



## Time to recognize the geoscience disclosure as the tool to face climate change impacts: can we care about something that we do not know?

**Alan Maria Mancini<sup>1</sup>**, Alessandra Negri<sup>2</sup>, Marco Tonon<sup>1</sup>, and Francesca Lozar<sup>1</sup>

<sup>1</sup>University of Turin, Earth Science department, Turin, Italy (alanmaria.mancini@unito.it)

<sup>2</sup>Marche Polytechnic University, Department of Life and Environmental Science, Ancona, Italy (a.negri@univpm.it)

Human-induced climate alteration is impacting ecosystem functioning and services. Ocean acidification and deoxygenation, mass extinction, rising sea level and extreme meteorological events are related to the rise of atmospheric CO<sub>2</sub> and the consequent increase in temperature. The rate of environmental change is extremely fast, hampering the biota to adapt to the ongoing new conditions, therefore increasing the potential impact on the ecosystem. The geological record is a powerful tool to investigate past trends in order to better understand the current climate change. The ability of geosciences to reconstruct the whole “evolutionary history” of past extreme events, from their onset to their conclusion and the consequent recovery of the ecosystem is something that must be exploited to increase awareness. As an example, the environmental reconstruction of the main events related to abrupt (natural) emissions of CO<sub>2</sub> during Earth history underlines that the current climate change is outstanding in terms of rate of environmental change and impact on ecosystems. Understanding and disclosing these findings is crucial in order to increase the population’s awareness of the current ecosystem threat and therefore, contributing to mitigate the impact. This because, trivially, “people cannot care about something that they do not know”. Anthropogenic pressure mostly derives from governance regime; this can be changed if population consciousness boosts governance actions for climate change mitigation. In this perspective, the geoscience, with its potential to explore and constrain past environmental changes, necessitate to be more considered in the educational career both at school and in the mass media worldwide. Clear examples of how, and how much, the awareness of the population regarding the current climate change plays a fundamental role in stimulating sustainable governance actions derive from the “Youth for climate” movement. Here we propose easily performable, inclusive and proactive educational tools for mitigation strategies to face possible future impacts deriving from the climate evolution, as pointed out in the United Nations 2030 Agenda (Sustainable Development Goal 13: Climate Action). We mainly focus our activities on marine sediments, in order to draw the attention to this widely unknown environment and to show how climate change affects the oceans; this also supports the UN Ocean Decade. In order to assess the knowledge and perception on climate change and ocean life evolution, we will present some data collected among the secondary school students reached by a public engagement project devoted to the dissemination of these subjects.

