

Green Mission News

March 2014 Green Mission News



What's in the News...

Will the circular economic model one day be as revolutionary as heliocentrism?

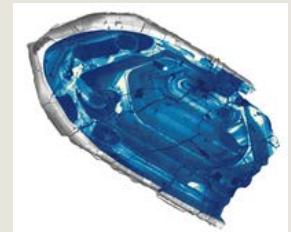
Monument to Nicolaus Copernicus, Warsaw, Poland.

Photograph: imagebroker/Alamy

See full article: [Circular Economy](#)

Zircon crystals from the Jack Hills of Australia, reveal that continents arose just 160 million years after our solar system formed, much earlier than previously thought. (Photograph by John Valley, University of Wisconsin-Madison)

Go to the [article](#).



External Article Links:

- Could the circular economy be the new Copernican revolution?

The transition to a circular economy will be tumultuous, but gains will eventually overshadow temporary instability, as with all major transitions in human history

www.theguardian.com/sustainable-business/circular-economy-copernican-revolution

- The influence of market deregulation on fast food consumption and body mass index: a cross-national time series analysis

<http://www.who.int/bulletin/volumes/92/2/13-120287/en/index.html>

- The Difference Between a Farmer and a Global Chemical Corporation

www.commondreams.org/view/2014/02/13-4

- Australia holds the oldest continental crust on Earth, researchers have confirmed, hills some 4.4 billion years old

http://news.nationalgeographic.com/news/2014/02/140224-oldest-crust-australia-zircon-science/?google_editors_picks=true

- Fossil Fuel Subsidies Dampen Shift Towards Renewables

<http://www.ipsnews.net/2014/02/fossil-fuel-subsidies-dampen-shift-towards-renewables/>

- Oilsands study confirms tailings found in groundwater, river Federal study shows water from tailings ponds leaching into Athabasca River

www.cbc.ca/news/canada/edmonton/oilsands-study-confirms-tailings-found-in-groundwater-river-1.2545089

- Climate change and circular economy take centre stage at Davos
After leading a design and sustainability workshop at this year's World Economic Forum, Bill McDonough reflects on why he is hopeful for sustainable change

www.theguardian.com/sustainable-business/climate-change-circular-economy-davos

- "Unacceptable Ingredients"

How many of the groceries sold at Walmart would be banned by Whole Foods Markets?

www.slate.com/articles/life/culturebox/2014/02/whole_foods_and_walmart_how_many_groceries_sold_at_walmart_would_be_banned.html

- Nearly 500 foods containing azodicarbonamide (Nearly 500 ways to make a yoga mat sandwich)

www.ewg.org/research/nearly-500-ways-make-yoga-mat-sandwich

- Towards the circular economy: accelerating the scale-up across global supply chains
In this report, the World Economic Forum and the Ellen MacArthur Foundation, with analytics provided by McKinsey & Company, acting as project adviser, joined forces to reconcile the concept of scaling a circular economy within the reality of a global economy and complex multi-tier supply chains. The key objective is to propose a very specific joint plan of action for industry leaders.

www3.weforum.org/docs/WEF_ENV_TowardsCircularEconomy_Report_2014.pdf

- Creating Desired Futures in a Global Society by Peter M. Senge (2003)

www.solonline.org/resource/resmgr/ECW/Creating_Desired_Futures_in_.pdf

- Peak Oil is Not a Myth (Chemistry World)

www.rsc.org/chemistryworld/2014/02/peak-oil-not-myth-fracking

- EPR Cost-Benefit study

<http://marketbasedrecycling.com//marketbasedrecycling/wp-content/uploads/2014/01/RR-EPR-MN-Study-Working-Paper-2.pdf>

- Sustainability Squared

How we can sustain both the environment and the people?

www.dollarsandsense.org/archives/2014/0114cleveland.html

- Towards . . . a clean energy future

www.usclimateplan.org/

- Invisible Math: Accounting for the Real Costs of Big Ag -

http://civileats.com/2014/02/12/invisible-math-accounting-for-the-real-costs-of-big-ag/?utm_content=buffer3f002&utm_medium=social&utm_source=twitter.com&utm_campaign=buffer#sthash.G7PqCVAd.dpuf

- Hydraulic Fracturing & Water Stress: Water Demand by the Numbers

www.ceres.org/resources/reports/hydraulic-fracturing-water-stress-water-demand-by-the-numbers/view

- Gaia principles offer a sustainable way to manage supply and legacy

Gaia theory states that, in nature, nothing is wasted. Why shouldn't business be the same?

www.theguardian.com/sustainable-business/blog/gaia-sustainable-supply-chain-circular-economy

- It Was Just a Matter of Time: PepsiCo Ditches 'Natural' for 'Simply'

<http://eatdrinkbetter.com/2014/02/14/just-matter-time-pepsico-ditches-natural-simply/>

- 2014 Shopper's Guide to Avoiding GE Food

www.ewg.org/research/shoppers-guide-to-avoiding-ge-food

- Mike Biddle: Why plastic is still 'the last frontier' of recycling

The former CEO discusses his frustration with the recycling movement, his hatred of waste and how the US can grow jobs

<http://www.theguardian.com/sustainable-business/circular-economy-environment>

- National recycling rate stays flat

Figures released today by the Environmental Protection Agency show the U.S. municipal recycling rate was 34.5 percent in 2012, a fall of 0.2 percentage points from the 2011 level.

The agency's municipal solid waste (MSW) report indicates Americans recovered around 65 million tons of MSW via recycling in 2012, a drop of roughly 1 million tons year-over-year. Composting volumes, meanwhile, grew from 20 million tons in 2011 to 21 million tons in 2012.

http://www.epa.gov/epawaste/nonhaz/municipal/pubs/2012_msw_fs.pdf

- Global warming will cost the world up to US\$1.45 trillion, says UN IPCC report

<http://www.channelnewsasia.com/news/asiapacific/global-warming-will-cost/1015390.html>

- Jet stream shift could prompt harsher winters: scientists

www.france24.com/en/20140216-jet-stream-shift-could-prompt-harsher-winters-scientists/

- Food and climate: connecting the dots

<http://www.centerforfoodsafety.org/issues/305/food-and-climate#>

- California-grown Lundberg rice shows near-zero heavy metals; case closed on 'naturally occurring' excuse for lead in other rice products (Article with 23 min video)

http://www.naturalnews.com/043903_Lundberg_rice_heavy_metals_naturally_occurring.html#ixzz2tSKw07h7

- GM Food: Failed Promises, Toxic Impacts – Part 1

<http://fearlessparent.org/gm-food-failed-promises-toxic-impacts-part-1/>

- U.S. GMO crops show mix of benefits, concerns - USDA report
www.reuters.com/article/2014/02/24/usda-gmo-report-idUSL1N0LT16M20140224

- Human Health and the GMO Industry: Puppets in High Places
www.globalresearch.ca/human-health-and-the-gmo-industry-puppets-in-high-places/5370197

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Full Length Articles Below:

- Emergence of the Circular and Restorative Business Model
- GMOs Are Killing the Bees, Butterflies, Birds and... ?

Emergence of the Circular and Restorative Business Model

February 6, 2014

www.environmentalleader.com/2014/02/06/emergence-of-the-circular-and-restorative-business-model/

Renilde Becqué, International Sustainability Consultant

In recent years, further fueled by economic meltdowns and austerity, the advocates for a fundamental change of our prevailing economic model have become increasingly outspoken. Terms such as Capitalism 2.0, Regenerative Capitalism, Responsible Economy, Restorative Economy and Circular Economy abound.

At a business level several pioneers have tested and trialed these concepts for at least two decades. This includes the late Ray Anderson, chairman of carpet tile company Interface, who became a passionate advocate in the mid90s for “climbing Mount Sustainability.” Rather than a goal of just eliminating environmental impacts he gave his team the task to convert the company into a Restorative Enterprise, “first to reach sustainability, then to become restorative, putting back more than it takes and doing good to Earth, not just no harm – by helping or influencing others to reach toward sustainability.”

Another philosophy known as Cradle to Cradle found a broad audience in countries such as the Netherlands from 2006 onwards. Private and public entities felt compelled to experiment with and apply the concepts of “re-making the way we make things,” “waste = food” as well as considering companies, cities and societies as metabolisms

with biological and technical loops, therewith linking natural eco-systems to man-made cycles.

Some of these ideas borrow heavily from earlier concepts around for example industrial ecology and bio-mimicry. Whereas the latter often failed to appeal to a very broad and diverse range of stakeholders, the restorative enterprise and cradle to cradle philosophies have been relatively successful to date in unleashing a flurry of innovative thinking through their compelling approach. An approach which challenges people to apply their imagination, specific skills and knowledge to re-thinking the way things are done.

Although such concepts are still evolving through an iterative process of trial and error at various scales and applied to different situations, they provide fertile ground for outlining an indicative framework for a circular and restorative business model.

Key attributes of such a model are briefly being distilled here with a focus on those representing a step change away from prevailing production and sales models:

From a linear to an ecosystem approach for precious resources, thinking in continuous and causal loops – loops of materials and nutrients, but also loops of responsibility;

Eliminating all forms of waste, i.e. any cost in a production process which doesn't produce value – from physical waste (waste = food) to wasting time, resources and energy;

Harnessing of renewable energy sources, creating energy loops rather than dead-ends;

Where possible, moving information rather than molecules (products or people);

Re-defining/-designing commerce by selling a service and its performance or values rather than the physical product – ownership of the product therewith remains with the supplying party. An example are ESCOs selling performance based energy efficiency services;

In line with this is a focus on fulfillment, i.e. fulfillment of a customer's needs and aspirations, rather than a focus on individual consumption;

A distinction between biological nutrients, which can be used in cascades in order to gain as much value as possible from them and technical nutrients, which after first use can be maintained, reused, remanufactured or recycled;

Designing with consideration of a product's economical and useful life – as influenced by e.g. fashion, politics and innovation. This could mean a core which has been designed to last (e.g. phone blocks), with a cover designed for replacement if the customer desires a different look or functionality;

A focus on upcycling instead of down-(re)cycling, in particular for technical nutrients, re-emphasizing and retaining the quality of resources;

A focus on minimizing entropy and preserving exergy, for example by assessing the energetic performance differences between alternative uses of (constituent) resources or alternative pathways, as well as through designing for reuse and re)assembly.

This can be explained by referring to the second law of thermodynamics. Spontaneous processes tend to occur in the direction of decreasing energy quality (exergy) and increasing disorder (entropy). In current production processes, the quality of a set of materials used in the production of products is often compromised by entropy, meaning that it will require extra energy to retain the quality of materials, real energy, labor or both;

Building resilience through diversity – in ecosystems this is based on biodiversity, while for business systems this resilience is based on different kinds of diversity: connections, customer relations, supplier relations, resources, and innovations;

Building shared values – in ecosystems also known as ‘symbiosis’, in a circular economy it’s about creating shared values with suppliers, sellers, customers and clients through performance and cooperative entrepreneurship;

In practice we currently see companies mainly embracing two different approaches:

A hybrid solution, utilizing the advantages of both, or rather focusing on diminishing the disadvantages of either system. Hybrid situations are a key component of transitions: use the beneficial elements of the existing system to compensate the first failures of the new system in order to maintain reliability.

Companies starting a new transformational business or business line separate from the existing one, in order to fully develop and dedicate the resources needed for success. This allows innovations in technical specifications and service delivery to be introduced swiftly without interference to existing operations.

This only goes to show that when we start solving linear problems, we may find ourselves having to solve other pieces of the complex puzzle as well as part of the ‘game of change’.

References: Mission Zero, Interface; Cradle to Cradle, Remaking the way we make things, Michael Braungart and William McDonough (2002); Towards a Circular Economy, Ellen MacArthur Foundation (2012, 2013); Guided Choices Towards a Circular Business Model, C2C Bizz (2013); and others.

Renilde Becqué is an international sustainability consultant.

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GMOs Are Killing the Bees, Butterflies, Birds and... ?

by Katherine Paul and Ronnie Cummins

- February 14, 2014

www.commondreams.org/view/2014/02/14-5



(Credit: Reuters/Nigel Roddis)

“It is ironic to think that man might determine his own future by something so seemingly trivial as the choice of an insect spray.” – Rachel Carson, *Silent Spring*

When the honeybees, our most important food pollinators, started dropping like proverbial flies, scientists scrambled to identify their killer (or killers). Attention eventually turned to the increased use of a class of pesticides known as neonicotinoids. Scientists now believe at least some of these pesticides play a major role in Colony Collapse Disorder (CCD), the ongoing demise of honeybee colonies.

Who makes the [neonicotinoids](#)? Syngenta, Bayer CropSciences and Dow Agrosciences. Who’s using them, and for what purpose? Companies like Monsanto, Bayer, Dow Agrosciences... in the herbicides and pesticides and seeds they sell to farmers who grow genetically engineered crops. Crops that eventually end up in our food, or in the feed used to fatten up animals in factory farms—animals we slaughter for food.

We need bees in order to grow food, or at least some of it. Yet the food—GMO food, drenched in neonics—we are growing is killing the bees.

It’s not just the bees that are dying. Butterfly and bird populations are in decline, too. And it’s not just the neonicotinoids that are to blame. Other herbicides and pesticides, especially Monsanto’s Roundup, used to grow GMO crops—and also used to [contain \(kill\) weeds in cities and home gardens](#) —are decimating pollinators, fish and wildlife, and some would argue, humans, too.

As consumers ask more and more questions about the impact of GMO foods and crops on our health and environment, we’re making smarter choices about the foods we choose to eat. Does my child’s cereal contain sugar from genetically engineered beets? Did that steak on my dinner plate come from an animal raised on a factory farm, and fed a diet of Roundup-ready GMO corn, canola, soy or cotton seed?

But we need to look at the bigger picture, too. That means calling for an end to the use of Monsanto's Roundup in urban areas, on our lawns, roadways, schoolyards and parks. It means paying close attention to the seeds and garden plants we buy for our home gardens.

It means asking ourselves what can we do to pressure Monsanto, Dow, Syngenta, and Dupont's customers, both rural and urban, into understanding that their widespread, reckless use of neonics and other toxins is destroying our food, soil, water, air and wildlife? And that organic, sustainable, non-chemical alternatives exist?

It means asking ourselves, how do we force food manufacturers to stop using these poison-drenched GMO crops in their processed food products? How do we get through to the politicians who protect the interests (profits) of pesticide and junk food makers, at the expense of all else? Before it's too late?

We do it by making intelligent and ethical buying decisions. By boycotting the corporations who refuse to hear us. But voting out the politicians who sell us out to the industry lobbyists who fund their political campaigns.

We do it by all of the above. Over and over again.

Bee Week of Action just the bee-ginning

February 16 marks the end of a [national Bee Week of Action](#). This week, more than 27,000 activists, coast to coast, delivered valentine cards to managers of Home Depot and Lowe's stores, and handed out bee education leaflets to store customers.

The actions, organized by Friends of the Earth, the Organic Consumers Association and 10 other groups, focused on pressing Home Depot and Lowe's to stop selling garden plants pre-treated with neonicotinoids. OCA and our allies also collected more than 650,000 signatures on petitions to Home Depot and Lowe's, and sent letters to the CEOs of both companies. Home Depot responded this week, saying that it is "working on" a policy to address neonics. We're hopeful, that with enough pressure, Home Depot and Lowe's will take these killers off their shelves and promote organic alternatives.

Our goal this week was to draw attention to the plight of honeybees, the damage caused by neonics, and the fact that consumers—most of them unknowingly—contribute to the problem when they purchase plants that may attract bees, only to kill them.

It's a strong campaign. One that OCA is committed to supporting until Home Depot and Lowe's end the sales of bee-killing plants.

But the problem is bigger than bees. The use of neonics isn't limited to garden plants. Neonics aren't the only toxins killing bees. And bees aren't the only victims of agribusiness's chemical assault on the environment.

As the bees go, so goes our food

When the honeybees started dying en masse, the alarm bells went off. Bees are critical to food production. According to the U.S. Department of Agriculture (USDA), more than a quarter of America's diet relies on pollination by honeybees.

No bees, no food. Or at least, no apples, cherries, onions, celery, cabbage, and a [long list](#) of others, including almonds and blueberries which, according to the American Beekeeping Federation, are [90-percent dependent on bees for pollination](#).

[Estimates](#) are that nearly a third of the honeybee population has been wiped out since 2006. Once scientists pinpointed neonics as the likely suspect, more studies were launched.

Under pressure, the U.S. Environmental Protection Agency (EPA) agreed to study the link between at least three types of neonics and the mass die-off of bees. Despite the fact that their counterpart in the EU took the precautionary step of requiring companies to suspend the use of neonics for at least the next two years, until further studies could be done, the best the U.S. EPA could come up with was a requirement that certain neonics carry [warning labels](#).

As if Monsanto and Bayer and Dow are going to read those labels and stop selling, and spraying, neonics.

Neonics, more powerful than DDT

Science writer George Monbiot says neonicotinoids are the “new DDT killing the natural world,” 10,000 times more powerful than DDT. In an [article](#) published in The Guardian, Monbiot skillfully explains how neonics, when applied to the seeds of crops, remain in the plant as it grows, killing the insects that eat the plant. ([According to](#) Pesticide Action Network of North America, the seeds for at least 94 percent of the 92 million acres of corn planted across the U.S. are treated with neonics). Other pollinators, including bees, hoverflies, butterflies, moths, and beetles that feed from the flowers of the treated crops, absorb enough of the pesticide to compromise their survival, says Monbiot.

But more disturbing? Monbiot points to studies proving that only a small percentage of the pesticide used to coat a seed before it's planted is absorbed by the plant. Some of it blows off into surrounding habitats. But more than 90 percent enters the soil, where it can remain for up to 19 years, causing who knows what damage.

“This is the story you'll keep hearing about these pesticides: we have gone into it blind,” says Monbiot. “Our governments have approved their use without the faintest idea of what the consequences are likely to be.”

Rounding up the other suspects, identifying the victims

Neonics are in the spotlight when it comes to bees, but scientists warn that other chemicals could be responsible, too, including those used widely in the production of GMO crops.

For instance, there's Dow's 2,4-D, closely associated with the infamous Agent Orange defoliant used in Vietnam. Besides being [linked to](#) cancer and birth defects in humans, 2,4-D is also [toxic](#) to honeybees. While the herbicide may not result in the immediate die-off of bees, scientists report that over time, it [severely impairs](#) their ability to reproduce.

And yet, the USDA is on the verge of [greenlighting](#) Dow's two new 2,-4-D-resistant crops (corn and soy). If the USDA follows through, experts predict we'll see anywhere from a [25 – 50-fold](#) increase in the use of this highly toxic chemical.

Perhaps the most widely used, and most well-known weed-killer in the world is Monsanto's Roundup. It's sprayed on home gardens and on roadsides. But by far, the single most use for Roundup is on Monsanto's "Roundup-Ready" corn, soybeans, sugar beets, canola and cotton.

Roundup is routinely used along with neonics, which implicates it in CCD. But its key active ingredient, one linked by numerous studies to widespread human and environmental health problems, is [glyphosate](#). According to the latest figures available from the EPA, in 2007, as much as 185 million pounds of glyphosate was used by U.S. farmers, double the amount used six years prior. Since 2007, more GMO crops have been approved, more acres of GMO crops have been planted.

Glyphosate, too, has been [linked](#) to the die-off of bees. But it's also the prime suspect in the dramatically declining [population](#) of the monarch butterfly. Roundup kills the milkweed plant, the main source of food for monarch butterflies.

[According](#) to one leading entomologist, the "main culprit" in the declining population of monarch butterflies is "herbicide-resistant corn and soybean crops and herbicides in the USA" which "leads to the wholesale killing of the monarch's principal food plant, common milkweed."

For whom the bee tolls

The Monarch butterfly isn't yet on the verge of extinction, and unlike the honeybee, it isn't critical to our food supply. But does that mean we can, or should, dismiss the impact GMO crops has on its ability to thrive?

We asked Karen Oberhauser, Ph.D, a professor at the University of Minneapolis and director of the school's Monarch Butterfly Lab. She said that Monarch's don't, to our knowledge, play a key role in any ecosystem, unless you count the fact that they provide food for a lot of birds. But, she wrote in an email to OCA:

I would argue that there are both ethical and more selfish reasons that monarchs deserve our protection. From an ethical perspective, just because we have the ability to so alter ecosystems that we can cause the extinction of species doesn't mean that it is ethical for us to do so. Thus, preserving monarchs is the "right" thing to do. From a selfish perspective, we can learn a great deal about migration, species interactions, insect population dynamics, and insect reproduction by studying monarchs. Monarchs thus have a great deal to teach us about how the natural world works, and I would argue that understanding the natural world will benefit us.

When in 1962, Rachel Carson published *Silent Spring*, her seminal work on the impact of chemicals on our environment, she probably didn't imagine a world in which millions of tons of evermore powerful chemicals are used not just to eliminate unwanted weeds and insects, but to grow the majority of the corn, soy, beets and other crops that are found in more than 80 percent of our processed foods, and are fed to an equally high percentage of the animals that eventually enter the human food supply.

But here we are. Will we change course, and reverse the damage? Will we save the bees, birds, butterflies—and ourselves—by driving GMOs, neonics and Roundup off the

market? And by making the Great Transition to organic agriculture and gardening, before it's too late?

Or will we maintain the status quo, on the outside chance that we humans will be somehow impervious to the decaying state of our surrounding environment?

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