

Corrected: Publisher Correction

TRANSPORTATION

Diesel boom, emissions bust

Atmos. Environ. **198**, 122–132 (2019)



Credit: Vincenzo Lombardo/Photographer's Choice RF/Getty

Transport is a significant contributor to global GHG emissions, and following the Kyoto Protocols in 1997 many European governments encouraged fuel-efficient diesel car sales as an emissions reduction strategy. Whether this was efficacious and led to appreciable climate benefits remains an open question.

Eckard Helmers of the University of Applied Sciences Trier, Germany, and colleagues report real-world CO₂ emissions from passenger cars in Europe between 1995 and 2015 and evaluate the potential emissions reduction benefits during this period of diesel growth. From 1995 to 2001, diesel cars emitted less CO₂ per kilometre than petrol cars, but the additional black carbon emissions resulted in higher climate-relevant emissions overall. From 2001 to 2015, diesel and petrol cars were indistinguishable with

respect to emissions. An evaluation of vehicle lifetime emissions under different scenarios suggests that the historic diesel boom was ineffective at reducing total emissions relative to a scenario in which the ratio of diesel to petrol cars remained constant. Larger emissions reductions would have been realized by promoting alternative CO₂-efficient fuels and reducing the overall size of the passenger vehicle fleet. *AY*

<https://doi.org/10.1038/s41558-018-0363-y>

REEF FISHERIES

Bleaching impacts

Nat. Ecol. Evol. <http://doi.org/cw38> (2018)

Coral reefs are a critical source of food and income for millions of people. More than half of the protein consumed in coastal tropical areas comes from reef fisheries, with fisheries dominated by small-scale and artisanal fishers. The impact of climate change, in particular bleaching events, on the reef ecosystems and the cascading effects on fisheries is not known over the longer term.

To understand these issues, James Robinson, of Lancaster University, UK, and collaborators analysed 44,945 daily fisheries landing records (1994–2016; 41 landing sites) from trap fishers and 960 underwater surveys of fish and habitats within the Seychelles fishing grounds (1994–2014; 12 sites).

Total catch and mean catch rates were found to be consistent or increased after bleaching events, which the authors attribute to changes in fish assemblages in line with observed increases in herbivorous target



Credit: James Robinson

species in the underwater surveys. This is contrary to expectations of decline, and suggests that projections need to consider increased productivity of low trophic levels, such as the browsing herbivores. *BW*

<https://doi.org/10.1038/s41558-018-0364-x>

PUBLIC OPINION

Beliefs about minority groups

Proc. Natl Acad. Sci. USA <http://doi.org/cw3w> (2018)

Racial and ethnic minorities in the United States are more likely to suffer the adverse consequences of climate change, and tend to have high awareness of these risks, yet are underrepresented in environmental decision-making. Because perceived norms influence pro-environmental behaviour, it may be that beliefs about environmental attitudes in minority groups influence their public participation around these issues.

Adam Pearson from Pomona College and co-authors asked US adults to indicate their level of concern for the environment generally, or climate change specifically, and estimate the level of concern of each of 12 US demographic groups. All participants, regardless of their demographic group, underestimated the level of concern of minority (black, Latino and Asian) and lower-income groups relative to each of these groups' reported levels of concern, and misperceived these groups as less concerned than whites and wealthier US citizens. Similar results were obtained for environmental and climate change problem framing. All respondents also associated the term 'environmentalist' with being white and well-educated. Shared cultural stereotypes about the environmental attitudes of vulnerable populations may impede efforts to address environmental inequalities and limit the scope of outreach initiatives. *JR*

<https://doi.org/10.1038/s41558-018-0365-9>

Alastair Brown, Jenn Richler, Bronwyn Wake and Adam Yeeles

ECOLOGICAL IMPACTS

Amazonian drying

Glob. Change Biol. <http://doi.org/gfhwgq> (2018)

Climate change-driven impacts on ecosystems are now very widely reported. Surprisingly, lowland tropical forests remain relatively poorly studied in this regard, despite their global significance for biodiversity.

Adriane Esquivel-Muelbert, working at the University of Leeds, and co-authors investigate whether the vegetation and functional trait compositions of intact lowland Amazonian forests have changed in response to climate drivers over a 30-year period. Three traits (maximum tree size, biogeographic water-deficit affiliation and wood density) were measured from 106 inventory plots.

They find a shift within tree communities to large-statured species — thought to be driven by increases in atmospheric CO₂. A gradual shift towards more dry-affiliated genera was also detected but because long lived tropical trees respond slowly, these changes are yet to impact whole-community composition. Despite this lagged climate response, patterns consistent with climate drivers were evident. In particular, newly recruited trees tended to be dry-affiliated genera, whereas tree deaths in plots that had experienced most drying tended to affect wet-affiliated genera. *AB*

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