The Washington Post
Democracy Dies in Darkness

ECONOMIC POLICY

Using the best data possible, we set out to find the middle of nowhere

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February 20, 2018 at 10:33 a.m. EST

In a triumph of data collection and analysis, a team of researchers based at Oxford University has built the tools necessary to calculate how far any dot on a map is from a city — or anything else.

The research, published in Nature last month, allows us to pin down a question that has long evaded serious answers: Where is the middle of nowhere?

To know, you'd have to catalogue and calculate the navigation challenges presented by the planet's complex, varied terrain and the dirt tracks, roads, railroads and waterways that crisscross it. You'd then need to string those calculations together, testing every possible path from every point to every other point.

That is pretty much what the folks did at the Malaria Atlas Project, a group at Oxford's Big Data Institute that studies the intersection of disease, geography and demographics. The huge team — 22 authors are credited — spent years building a globe-spanning map outlining just how long it takes to cross any spot on the planet based on its transportation types, vegetation, slope, elevation and more. Those spots, or pixels, represent about a square kilometer.

Armed with this data, and hours and hours of computer time, The Washington Post processed every pixel and every populated place in the contiguous United States to find the one that best represents the "middle of nowhere."

Congratulations, Glasgow, Mont.!

Of all towns with more than 1,000 residents, Glasgow, home to 3,363 people in the rolling prairie of northeastern Montana, is farthest — about 4.5 hours in any direction — from any metropolitan area of more than 75,000 people.

Below, we've mapped the 10 most isolated towns in the United States. Also marked are what the analysis shows to be the hardest-to-reach unpopulated parts of the contiguous 48 states: the heart of Idaho's Frank Church River of No Return Wilderness Area, and part of the Shoshone National Forest outside of Yellowstone National Park in Wyoming.

The Malaria Atlas Project's research could shed light on global efforts to help the poor — because access to cities, the researchers have found, is associated with such issues as health, education and environmental protection.

The map above, based on The Post's analysis, helps us understand the landscape of geographic isolation in the United States — not a geography with as giant implications as the Malaria Atlas Project's, but still one that gives a deeper insight into a country that seems so defined by the cities and suburbs that all but about 2 percent of the population can reach in less than an hour.

Glasgow is in a region of northern Montana — running from the Fort Belknap Indian Reservation to the west to the Fort Peck Indian Reservation in the east — that consistently ranks as the most isolated, but still settled, part of the country.

To the north, a border crossing and acres upon hectares of wheat and other grains lie between Glasgow and the nearest midsize Canadian city, Regina, in the province of Saskatchewan. To the south, both Glasgow and the waters of the Missouri River are pinned in by Fort Peck Dam, an icon of an era when New Deal feats of civil engineering earned a place in the inaugural edition of Life magazine.

The seven-year boom fueled by the dam's construction ended in 1940, and the town didn't get its second wind until Glasgow Air Force Base opened in 1957. Before it closed in 1976, more people living on the base than in the town itself, said Mark Dulaney, a longtime resident and a sales rep for a local office supply company.

Dulaney, 61, who moved to Glasgow from Iowa with his family in 1971, lives out by the reservoir and hunts pheasant and whatever game is in season. He said he enjoys the isolation in northeastern Montana, even if it means driving hours to sell printers and supplies across a sprawling sales territory or paying twice as much for wood pellets to heat his garage than he would in Billings, a metropolitan area of 164,496 people that's about 4.5 hours away.

“It's pretty slow moving here,” said Dulaney, who can travel all day on a hunting trip without seeing another car. “When we go to Billings, it seems like a big metropolis.”

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Glasgow, Montana

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Getting a Lubbock, TX vibe here in Montana.

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Today, folks in Glasgow tend to work for the railroad, grow wheat, raise livestock, or provide goods and services for people in those industries. Last summer had the worst drought on record, Dulaney said, but there has been plenty of snow this winter, so 2018 is looking better.

“When the farmers and ranchers are happy, then everybody's happy,” he said. The money they spend at restaurants and bars, and on farm equipment, buoys all of Glasgow.

Prior attempts to compare the solitude of the Glasgows of the world have been hamstrung by a lack of data. They tended to measure distance from roads — not travel times. Five miles on a dirt road in the Montana Rockies isn’t equivalent to five miles on a state highway in Illinois farm country.
The measurement is daunting enough in the United States, but it quickly becomes nearly impossible in the developing world.

It explains why Daniel Weiss, the Malaria Atlas Project’s director of global malaria epidemiology, and his team invested so much time acquiring data from satellites, OpenStreetMap, Google, shipping databases, surveys and other sources.

In the end, their data accounted for 4.8 times as much road coverage as a previous effort in 2000. With Google’s Earth Engine, they combined it with travel speeds for myriad transportation types, elevations and slopes. They estimated walking speeds through everything from open shrub lands (2.6 miles per hour) to croplands (1.55 mph) to snow and ice (1.01 mph).

When they were done, they had a Rosetta Stone for transportation. With the right algorithm, it can estimate transit times between any two points on the globe (although areas near the polar regions are a special case), and be modified to suit just about anyone’s needs. It excludes flight, and the final product doesn't distinguish between transportation types, instead assuming travelers will take the fastest method available.

We focused our analysis on that previously impossible search for the most remote places in the contiguous United States, using a variant of the methodology the researchers used. Like them, we attempted to measure a place's distance from any densely populated spot within a metro large enough to provide key goods and services.

When you take population out of the equation, the most remote place in the Lower 48 is a vast conglomeration of protected areas in Idaho that some locals call “The Frank.”

The Frank Church River of No Return Wilderness Area, the largest contiguous federal wilderness outside of Alaska, is named after the Idaho senator who did much to advance conservationism in the 1960s and the Salmon River, one of the most wild and scenic rivers on the continent.

The Salmon River Canyon, the Salmon River Gorge and the Salmon River mountains are at the heart of The Frank. They're also where you'll find the ultra-remote area pinpointed by our algorithm.

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Did you know? Frank Church River of No Return Wilderness is the second largest wilderness in the United States outside of Alaska. One of the biggest attractions is the Salmon River Canyon which is one of the deepest gorges in North America—deeper than the Grand Canyon. Share the Experience photo by David Regela.
#frankchurchriver #wilderness #idaho #recreationgov #exploreyouramerica

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The runner up for most remote area lies southeast of the Wapiti Ranger Station in the Shoshone National Forest, part of the oldest federally protected forest in the country. The Shoshone abuts Yellowstone to the east, and was set aside along with the more famous and accessible national park as a timberland reserve in 1891, the year after Wyoming became a state.

All the above reckoning, however, still relies on distance from what might be a generous definition of "city." Outlying metro areas such as Rapid City, S.D., and Helena, Mont., end up with a large influence on the outcome.

If you went to another extreme, and told the data set that you wanted to be as far away from a city of more than 1 million people as possible, it probably would suggest, well, pretty much all of Idaho, Montana and New Mexico.

For the most extreme case — finding the world's hardest-to-access places regardless of population — we used a data set created by the researchers. It shows the number hours needed to travel from a city to almost any point on the globe.

When analyzing their data, we only considered contiguous groups of more than 20 pixels that were all in the top few percentiles of inaccessibility to reduce distortion from small and mountainous areas.

Greenland's interior led the list. The world's largest island's never-ending ice pack, combined with its distance from the population centers of Maritime Canada and Western Europe, make its farthest reaches uniquely inaccessible, probably in part because the map assumes you'll be making much of the overland journey on foot. Its neighbor to the west, Canada's Ellesmere island, came in third for many of the same reasons.

The runners-up, the Pitcairn Islands, are a lonely Pacific island chain still populated by descendants of the Bounty mutineers. The parts of Greenland remote enough to make this list aren't inhabited.

We've mapped the top five below. Polynesian islands fill out the rest of the top 10.

In the United States, being far from a major city means that it's harder to access specialized types of health care, as well as things such as certain elite institutions of higher learning and international airports.

In the developing world, living in a remote location is measurably worse for your well-being. They're not only harder to reach, but they also can host endemic diseases such as the malaria that Weiss and his colleagues are helping to eradicate.

In low-income and middle-income countries especially, the researchers write, the link between access to cities and well-being is "unequivocal." The access itself also is harder to come by. In developed nations, they found, 90.7 percent of the population lives within an hour of a major city (see, for example, the entire eastern half of any of our maps), while in low-income countries, only 50.9 percent does.

Western Kansas won't be struck by a malaria outbreak. Tropical diseases aren't festering within the Frank Church River of No Return Wilderness Area. But the same data that gave us the power to determine what makes a speck on the Nevada map or a stretch of the Montana Badlands unique also will empower researchers worldwide.