The Breath Eaters

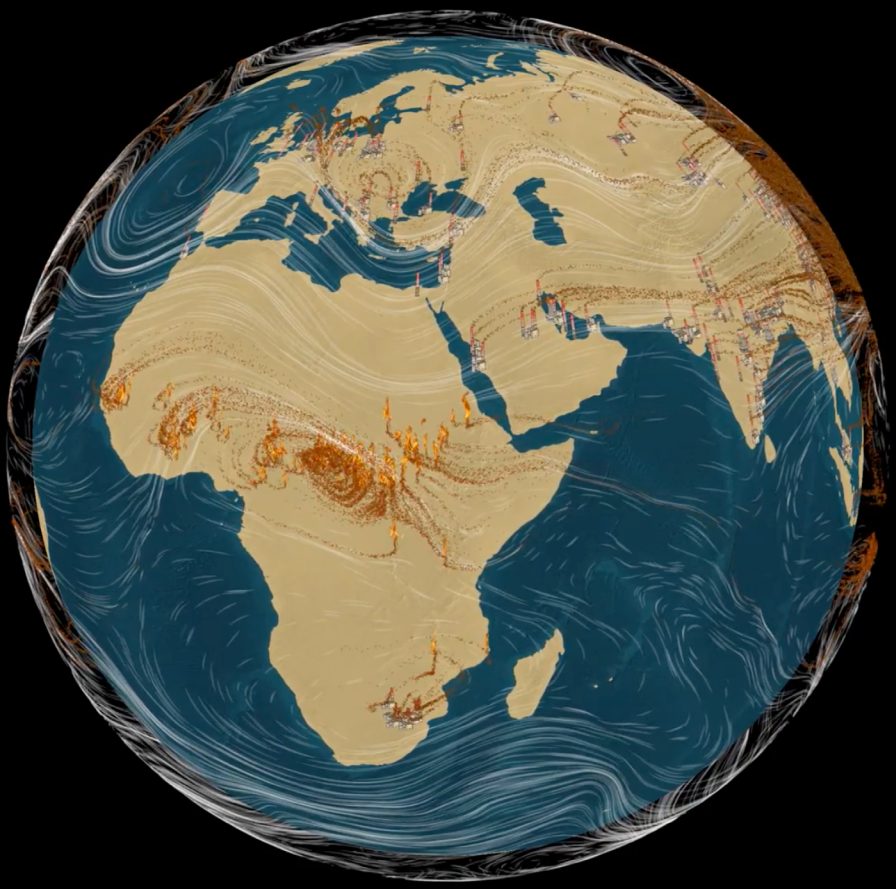
Marina Zurkow and James Schmitz

…There is no doubt that the skies are closing in.

Caught in the stranglehold of injustice and inequality, much of humanity is threatened by a great chokehold as the sense that our world is in a state of reprieve spreads far and wide. If, in these circumstances, a day after comes, it cannot come at the expense of some, always the same ones, as in the Ancienne Économie—the economy that preceded this revolution. It must necessarily be a day for all the inhabitants of Earth, without distinction as to species, race, sex, citizenship, religion, or other differentiating marker. In other words, a day after will come but only with a giant rupture, the result of radical imagination.

All these wars on life begin by taking away breath.

– Achille Mbembe, *The Universal Right to Breathe*, 2020.



Marina Zurkow and James Schmitz
The Breath Eaters, 2022
Custom software (color, silent)
Dimensions variable, Portrait or landscape orientation
Edition of 5, 1 AP

Video Documentation: https://vimeo.com/776268180

The Breath Eaters is an animated, custom software work by Marina Zurkow and James Schmitz that visualizes CO2 pollutants and other greenhouse gasses produced by wildfire and fossil fuel plant emissions. Inspired by a Midjourney image of a world map and presented as a live, three-channel generative composition, the work demonstrates how pollution is carried into the high atmosphere and across the globe on currents of wind. *The Breath Eaters* broadcasts real-time data from NASA's fire detection systems, World Resources Institute's global fossil fuel power plant database, and NOAA's global forecast system. Zurkow expands on the notion of visualizing global emissions, writing:

"If carbon has been extracted and liberated to roam the globe on the winds, why is the world of beings (human, plant, animal) constrained by national boundaries, walled in and walled out? It is our hope that a nearlive data stream of pollution's transnationalism will give rise to empathy in viewers—this map can look very different with planetary action."

As the triptych globe turns within the gallery, visitors witness an immediate impression of global carbon pollution.

The Breath Eaters tracks the travel of particulate pollution emitted from fossil fuel and biomass power plants and fire of all kinds - agriculture, deforestation, volcanos, wildfire. These particulates include primarily black carbon and organic aerosols. Global Estimates offer a range of particulate emissions.

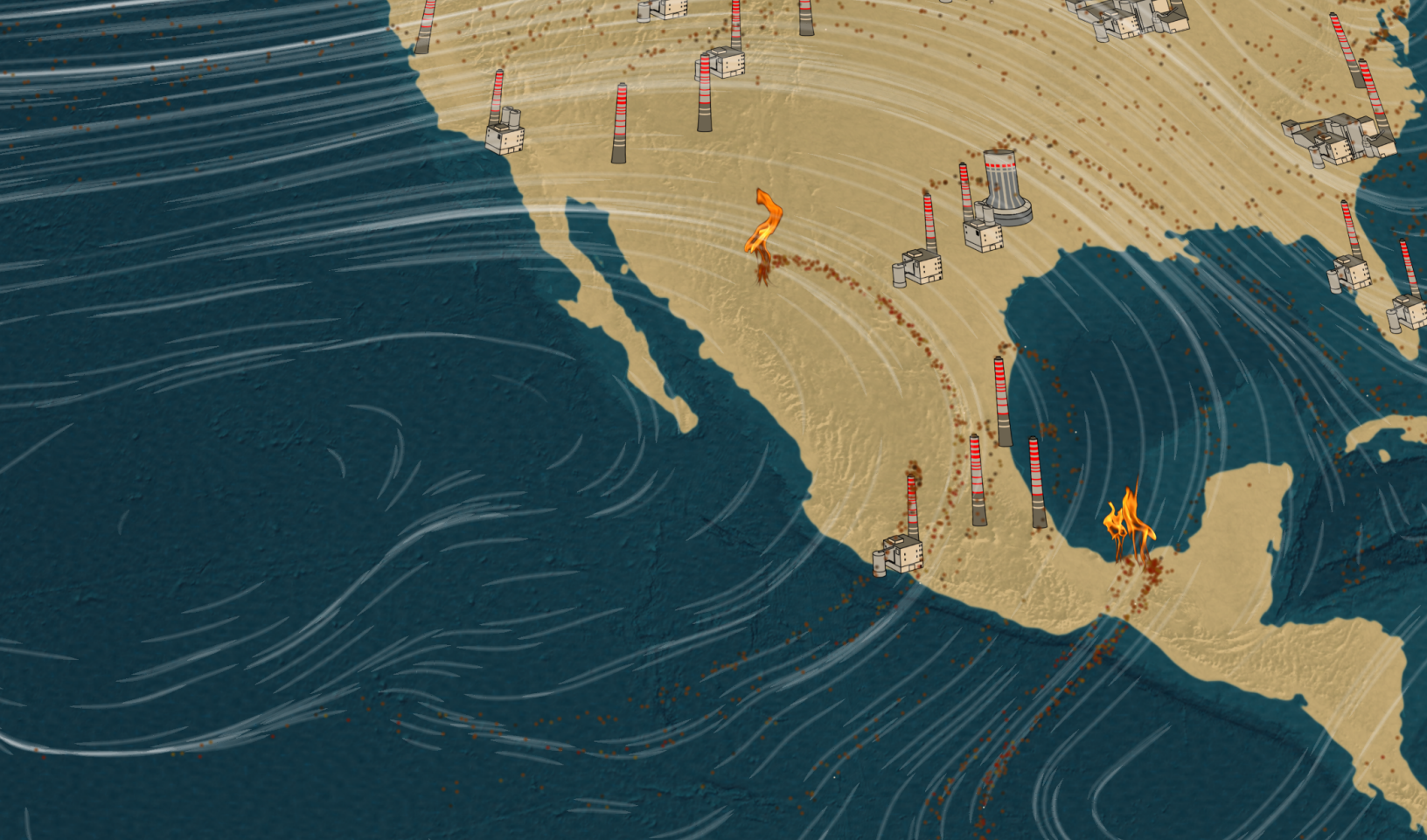
Fossil fuel plants are divided into small (single smoke stack), medium (two varieties of small power plant) and large (big can or power plant).

Small = 250 to 400 tons of PM2.5 particulates / year
Medium = 400 to 1000 tons of PM2.5 particulates / year
Large = more than 1000 tons of PM2.5 particulates / year

Fires are scaled at small and large based on the fire radiative power (FRP) observed from NASA's satellites:

Small = 100 to 1000 megawatts
Large = above 1000 megawatts

We don't know of a direct way to translate FRP to tons of particulates and global annual particulate emission estimates from fires vary substantially depending on the methodology used, but some sources estimate about 40% of black carbon from fossil fuels and 40% from open biomass burning, suggesting that it is possible to create a comparison between the two sources and that they are roughly proportional.



Rainer Maria Rilke
The Sonnets to Orpheus, Part II, No. I, 1922.

Breathing: You invisible poem!
Complete interchange of your own essence
with world-space. You counterweight
in which I rhythmically happen.

Single wave-motion
whose gradual sea I am;
you, most inclusive of all our
possible seas-space grown warm.

How many regions in space
have already been inside me.
There are winds
that seem like my wandering son.

Do you recognize me, Air,
full of places I once absorbed?
You who were the smooth bark,
roundness, and leaf of my words?

Links & Resources

General Information

Marina Zurkow, biography & curriculum vitae

Marina Zurkow, website

bitforms gallery, website

World Wind, Dropbox link to more information

James Schmitz, website

World Resources Institute, dataset

NOAA, global forecast

NASA, dataset

Recent Lectures

Toxic Progeny & The Ends of the Ocean, Marina Zurkow, Heather Davis, Anna Rose Hopkins, EFA Project Studio

Anderson Lecture Series, Penn State

Boil The Ocean, Institute of Contemporary Art, San Diego

The Fur that Jams the Social Gears, Arizona State University, Desert Humanities

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