

Editorial

Browning Water

Environment: The increasing browning of rivers and seas creates difficulties for the potable water supply. It leads to the emission of CO₂ and can endanger the animal species.

The rivers and seas become browner in course of global warming while more organic materials and microorganism grow in them. This phenomenon was first observed in colder climate zones of earth by researcher which has been intensified by the global warming than in the moderate climate zone. When the water becomes browner, then the living animals can die apart from that the drinking water becomes unpalatable.

The phenomenon of browning of water is in the meantime so widely spread that in 2022 it was taken up by the council report of the working group II of World Climate. It can be associated with climate change as the unequivocal cause. In the report, a study of the professor for sea biochemistry Gesa Weyhen Meyer in 2016 at the University of Uppsala; it was prominently highlighted.

The Swedish German Earth scientist belongs to the first researchers group who brought to light this phenomenon associated with the climate change. She knows the regions which warmer but does not get drier at the same time belong to the risk zones.

With advancing climate change, a further browning shall be taken into account, warns the scientist. Whether and how strong fresh water is coloured depends on land use, air temperature and rainfall. Coniferous forests and before all marshy lands promote the process – clarifies Mark

Gessner, Leibniz Institute for Water Ecology and Freshwater fishing and T. University of Berlin.

With the browning of water there occur along with it further problems. It caused increased emission of CO₂. That lies with the organic materials which cause the browning. Millions of microorganisms in water transform the organic materials effectively to CO₂ which is driven out from the water. So the water can be a source of CO₂ emission from a mere CO₂ sink. Strong precipitation can strengthen the phenomenon while more nourishment for the small living system in the form of organic materials is flushed out.

Also forest and agriculture farming contribute to the advancement of browning when this is not managed sustainably.

The re-naturalization of rivers and their



A look into the sea laboratory for water ecology and inland fishing (IGB) in an experimental cylinder with clear water back left one with brown coloured water.



Water investigation shows the browning of river and seas. The investigations were conducted in South Sweden in the periphery of 35 km. They contain varying concentrations of organic materials and iron.

reconnection with greening could not only stop increasing browning but also make space for various animals and plants. Functioning meadows filter the surface water and hold this in the agriculture. Therefore they prevent drought and

offers space for a preventive protection against high tide and floods, something towards extreme rain incidents.

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