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REACH Update

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First results of EU chemical industry REACH action plan reveal progress on updating safety data

2020-03-31

Cefic published the first progress report on the implementation of its voluntary Action Plan for update and improvement of chemical safety data in REACH registrations dossiers launched in June 2019. As part of this Action Plan, Cefic is honouring its commitment to transparent reporting on companies' progress in updating dossiers, by publishing aggregated data at the end of Q1 of each year.

The 2019 results are as follows:

- 165 companies joined the Action Plan in 2019.
- These companies have reviewed and updated, where needed, chemical safety data in 1758 REACH registration dossiers between June and December 2019.

Most of the work in 2019 was dedicated to internal planning, prioritising dossiers for re-evaluation or discussing a joint update plan with consortia (if a dossier has been submitted jointly with other manufacturers).

From the 165 companies that joined the Action Plan in 2019, 64% are Cefic corporate members and the remaining 36% companies are members of national chemical industry federations.

Cefic Executive Director Product Stewardship Sylvie Lemoine:

"These initial results are encouraging but our work continues. The Action Plan's priority this year will be on attracting more companies to join the initiative, starting with Cefic members who have not joined yet. We will also continue working with national chemical industry associations whose members are yet to join the Action Plan, as well as associations representing downstream users of chemicals, because many of their members also hold REACH registration dossiers. We will continue our joint work with the European Chemicals Agency (ECHA) to produce more guidance for the Action Plan participants to help them revise data in line with the most recent ECHA requirements".

Background information

On 26 June 2019, Cefic launched an unprecedented multi-annual action aimed at proactively and systematically reviewing and improving, if needed, the data previously submitted in REACH registration dossiers. The Cefic multi-annual Action Plan provides a framework for REACH registrants

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to evaluate the safety data in a stepwise manner. The aim of this initiative is to achieve a significant contribution to the quality of REACH registration dossiers, in cooperation with ECHA.

Companies participants of the Action Plan commit to annual reporting about their progress. The data that Cefic collects includes the number of dossiers that have been re-evaluated each year.

Cefic, 31 March 2020

<https://cefic.org/media-corner/newsroom/first-results-of-eu-chemical-industry-reach-action-plan-reveal-progress-on-updating-safety-data/>

Female fertility data lacking for nanomaterials

2020-04-06

A study commissioned by the EU Observatory for Nanomaterials has found a lack of data on female fertility. Studies on reproductive performance were also scarce. As such, the study calls for more coordinated tests and follow up of outcomes when concerns are identified.

Helsinki, 6 April 2020 – This lack of data results in uncertainties on the potential toxic effects of nanomaterials over multiple generations.

The available information identified a concern for developmental toxicity for the materials that were tested and indicates that nanomaterials may be able to cross the placental barrier and reach developing fetuses, as well as affect critical organ systems.

The report also identifies a lack of studies comparing bulk and nanoforms of the same substance, resulting in uncertainties in possible differences in toxicity.

Reproductive and developmental toxic effects can occur after repeatedly being exposed to a substance. There is concern that nanomaterials may cause these effects due to their ability to pass cell membranes and biological barriers in our bodies.

The study makes several recommendations for testing such as following OECD test guideline principles as much as possible, even when full study guidelines cannot be applied.

Screening was carried out for 2 152 publications, out of which 111 relevant studies covering 19 nanomaterials and using mainly in vivo testing were reviewed in more detail.

The report also identifies a lack of studies comparing bulk and nanoforms of the same substance, resulting in uncertainties in possible differences in toxicity.

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Nano titanium dioxide and nano silver were the most frequently tested materials and were used in 48 % of the reviewed studies. Both have widespread uses, for example, nano titanium dioxide is used in sunscreens to absorb UV light and nano silver is used in many textiles such as pillowcases and plush toys for its antimicrobial properties.

Nano-sized particles of zinc oxide, silicon oxide and carbon-based nanomaterials contributed to 34 % of the studies, while the remaining 18 % focused on 13 different nanomaterials.

The study was carried out for the EUON by DHI A/S and the Danish National Research Centre for the Working Environment.

Background

EUON aims to increase the transparency of information available to the public on the safety and markets of nanomaterials in the EU.

A key aim of the observatory is to create a one-stop shop for information, where EU citizens and stakeholders including NGOs, industry, and regulators can find accessible and relevant safety information on nanomaterials on the EU market.

The EUON uses a part of its funding to carry out studies on different aspects related to the safety and uses of nanomaterials on the EU market.

Further information

- A critical review of studies on the reproductive and developmental toxicity of nanomaterials [PDF] [EN]
- Previous EUON studies

EUON, 6 April 2020

https://euon.echa.europa.eu/view-article/-/journal_content/title/female-fertility-data-lacking-for-nanomaterials?utm_source=echa-weekly&utm_medium=email&utm_campaign=weekly&utm_content=20200408

Completeness check of chemical safety reports postponed until October 2020

2020-04-08

Corrigendum 8 April 2020: The headline and content of the news has been amended to reflect that the completeness checks of chemical safety reports will now only start in October 2020 to help companies facing difficulties due to the COVID-19 pandemic. The remaining changes to the

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completeness check will take effect on submissions as of 1 May 2020, as previously communicated.

The completeness check will be extended to chemical safety reports, to ensure they contain all the elements required under REACH. More explicit checks on key hazard endpoints will also be included in the revision.

Helsinki, 11 December 2019 – ECHA plans to extend the completeness check to the chemical safety report. So far, the chemical safety report has remained outside the scope of the completeness check, which has focused on the other elements of the registration dossier.

With experience gained in performing manual completeness checks on certain dossier elements, ECHA is now ready to tackle the content of the chemical safety reports. With this improvement, ECHA can better fulfil its obligation to ensure that all the required elements are included in the registration.

The decision to cover the chemical safety report in the completeness check also supports ECHA's regulatory strategy, which foresees requests under evaluation to mainly be used for obtaining hazard information. Extending the completeness check to the chemical safety report is expected to enable better prioritisation of substances for regulatory action by authorities, enhance the dissemination of use information and improve the starting point for appropriate supply chain communication.

In parallel, ECHA will also strengthen computerised completeness checks on use information. In particular, cases where the service life description of an article is expected but has been left out of the registration dossier will be detected. Improvements are also foreseen for the endpoints related to mutagenicity, reproductive toxicity and degradation. More information on these changes is available in the annex to this news release.

The revised completeness check will be launched with the release of a new version of IUCLID in April 2020 and will apply to both new registrations and updates of existing ones. Registrants should, therefore, prepare for the changes as registrations submitted before may no longer pass the revised completeness check rules. The completeness checks of chemical safety reports will now only start in October 2020 to help companies facing difficulties due to the COVID-19 pandemic.

ECHA aims to minimise unwanted impact for registrants and will provide support in addressing the areas of the completeness check revision and preparing to successfully submit their registrations. A webinar explaining

ECHA plans to extend the completeness check to the chemical safety report.

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the changes in the completeness check will be organised on 29 January 2020.

The IUCLID Validation assistant will be made available with the April IUCLID release and can be used to detect all computer-based incompleteness issues in the dossiers before submitting them to ECHA. Since chemical safety reports are submitted as text documents attached to the IUCLID dossier, the information cannot be verified by the Validation assistant.

ECHA is also making the Chesar software available, which guides users in carrying out a complete chemical safety assessment. In addition, written support material will be available on ECHA's website. For case-specific advice, ECHA's contact form should be used.

Background

Under Article 20(2) of REACH, ECHA is obligated to check that all of the required elements are provided in a REACH registration dossier. Before registration numbers can be issued, each dossier has to pass a completeness check.

ECHA, 8 April 2020

<https://echa.europa.eu/-/completeness-check-of-chemical-safety-reports-postponed-until-october-2020>

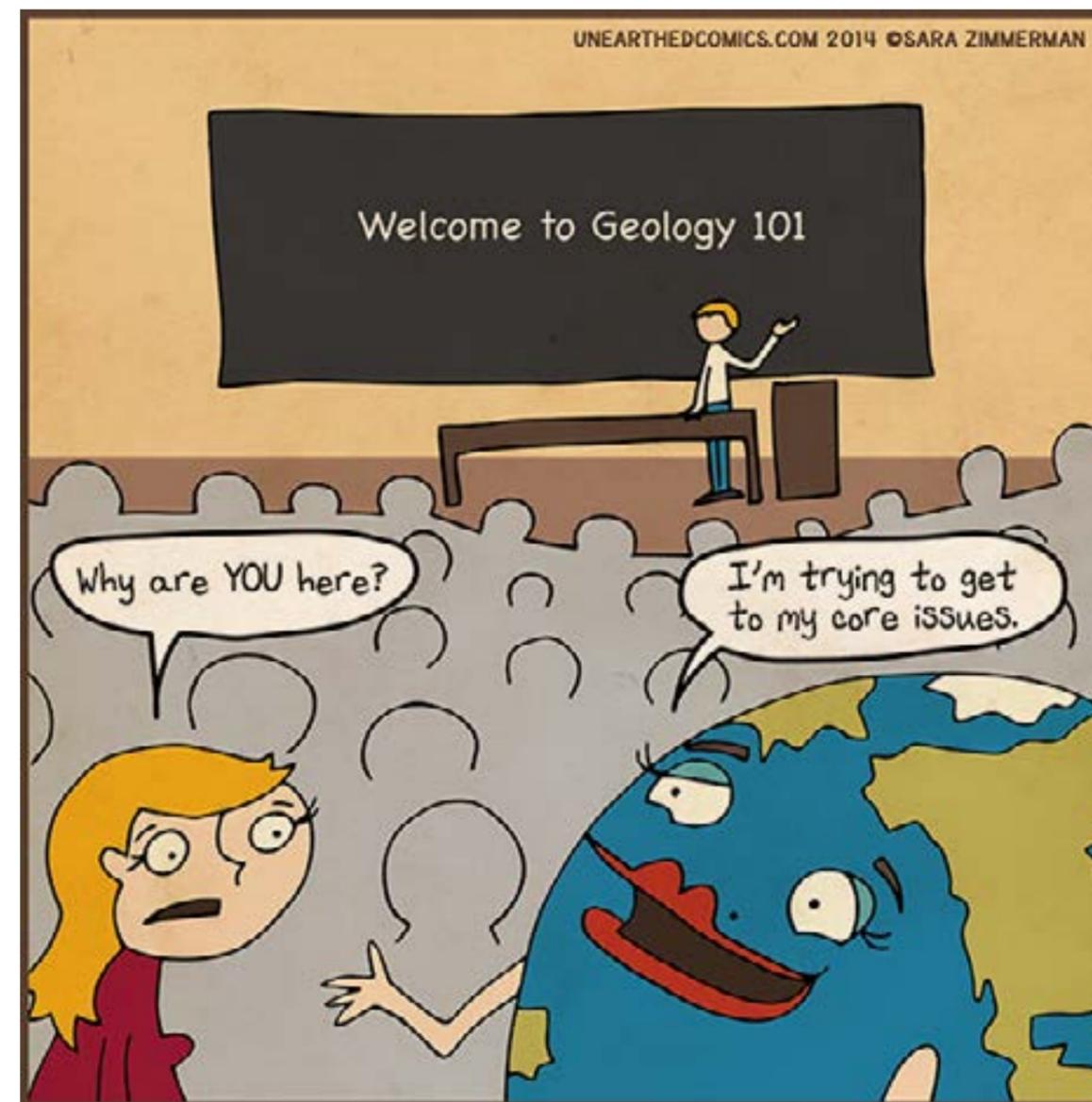
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Geology 101

2020-03-24



<http://unearthedcomics.com/comics/geology-101/>

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Hazard Alert

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Toluene

2020-03-24

Toluene is a clear colourless liquid with a distinctive odour—also known as an aromatic hydrocarbon. It occurs naturally in crude oil and in the tolu tree, and can be produced in the process of making gasoline. Toluene is insoluble in water and its vapours are heavier than air. It is a methylbenzene and is the simplest member of the class toluenes. [1,2]

USES [1,2]

Toluene is used in many different applications, including aviation, as a solvent and as an industrial feedstock. For airplanes and cars, toluene is used as an octane booster in fuel. It is also used as a solvent in paints, nail polish, adhesives, permanent markers and certain types of glue. It is also sometimes used in leather and printing processes and as a recreational inhalant.

ROUTES OF EXPOSURE [3]

- The most common route of exposure for toluene in the ambient air is in automobile emissions.
- Common household products, such as paints, nail polish and adhesives are the highest source of toluene in indoor air.
- Cigarette smoke is also a source of toluene.
- Levels of toluene are highest in indoor areas, followed by urban areas and then rural.
- People can be exposed to formaldehyde by skin contact, inhalation, by eye contact, or by ingestion.

HEALTH EFFECTS

Toluene poisoning can affect a range of systems, including the nervous, respiratory and cardiovascular systems.

Acute Effects [3]

Severity of symptoms depends on the level and type of exposure.

- The Central Nervous System (CNS) is the primary target organ for toluene exposure.
- Other acute effects include: narcosis, CNS dysfunction, fatigue, sleepiness, headache and nausea.

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- Inhalation of toluene has a low chemical toxicity.
- Ingestion of toluene can lead to a swollen liver, depression of the CNS, congestion and hemorrhage of the lungs and necrosis of myocardial fibres.
- Acute exposure to it may cause cardiac arrhythmia.

Chronic Effects [3]

Toluene is toxic to multiple body systems. Long-term exposure to the liquid can cause neurological damage, including CNS depression, ataxia, cerebral atrophy, nystagmus and neurobehavioural effects. It can also result in respiratory difficulties, such as irritation of the respiratory tract, a sore throat, headaches, and inflammation and degeneration of the nasal and respiratory epithelium. Pregnant women who are exposed to toluene could see developmental delays, CNS dysfunction, minor limb abnormalities and attention deficits in their children. Additionally, children who were born to toluene abusers have been known to show temporary renal tubular acidosis.

SAFETY

First Aid Measures [4]

- Ingestion: If ingested, rinse mouth and DO NOT induce vomiting. Immediately call a doctor or a poison centre. In victim vomits while lying on their back, put them in a recovery position.
- Skin contact: In case of skin or hair contact, shower/wash immediately for at least 15 minutes with water. Remove all contaminated clothing and shoes while washing. Wash contaminated clothing before re-wear. Consult doctor.
- Eye contact: Flush eyes carefully with water for 15 minutes. Do not forget to wash underneath the eyelids. Call a doctor immediately.
- Inhaled: Take contaminated person to nearest fresh air source and monitor their breathing. If they are not breathing, perform CPR. If victim is struggling to breathe, they can be given oxygen.

Exposure Controls/Personal Protection [4]

- Engineering controls: Safety showers and emergency eyewash fountains should be accessible in the immediate area of the potential exposure. Ensure there is adequate ventilation. Use toluene with local exhaust ventilation. Whenever possible, material should be handled in a laboratory.

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- Personal protection: Safety glasses, solvent-protective apron, safety glasses with side shields and solvent-protective gloves.

REGULATION [5]

United States:

The Occupational Safety and Health Administration (OSHA) has set an 8-hour time-weighted average (TWA) concentration for toluene of 200ppm, with an acceptable ceiling concentration of 300ppm.

Australia [6]

Safe Work Australia: Safe Work Australia has set an 8-hour TWA concentration for toluene of 50ppm, and a short-term exposure limit—usually 15 minutes—of 150ppm.

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Curiosities

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1.3 billion people. A 21-day lockdown. Can India curb the coronavirus?

2020-03-31

MUMBAI, INDIA—Until last week, Shivaji Park was brimming with people almost every night. One of this city's largest public grounds, it was often packed with cricket teams, joggers, school children, and elderly walkers—along with an entire informal economy of street vendors.

All vanished after Prime Minister Narendra Modi announced the world's largest lockdown on 24 March, asking 1.3 billion Indians to stay home for 21 days to slow the spread of COVID-19.

The move was partly a response to apocalyptic projections. Fewer than 600 cases had been confirmed at the time of Modi's announcement, although that number is widely believed to be an undercount. But without control measures, 300 million to 500 million Indians could be infected by the end of July and 30 million to 50 million could have severe disease, according to one model. And the world's second most populous country has large numbers of poor living in crowded, unsanitary conditions and a weak public health infrastructure, with just 0.7 hospital beds per 1000 persons, compared with Italy's 3.4 and the United States's 2.9; India also has fewer than 50,000 ventilators.

"India is probably the first large developing country and democracy into which this pandemic will arrive," says Ramanan Laxminarayan, founder and director of the Center for Disease Dynamics, Economics & Policy. "Many of the advantages of the Chinese [state] control and of having the health systems of Europe or the U.S. are not available to India," says Laxminarayan, who is advising the Indian government. "There will have to be a uniquely Indian response to COVID-19."

Modi's lockdown had social and economic impacts even sharper than lockdowns in richer countries. Millions of Indians who depend on each day's wages for their daily meal were thrown out of work. Migrant workers packed buses and trains home, potentially taking the virus into rural areas. And as transport options dried up, many families in New Delhi and other major cities simply began to walk to their distant villages, with little access to food. "We risk converting a health crisis into a socioeconomic crisis," says Ravi Duggal, a public health activist.

To prevent that, the Indian government announced a nearly \$23 billion economic package on 26 March to support the poor, providing rations of grains and pulses, free gas cooking cylinders to 83 million families, and

But without control measures, 300 million to 500 million Indians could be infected by the end of July and 30 million to 50 million could have severe disease, according to one model.

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cash transfers of \$6.65 a month to about 200 million women for the next 3 months. Many observers say the aid is too little—less than 1% of India's gross domestic product—and that more is needed in the coming months.

Other **South Asian countries**, too, are wrestling with difficult choices between disease control and the economy. Bangladesh, which has a total of 49 reported infections, has locked down the country until 4 April. Sri Lanka has more than 100 confirmed cases, but has shut down only eight of its 25 districts, citing the hardship to the poor. Pakistan, which has reported the region's largest number of cases, 1625, has also locked down only a few areas. In an address last week, Pakistani Prime Minister Imran Khan said with one-quarter of its population falling below the poverty line, the country could not afford to a complete shutdown.

Duggal and other advocates have criticized India's large-scale closure, saying area-specific lockdowns are more humane and practical in India. But most experts agree a national lockdown was needed. Shahid Jameel, an Indian virologist and head of the Wellcome Trust/DBT India Alliance, notes that measures taken in previous weeks—including halting international arrivals—had not slowed the rate of increase in cases. "The experience from other countries has shown that if you lock down early, if you catch yourself early on the curve, there's a better chance of limiting the spread," he says.

The government has announced several other measures to prepare India for the coming onslaught. A \$2 billion package was cleared last week to buy protective gear for health care workers, expand testing facilities, and train health care workers across the country. India is importing 10,000 ventilators from China and has ordered another 30,000 from domestic companies. Export of critical care medical equipment has been banned. Private hospitals are setting aside wards and authorities have granted emergency financial powers to the army to set up quarantine facilities.

"A lot needs to be done in the next 3 weeks to make sure that we have built up a system to test and treat patients, and to support families of patients," says Gagandeep Kang, a leading Indian infectious diseases researcher and the executive director of the Translational Health Science and Technology Institute. "We cannot waste the lockdown."

Ramping up testing is especially important, says former Indian health secretary K. Sujatha Rao. "Just lockdown without testing is only postponing the surge," she warns, because it will allow transmission to resume from undetected cases. India had done just over 38,000 COVID-19 tests by 31 March. It has recently allowed private labs to begin to test and approved

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12 types of rapid testing kits. Testing has also expanded from patients with an association with international travel to include patients with severe acute respiratory illness.

Some states are already calculating their needs in the worst-case scenarios and ordering extra equipment on their own, says Giridhar Babu, head of epidemiology at the Public Health Foundation of India. But some states have little data to show the extent of the problem, because surveillance and reporting are poor. "My worry is not about the states with high cases," Babu says. "My worry is about the silent areas."

Nevertheless, Babu is cautiously optimistic. He points to some promising indicators: The case fatality has been a relatively low 0.7% in the hard-hit state of Kerala, which has one of the best public health systems in the country and has done the most tests. There has been little need for ventilators yet, and few reports of a surge in fever cases in local clinics. India's relatively young population is also in its favor, because older people are at higher risk of severe disease and death. And the fact that the country has been able to implement the lockdown so far, despite problems, is important, Babu says. If other measures also succeed, he believes the peak case load may be far lower than expected. "We'll have to see the data for the next 2 weeks to understand the trajectory," he says.

Unlike China, the only other country with a comparable population size, India's democratic governance is not known for efficiency. But the country's success in polio eradication, which also required innovation, coordination at all levels of government, and community support, provides an example of how the entire system can sometimes rally to achieve a goal, Babu says. "Nobody thought India would pull off polio," he says.

Kang agrees the shutdown is timely and could slow the spread of the virus by several weeks, beginning what she calls a controlled burn. "But after that you still need to maintain distancing efforts and isolation," she says. That may be easier said than done for the more than half of Mumbaikars who live in slums. "How do you communicate that or enable that when you have five people living in a room?" Kang asks.

Education is critical, she says, in part to fight misinformation and stigma surrounding disease. In recent days, apartment complexes have tried to throw out doctors and airline crews, as well as Indians from the northeast region bordering China. Houses under quarantine are being marked with "Do not visit" posters. Such stigma hampers efforts to increase testing,

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Kang notes, and needs to be countered by incentives and awareness programs. “This lockdown is just the start,” she says.

sciencemag.org, 31 March 2020

<https://www.sciencemag.org>

Opinion: In a pandemic, we need green spaces more than ever

2020-03-31

As we settle into our new normal — two parents working from home with an active 2-year-old — my family is in a constant search for age-appropriate, socially distant entertainment. The few playgrounds near us are padlocked shut to keep kids off the slides and swings, and each day is a new hunt for opportunities to burn off energy. When my husband and daughter left the house today to get some fresh air, I asked them to bring home sticks for a crafting project. But even after a lengthy walk — at least by 2-year old standards — they came home empty handed. There simply weren’t any sticks to be found.

Our neighborhood stick shortage is connected to a much larger national problem. My beloved hometown of Somerville, Massachusetts, is one of the densest cities in New England with little green space compared with other cities in the state. The sparse tree canopies and extensive pavement in my city have little to do with neighborhood preference and everything to do with a long history of federally backed housing segregation.

In the 1930s, the Home Owner’s Loan Corporation created a series of “residential security maps” — redlining maps — designating black and brown communities as too risky for investment and ineligible for newly available federally backed mortgages. Even though redlining was outlawed by the Fair Housing Act in 1968, we are still prying loose its grip today.

Redlining locked in patterns of poverty and disinvestment. It denied mortgages to black families, cementing a racial gap in homeownership and wealth that has persisted into the 21st century. Formerly redlined neighborhoods still have relatively low homeownership rates, home values and credit scores. Our neighborhoods receive fewer services and investments: We get the bus depots and sewage treatment plants; others get the parks and street trees.

The sparse tree canopies and extensive pavement in my city have little to do with neighborhood preference and everything to do with a long history of federally backed housing segregation.

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As a result, my neighbors are more vulnerable to climate change. Lacking substantial tree cover and green space, new research shows that formerly redlined neighborhoods are about 2.6 °C (4.7 °F) hotter, on average, than comparable communities. Low-income communities of color are literal hot spots for the urban heat island effect — a deadly impact of climate change. Impermeable surfaces and a lack of green space also make our neighborhoods more vulnerable to flooding, and many of my neighbors may be unable to absorb the costs of these crises.

Today, our communities are likely to be disproportionately harmed by the health, economic and social costs of the COVID-19 pandemic. The pollution sources clustered in our neighborhoods mean poor air quality and soaring rates of asthma and other respiratory diseases, underlying health conditions that increase the severity of COVID-19. And sparse green space will make it harder for us to stay healthy and sane while limited in our activities.

But there is hope. Across the country, community members, activists and organizers are fighting back. They’re drawing attention to the legacies of redlining and pushing policymakers to address the harm caused by these racist policies. In five cities — Denver, Colorado; Elizabeth, New Jersey; Richmond, California; Metro Providence, Rhode Island; and, Richmond, Virginia — residents of formerly redlined neighborhoods are working to make their communities greener, safer and more equitable. Partnering with five local trusts, my organization, Groundwork USA, launched the Climate Safe Neighborhoods Partnership to use data-driven community organizing to make our formerly redlined communities safer from the impacts of extreme heat and flooding — and now coronavirus.

The Climate Safe Neighborhoods Partnership helps educate communities about the relationship between historical redlining practices and current climate risks. We then work with residents to prioritize changes they’d like to see in their communities and build the capacity of community leaders to intervene in municipal budgeting, planning and decision-making.

In New Jersey, for example, seasonal flooding leads to frequent overflows of wastewater from sewers directly into the Elizabeth River, exposing residents to untreated wastewater. Groundwork Elizabeth’s Climate Safe Task Force is working to bring community voices to the county’s plan to design the sewer system. In Colorado, Groundwork Denver is empowering residents to organize and advocate for green-space funding to combat the disproportionately high temperatures and flooding experienced in their neighborhoods. In Virginia, Groundwork RVA is doing door-to-

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door community education and capacity building so that impacted residents can advocate for green community infrastructure in the city's Master Planning process.

The projects are different, but the goals are the same: to empower disinvested neighborhoods to become more resilient to disasters of all kinds, and to make sure that people who live in these neighborhoods are driving that change.

For me, this is personal. I want my daughter to grow up with green space to run in and clean air to breathe, under the cooling shade of trees. I want her to be safe from the heat waves, floods and pandemics of the future. I want her to know that fighting for justice and the safety of others is just as important as fighting for herself.

I know that my neighborhood isn't barren of sticks by accident, and it isn't going to get better by accident. As writer James Baldwin once observed, "history is not the past. It is the present." Racist history makes low-income communities of color more vulnerable to crises — from climate change to COVID-19. Understanding that, we can we address the root causes of the problem and, most importantly, solve it.

ensia.com, 31 March 2020

<https://www.ensia.com>

Rootin', poopin' African elephants help keep soil fertile

2020-04-01

The iconic wildlife of the African savanna—zebras, gazelles, and other grazers—has for decades been under pressure from some unnatural rivals. Ranchers' cattle compete with local wildlife for food and water, and they starve much of the soil of nutrients. But a new study suggests wildlife and cattle can coexist—if elephants remain to help distribute nutrients into the soil, via their poop and their habit of knocking over trees.

Cattle ranching, which has been intensifying across the savanna, can lead to overgrazing, eroding and impoverishing the soil and helping shrubs invade the grasslands. The damaged ecosystem provides less food for wildlife and cows alike. A significant cause is that cattle herds don't "give back" to the land in the form of fertilizer. Instead, their dung and urine accumulate in small corrals where they spend their nights sequestered from lions and other predators. In general, when livestock numbers in the savanna increase, wildlife numbers go down.

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To investigate the ecological effects of ranching—and the role of elephants in the ecosystem—scientists launched a long-term experiment in 1995 at the Mpala Research Centre in central Kenya. There, herds of up to 120 cows graze in fenced areas, each about the size of four soccer fields. (The cattle still spend nights in corrals outside the experimental plots.) Some of these grazing areas exclude all wildlife. Others have tall electrified fences that let in gazelles, zebras, and similar-size grazers, but not elephants. And still others included cattle, medium-size wildlife, and elephants. "Creating those kinds of combinations [of cattle and wildlife] is really, really difficult to do," says Mark Ritchie, an ecologist at Syracuse University who was not involved in the research.

Judith Sitters, an ecologist at the Free University Brussels, visited Mpala in 2015. She analyzed soil and vegetation samples from each of the areas—plus a plot that had no cattle—to see the impact of livestock and wildlife on nutrient levels. She was surprised to find nearly twice as much carbon in the soil in grazing areas that included elephants, compared with those without them. Soil nitrogen was also much higher when elephants were present, **providing additional nutrients for plant growth**, she and colleagues reported last month in *Nature Sustainability*. Those levels were similar to measurements for plots that had no cattle at all. "We didn't expect that there would be such a positive impact from these elephants," Sitters says.

More soil nutrients had a knock-on benefit. Sitters and colleagues found that a common grass (*Brachiaria lachnantha*) contained about 50% more nitrogen in the grazing areas with elephants than the areas without them, making that grass more nutritious. That should benefit both cows and wild herbivores, Sitters says, but it's especially good for smaller wildlife, such as gazelles. All of this emphasizes the key role of elephants in the functioning of an ecosystem, Sitters says. Ritchie calls their impact "pretty surprising and striking."

One reason is that elephants don't remove many nutrients from the soil because they defecate in the plots where they graze. That's true of the other wild grazers, but elephants have another important habit: They sometimes knock over trees to eat leaves and branches. That vegetation decomposes, adding nutrients to the soil. Sitters estimates that such vegetation is enough to account for about 19% of the extra nutrients. (The team wasn't able to account for all the sources of extra carbon and nitrogen.) Elephants also chow down on grasses that cows prefer, reducing the amount of grass—and nutrients—that cattle in the mixed plots could remove.

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The findings add to evidence that wildlife can coexist sustainably with livestock. "If you have elephants, then it's no problem to also have cattle, as long as you don't overstock them," Sitters says. The study can't say whether elephants can compensate for damage caused by larger herds. The number of elephants in Kenya has been increasing, but populations remain threatened by poaching in other countries. Elephants sometime annoy people, especially when they raid crops. So the finding that the giant animals help keep soil fertile and the land productive might improve their reputation, Ritchie says.

sciencemag.org, 1 April 2020

<https://www.sciencemag.org>

'We have no choice.' Pandemic forces polio eradication group to halt campaigns

2020-04-01

The COVID-19 pandemic is imperiling the worldwide, 3-decade drive to wipe out polio. In an unprecedented move, the Global Polio Eradication Initiative (GPEI) has recommended suspending polio vaccination campaigns to help stop the spread of the novel coronavirus.

On 24 March, GPEI's leadership called on all countries to postpone until at least the second half of this year both mass campaigns to boost immunity to the polio virus and the targeted campaigns underway in Africa to stop outbreaks sparked by the live virus vaccine itself.

The implications are "huge," says Kim Thompson, president of Kid Risk Inc., one of three modeling groups GPEI has charged with analyzing the possible impacts of the pause. More children will be paralyzed by both the wild and vaccine-derived viruses, and the virus will likely invade countries that are now polio-free, GPEI concedes. And polio is only one of several diseases for which mass vaccination efforts will be suspended.

"We are caught between two terrible situations," says GPEI head Michel Zaffran of the World Health Organization (WHO). Going door to door delivering drops of oral polio vaccine (OPV) would put both communities and health workers at risk of infection with the novel coronavirus. Halting polio campaigns will enable GPEI to free up its extensive resources, including surveillance systems and tens of thousands of frontline health workers, to aid in the COVID-19 fight, he says.

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"We have no choice," Zaffran says. "We did not want to have the program be responsible for worsening the situation with COVID-19."

sciencemag.org, 1 April 2020

<https://www.sciencemag.org>

Sustaining sustainability: Lessons from the coronavirus pandemic

2020-04-01

We're seeing it all: CEOs taking pay cuts amid layoffs, Gap and Zara producing masks in their factories, General Motors and Ford building ventilators, and social media sites such as LinkedIn and Instagram replete with examples of corporate generosity in this crisis-ridden time. But what are the deeper lessons from the coronavirus pandemic that will help companies be more sustainable going forward?

It is somehow evident to me that we are still "living in the past," and that many companies continue to subscribe to the Milton Friedman dictum that the «social responsibility of business is to maximize profits.»

This crisis, like many others before it, has shone a light on the phenomenon of the "Tragedy of the Commons," the notion that when individual companies or industries try to maximize private gain, it inevitably leads to collective loss, typically in the form of degradation to our people and planet. Case in point: Firms such as Gap or Starbucks that kept their doors open until last week in pursuit of sales put people — their workers and customers — at risk of catching the virus and spreading it to many others.

Currently, the plastics lobby is trying to overturn the ban on single-use plastic bags, at great cost to the planet, citing dubious public health concerns with reusable shopping bags. This myopic focus on the single bottom line of profits needs to be replaced by the embrace of the triple bottom line of people, planet and profit. And this shift in perspective can be achieved only by adopting the fourth «P» — the compass of Purpose, which forces us to address the all-important question of «why we do what we do.»

Defining a sense of purpose inevitably will lead all companies to realize that business belongs to society and not the other way around. This is a powerful step forward to becoming more stakeholder-centric and not just

And this shift in perspective can be achieved only by adopting the fourth "P" — the compass of Purpose, which forces us to address the all-important question of "why we do what we do."

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caring about shareholders but other key stakeholders as well, including employees, consumers and communities.

Jobless claims have shot up to a record high of more than 3 million in the last week alone. To make matters worse, 40 percent of American households cannot afford an exigency payment of \$400. Why? This is because profit continues to trump people, and rank-and-file employee pay and benefits remain abhorrently low in the U.S. Workers at Amazon had to strike to protest inhumane working conditions, which does not speak well for one of the richest companies in the world. Similar stories abound, despite plenty of research to show happier and engaged employees are way more productive and contribute positively to company profitability.

The current crisis shows in unequivocal terms that the frontline and shop-floor employees surviving hand to mouth are more vulnerable than the rest of us. The same is true for climate change and other impending crises.

Unlike their CEOs, poor workers living in Manhattan have no place to go when the sea level rises. In this vein, it is key for companies to realize that the United Nations Sustainable Development Goals of addressing climate change and ending poverty are related — and the poor amongst us will be disproportionately affected when the climate crisis hits.

Now is the time to strengthen our social fabric. Companies must lobby to increase social protections for the less privileged — a living wage, health care and other forms of insurance that European citizens take for granted — to increase societal resilience. Writing checks each time a crisis hits is a bad idea.

This crisis also teaches us that companies can't go it alone to solve difficult problems: Collaborations are a must. When collaboration breaks down (as is evidenced by the current spats between the U.S. and Chinese governments) or does not take root (as in the current global race to find a vaccine), everybody stands to lose.

The same is true of climate change. Topics such as deforestation, effluents in waterways, buying minerals from the Congo — these are all germane issues that can be addressed only by a consortium, where each party, again, needs to rise above self-interest and think about the wellbeing of the collective.

This is a hard and unusual issue for companies as they often have to collaborate with traditional competitors. My book, "Small Actions Big Difference," proposes several strategies that companies can implement

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to collaborate and adopt the «us-us» rather than «us-them» mentality. Sustainability needs to be put in the pre-competitive space, as there is no profit without planet and people.

In case you didn't realize, global warming is in large part the result of companies pursuing profit maximization without regard for planet and people and urging consumers to keep buying and discarding things at an ever-accelerating rate.

This way of conducting business certainly has created a mess: We are consuming 1.5 planets-worth of resources, a figure expected to go up to three planets by 2050 under the business-as-usual scenario. Last time I checked, we still only have the one planet.

Looking at the picture of the skies before the lockdowns and now — and seeing firsthand that the planet is healing — managers must implement new ways of doing business. That might mean using technology and flying less for business meetings to asking their consumers to buy less (yes, you read that right) and consume responsibly. If the current crisis shows us anything, it is that most of us can indeed get by on less.

In closing, small actions by individual companies can lead to a big difference for humanity. This simple dictum must be implemented by all of us to beat the next crisis. Or else, in the words of Bob Dylan, "It's not dark yet, but it's getting there."

greenbiz.com, 1 April 2020

<https://www.greenbiz.com>

Mysterious human ancestor finds its place in our family tree

2020-04-01

When it comes to deciphering our ancient family tree, DNA from fossils is the new gold standard. But after about half a million years, even the best-preserved DNA degrades into illegibility, leaving the story of our early evolution shrouded in mystery. A new study of proteins taken from the tooth of an enigmatic human ancestor reveals their rough place in the family tree—and shows how ancient proteins can push beyond the limits of DNA.

The new study is "a landmark paper," says Mark Collard, an archaeologist at Simon Fraser University who wasn't involved with the work. "Ancient

The physical features of H. antecessor have left anthropologists puzzling over its relationships with other early humans.

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protein analysis promises to be as exciting as ancient DNA analysis for shedding light on human evolution.”

DNA, made of chains of nucleic acids, can remain embedded inside fossilized bones (**and prehistoric “chewing gum”**) for up to about 500,000 years, explains Enrico Cappellini, a geneticist at the University of Copenhagen’s Natural History Museum of Denmark. That time frame covers the rise of our species, *Homo sapiens*, in Africa sometime about 300,000 years ago. But before then, many other kinds of humans roamed Earth, including our close cousins the Neanderthals, and their Siberian kin, the Denisovans. Another early relative is *H. antecessor*, known chiefly from northern Spain’s Gran Dolina cave.

The physical features of *H. antecessor* have left anthropologists puzzling over its relationships with other early humans. It has big teeth, as do more primitive members of our genus such as *H. erectus*, but its face shape is remarkably similar to that of modern humans. Some have argued it could be the last common ancestor of Neanderthals, Denisovans, and *H. sapiens*. Others argue it is actually a member of *H. erectus*.

In the new study, Cappellini’s team used mass spectrometry—a technique that can sort out a sample’s chemical composition, including the peptides that make up proteins—to analyze proteins in a sliver of enamel from an 800,000-year-old *H. antecessor* molar from Gran Dolina. Proteins are much harder and longer lived than DNA: In just the past 6 months, Cappellini and colleagues have published ancient proteins found in a **1.77-million-year-old rhinoceros** and a **1.9-million-year-old primate**, *Gigantopithecus blacki*. But they also contain less genetic information than DNA, and they vary less between species.

Cappellini’s team identified peptide sequences from seven proteins in the ancient tooth enamel—essentially all the proteins found there—including a peptide specific to the Y-chromosome that marks the individual as a male. Next, researchers compared these protein sequences with their equivalents in modern humans, other living apes, Neanderthals, and Denisovans.

The proteins suggest *H. antecessor* **was a close relative of the last common ancestor to humans, Neanderthals, and Denisovans**, the researchers report today in *Nature*. “We see that *antecessor* falls as a sister group—close, very close—to the branch that leads to us,” Cappellini says.

That solidifies what many suspected, but it’s far from conclusive, says Tim Weaver, an anthropologist at the University of California, Davis, who wasn’t

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involved in the study. Either way, it offers fantastic proof of the power of proteomics to reveal ancient events in human evolution. “It’s really exciting that we’re starting to get proteins from some of these older fossils,” he says.

sciencemag.com, 1 April 2020

<https://www.sciencemag.org>

Longing for the Great Outdoors? Think smaller.

2020-04-01

Danny Leong knows how to find nature in unexpected places. A Ph.D. candidate studying entomology and urban ecology in Macau, he earned the moniker of “Macau Ant Man” in 2017, after discovering a new species of the insect in the most densely populated region on earth.

That knack for hidden wildlife will be handy when Leong leads his hometown into the City Nature Challenge next month. For three days every April, the global event encourages regular people to look for wildlife in their communities and post observations onto the app iNaturalist, netting everything from daddy long-legs and dogwood trees to rare orchids and red-faced warblers. Species are then tallied up for each city. Since 2018, Leong has coordinated Macau schools, museums, and universities to get locals, especially children, hunting in nearby parks and gardens.

But this year will be different. As in cities around the world, the 650,000 residents of Macau are restricted from non-essential trips outside their homes, in order to slow the spread of the coronavirus. (So far, the Chinese territory has been strikingly successful in that fight.) In a tight, vertical city where windowsills and balconies are the closest thing most residents have to a yard, that means this year’s Nature Challenge will have to scale down to whatever can be found in an apartment — even if it’s a bug under the sink, or a houseplant basking in the sun.

“This is a good time for self-modification about how we can reach nature,” Leong said. “A cockroach is still part of the ecosystem, too.”

The City Nature Challenge is one of many ways that people around the world are shifting their relationship to the natural environment at a time when access to shared outdoor space has rarely been so fraught. In many countries, forests and recreational areas have closed to the public in keeping with quarantines. Out-of-neighborhood travel is discouraged or even banned, canceling plans for springtime camping trips or cabin visits. Though most shelter-at-home orders allow for outdoor exercise,

“This is a good time for self-modification about how we can reach nature,” Leong said. “A cockroach is still part of the ecosystem, too.”

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questions still swirl about the safety of visiting public areas. In some cities, popular parks and beaches have shut their gates after large crowds proved dangerous for public health. A recent *New York Times* headline summed up “the new terror, and the intensifying debate, over going outside.”

But for some scientists, researchers, and stay-at-home civilians, the pandemic age may also be a chance to shift perceptions of what “nature” really means, and find new, hyper-local ways to appreciate it.

“If just a few people find some joy or solace from getting up close with a pollinator out the window or a weed in the sidewalk, and learning what it is and how it works, the City Nature Challenge is still going to be a success,” said Lila Higgins, the citizen science manager at the Natural History Museum of Los Angeles County. (Disclosure: the author of this article used to work there.) Higgins and Alison Young, who works on citizen science at the California Academy of the Sciences in San Francisco, founded the event in 2016. Both plan to encourage participants in their cities to go outside if they can, but to practice safe social distancing while they’re at it. If they can’t, there’s always whatever is flying or growing outside the window.

The plan for continuing the Challenge came out of extensive deliberation. It became clear through talks with dozens of science educators around the world, including those quarantined early on in China, that while the focus would have to shift, it was important that the event still go on. “Now it’s really all about the healing power of nature,” Higgins said.

Indeed, at a time when the mental health effects of mass isolation and anxiety over a rising death toll are still unmeasured and unknown, experts say it’s more important than ever to get up close with nature in whatever way possible. Volumes of scientific research have proven that woods and wildlife offer myriad mental and physical health benefits to human beings. Vitamin D from the sunshine boosts immune systems and bone health. Immersion in greenery — also known as “forest bathing” — has been linked to reduced stress, healthier heart rates and blood pressure, and lower risk for diabetes and cardiovascular disease. Interacting with the natural world, whether on a walk through some trees or gardening in the backyard, is shown to ease anxiety and depression and foster a sense of well-being. Watching birds and listening to bird song can help filter away stress. An after-dinner stroll can even help digestion.

And though the “great outdoors” may be more distant than ever right now, small and mediated exposure to nature can still give us a lift, said Jon Christensen, a professor of environmental studies at the University of

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California at Los Angeles. Even photos of tree-lined mountains and wildlife documentaries can yield a health payoff; so can sitting in a park for 20 minutes. “There does seem to be a dose-response curve,” he said.

Around the world, people stuck at home are now finding ways to connect with flora and fauna in more intimate settings. In U.S. cities, World War II-era “victory gardens” have made a comeback amid coronavirus, thanks to the meditative (and supermarket-avoidance) benefits of planting tomatoes and lettuce at home. A similar run on backyard chickens has been reported. Other nature seekers are getting their fix online. On Explore.org, a website that hosts streaming footage from cameras pointed at hundreds of natural habitats and landscapes around the globe, traffic from desktop computers has doubled since mid-March, and viewership from its iPhone app has grown threefold. (The Northern Lights, which are visible right now, are especially popular.)

The audience spike suggests that more younger people are tuning in while they’re cooped up at home, said Charles Annenberg Weingarten, the L.A. philanthropist who founded the site. “I anticipate that when this ends, people will go back out into the world and we might not be as popular,” he said. “But I hope they’ll appreciate their natural environment more.”

In many urban areas, street space is the most readily accessible outdoor resource. A growing handful of U.S. cities, including Portland, Philadelphia, and New York City, are limiting vehicle traffic on certain corridors to create more room for walking, cycling, and outdoor play. Eugenia South, a professor of emergency medicine at the University of Pennsylvania who specializes in the effects of community context on health and safety, is a proponent of street closures as an antidote to dangerous overcrowding in parks. Even the trees that line neighborhood blocks and thoroughfares can be good for mental health, she said. “You’re still getting outside and getting that dose of nature.”

Still, South said, limiting access to nature is one of many ways that coronavirus is heightening existing social disparities. Lower-income people are less likely to have yards, neighborhood parks within walking distance, or tree-lined streets to enjoy; that puts them at a deeper disadvantage in cities under lockdown.

South and others hope that the crisis can shake policymakers into doing more to bridge those gaps in green space, and into doing more to protect the fragile balance of their ecosystems in the future. Scientists find that a diversity of species in nature is essential for the health of the air, water and soil on which all of life depends. There’s even evidence that biodiversity —

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something that the planet is losing every day — can reduce the chances for the spread of infectious disease.

In that sense, nature may hold another lesson about surviving coronavirus, said Leong: Treat plants and animals with more respect. Using eyes, ears, nose or a camera to observe a living thing is a more peaceful interaction than catching or harming its habitat.

“We still don’t know the full connection between animals and plants and virus and us,” said Leong. “But we do know from ecology that if you break down one part of a system, it will collapse.”

~scitylab.com, 1 April 2020

<https://www.citylab.com>

A tourism lull may be good for animals—but not for long

2020-04-01

Stanza Mbang Molaodi had big plans this spring. On May 17, the owner of African Bush Lovers Safaris in Botswana was due to accompany six Italian clients into Chobe National Park, home to a third of the continent’s 600,000 elephants. From its base camp in the bush, the group would go on game drives, day-trip to Victoria Falls, and enjoy cocktails and crocodile-watching on sunset cruises up the Chobe River. The gang would then relocate to the park’s semiarid Savuti region, a landscape of baobab trees and rocky outcrops where dense herds of zebra and buffalo congregate at watering holes and try not to get picked off by the Savuti lion pride. Next up would be the Khwai Community Area, where indigenous bushmen would guide the Italians on walking safaris and take them paddling down the Khwai River in traditional *mokoro* canoes. The 12-day adventure would end with a birding extravaganza in the Okavango Delta, a Unesco World Heritage site. “It’s a beautiful place to end a safari,” Molaodi told me, sounding almost emotional.

But the trip was not to be.

Frightened by the coronavirus, the Italians canceled. All of Molaodi’s clients have canceled or postponed. When I reached him by phone recently, he was holed up at home with his family in Kasane, fretting. On the day we spoke, the Botswana Defense Force ordered all troops on leave or off duty to return to their posts immediately, and Molaodi predicted a military-enforced lockdown, not unlike what neighboring South Africa had

Simply put, the safari business in Africa and Asia has stopped.

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announced that same day. Molaodi seemed to be speaking for Africa’s entire \$40 billion wildlife-tourism industry when he confessed, “We are all retrenching. Everyone is panicked.”

Simply put, the safari business in Africa and Asia has stopped. Completely. Maybe that’s not surprising at this point in the pandemic. Between flight cancellations, national lockdowns, border closures, emergency visa restrictions, and required quarantine upon entry, clients fearless enough to travel couldn’t reach their destinations if they wanted to. Even if they could, in some countries they’d be sorely disappointed. India has shuttered all of its tiger reserves and national parks. Congo has closed Virunga National Park, fearing that its famous mountain gorillas could contract COVID-19 from humans. Gabon, deeply scarred from losing 15,000 lowland gorillas in a 1995 Ebola outbreak, has likewise halted all ape tours.

What is surprising are the domino effects of this economic catastrophe and the ultimate impact they will have on wildlife. Starting in April, Molaodi’s six staff members will receive half their normal salary, but for May and beyond, all bets are off. Roberto de Sibi, owner of Savannah Explorers in Tanzania, had already placed 17 of his 45 employees on half salary when we spoke (I found him under 14-day quarantine in Milan, where he’d fled to be near his 82-year-old father, having caught the last flight from Tanzania to Italy). Neither Molaodi nor De Sibi would be paying anything to the many freelance drivers and guides they hire during busy periods. Molaodi wouldn’t be paying the bushmen to take clients paddling, and De Sibi wouldn’t be paying Dadoga tribesmen to show his clients how to melt metal to make knives. Their clients wouldn’t be donating solar lanterns to villages or otherwise leaving generous contributions.

Crucially, neither operator would be ponying up the various fees required by parks and community conservation areas for tourist entry, guide entry, vehicle entry, and overnight stays. Large percentages of such fees go to local communities for development projects and conservation measures, like funding anti-poaching scouts. Ninety percent of Zambia’s more than 1,000 scouts come from its communities and are paid from tourism fees. In Namibia, tourism fees pay for the country’s 600 game guards and support more than 6,000 families.

With rampant unemployment, unpaid game guards, and fewer tourists in the bush to report suspicious activity, it’s just a matter of time before

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wildlife gets hammered. "Poaching will increase," De Sibi insists. "People who are jobless must find money or food."

Everyone I spoke with concurred on this point. "One of the biggest fears is that, if scouts can't be paid, I can foresee people poaching," says Maxi Louis, director of the Namibian Association of Community Based Natural Resources Management Support Organizations. "Poverty will drive people." Louis also anticipates that local tolerance for crop-raiding herbivores and livestock-killing predators, both common in villages near protected areas, will plummet. "There will be no scouts to manage human-animal conflict and no funds to compensate for lost livestock," she says, expecting a spike in retaliatory killings of troublesome wildlife.

In a 2012 study, ecologist Ralf Buckley of Griffith University in Australia found that most of the more than 1,400 species listed as threatened by the International Union for Conservation of Nature depend on tourism for their survival, including iconic species like lions, elephants, and rhinos. "Many park agencies worldwide now rely heavily on tourism for routine operational funding, more than 50 percent in some cases," the study reported. "This puts rare mammals at a new risk, from downturns in tourism driven by external socioeconomic factors."

Given the magnitude of this potential biodiversity implosion, mentioning a silver lining might seem frivolous. But there is one. Tourism is a double-edged sword. It funds conservation, yes, but too much of it can disturb breeding patterns, feeding habits, and migratory movement. It can pollute landscapes and destroy habitat. "This travel hiatus of several months will give a chance for resilient natural environments to recover from the stress inflicted by tourism," says Frederic Dimanche, director of the Ted Rogers School of Hospitality and Tourism Management at Ryerson University in Toronto. (While Dimanche's prediction is warranted, many other reports on social media of wildlife thriving as a result of quarantines have been debunked.) If the animals can manage to survive, the pandemic might be an opportunity to improve wildlife tourism. "Destinations and tourism operators everywhere have a unique chance to restart a tourism that will be better planned, better managed, one that will be sustainable, with stronger policies," Dimanche says.

outsideonline.com, 1 April 2020

<https://www.outsideonline.com>

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Does a high viral load or infectious dose make covid-19 worse?

2020-03-27

Does being exposed to more coronavirus particles mean you will develop a more severe illness? Rumours circulating on social media suggest that hospital workers or their household members exposed to a higher "viral load" become sicker than the general population. But emerging research indicates the relationship between infection and covid-19 severity may be more complex – and differ from that of other respiratory illnesses.

The average number of viral particles needed to establish an infection is known as the infectious dose. We don't know what this is for covid-19 yet, but given how rapidly the disease is spreading, it is likely to be relatively low – in the region of a few hundred or thousand particles, says Willem van Schaik at the University of Birmingham, UK.

Viral load, on the other hand, relates to the number of viral particles being carried by an infected individual and shed into their environment. "The viral load is a measure of how bright the fire is burning in an individual, whereas the infectious dose is the spark that gets that fire going," says Edward Parker at the London School of Hygiene and Tropical Medicine.

If you have a high viral load, you are more likely to infect other people, because you may be shedding more virus particles. However, in the case of covid-19, it doesn't necessarily follow that a higher viral load will lead to more severe symptoms.

For instance, health workers investigating the covid-19 outbreak in the Lombardy region of Italy looked at more than 5,000 infected people and found no difference in viral load between those with symptoms and those without. They reached this conclusion after tracing people who had been in contact with someone known to be infected with the coronavirus and testing them to see if they were also infected.

Similarly, when doctors at the Guangzhou Eighth People's Hospital in China took repeated throat swabs from 94 covid-19 patients, starting on the day they became ill and finishing when they cleared the virus, they found no obvious difference in viral load between milder cases and those who developed more severe symptoms.

Although it is difficult to draw firm conclusions at this stage, such studies "may impact our assumptions about whether a high number of viral particles predisposes to a more serious disease", says van Schaik.

If you have a high viral load, you are more likely to infect other people, because you may be shedding more virus particles.

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However, a study of patients hospitalised with covid-19 in Nanchang, China, found a strong association between disease severity and the amount of virus present in the nose. "Those with more severe disease had a higher level of virus replication, although we have no evidence to relay the initial exposure dose to disease outcome," says Leo Poon at Hong Kong University, who was involved in the study. "That rumour is still an open question to me."

It is early days, but if the initial amount of virus a person is infected by doesn't correlate with the severity of disease symptoms, this would mark covid-19 out as different from influenza, MERS and SARS.

For influenza, a higher amount of virus at infection has been associated with worse symptoms. It has been tested by exposing volunteers to escalating doses of influenza virus in a controlled setting and carefully monitoring them over several weeks. This hasn't been done with covid-19, and is unlikely to happen, given its severity.

Animals infected with higher doses of the SARS and MERS coronaviruses also experienced worse outcomes, says van Schaik. "I think we just have to conclude that while this virus is related to SARS, there are also important differences that are currently poorly understood," he says.

Even if the initial level of virus at infection isn't related to disease severity, it still pays to try and minimise our exposure to the virus because this will reduce our chances of falling ill in the first place. "We want to be taking every precaution we can to prevent ourselves getting infected, which will also reduce our ability to pass the virus on to others," says Parker. "Any measures we can take to avoid infection are worth taking."

newscientist.com, 27 March 2020

<https://www.newscientist.com>

Food goes to waste amid coronavirus crisis

2020-04-05

The coronavirus pandemic is leading the food industry and regulators to change policies as they grapple with empty shelves, a glut of fresh produce and milk, and sudden shifts in consumer buying habits.

The problem isn't a shortage of food and commodities. If anything, food waste is becoming a bigger issue as traditionally big, bulk buyers — like college dorms and restaurant chains — suddenly stop receiving deliveries.

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As a result, millions of gallons of milk are being dumped, and farmers have no alternative but to turn fresh vegetables into mulch.

Federal agencies are scrambling to keep up with the altering landscape by easing rules governing trucking, imports, agricultural visas and labeling requirements for restaurants and manufacturers.

"The way a client described it is they're seeing a tsunami of demand shift from foodservice to food retail," said Bahige El-Rayes, a partner in the consumer and retail practice at Kearney, a consulting firm. "If you're a manufacturer today of food, it's basically how do you adapt? How do you actually take what you sent to restaurants then sell it now to retail?"

New alliances are being formed as demand from restaurants dry up and consumers look for new ways of delivery. Kroger, the largest U.S. supermarket chain, has partnered with foodservice giants Sysco and U.S. Foods, which normally supply the restaurant industry and large institutions, to share labor and keep store shelves stocked.

The partnerships offer employment to foodservice workers that would otherwise be furloughed or laid off as a result of a near shutdown of the restaurant sector. It also provides much needed manpower to the overwhelmed food retail industry.

Rewiring the U.S. food network, however, comes with logistical headaches.

"Since we're buying more at the grocery store, it means [food items] have to be in that form," said Pat Westhoff, director of the University of Missouri's Food and Agricultural Policy Research Institute. "We have a bunch of stuff that's still stuck with restaurants, and they're trying to decide what to do with it at this point."

Farmers are also scrambling to recalibrate their production.

Richard Guebert Jr., Illinois Farm Bureau president, said his state's meatpacking companies have fewer employees showing up because of concerns of being too close to other workers.

"The industry is backing up on bacon and other products that they put together as cut-outs, so they're slowing down and not doing the volume that they had," Guebert said.

"There's a concern for pork producers because they just can't turn their buildings on or off like you can an assembly line," he added. From the time sows give birth to slaughter, "it's a nine-month process that started nine

As a result, millions of gallons of milk are being dumped, and farmers have no alternative but to turn fresh vegetables into mulch.

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months ago. Pigs continue to be born every day, whether they keep the whole capacity.”

In the meantime, major food distributors including U.S. Foods and Performance Food Group are begging the Treasury Department to prioritize loan applications from their sector as companies shift operations to supply retailers.

“This kind of transition, even if temporary, takes time and investment as we adjust our warehousing, logistics and purchasing processes to meet a consumer-facing market,” they wrote in a letter to the Trump administration.

A group of food worker associations also made an appeal to congressional leaders that any future aid package should “include support for America’s essential critical industry workers” through tax exemptions or direct payments.

In the U.S., an excess supply of food production is forcing some sectors to take extreme measures and ask for extra creative solutions from the government.

“Clearly we’re in a time of crisis,” said Gordon Speirs, owner of Shiloh Dairy in Brillion, Wis. “We’ve lost 25 percent of our income just through the crashed market. Now we face the reality of having to dump milk on top of that.”

John Umhoefer, executive director of the Wisconsin Cheese Makers Association, said the foodservice sector accounts for half of all cheese sold in the U.S., while only one-third is sold at grocery stores. Without that critical market, milk producers need the government to “immediately begin to purchase dairy products” and distribute them to food pantries and school feeding programs, he said.

Westhoff, of the University of Missouri, said the drop in restaurant dining will eventually hamper demand for high-end meat products like steaks.

“Even though we have a short-run rush to the grocery store that gave us a run-up in prices very temporarily, we don’t think that’s going to last very long,” he said.

The radical change in the age of the pandemic is a seismic shift for the food industry. In 2018, Americans spent more on food from full-service and fast-food restaurants — about \$678 billion — compared to the roughly \$627 billion spent at grocery stores and warehouse clubs,

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according to USDA data. Spending on food away from home is even higher when counting meals at schools, colleges, sporting events and other entertainment venues.

Now, the National Restaurant Association expects the industry will shed \$225 billion over the next few months, along with some 5-7 million jobs.

“Grocery stores just aren’t set up to restock shelves to meet that kind of demand,” said Joseph Glauber, a senior research fellow at the International Food Policy Research Institute.

For the most part, food analysts say consumers don’t need to worry about other countries that are putting in place export restrictions on food and agricultural goods. Vietnam, the third-largest exporter of rice, has temporarily suspended exports of the grain. Russia, Ukraine and Kazakhstan, major wheat producers, have capped exports of the commodity.

“The signs are all disturbing on the foreign side, but if you look at all the actions taken they don’t seem at least yet to have very big ramifications,” said Glauber, who previously served as chief economist for the Agriculture Department.

So far, the U.S. appears to have faced fewer hurdles to transporting food and farm goods than other countries. Border checks across Europe, for example, have snarled trucking and at one point backed up traffic as far as 50 miles.

The European Union has tried to ease the congestions by opening so-called green lanes for trucks carrying farm goods. U.S. highway regulators, for their part, have lifted driving hour limits for essential products including “food for emergency restocking of stores.”

Some governments have asked their citizens to help pick fruits and vegetables and considered designating special planes and buses to transport workers from Eastern Europe to farmlands in the West.

politico.com, 5 April 2020

<https://www.politico.com>

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