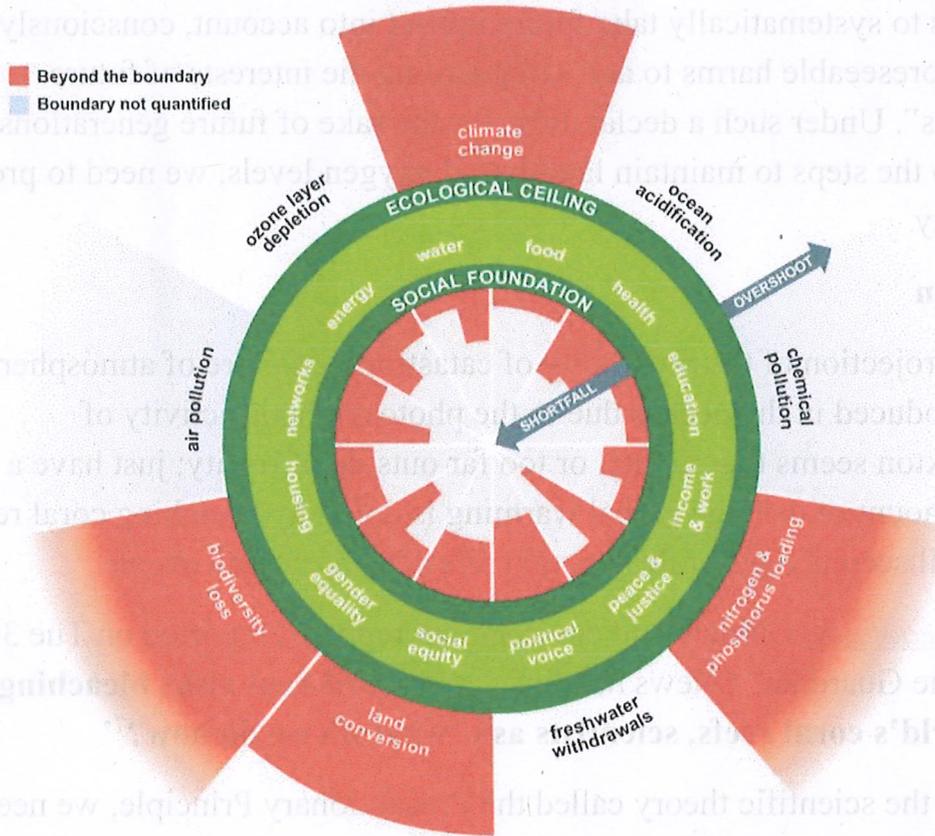
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<sup>2</sup> [https://www.researchgate.net/profile/Sergei-Petrovskii/publication/284728921\\_Mathematical\\_Modelling\\_of\\_Plankton-Oxygen\\_Dynamics\\_Under\\_the\\_Climate\\_Change/links/572cb1c708ae3736095a3259/Mathematical-Modelling-of-Plankton-Oxygen-Dynamics-Under-the-Climate-Change.pdf](https://www.researchgate.net/profile/Sergei-Petrovskii/publication/284728921_Mathematical_Modelling_of_Plankton-Oxygen_Dynamics_Under_the_Climate_Change/links/572cb1c708ae3736095a3259/Mathematical-Modelling-of-Plankton-Oxygen-Dynamics-Under-the-Climate-Change.pdf)

<sup>3</sup> [The Tipping Points of Climate Change and Where We Stand: Johan Rockström, TED, Aug 2024. https://www.youtube.com/watch?v=VI6VhCAeEfQ&t=7s](https://www.youtube.com/watch?v=VI6VhCAeEfQ&t=7s)

Planetary Boundaries, the very survival of humanity as a species comes into question<sup>4</sup>.

**Diagram 1 Current overshoot of planetary boundaries (Raworth, 2017, p.51).**<sup>5</sup>



We can see from this diagram above, that biodiversity loss could very well threaten humanities existence as a species if we continue to destroy native forests. Many are also unaware that due to excess fertilizer run-off into oceans, there are already a number of massive dead zones in the world's oceans some of magnitudes of 20,000 square kilometres where no life exists, with the biggest

<sup>4</sup> <https://science.sciencemag.org/content/347/6223/1259855>

Steffen, W., Richardson, K., Rockstrom, J., Cornell, S. E., Fetzer, I., Bennett, E. M., ... & Sorlin, S. (2015). Planetary boundaries: Guiding human development on a changing planet. *Science*, 347(6223), 736-736. <https://doi.org/10.1126/science.1259855>

<sup>5</sup> Raworth, K., 2017. *Doughnut Economics: Seven ways to Think Like a 21<sup>st</sup>-Century Economist*. rh Business Books.

one being 91,00 square kilometres<sup>6</sup>. So, our window of opportunity to keep producing atmospheric oxygen from the oceans is already somewhat reduced.

The recent (September 2024) United Nations Summit of the Future agreed on a “Declaration on Future Generations. Leaders agreed [on] the first ever Declaration on Future Generations, recognizing our obligations and putting in place steps to systematically take future impact into account, consciously avoiding foreseeable harms to and safeguarding the interests of future generations”. Under such a declaration, for the sake of future generations, in addition to the steps to maintain land-based oxygen levels, we need to protect biodiversity.

### **Conclusion**

If such a projection of the possibility of catastrophic failure of atmospheric oxygen produced in the oceans due to the photosynthetic activity of phytoplankton seems too remote, or too far outside of reality; just have a look at the vast amount of damage global warming is doing by bleaching coral reefs. We have all seen images of dead coral reefs after bleaching events.

*Graham Readfearn* Climate and environment reporter, reported on Tue 30 Jul 2024 in The Guardian, a News heading: **As record heat risks bleaching 73% of the world’s coral reefs, scientists ask ‘what do we do now?’<sup>7</sup>**

Following the scientific theory called the Precautionary Principle, we need to end native logging, in order to have increased oxygen levels available over the land masses, in the event of catastrophic failure of atmospheric oxygen produced in the oceans due to the photosynthetic activity of phytoplankton, and we need to end native logging sooner rather than later.

To achieve this, we also need to be able to offer job retraining to forest workers.

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<sup>6</sup> <https://education.nationalgeographic.org/resource/dead-zone/> also see [https://doi.org/10.1641/0006-3568\(2005\)055\[0552:DZSIWO\]2.0.CO;2](https://doi.org/10.1641/0006-3568(2005)055[0552:DZSIWO]2.0.CO;2)

<sup>7</sup> <https://www.theguardian.com/environment/article/2024/jul/30/as-record-heat-risks-bleaching-73-of-the-worlds-coral-reefs-scientists-ask-what-do-we-do-now>