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Tourists at Machu Picchu's Citadel, which receives an average of 4,080 visitors a day.

MARTIN PARR/MAGNUM PHOTOS

Too Much of a Good Thing

Are we putting our favorite destinations in peril? On a trip to Peru's Machu Picchu, **Kevin West** examines the consequences of—and remedies for—overtourism.

HIGH IN an Andean cloud forest, surrounded by the myth and legend of an ancient Incan world, my first morning at Machu Picchu left me feeling lucky and #blessed.

But it's not at all what you're thinking. I hadn't been up to the Citadel, which is how the local tourism industry refers to the mountaintop ruins recognized around the world as the Lost City of the Incas. Instead I was at the Mariposario, a butterfly sanctuary across the Urubamba River from a dirt highway that links the Citadel to the tourist base camp, Aguas Calientes. Diesel buses, every one packed, rumbled past in both directions.

A municipal official had been showing me around the town's sustainability projects, including a plastic-waste disposal facility and an organic-waste treatment plant; the sanctuary was our last stop. At the gate, he handed me over to director Leonardo Serrano for a private tour of the butterfly "zoo," a shaded garden enclosed by netting. Serrano was a master of show-and-tell. He drew my eye to what seemed to be a crumpled dead leaf until he touched it and the camouflaged cocoon squirmed like a tickled baby.

"Nature is a miracle," I said in what was left of my college Spanish.

"Look what a miracle nature is," Serrano parried. He approached a resting Caligo butterfly, its iPhone-sized wings closed above its back like a sail. Serrano spread his first two fingers behind the butterfly and tenderly closed them to immobilize the fragile creature in his velvet grasp.

"What eats butterflies?" Serrano asked as he tipped the quivering wings down for me to see their curved and pigmented edges. "Birds. What eats birds? Serpents."

In a blink, what looked like a random pattern on the wings resolved into a snake's head: the reptilian eye, the lipless slit of a cold mouth, the row of scales that curved where the head cocked menacingly toward me.

"Oh my god," I gasped.

Serrano opened his fingers and the butterfly fluttered aloft. For the Incas, he said, butterflies represented the union of earth and sky. To scientists they are an indicator species, and populations are in worrisome decline because of such factors as habitat loss, pesticide overuse, and climate

change. Perhaps to end my tour on a less gloomy note, Serrano had me capture a butterfly and release it into the wild. It was a simple, joyful gesture.

The next day, I happened to see the same species again, except this one was mounted and framed for sale in an open-air souvenir market. Even worse, my guide explained, a butterfly hunter might kill as many as 20 to get a perfectly intact specimen to sell.

The symbolism was almost too on-the-nose. My assignment in Peru was to write about overtourism, a clunky word that describes a visitor influx that overwhelms local conditions, and I came to see overtourism as a sustainability issue at its root. Sustainability might be a slippery concept, but killing 20 to sell one is a cut-and-dried example of wasteful stewardship. All the more so when you try to scale up: The more tourists you get, the more butterflies die. That's overtourism in a nutshell.

Now swap out butterflies for any other precious but limited resource—whether it's a natural resource, like water, or a fragile cultural heritage, or even an intangible experience like the stillness of a Bhutanese forest path or the ageless beauty of Venice. Are we loving our favorite places to death? Looked at from a certain cosmic perspective, overtourism also represents the global sustainability crisis in microcosm. We are all visitors on planet Earth. And we're currently overbooked, using too many resources at too fast a pace.

If there's going to be a future for travel, the future will have to be sustainable. What exactly that means and how to achieve it will concern governments, tour operators, and conscientious travelers alike. The scale of the travel and tourism industry can literally shape the future. The question is how do we reap the benefits of tourism—economic development, cultural understanding, personal growth—without, as it were, killing off all the butterflies?

CLEANER CRUISING

Hope Floats

Rethinking the cruise ship with state-of-the-art technology.

The cruise industry is taking steps to reduce pollution, with companies such as Oceania and Regent pledging to eliminate plastic water bottles, and others (Silversea) installing advanced wastewater treatment systems. In addition, next year Quasar Expeditions *(quasarex.com)* will launch the *Conservation*, a retrofitted 10-cabin cruiser that runs on ultra-low-sulfur diesel and offsets its emissions through an Andean reforestation project in partnership with the Carbon Fund. Based in the Galápagos, the fuel-efficient *Conservation* is designed to sail up to a third more quickly than other ships, allowing it to get where it's going faster, thus spending less time spewing carbon. In addition, a team of scientists tasked with measuring the impact of tourism will join every trip.

One of the most eagerly awaited innovations in the cruise industry is the arrival of *Le Commandant Charcot*, a hybrid-powered polar exploration ship from Ponant *(ponant.com)* fueled by electric battery and natural gas. Currently under construction in Romania, the five-deck, 490-foot vessel has been described as a "spaceship." According to Nicolas Dubreuil, director of sustainable development at Ponant, "everything has been designed for the sake of sustainability." Under electric mode, the 135-cabin ship will have zero emissions, and under gas power, far fewer than international regulations require. Moreover, thanks to a cutting-edge propulsion system, *Le Commandant Charcot* will be able to visit some of the least accessible regions of the Arctic, including northeastern Greenland, while leaving as little trace as possible, such as less broken ice. "I want our passengers to experience real nature, not a domesticated version," said Dubreuil, "and I want them to respect it."

In 1911, a handsome Yale historian named Hiram Bingham led an expedition to Peru and returned with photos of Machu Picchu. Built for Inca royalty and 1,200 or so support staff, the Citadel is set with dramatic flair amid towering green peaks and plunging jungle canyons: a carved emerald centered in a jade chalice. Bingham's photographs made Machu Picchu an instant icon. It's the *Mona Lisa* of archaeology.

"How did you learn about Machu Picchu?" asked my driver, Santos Kae Palomino Tapia, when he picked me up at the Cuzco airport at the start of my trip. Hard to remember, I said, but I must have seen pictures in magazines like *National Geographic*. Tapia replied that today people encounter such pictures in limitless profusion on their phones and laptops. "Everyone who visits wants to share their impressions," he said. "The information has a global reach." Social media creates an endless feedback loop: More posts from more visitors mean more visitors who post more.

Today an average of 4,080 tourists daily tramp through the Citadel, despite the planes-trains-and-automobiles itinerary required for virtually anyone to get there. It took me two full travel days to join the slow-moving tourist conga line that shuffled from the Citadel gates toward the mobbed first overlook where selfie-stick self-portraitists searched impatiently for a spot to crop out the crowds and frame a likeable if 100 percent deceitful Instagram post of themselves in a contemplative/celebratory "solo" moment at Machu Picchu. Some 1.5 million visitors have posted to Instagram under the hashtag #machupicchu. As I write this paragraph in my home office, it's 9:14 A.M. Citadel time and the dry-season weather is crystal clear. In the past hour alone, 75 new posts have been uploaded, a rate of one every 48 seconds. Machu Picchu was abandoned by the Incas 484 years ago, but here in 2019, it's blowing up.

To get wonky for a minute: Last year, the travel industry generated one out of every ten dollars in the entire world. Put another way, this 10 percent of global GDP equaled $8.8 trillion in economic activity, according to figures presented at

The Louvre recently closed for a day after staff went on strike to protest overcrowding.

the 2019 World Travel & Tourism Council (WTTC) I attended in April in Seville. Trend lines point up and up. Total economic activity ten years from now is projected to hit $13.1 trillion, representing 11 percent of GDP and one in four new jobs, for a total global tourism workforce of 421 million people. That's as if every single person in the U.S. and Canada today worked in the travel industry—as travel agents, pilots, wilderness guides, waiters, data analysts, housekeepers, coders for online booking sites, drivers, translators, administrative support, you name it—plus everyone in the U.K. and everyone in Australia. Travel is huge.

So huge as to challenge our ability to grasp its consequences. Last year on this frenzied anthill of humanity, we collectively made 7 billion trips from one place to another. Now factor in the next superpower. If you think there aren't already a lot of tourists at Piazza San Marco, the Louvre, and Machu Picchu, get ready for the great Chinese middle class to consummate its wanderlust. Tour operators around the world are rushing to incorporate Mandarin fluency into their services. Multiple presentations at WTTC made clear that the well-to-do Chinese tourists you may have spotted on your last trip represent only an advance ripple of an oncoming tsunami. Message: It's a good time to be in the travel industry. Among the business leaders and politicians who spoke in Seville, the mood was jolly.

Another contingent was less so. Sustainability experts did their level best to remind delegates that travel's huge economic benefits also have huge environmental consequences, but the handwringers got less play than the cheerleaders.

Futurist and contrarian Chandran Nair, founder and CEO of the Global Institute for Tomorrow in Hong Kong, had just ten minutes to speak on the second afternoon—and the few delegates left were dozing or texting—so he got straight to the point. The defining conditions of the 21st century, he said, are population growth, climate change, technology overreach, the crises of capitalism, and constraints on resources. To balance this dire litany, Nair offered a list of actions to make the travel industry more sustainable. Stop all breakfast buffets at chain hotels, because food waste is a major driver of carbon emissions. Eradicate single-use plastic across the industry. Use 75 percent local food. No bathtubs in hotel rooms. Charge for AC overuse. And halt further incursions into wild lands. The ideas were simple, impactful...and implausible.

Later I found Nair alone in the lobby. He was charming in person but even more fierce in his critique of weak-tea sustainability gestures. "Reusing your towels," he said coolly, "is not going to save the tigers."

Nair's impassioned position is that politicians, business leaders, and travelers of all stripes have to accept the current reality of runaway global climate change and seek urgently for transformative structural changes that might—might—mitigate the worst outcomes. In the end, that means one thing only. "Sustainability," Nair said, "means using less."

On my second morning at Machu Picchu Pueblo, I made it up to the Citadel. It lived up to the hype. I add my voice to the choir proclaiming Machu Picchu a bucket-list wonder of the world. What I didn't anticipate was how annoying the crowds would be. Picture-takers clotted every doorway. They shadowed every free-range llama like gangs of pickpockets. They blocked traffic along single-file trails, human cholesterol clogging the ancient site's sclerotic arteries. So many people! And it wasn't even peak season. The park currently caps visitors at 5,600 per day. Since August 2018, when it happened for the first time, tickets sometimes sell out. Machu Picchu has reached not just the theoretical but the actual limit of its capacity. The lost Incan city is, strictly speaking, now a limited resource.

CHRIS SORENSEN/GALLERY STOCK

I started my visit in a small building just inside the gates to meet Miguel Antonia Zamora Salas, who administers the 91,000-acre Parque Arqueológico de Machupicchu. Zamora's two key goals are at odds: to bring more visitors to Machu Picchu and simultaneously to protect the fragile ruins from being trampled to dust. In a brusque mood when I arrived, Zamora explained that Peru began to promote its tourist sites in the 1940s and has made tourism a national political priority since the 2000s. He flipped on an antiquated computer to show me the results. Last year, a total of about 1.5 million visitors passed these gates.

Is that too many people?

"For the current conditions, it is," Zamora said.

His next slide modeled visitor numbers through 2021, Peru's bicentennial. The most optimistic projection, which imagined a robust 15 percent annual growth rate, showed as many as 2.25 million visitors by 2021, or around 6,160 per day.

Zamora pushed back from the computer and leaned into his chair. I couldn't tell if he was pleased to accomplish goal No. 1 or concerned about goal No. 2. I repeated what Nair told me in Seville, that sustainability means using less.

"So how do we accommodate more visitors by using less?" Zamora replied with raised eyebrows. "That is a good question. It's the big question."

Here's the big answer: You allot each visitor a smaller piece of the pie. More people means less resources per person. At Machu Picchu, the most valuable resource is the Citadel itself, as measured by time spent on site. Zamora's plan is to move visitors through more quickly—less time per capita. A ticket holder could until recently enter the gates at 6 A.M. and stay until closing at 5:30 P.M. Now Zamora has instituted a policy of timed entries, morning or afternoon, with a limit of four hours per visit. In the future, visitors could have as little as one hour, with additional all-you-can-eat access to a visitor's center. That's half the plan. The other half is to tempt people away from the Citadel and into the surrounding national park, where Incan trails, ruins, waterfalls, views—and other attractions such as the Mariposario—are largely ignored.

"The Citadel is receiving 99 percent of visitors here," said Zamora. "Our big effort is to disperse the visitors."

Zamora gave me a bound copy of the park's master plan and then introduced an X factor that could shred the whole thing. He picked up a water glass and placed it at the center of his desk. "This is Cuzco," he said. He placed a second glass on the left side of the desk to represent Machu Picchu. Cuzco's airport, a stapler, went slightly to the city's right. Most foreign visitors, Zamora explained, reach Peru via Lima's international airport and catch a smaller plane to Cuzco. By force of geography, they pass through Cuzco on the way to Machu Picchu, and many will stay over in Cuzco for a few nights to explore the city and make side trips to nearby ruins and the spectacular Sacred Valley, the area of Zamora's desk between the two water glasses.

The Sacred Valley is also the proposed location for a new international airport. Despite furious outcry, earth-moving has

FOOD MATTERS

A Taste of Home

The culinary vanguard doubles down on localism.

Visionary chefs around the world are building on the locavore movement to push sustainable dining in new directions, focusing on indigenous foodways and communal ingenuity. In New Zealand, chef Monique Fiso is reviving the forgotten cuisine of her Maori ancestors at Hiakai *(hiakai.co.nz)*, her new 30-seat restaurant in Wellington that offers tasting menus based on native ingredients such as *titi* (muttonbird) and *pikopiko* (ferns). Fiso spent seven years working at New York restaurants, including the Musket Room (one of only two in the city serving New Zealand cooking), and competed on Netflix's *The Final Table*. At Hiakai she's built supply chains that rely on access to islands where only Maori hunters are permitted.

Similarly, in Mexico City, restaurateurs are trying to save the chinampas, the famous man-made islands of Lake Xochimilco built by the Aztecs more than 1,000 years ago, by using them to supply local restaurants. The sprawling chinampas, which have been abandoned over the past century in favor of industrial farms, provide vegetables free of chemical fertilizers or pesticides; increasingly, the city's top restaurants—such as Global Dining Collection partner Enrique Olvera's perpetually booked Pujol *(pujol.com.mx)*—are getting their corn, radishes, chili peppers, and squash blossoms directly from them. "If we managed to convert that land into an agricultural area, it could be a big part of the city," said Olvera.

The push extends beyond agriculture into aquaculture. Chef Jean-Georges Vongerichten has a new Manhattan restaurant, the Fulton *(thefulton.nyc)*, that looks to the waters off Montauk and Rhode Island for much of its fish, including black bass, skate, monkfish, and sea robin. "We work only with small boats that go out and return the same day. We get the seafood that afternoon, and it's on your plate that night," the French chef said. "Local seafood tastes better and is better for the environment."

begun. If completed, the consequences for Machu Picchu could be drastic. Imagine, said Zamora, how the tourist stream that now disperses through Cuzco and scatters over the entire region like a beneficial rain would be funneled through the international airport as a fire-hose blast aimed directly at the Citadel. "Here will receive the full force," he said, glaring at the prospect.

As we wrapped up our conversation, Zamora asked to see my entry pass. He scrawled a note, signed it, and said I now had permission to climb Huayna Picchu, the mountain behind Machu Picchu. It was my golden ticket. Access to the peak is limited to 400 per day, and the attendant at the trailhead was visibly peeved that Zamora had allowed me to bypass the usual three-month wait list. Guide Israel Obando led me along dramatic cliffs blooming with ten-foot-tall orchids as a profusion of butterflies did laps around the peak and swallows plunged headlong into the bottomless canyons. In an hour we saw maybe 20 people. Enforced exclusivity turns out to be a powerful tool against overtourism, whether it is imposed through strict quotas, as at Huayna Picchu, or created through some combination of quotas, inaccessibility, and cost, as with the Galápagos Islands and Rwanda's mountain gorilla preserves. The remote Himalayan kingdom of Bhutan received only 274,097 foreign visitors in 2018, or 751 per day in the entire country, but each of them paid a mandatory visitor's fee of $250 a day.

Near the tippy top of Huayna Picchu, Obando pointed me around the last switchback. There my Hiram Bingham fantasies met a line of people waiting to step onto a flat rock the size of a ping-pong table. The selfie spot. Pics or it didn't happen.

An old EPA maxim holds "dilution is the solution to pollution." The sentiment is discredited now—there's no such thing as diluting carbon emissions—but it came to mind when I left Cuzco at dawn for Kuélap, an archaeological site in the northern region of Amazonas. Groggily, I thought about dilution as the solution to overtourism. If there are too many people in one place, just spread them around, like jam on toast. Two hours later, changing planes in Lima for the Amazonas city of Jaén, I saw a crazy photo on my news feed. It was of Mount Everest, where mountaineers were stuck in an hours-long line to reach the summit, idling at an oxygen-deprived altitude so extreme it's called the death zone. So much for jam on toast. Overtourism is the 21st century's anywhere and everywhere problem.

This May, climbers on Mount Everest were forced to wait in the "death zone" while waiting to reach the summit.

My intention in visiting inaccessible Amazonas, in fact, was to see how many people had beat me to it. Last year, the *New York Times* travel section put Kuélap on its list of 52 Places to Go. The writer described a tedious journey by plane, train, automobile, cable car, and horse, followed by a magical experience at the ancient mountaintop complex sometimes called the Machu Picchu of the north.

The comparison, I found when I visited the next day, is inapt. Kuélap was built by the pre-Incan Chachapoyas people, the so-called Cloud Warriors, and it's no more going to knock Machu Picchu off its pedestal than the lovely Chardin still-life paintings at the Louvre are going to draw crowds away from the *Mona Lisa*. Kuélap was interesting, but in a rather academic way, and it's hard to photograph. There's no iconic view, no Mona Lisa smile. Kuélap currently gets 400 to 500 visitors per day, one-tenth of Machu Picchu's numbers; many are Peruvians for whom the main attraction is the cable car, the country's first.

That's not to say I didn't enjoy Amazonas. I did, very much so. But my memories center on the undeveloped landscape, the traditional agriculture, and my intense multiday conversation with guide Julio Galexner Garcia Infante. Infante is from the Amazonas capital of Chachapoyas, population 30,000, and he has the small stature and broad cheekbones of the region's indigenous people. University-trained to become an English teacher, Infante spoke fluently, even elegantly, with old-fashioned, by-the-book grammar.

He met me at Jaén's podunk airstrip. As we drove through the chaotic city, a regional hub, past strip malls that had

pushed into outlying rice fields. Infante expressed his contempt. "See this here? It is known as progress," he said. "Progress was an idea born in the 19th century, that we are moving ahead always. What comes after that? You should be more concerned with your identity."

Infante identifies first as Andean and Amerindian, then Peruvian. He is altogether unsure of his place in Western culture, given its historic hostility to indigenous people. And yet he is torn. He wants to learn about his native history and share his region with outsiders like me. He understands that tourism could bring money, if also the risk of fundamental changes to the region's fragile culture.

The *Times* listing had indeed contributed to an uptick in local tourism last year, Infante acknowledged, but it hadn't made Kuélap a must-see for most international visitors. It's just too far. We spent five hours on twisty roads to reach the mountain hamlet where we'd stay the night in a guesthouse with no other guests.

The next afternoon we went even farther off the beaten path, to a tiny mountain village, San Bartolo, known for the Mausoleum of Revash, a Chachapoyas tomb complex built into high cliffs above the town.

The narrow dirt road to Revash started in a shaded ravine and climbed for miles to the middle of nowhere. Fresh landslides had ripped the higher slopes, brought down by a conspiracy of earthquakes and rain. The road itself seemed at best a provisional agreement with gravity.

By the time we got to San Bartolo, the afternoon was far gone. We stopped at the municipal office to pay an entry fee and sign a guest book. Mine was the third signature of the day. Three young boys trotted their cattle home and we set out for the ruins. An old woman shouted from her porch that it was too late to go. We walked faster. The walkway was paved, an extravagance built to accommodate the government's hoped-for tourists.

A quarter mile from the ruins, the walkway ended, the literal end of the tourist trail.

"They ran out of money," Infante explained.

We followed a mud track into the thickening dusk. The ruins, discovered in the 1980s, loomed ahead. I looked across the expansive valley and saw mountains pushed up by great folds of the earth's crust. Pastures and fields of corn quilted the ridgetops. Except for the few dirt roads twisting like discarded bits of yarn, the view had hardly changed since the Chachapoyas laid their warriors to rest. "Progress" hadn't arrived.

I asked Infante what he was feeling. He replied philosophically. Because he was from this place, he said, he believed he had a commitment to it. He believed tourism was a way to learn about his culture and earn money. He had a responsibility to share and to protect his inheritance. Infante quoted Spanish philosopher José Ortega y Gasset: "*Yo soy yo y mi circunstancia, y si no la salvo a ella no me salvo yo*" (I am I and my circumstance, and if I don't save it, I don't save myself).

"This is the beginning," he said, hands clasped behind his back, "but only the beginning." We watched the sunlight fade as a noisy group of parrots flew to roost. "Well," he said finally, and shuffled his feet. It was time to go. We followed the mud track back to the paved walkway.

More tourists will come to Revash, and soon. They will bring with them money and progress, benefits and risks, but in what proportions neither the government, nor Infante, nor anyone else can foretell.

THE FUTURE ACCORDING TO...

DANIELA SOTO-INNES

CHEF, COSME AND ATLA

"I'm looking forward to seeing more vegetables and fish on menus, with a focus on sustainability. I think, and hope, the future of dining will center on shared plates, better music, and an overall more fun experience."

Peru Essentials

Highlights of three of the nation's top destinations.

MACHU PICCHU
The Peruvian-owned Inkaterra hotel group stands apart for its serious commitment to sustainability; its seven properties are carbon-neutral thanks to offsets from a private 42,000-acre rainforest preserve. At Inkaterra Machu Picchu Pueblo Hotel *(rooms from $547)*, 83 adobe casitas are surrounded by a 12-acre garden, while Inkaterra La Casona in Cuzco *(rooms from $400)* features 11 suites within a 16th-century colonial mansion. *inkaterra.com*

SACRED VALLEY
Mil, located near the Incan ruin of Moray above Cuzco, is a tasting-menu restaurant by celebrated chef Virgilio Martínez, who creates high art with ancient Peruvian ingredients. *milcentro.pe*

KUÉLAP
Kentitambo is a charming guesthouse near the cloud forest town of Leymebamba, 45 minutes by car from the cable car to Kuélap. $ *Rooms from $116; kentitambo.com.*

ILLUSTRATION BY ULLA PUGGAARD