
Newsletter del CIRSEC, Centro Interdipartimentale per lo
Studio degli Effetti del Cambiamento Climatico dell'Università di Pisa

Alcuni comportamenti semplici che possiamo compiere nella nostra routine potrebbero “fare la grande differenza”. Per aiutarci l'ONU ha realizzato una guida, *The Lazy Person's Guide to Saving the World* <https://www.un.org/sustainabledevelopment/takeaction/>, che contiene una serie di buone pratiche adatte anche ai più pigri. La guida è divisa per ambiti: divano, casa, quartiere e lavoro e contempla attività che spaziano da quelle che si possono compiere stando comodamente seduti in poltrona fino a quelle che necessitano di una presa di posizione forte, ad esempio per garantire diritti, uguaglianza e pari opportunità nel lavoro.

D. Zanotelli, N. Vendrame, Á. López, G. Caruso (2018) - Carbon sequestration in orchards and vineyards. *Italus Hortus* 25 (3): 13-28 – I sistemi arborei possono agire da accumulatori netti di CO₂ grazie alla loro capacità di stoccare carbonio organico nelle strutture permanenti e nel suolo. In questo articolo, presentato all'“*International Workshop on Carbon Sequestration in Horticultural Crops*”, Pisa, 30.10 2018, vengono esaminati tre sistemi arborei da frutto (melo, vite e olivo). La nota è scaricabile qui: <http://cirsec.unipi.it/pubblicazioni/>

The European State of the Climate 2018, compiled by the Copernicus Climate Change Service (C3S) <https://climate.copernicus.eu/ESOTC> - 2018 was one of the three warmest years on record for Europe. It began with a relatively cold period across most of the region. Throughout the rest of the year, Europe experienced sustained warm and dry conditions, while the south, in particular areas along the Mediterranean coast, saw a long period of repeated heavy rainfall events, making spring and summer in those regions amongst the wettest on record.

W.F. Lamb et al. - Learning about urban climate solutions from case studies. *Nature Climate Change* 9, 279-287 (2019). Climate mitigation research puts increasing emphasis on cities, but much more could be learned from urban case studies. The overall size, geographic scope and topic content of cases remains unknown, resulting in few attempts to synthesize the bottom-up evidence. Here, we use scientometric and machine-learning methods to produce a comprehensive map of the literature.

D.A. Smale et al. - Marine heatwaves threaten global biodiversity and the provision of ecosystem services. *Nature Climate Change* 9, 306-312 (2019). The global ocean has warmed substantially over the past century, with far-reaching implications for marine ecosystems. Concurrent with long-term persistent warming, discrete periods of extreme regional ocean warming (marine heatwaves, MHWs) have increased in frequency.

Cambiamento climatico e scioppo di acero canadese. “*Maple is a social crop*”, but warming temperatures and loss of snowpack linked to climate change may significantly shrink the range where it's possible to make maple syrup. To release the sap, maple producers make a small hole in the tree and insert a tap that allows it to spill out. But there's only a small window of time when conditions are right. But because of climate change, some years those key temperatures are more elusive.

<file:///C:/Users/pc/Desktop/Syrup%20Is%20as%20Canadian%20as%20a%20Maple%20Leaf.%20That%20Could%20Change%20With%20the%20Climate.%20-%20The%20New%20York%20Times.html>

<https://wmo.maps.arcgis.com/apps/Cascade/index.html?appid=855267a7dd394825aa8e9025e024f163>

- L'ISPRA, in qualità di focal point nazionale per la trasmissione di dati e prodotti climatici

all'Organizzazione Meteorologica Mondiale, ha prodotto e trasmesso le informazioni a livello nazionale, che contribuiscono a comporre il quadro climatico globale. Tra queste, la stima aggiornata dell'anomalia della temperatura media in Italia, che pone il 2018 al primo posto tra gli anni più caldi di tutta la serie storica .

- N.S. Diffenbaugh, M. Burke, 2019. Global warming has increased global economic inequality - <https://www.pnas.org/content/early/2019/04/16/1816020116>. To investigate whether global warming has affected the recent evolution of inequality, we combine counterfactual historical temperature trajectories from a suite of global climate models with extensively replicated empirical evidence of the relationship between historical temperature fluctuations and economic growth. Global warming has very likely exacerbated global economic inequality, including ~25% increase in population-weighted between-country inequality over the past half century
- A. Sezen-Barrie et al., 2019. <https://doi.org/10.1080/13504622.2019.1610158> - It's a gassy world: starting with students' wondering questions to inform climate change education. Environmental Education Research -. Despite increasing attempts to integrate climate change into school curricula, teachers have challenges in preparing and implementing climate change lessons.
- Y. Ma et al. - Beneficial microbes alleviate climatic stresses in plants. Front. Plant Sci., 16 May 2019 - <https://doi.org/10.3389/fpls.2019.00595> - Global climate change accelerates the concurrence of a variety of abiotic and biotic stresses, thus affecting agricultural productivity and bioremediation efficiency, even forest ecosystems. In this scenario, plant growth promoting microorganisms are receiving increasing attention as candidates to develop an effective, eco-friendly, and sustainable alternative to conventional agricultural and remediation methods employed to deal with these climate change-induced stresses.
- Marvel K. et al., 2019 - <https://pubs.giss.nasa.gov/abs/ma04410o.html> Twentieth-century hydroclimate changes consistent with human influence. *Nature*, 569, no. 7754, 59-65, doi:10.1038/s41586-019-1149-8 - Climate models predict that a human "fingerprint" – a global pattern of regional drying and wetting characteristic of the climate response to greenhouse gases – should be visible early in the 1900s and increase over time as emissions increased. Using observational data such as precipitation and historical data reconstructed from tree rings, the researchers found that the real-world data began to align with the fingerprint within the first half of the 20th century.
- Azzurro E. et al. - <https://onlinelibrary.wiley.com/doi/full/10.1111/gcb.14670>: Climate change, biological invasions, and the shifting distribution of Mediterranean fishes: A large-scale survey based on local ecological knowledge. *Glob Change Biol.* 2019;00:1–14. Uno studio al quale ha preso parte anche UniPI, che raccoglie le testimonianze di oltre 500 pescatori provenienti da 9 Paesi Mediterranei, che raccontano come il nostro mare stia cambiando sotto la spinta del riscaldamento globale, che provoca una redistribuzione delle specie viventi in tutto il pianeta.

Comunicazione di servizio

Pubblicazioni dei docenti afferenti a CIRSEC:

è opportuno che gli autori dei contributi scientifici relativi ai temi di riferimento del Centro riportino, oltre all'affiliazione al proprio Dipartimento, anche quello del Centro stesso, allo scopo di favorirne la conoscenza nella comunità scientifica.

La formula consigliata è:

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