



# the weekly anthropocene



dispatches from the wild, weird world of humanity and its biosphere

By Sam Matey, January 29 2020

## New Species: Walking Sharks. off

northern Australia, New Guinea, and a few small Indonesian islands, an incredible group of creatures adorn the sea bottoms-walking sharks! During low tides, an array of species in the genus *Hemiscyllium* eschew swimming and walk like quadrupeds on their pectoral and pelvic fins, making it easier to navigate small crevices where prey are hiding. (Pictured: a juvenile *Hemiscyllium michaeli*). Four new species were discovered over



the last 12 years, and they have even been observed walking on land for short periods. "At less than a meter long on average, walking sharks present no threat to people but their ability to withstand low oxygen environments and walk on their fins gives them a remarkable edge over their prey of small crustaceans and mollusks," said Dr. Christine Dudgeon of the University of Queensland. Fascinatingly, although sharks as a group are older than the dinosaurs (having first evolved over 400 million years ago, in the Devonian Period) a genetic "molecular clock" analysis found that these walking sharks evolved only 9 million years ago, making them the youngest shark genus on Earth. Their ability to handle high temperatures and low-oxygen waters could also mean that their genes hold valuable tips on how marine species could adapt to climate change. Epic! For more-and a video!-see [tinyurl.com/SharksWalking](https://tinyurl.com/SharksWalking) and [tinyurl.com/uqea3cf](https://tinyurl.com/uqea3cf).

**New Protections: Florida.** On January 15<sup>th</sup>, Florida Governor Ron DeSantis announced that the Sunshine State had reached a deal to buy 20,000 acres of land in the Everglades (an area larger than Portland, Maine) from Kanter Real Estate, a company which had been planning to drill for oil there. The purchase will protect territory that is home to over 60 threatened or endangered species, as well as a part of the great Everglades carbon-sequestering wetland ecosystem. Along with being excellent news on its own, fits with DeSantis' surprisingly positive environmental record: despite being a strongly pro-Trump conservative, since taking office in 2019 the governor has allocated \$2.5 billion to Everglades restoration programs, established an algal blooms task force, and appointed Florida's first Chief Science Officer. While the national GOP remains utterly wedded to corrupt and outdated anti-science and anti-environmental action policies, there may yet be space for bipartisan action on environmental issues at the state level. Awesome! For more, see [tinyurl.com/uuemysh](https://tinyurl.com/uuemysh). For all the details, see [tinyurl.com/ut3v728](https://tinyurl.com/ut3v728).



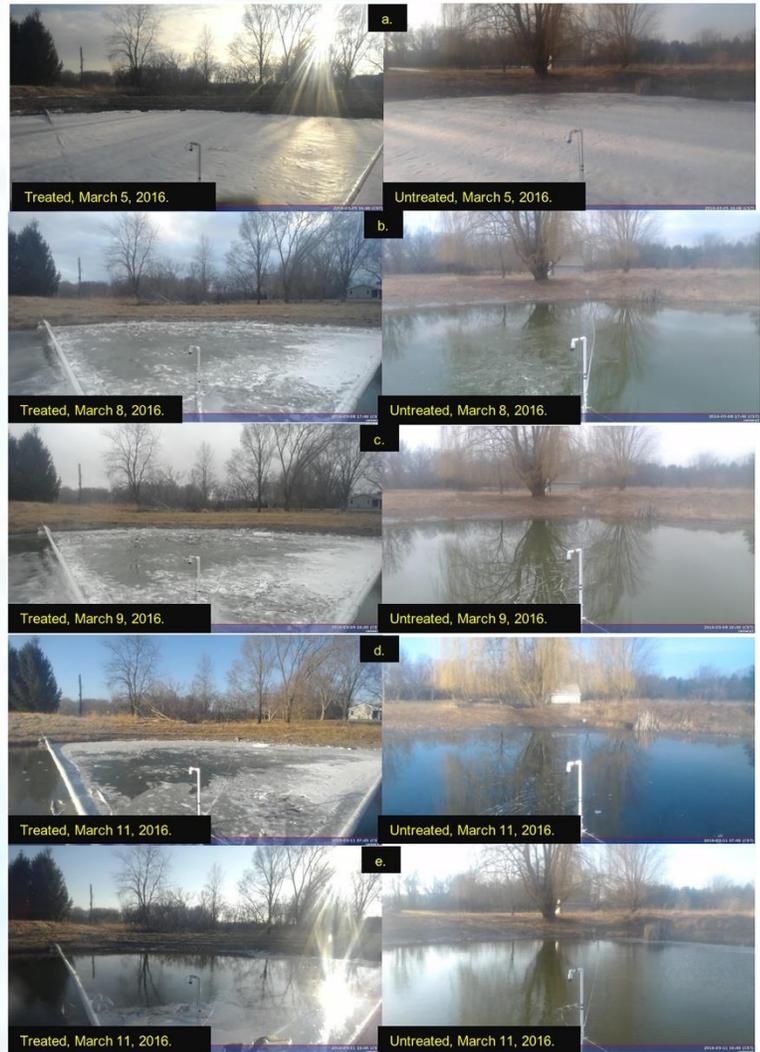
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**New Solutions: Ice 911.** During the recent World Economic Forum at Davos, many of the world's largest companies affirmed the importance of acting on climate change (though relatively few took substantive action on the issue). A potentially more important highlight was the launch of the Global Climate Restoration Taskforce (see [f4cr.org/taskforce](https://f4cr.org/taskforce)), where one of the stars of the show was brilliant, maverick inventor Dr. Leslie Fields, and her nonprofit Ice 911. Ice 911 is testing a plan to increase the Arctic's albedo, reflecting more sunlight and cooling the ice, by spreading bright white hollow micro-spheres made of silicon dioxide (the major component of sand and quartz). Dr. Field and Ice911's floating micro-spheres are highly reflective, can float, are completely nontoxic (labs have found that fish and birds can eat them with no ill effects), do not act as a pollutant-accumulating "sponge" (unlike microplastics) and eventually degrade harmlessly. They have already been extensively tested with years of study on lake ice



in Minnesota, Alberta, and Utqiagvik, Alaska, and were found to substantially thicken the ice they were applied to! At Davos, Ice 911 announced their move to testing in simulated sea ice conditions at UManitoba's SERF lab, to get the most valuable data yet. (Pictured: side-by-side comparisons of microsphere-treated and untreated areas in Minnesota).

Ice 911's bold idea can be thought of as a kind of "soft," benign, and reversible geoengineering project-though Dr. Field prefers the term "climate restoration." Ice911's long-term plan is to use one to three repurposed oil tankers to blow about 300,000 tons of the microspheres to cover 25,000 square kilometers of sea ice at critical locations in the Arctic, such as the Beaufort Gyre and the Fram Strait, where thicker sea ice will do the most good. This could be an amazing endeavor to safeguard the Arctic until humanity gets its act together and fully transitions to renewables! This kind of out-of-the-box thinking could be what helps get us through the Anthropocene. For more, see [ice911.org](https://ice911.org), [tinyurl.com/y4m7jv9d](https://tinyurl.com/y4m7jv9d), and the full study at [tinyurl.com/Ice911Study](https://tinyurl.com/Ice911Study).