Mercury from mining prompts emergency in Peru
Lima, Peru

A state of emergency aimed at addressing health problems related to widespread mercury poisoning in the southeastern Peruvian Amazon has raised tensions between national government officials and local authorities in the Madre de Dios region. The May 23 emergency decree blames the contamination on unregulated alluvial gold mining, in which miners use mercury to separate gold from sediment. Mining operations have also choked rivers with silt and deforested about 100,000 hectares (386 square miles), according to government figures.

The decree paves the way for additional studies of mercury in humans and the environment, as well as food and medical assistance, water treatment, environmental monitoring and other measures, says Environment Minister Manuel Pulgar-Vidal. The measure’s long-term impact may be in doubt, because Peru’s presidential runoff is scheduled for June 5 and the new government will take office July 28, just days after the 60-day emergency period expires.

The two candidates, Keiko Fujimori and Pedro Pablo Kuczynski, differ on policies for regulating gold mining. (See related story—this issue.)

Researchers from Duke University have found that two out of five people tested had levels of mercury in their hair that exceeded the maximum level, or “reference value,” set by the World Health Organization, says Pulgar-Vidal.

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Species-rich private reserve for sale in Paraguay

Since its establishment in 2010, the Laguna Blanca Natural Reserve has stood out as a rare remnant of wilderness in Paraguay’s galloping advance of soy plantations and ranches. Evenly split between Cerrado and Atlantic Forest ecosystems, it has the largest number of reptile and amphibian species of any of the nation’s reserves. It is internationally recognized as an Important Bird and Biodiversity Area (IBA). And it is a place of significant scientific research, with 14 newly discovered animal species, including the Tropidurus lagunablanca, a critically endangered golden-brown and orange lizard, described for the first time in February by a scientist from the American Museum of Natural History.

But the 814-hectare (2,011-acre) private reserve in the eastern department of San Pedro is now up for sale. With no environmentally minded buyers on the scene, its future looks dubious. In January 2015, the reserve’s five year, government-granted status as a protected area expired. The family that owns it now seems determined to sell to the highest bidder, most likely a soybean or ranching concern. The experiment in conservation and research could soon come to an end.

“The constant presence of staff researchers and interns here has allowed us to discover and describe some very rare species,” says Joseph Sarvary, deputy director of the Para La Tierra Foundation, which manages the reserve. “In Para-...continued on page 10
Vaquita count indicates population nearly extinct

Last year seemed to finally provide a ray of hope for the vaquita, the critically endangered Mexican porpoise that inhabits the upper reaches of the Gulf of California. As the population of the tiny marine mammal slipped below 100, the government assembled an all-out effort to save the species, placing strict curbs on fishing and sending in the Mexican Navy to enforce them. (See “Mexico plans 11-hour drive to save vaquita”—EcoAméricas, March ‘15.)

Then, during a 10-week marine expedition to estimate a new count of the population, researchers made at least two-dozen sightings of the elusive vaquita (Phocoena sinus), beyond anything they had hoped for. (See “Some rare good news about a very rare porpoise”—EcoAméricas, Oct. ’15.)

But this month, a panel of experts known as the International Committee for the Recovery of the Vaquita announced the results of last fall’s expedition and it was disheartening. Only 60 vaquitas are left, they concluded.

The group called for the two-year gillnet ban the government enacted last year to be extended and asked for enforcement to be strengthened. Otherwise, the experts warned, the vaquita, which are caught accidentally in the gillnets, could become extinct in five years.

Conservation groups agree that the government has made an unprecedented attempt to enforce fishing limits across the vaquita’s habitat, adding helicopters and even drones to new speedboats that have been deployed on the water.

But it has not been enough to stop illegal fishing for another endangered species in the region, the giant totoaba fish (Totoaba macdonaldi). The totoaba’s swim bladder is a culinary delicacy in China and smugglers linked to local organized crime groups pay fishermen thousands of dollars a kilogram for it. Although the vaquitas are not the fishermen’s target, they become accidental bycatch, drowning when they get entangled in the illegal gillnets set for the totoaba.

Despite the enforcement actions, conservationists say that many illegal fishing boats succeed in evading the Navy. They put out to sea at night or from remote beaches, according to Oona Layolle, the leader of a campaign by the Sea Shepherd Conservation Society to patrol the vaquita habitat.

Lookouts on shore radio coordinates to the Navy, and even when the fishermen are caught, they simply pay a fine and are released, Layolle says.

Environmental groups also suspect that corruption may be allowing some fishermen to get past all the enforcement. Omar Vidal, director of the World Wildlife Fund in Mexico, says that the fishermen who are supposed to receive fishing licenses to use their vaquita-safe nets are not getting them, but others are.

In a statement, Mexico’s Environment and Natural Resources Secretariat (Semarnat), acknowledged the reduction in the estimated population but did not respond to the call for the extended gillnet ban. The ministry pledged to redouble enforcement efforts.

Meanwhile, conservationists fear that the population may have slid even further than their count shows. The marine expedition took place before the totoaba season, which began in December. Since then, three dead vaquitas have been found.

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Brazilian authorities suspend licensing of big Amazon dam

Given the pressure to meet future power demand, Ibama, the permitting arm of Brazil’s Environment Ministry, is loath to suspend licensing of a major hydroelectric project without a powerful reason. Last month, though, Ibama announced it had found such a reason in a report by the government’s Federal Indian Agency (Funai).

The report, sent to Ibama on Feb. 26, concludes that the planned 722-square-kilometer (279-square-mile) reservoir of the São Luiz do Tapajós Dam, the largest new hydroelectric project currently planned for the Brazilian Amazon, would partially flood the 1,780-sq-km (687-sq-mile) reservation of the 13,000-member Munduruku tribe. This, the report says, would require the relocation of three villages.

Citing the finding, Ibama President Marilene Ramos announced on April 26 that her agency had suspended licensing the dam, planned for the eastern Amazon state of Pará. In a letter to the head of Electrobras, the state-run electricity holding company spearheading the project, Ramos said: “the project is unviable because of the Indian component.”

Ramos is expected to be replaced in her post as part of the change of administration following the suspension of Brazilian President Dilma Rousseff pending an impeachment trial on charges of budgetary malfeasance. An Ibama spokesman told
Two new fronts in monarch-conservation debate

Mexico City, Mexico

A Cornell University study that asserts dwindling milkweed is not the main cause of an alarming decline in the monarch butterfly population has rekindled debate about what is affecting the insects and how best to save them. The study, based on two decades of population data, argues the monarch’s numbers fall during its southward migration and at its winter habitat in Mexico. It coincides with news of a fresh threat to that habitat: plans to reopen a gold, silver and zinc mine in a village in Michoacán state just five miles from the mountain tops where monarchs winter.

Led by Anurag Agrawal, a Cornell professor of ecology and evolutionary biology, the study analyzes the size of the population of the monarch (Danaus plexippus) at different stages of its complex migration between Mexico and the rest of North America. It looks at several sets of data from monitoring programs, run by the North American Butterfly Association (NABA) and other citizen scientists, between 1993 and 2014. Agrawal and his coauthors argue that, even while the number of monarchs in Mexico’s overwintering sites has hit record lows in recent years, the number in the northern United States and Canada has not declined.

Whatever is harming the monarchs, they argue, is harming them after they start flying south—a stage in their migratory cycle in which they do not reproduce and do not need milkweed. Many scientists have blamed the loss of milkweed habitat—where the butterflies lay eggs and their caterpillars feed—for the dramatic decline in the insect’s numbers. “We are able to rule out this milkweed limitation with some confidence,” Agrawal says.

But the study has met with deep skepticism among some scientists. Karen Oberhauser, a professor at the University of Minnesota who has studied monarchs for 30 years, says citizen-scientist counts are not a proxy for the entire monarch population, adding that the fact these counts do not show a decline does not mean there isn’t one. The Cornell study’s claims are “completely wrong,” says Oberhauser, because the monitors “are measuring a biased subset.”

Citizen-scientist counts of adult butterflies tend to be conducted in natural or suburban areas where butterfly populations are consistently higher, rather than in the agricultural areas where an increase in genetically modified crops—and pesticide use—has killed milkweed and the presence of monarchs has declined, Oberhauser says. Besides, she argues, the authors of the Cornell paper offer only a vague alternative to the threat of reduced milkweed: what they call in the study an “unknown, annually increasing effect.” Oberhauser worries the study could lead people to discard efforts to replant milkweed, which she and other monarch migration experts consider crucial to the insect’s survival. “It is a confusing red herring,” she says of the study. “My hope is that it doesn’t put a damper on conservation efforts.”

The Cornell study is not alone in finding a gap between the monarch’s summer population and its overwintering population in Mexico, however. Leslie Ries, an assistant professor of biology at Georgetown University published a study in June 2015 that also indicates a divergence between the two populations. But Ries says that she treated her own findings with circumspection, aware that the NABA and citizen scientist data are “biased” towards non-agricultural areas. The Cornell study’s conclusions, Ries says, “seem a little strong.”

A matter of interpretation

Agrawal defends the study’s interpretation of the data, saying that the citizen-scientist counts correlated with the number of monarchs flying southward through funneling points in Michigan and New Jersey. He says severe drought in Texas may have been the main reason for a steep decline in the overwintering population in Mexico between 2010 and 2014. Other factors include increased insecticide use and illegal logging in the Mexican winter habitat. While milkweed is “super important” to the butterflies, it is not “the most important factor,” Agrawal says.

Amid the debate about milkweed’s role, conservationists are focusing on another threat to the monarchs. Grupo México, the country’s biggest mining conglomerate, is seeking approval to reopen a mine in Angangueo, Michoacán, only five miles (eight kms) from the monarch’s mountain wintering grounds. The company, which did not return calls for comment, has a permit dating to 2007 to reopen the mine. What it seeks now is a permit to expand an idle processing plant near the town.

Mexico’s Environment and Natural Resources Secretariat (Semarnat) did not respond to requests for information about the permit application. Environmentalists worry that the mine and its processing plant will disturb the monarchs, poison groundwater with mineral waste, and sap water vital to the oyamel fir trees where the butterflies rest. Illegal logging in the biosphere reserve protecting monarch habitat has already damaged about a sixth of the area where the monarchs spend the winter; and logging continues, despite a crackdown by authorities in recent years.

—Victoria Burnett

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Study by Ries et al. on disconnect between monarch summer and winter population: file:///Users/vickyburnett/Downloads/Ries%20et%20al%202015%20Annals.pdf
Green issues mostly in background in Peru race

Lima, Peru

As Peru's two presidential candidates this month headed into a June 5 runoff election, the environment was getting little attention in their debates, although their government plans feature green issues.

Keiko Fujimori, the daughter of former President Alberto Fujimori, who is currently serving a prison sentence on human rights and corruption charges, will face Pedro Pablo Kuczynski, who served as minister of economy and finance and Cabinet chief under former President Alejandro Toledo in the early 2000s.

The good news, says Pedro Solano, director of the non-profit Peruvian Environmental Law Society (SPDA) in Lima, is that the candidates’ platforms address issues such as climate change, biodiversity, pollution, water and solid waste management. The bad news, he says, is that their speeches and debate rhetoric do not match those plans, which could set a future government up for internal battles between politicians and technocrats.

Both drawing fire

Fujimori’s opponents have accused her of having played a role, as the official first lady following her parents’ divorce in 1994, in corruption that occurred during her father’s administration. Kuczynski has come under fire, too. In a televised debate on May 22, he backpedaled on earlier support of genetically modified crops. And during the primary race, he was questioned for having chosen as his running mate Mercedes Aráoz, who was trade minister in 2009, when free-trade laws sparked protests in which more than 30 people died. (See “Amazon violence prompts Peruvian repeals”—EcoAméricas, June, ’09.)

Kuczynski’s governing plan sets clear goals in some respects. It calls for reforestation of 3.5 million hectares (13,513 square miles) of land, although more than half is targeted for the Andean highlands rather than the Amazon. He also says he will include 50% of the Amazonian indigenous communities in forest conservation programs to mitigate climate change, and he pledges to combat illegal logging and increase legal timber exports from managed forests and plantations by 60%. His plan also mentions a framework law on climate change, although it offers few details.

Water gets more attention in his program. He promises to make the National Water Authority an independent body under the Cabinet chief’s office, rather than a unit of the Agriculture Ministry, as it is now. He also calls for a national information system on water resources, and pledges to expand water service to all urban residents. The poorest people on urban peripheries usually depend on expensive service from tank trucks instead of city water.

Fujimori’s pledges include mini-reservoirs for agriculture and promoting the timber and fishing industries, including fish farming on the coast and in the Amazon region. Her “Sustainable Amazon” proposal calls for producing palm fruits, medicinal plants and essential oils, protecting headwaters for ecosystem services and participating in carbon markets.

Both candidates pledge to increase renewable energy use.

One critical difference lies in their approach to unregulated gold mining. This untrammeled mineral extraction has devastated rainforest land and choked rivers with silt in the southeastern Madre de Dios region, and has caused mercury pollution in Amazon and Andes Mountain mining areas.

Wildcat miners at issue

Fujimori promises to repeal existing regulations aimed at bringing unregulated miners into the formal economy, limiting the areas where they can work and controlling access to mercury. In April, she signed a pact with miners’ associations, pledging to streamline the process for gaining permission for formal operations. Her technical advisors say she would replace those regulations with more efficient ones, but provide no details. Her campaign has criticized the current regulations as ineffective, because less than 10% of the unregulated miners have been able to meet the requirements since they took effect in 2012.

Kuczynski’s staff counters that the current regulations should be improved, but not eliminated, and cautions that repealing them would send thousands of miners whose applications are being processed back to square one, at a high cost in time and fees.

Both candidates are short on details about environmental safeguards for extractive industries, such as mining and oil and gas. Large-scale projects in the Andes and parts of the Amazon are a constant source of conflicts with local communities, according to the government Ombudsman’s Office.

Neither candidate has specifically mentioned maintaining or strengthening the national environmental oversight agencies that have been established under the current administration, notes Patricia Patrón, environmental management specialist at Law, Environment and Natural Resources (DAR), an environmental nonprofit in Lima. But Solano, for his part, doubts that a future administration could roll back the progress, as creation of the system follows a trend in the region.

—Barbara Fraser
Chile's red tide causes wave of protest and blame

A new red tide outbreak in southern Chile, the largest in the nation’s history, has sparked protests focused mainly on the country’s lucrative salmon farming industry, which last year generated US$3.5 billion in sales.

Red tides, known by scientists as “harmful algal blooms,” occur when algae accumulate rapidly in the water and produce natural toxins that can be fatal to marine life. They have been dubbed “red tides” because the water containing the algal blooms can take on shades of red.

Chile’s current red tide, which has involved the spread of a microalgae called Alexandrium catenella, was officially confirmed by the government on April 20. It is believed to have originated near Quellón, a small town on the western edge of Chiloé Island in the Los Lagos region, but has since spread as far north as the city of Valdivia in the Los Ríos region.

Blame for the bloom was aimed in various directions, with government officials, salmon farming executives and some scientists pointing to the El Niño phenomenon or climate change. Felipe Manterola, general manager of SalmonChile, an association of salmon farming companies that accounts for 95% of national production, blames El Niño, which has caused red tides elsewhere in the world in the past year. “This year we have a potent El Niño phenomenon,” Manterola says. “We have this situation in Argentina, Vietnam and Thailand. There is a large algae bloom between California and Alaska; and in northern and central Chile.”

Focus on salmon farms

Others, including green groups, fishermen and some scientists, believe a contributing factor could be pollution from salmon farms along the coast of Chiloé. Thousands of people who subscribe to this view blocked roads leading to and from Chiloé Island for more than three weeks this month. There and elsewhere, protestors also called for more aid to workers and communities affected by the red tide.

Demonstrators near Chiloé drew attention to the numerous salmon pens, each containing tens of thousands of young salmon, dotting the coast of the island. Experts say most of the fish feed for the salmon and tons of feces from the fish sink into the sea from the pens. These nutrients, if not dispersed by currents, concentrate nitrogen and phosphorous in the water, stimulating the growth of marine plants and contributing to algal blooms if other necessary environmental conditions are present, such as elevated water temperatures and adequate light.

Still others assert the algal bloom may be connected to government-authorized dumping of 4,600 tons of dead fish in late March some 80 miles off the coast of Chiloé. The dumping followed a separate red tide event in January that killed 25 million fish at Chilean salmon farms.

“They threw salmon into the sea with ammonia, with chemicals, it is the only explanation that occurs to us, because we can’t understand where so much death comes from,” says Teresa Calfunao, president of a group of shellfish collectors in Duhatao, Chiloé. “The water is oily, and the sand has turned a very ugly brown-dark grey,” she said after touring the beaches and finding mass death of clams, ducks, otters and more.

Héctor Kol, a biologist with the marine program of the Pumalín Foundation, blames the salmon industry and insufficient environmental oversight by the Chile’s national fisheries service (Sernapesca). He says red tides have happened multiple times over the past 15 years, and most recently in 2009 due to the same phytoplankton as the current algal bloom.

Precautions urged

Scientists say the cysts of the phytoplankton remain dormant on the seabed for decades, and form algal blooms when the adequate environmental conditions exist. Kol says that instead of the salmon industry and government taking precautions to prevent another red tide of Alexandrium cantanella, salmon farming activity increased fifteen-fold since the 2009 outbreak.

“What the salmon industry did was cause eutrophication [an overabundance of nutrients in the water], with production levels far above the carrying capacity of the aquatic ecosystem,” says Kol. “An algal bloom like this one cannot occur if there are not enough nutrients in the water.”

But the general manager of SalmonChile, Felipe Manterola, rejects the view that any link can be proved between salmon farming and red tides. “I don’t know what relation there can be proved between salmon farming and red tides. ‘I don’t know what relation there can be between the salmon industry and its nutrients with this phenomenon,’” he said in an interview with EcoAméricas. “There isn’t any.”

In response to the widespread public clamor, the Chilean government has formed a special roundtable of five scientists to examine whether there is a link between salmon farming and the red tide. They have also ordered a temporary ban on extracting and consuming seafood from the affected area.

Mónica Vásquez, a biochemist at Chile’s Catholic University, one of the scientists appointed to the roundtable, said in a press conference the group will act quickly. “We will make a work plan for the medium to long term. There is urgency. Obviously, a toxin that in this case affects an entire region requires a different level of urgency.”

—James Langman
Brazil’s new government drawing few cheers from environmentalists

Rio de Janeiro, Brazil

Green advocates never were fans of the environmental policies of Dilma Rousseff, who this month was suspended as president of Brazil pending her impeachment trial for budgetary malfeasance. They felt that Rousseff, of the center-left Workers’ Party (PT), routinely sided with pro-development interests on issues ranging from Amazon hydroelectric-dam construction to land clearing for agricultural expansion.

They’re taking an even dimmer view of environmental-policy prospects under her interim successor—former Vice President Michel Temer, a conservative from the center-right Brazilian Democratic Movement Party (PMDB).

Temer, slated to serve until Jan. 1, 2019, the end of Rousseff’s second four-year term, is expected to support ratification of carbon-emission targets Brazil made last year at the Paris climate summit. But his governing blueprint contains nothing on environmental protection, and early positions taken by members of his administration have raised concern about his commitment to forest conservation.

And while his choice for environment minister, José Sarney Filho, has solid credentials, his picks for more powerful cabinet posts with a strong say in green issues bode ill for environmental protection, many experts here contend. Says Emilio La Rovere, an energy and environmental planning specialist at the Federal University of Rio de Janeiro: “Temer, like Rousseff, doesn’t consider the environment to be a priority.”

La Rovere adds that while Sarney Filho’s predecessor, Izabella Teixeira, was in a similarly weak political position in Rousseff’s cabinet, she was nevertheless respected and frequently consulted by the president. This, he forecasts, is unlikely to be true in Sarney Filho’s case: “There are no signs that Sarney Filho will enjoy the same prestige, the same presidential ear.”

Brazil’s Senate voted on May 12 to suspend Rousseff pending an impeachment trial. Congress’s lower house, the Chamber of Deputies, had approved impeachment proceedings on April 17. The trial could last six months and is expected to end in Rousseff’s conviction, though many criticize it as a disproportionate response to the alleged malfeasance—using federal bank funds to cover budget shortfalls in the run-up to her 2014 reelection.

Temer, sworn in as interim president on May 12, is a member of the center-right Brazilian Democratic Movement Party (PMDB), which on March 29 left the governing coalition it had participated in with the PT since 2006. He has moved quickly since then to appoint a 23-member Cabinet reflecting his conservative views.

Those views are summarized in “A Bridge to the Future,” a 19-page policy platform Temer issued last October, when his party’s relationship with the PT began showing public signs of fraying. The document, which Temer has adopted as his governing blueprint, reads like a neoliberal wish list for markets and investors. Taking aim at Brazil’s severe recession and large government budget deficits, it advocates deep cuts in public spending, deregulation and the use of partnerships, concessions and other means to give the private sector a greater role in infrastructure projects. The words “climate change” or “sustainability” do not appear once in the document, while the environment is only alluded to at a single time—in a sentence that refers to “the complexity and delays involved in granting environmental licenses.”

His cabinet includes no blacks, who along with those of mixed race represent 53% of Brazil’s population, or women, who are without representation in the cabinet for the first time since 1979, when the country was under military rule. The appointees, all white males, hail from 11 parties, most of them rightwing.

Environmental advocates here became particularly concerned when Temer, on taking office, announced his picks to head the powerful agriculture and planning ministries. Under Rousseff, as under previous administrations, those ministries as well as the energy and transport ministries used their clout to push through large-scale Amazon development projects, typically prevailing if challenged by the politically weaker environment ministry.

Blairo Maggi, the new agriculture minister, is a soybean tycoon who has cleared large tracts of Amazon rainforest to accommodate his crops. Known as “the King of Soy,” he was named winner of the Greenpeace environmental group’s Golden Chainsaw award in 2005, during his first term as governor of Mato Grosso state, to publicize his role in deforestation. While Maggi served as governor, however, deforestation rates there decreased significantly from 2006 to 2010, even as agricultural production in the state reached an all-time high. A key reason is that soy traders and processors, including Maggi’s own conglomerate, signed a 2006 moratorium on purchases of soy cultivated on illegally cleared Amazon land and intensified production elsewhere in the state.

Experts note that more recently as a member of Brazil’s Senate, Maggi led congressional action on a bill (PL 654) aimed at speeding the licensing of so-called strategic infrastructure projects such as dams, roads, railways, ports, waterways, mines and oil wells. The bill, pending in Congress, would allow developers of such projects to file a single licensing request with a centralized body coordinated by Ibama, the Environment Ministry’s permitting arm. Currently, three successive licenses must be obtained from Ibama, one each at the outset of a project’s preliminary, installation and operating phases. The legislation’s most controversial provision requires that an environmental license must be granted or denied within eight months of being requested. Such licensing currently takes an average of five years.

Maggi also has helped push a proposed constitutional amendment, currently pending in Congress as well, that environmental advocates consider more objectionable. The amendment (PEC 65) would remove the requirement that all projects affecting the environment be subject to environmental licensing. Instead, the only requirement would be that an environmental-impact assessment (EIA) approved by a federal or state environmental agency.

Together, the bills represent an effort by conservative political parties to curb the government’s environmental-licensing power. Of the two, PL 654 has the greatest chance of passage because a pro-
posed law needs only an absolute majority vote once in each house of Congress, whereas a constitutional amendment requires a 60% vote twice in each house.

Another of Temer’s cabinet picks to stir concern in green circles was his initial choice for Planning Minister—Romero Jucá. A leader of the PMDB in the Senate, Jucá authored PL 654, the pending bill to speed environmental licensing. On May 23, he abruptly announced he was stepping down after it was reported he had been recorded telling a former senator and state oil official that Rousseff’s impeachment was aimed at blocking a huge corruption investigation in which he was one of the targets.

Though Jucá resigned, experts point out that Temer’s selection of him nevertheless underscores that he’ll make development a far higher priority than environmental protection. And Jucá, they add, does not appear to be going away: He announced he is returning to the Senate. “He will continue to push a very pro-development agenda in that body, including passage of PL 654, the bill he authored which greatly undermines environmental licensing,” says La Rovere, the planning specialist at the Federal University of Rio de Janeiro.

Though Jucá’s replacement as planning secretary had not been announced as of press time, the eventual appointee’s profile is expected to match Jucá’s. “Now that Jucá is no longer planning minister, Temer will almost certainly choose someone like him, someone with considerable sway in Congress and someone with similar pro-development views,” says Carlos Rittl, executive secretary of the Climate Observatory, a consortium formed by 41 nongovernmental groups to study Brazil’s carbon emissions.

Green advocates doubt any environment minister could make much headway in a Cabinet as heavily pro-development as the new one. But they acknowledge Temer’s pick for that post, José Sarney Filho, has genuine environmental credentials. Sarney Filho, the son of José Sarney, Brazil’s president during 1985-90, was leader of the Green Party in the Chamber of Deputies before joining the cabinet. A member of Congress since 1983, he had served as environment minister from early 1999 until early 2002, during the second four-year term of then-President Fernando Henrique Cardoso.

In that first stint as minister, Sarney Filho helped draft the implementing decree for a 1998 environmental crimes law that greatly increased fines and established prison terms for causing environmental damage. Also during his tenure, the ministry fined state oil giant Petrobras R$50 million (then US$27.7 million) over a refinery pipeline break that sent 1.3 million liters (340,000 gallons) of fuel oil into Rio de Janeiro’s Guanabara Bay in 2000. At the time, it was the largest fine the ministry had levied.

In a recent interview with Valor Econômico, Brazil’s largest-circulation financial daily, Sarney Filho when asked about PL 654 and PEC 65 replied that he wants to “perfect environmental licensing… to be more quick and efficient.” He added: “Eventually, we will have to make some legal changes in the process. But I am against an environmental licensing process with a fixed deadline [in reference to PL 654]…Our agenda is, however, consensus, not confrontation.” A Sarney Filho spokeswoman confirmed that the interview was “100% accurate.”

Still, some here expect Sarney Filho will find himself crossing swords sooner or later with powerful members of the cabinet and the administration’s backers in Congress over issues such as environmental licensing—disputes, they add, that he’ll likely lose.

“The controversial bills and amendments [PL 654 and PEC 65] that would sabotage environmental licensing [and were] shepherded through congressional committees by Maggi should make a clash between him and Sarney Filho inevitable, and could create conflicts between the new environment minister and other pro-development ministers and their allies in Congress,” says Márcio Astrini, coordinator of public policy for Greenpeace in Brazil. “Recent

Demonstrator who opposes Rousseff’s suspension holding sign that reads “Temer does not represent me” (AP Images)
history has shown that environment ministers lose such battles with more powerful [ministers], and are even forced to resign. This happened when Marina Silva was environment minister under Lula [Luiz Inácio Lula da Silva, Rousseff's predecessor], and opposed the building of big Amazon dams and other big infrastructure projects in that ecosystem."

Carlos Bocuhy, president of the nonprofit Environmental Protection Institute (Proam), which advocates for cleaner industrial policies, agrees. “The environment minister has been losing ground ever since the Workers’ Party took power 13 years ago, and although Sarney Filho’s first stint as environment minister was not marked by backward steps, his forward steps avoided confrontation,” says Bocuhy, who also is a member of the public-private National Environmental Council, Brazil’s top environmental policymaking body. “I don’t see him taking bold stances against more influential ministers, in particular regarding environmental licensing, now that he has returned as environment minister.”

Philip Fearnside, senior researcher in Amazon ecology at the government-run National Institute of Amazon Research (INPA), Manaus, Brazil, says: “I don’t think that Temer’s government will make combating climate change a top priority.” Experts also express concern about cuts in science funding brought on by a merger of the Ministry of Science, Technology and Innovation (MCTI) with the Communication Ministry (MC)—a retrenching that could affect environmental-research. The merger, part of a cabinet consolidation carried out by Temer to bring the number of ministries down to 23 from 31, has drawn heavy criticism from the country’s two leading scientific associations—the Brazilian Society for Scientific Progress and the Brazilian Academy of Sciences.

One environmental area in which experts appear confident that Brazil will not experience backsliding is in the carbon reduction goals, known as intended nationally determined contributions (INDC), that were submitted last September and incorporated in the Paris climate agreement reached three months later. Those goals, which Congress must ratify, call for the country to cut carbon emissions 37% below 2005 levels by 2025 and 43% below the 2005 baseline by 2030. To reach them, Brazil by 2030 must boost renewable power (mainly wind, biomass and solar) to 45% of its energy matrix from the current 39.5% share; eliminate illegal deforestation entirely; restore 12 million hectares (30 million acres) of forests; and restore 15 million hectares (37 million acres) of pastureland.

On May 18, Sarney Filho met with leaders of environmental groups and, according to a statement issued by his ministry, “provided assurances that the [new] government will maintain Brazil’s Paris climate agreement commitments.” The ministry added that it was taking part in climate talks being held this month in Bonn, Germany, on implementation of the Paris accord.

“I don’t think Temer will oppose Brazil’s ratification of the Paris climate agreement, because Sarney Filho said during his swearing in as environment minister that he was making Brazil’s ratification of the accord a priority, and no one in Temer’s cabinet has expressed opposition to the accord,” says Rittl of the Climate Observatory.

However, going above and beyond basic climate commitments is another matter, Rittl says: “I don’t think that Temer’s government will make combating climate change a top priority.”

—Michael Kepp

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Regional and local officials in Madre de Dios on May 24 rejected the national government’s decree. In a statement, they said protecting public health was a priority, but that the link between mining and mercury pollution is not reliably proven. They added the measure was designed to cover up the failure to regulate the miners, and would hurt local businesses. They also accused national officials of alarming people by declaring an emergency in the entire region, when mining affects only certain areas.

Studies since 2009 have found much of the population of Madre de Dios is exposed to mercury in the environment. Because mercury accumulates in fish, indigenous villagers, for whom fish is a key source of protein, are at risk. A 2012 study led by tropical ecologist Luis Fernández of the Carnegie Institution for Science at Stanford University found mercury levels in residents of indigenous communities averaged over twice those of non-indigenous residents. (See “Study Points to Mercury Danger in Madre de Dios”—EcoAméricas, Sept. ‘13.)

Fish as carriers

Some Amazonian fish migrate long distances, and studies have found mercury in fish far from mining sites. Analysis early this year detected particularly high mercury levels in a type of catfish known locally as mota punteada (Calophysus macropterus), confirming earlier findings by Fernández. As part of the emergency, officials have banned the sale or distribution of that species. Earlier this year, they had recommended against eating the fish when urine tests showed that residents of a remote indigenous community in the neighboring region of Ucayali had mercury in their bodies. Officials are not sure how they were exposed to mercury, as there is no gold mining nearby.

Julio Cusurichi, who heads the Federation of Native Communities of the Madre de Dios River and its Tributaries (Fenamad), says he worries about health problems in the region, but adds indigenous communities in and near the region’s protected areas fear the decree will deter tourists from visiting lodges they operate. Fenamad was not consulted about or informed of the decree before it was announced, he says.

As part of the emergency measures, the government will promote fish farming and the reforestation of some 40,000 hectares (154.4 square miles) of land, Pulgar-Vidal says.

The emergency decree follows efforts underway since 2010 to bring unregulated gold miners into the formal economy and control the indiscriminate use of mercury in gold processing. (See “Peru moves to regulate gold mining in rainforest”—EcoAméricas, March ’10.) Officials estimate there are 30,000 informal miners, and 2,000 have become “formalized,” with a goal of 6,000 by the end of this year, Pulgar-Vidal says. Most of those formalized, however, are hard-rock miners in the Andean highlands. Some experts say the norms are more difficult to apply to the more transient alluvial miners in the Amazonian lowlands. No miners in Madre de Dios have completed the steps for formal operation, Pulgar-Vidal says.

The mining done in Madre de Dios leaves a landscape of water-filled craters surrounded by sand, but studies are showing ways to hasten regrowth of vegetation. In a one-hectare (2.5-acre) test plot in recent years, restoration ecologist Francisco Román is experimenting with native trees. The plot, in a reforestation concession held by a small mining community near the Manuani River, illustrates the possibilities and difficulties involved. To reach the plot, Román climbs behind a motorcyclist providing taxi service and bounces through abandoned mining sites, where the wheels sink into the soft sand. With no topsoil left, the forest is slow to reclaim such sites. Román experimented with four tree species, planting half as bare-root seedlings and half with rootballs, then applying different amounts of a bio-fertilizer containing nutrients and microorganisms. He added a control group without fertilizer.

Reforestation research

Two years later, the results, published in the journal Ecological Engineering in December 2015, are evident. Trees that got their start with a rootball are taller, and ants and small plants around the bases of some trunks show the beginning of tiny ecosystems. The bare root trees are smaller and have lower germination rates. The experiment is the first step in developing proposals for reforesting degraded areas with timber species, Román says. Restoring damaged ecosystems in protected areas, such as the Tambopata National Reserve, will be a more difficult challenge, he says. Satellite images show that miners have invaded the reserve, silting up and diverting the Malinowski River, which forms the reserve’s boundary.

Meanwhile, a new mine has opened beside Roman’s test plot, in an area the government earmarked for reforestation concessions. Leaving the plot, Román detours to the community of Manuani, where the residents, small-scale miners, grew the seedlings for the reforestation. The community was empty—the houses boarded up, the plant nursery abandoned and knee-high weeds covering the soccer field. A passing motorcycle rider said the residents had gone to mine along the Malinowski River.

—Barbara Fraser

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Documents & Resources

Satellite photos showing the impact of mining on the Malinowski River and Tambopata National Reserve: http://maaproject.org/2016/invasion-tambopata-3/
Paraguayan reserve continued from page 1

...aguay, a country where the amount of environmental research pales in comparison to Argentina, Brazil or Bolivia, that is very important.”

The uncertainty facing Laguna Blanca is typical of that facing private reserves in Paraguay, where despite great biodiversity, conservation receives little funding from the national government. Paraguay currently has 44 major protected areas, including 14 national parks. But with a limited budget for parks there are fewer than 80 park rangers to protect more than 2.4 million hectares (5.9 million acres). In practice, this means that a single ranger is in charge of tens of thousands of hectares of wilderness, land which too often is invaded by farmers, loggers and—more recently—marijuana growers. Working on a shoestring budget, without airplanes or other vital monitoring and enforcement equipment, these rangers can do little to stop such incursions and the land-clearing that ensues.

**Furious deforestation pace**

The results have been catastrophic. The combination of a thinly staffed protected area system and weak environmental enforcement generally has meant that vast tracts of primary forest have fallen.

Today, only 13% of Paraguay’s portion of the Atlantic Forest, which stretches along Brazil’s Atlantic coast into Paraguay and Argentina, remains. The Chaco, a dry, thorny forest which covers parts of Argentina, Bolivia and Paraguay, is giving way in Paraguay to cattle ranchers at the rate of 300,000 hectares (740,000 acres) annually. And deforestation is picking up in the small sliver of Cerrado that exists in Paraguay, while already having destroyed much of that savanna ecosystem in Brazil.

Private reserves have played a critical role in filling the breach since 1994, when they were authorized in a law that created Paraguay’s National System of Protected Wild Areas. Though covering under 1% of the country’s surface area, the approximately 35 private reserves nationwide encompass vital biological corridors and watersheds, enable scientific research and provide environmental education and local jobs.

Some have been models of environmental conservation. In 1991, for example, the Mbaracayú Forest Nature Reserve was established by the Moises Bertoni Foundation, a Paraguay-an nonprofit, with funding from the Nature Conservancy, the U.S.-based energy company Applied Energy Services (AES), and the United States Agency for International Development.

Currently, that reserve, located in the midst of the Atlantic Forest near the border with Brazil, encompasses more than 64,000 hectares (158,000 acres). It also includes the largest expanse of continuous Atlantic Forest, with 22 park rangers and a $1.7 million annual budget derived partly from Moisés Bertoni business ventures including the sale of blood plasma from slaughterhouses and the processing of shade-grown yerba mate.

As a result, the reserve not only protects some 30 globally threatened species, including the jaguar (Panthera onca), the maned wolf (Chrysocyon brachyurus) and the bush dog (Speothos venaticus), but also has built local support for conservation. It has done so by establishing a high school and a rural development program which, working with local agricultural companies, helps local indigenous and farming communities produce cash crops in a more profitable and sustainable manner. The reserve also runs an ecotourism business on its land, employing local people.

“Private reserves not only add several hundred thousand hectares of protected areas to the cause of conservation in Paraguay,” says Yan Speranza, executive director of Moisés Bertoni. “They provide an example of how to do conservation through ecotourism and the participation of the private sector.”

**Not for faint of heart**

Still, the establishment and management of private reserves is challenging at best. While reserves can qualify their owners for a property tax exemption, they often require an enormous amount of paperwork and bureaucratic delays to create and administer. Guarding against environmental destruction is another concern. Paraguayan law prohibits woodland clearing in the Atlantic Forest, and elsewhere allows property owners to deforest up to 75% of their land. But neighboring landowners still cut down the forests, creating problems in the reserves’ buffer zones. And within the reserves, guards must often fight a running battle with poachers, loggers and marijuana growers in which an ineffective and often corrupt police force is an unreliable ally. “Impunity and corruption remain huge problems,” says Speranza.

The problem is more complex for Laguna Blanca, which is run by a nonprofit but owned by a family whose new generation of leadership does not want to continue conserving the land. Unless the Par La Tierra Foundation can buy it—the family has set a price of US$2.8 million—the reserve could disappear. The foundation is working with Gyura Paraguay, an Asunción nonprofit, to raise funds from international donors. It the effort fails, Laguna Blanca will be sold, and its Atlantic Forest woodlands could face an elevated risk of illegal conversion over time to cattle pasture or soybean fields.

—Steven Ambrus
EcoAméricas a decision on whether the license, the first of three required for the project, will remain suspended will not be taken until a new Ibama president is appointed.

Even if the Rousseff administration had remained in office, Ibama’s April announcement would not necessarily have spelled the end of the project. An Ibama licensing specialist who declined to be quoted by name notes that Eletrobras can file an appeal calling on Ibama to rescind the suspension, and Ibama could set conditions for restarting the licensing process.

“Ibama could require Eletrobras to revise the project’s environmental impact assessment (EIA) to show how it will eliminate or greatly mitigate the dam’s impact on the Munduruku people,” the official says. “Or more likely, the impact could be offset, perhaps through government annexation of an [adjacent] area similar in size to the one to be flooded by the dam’s reservoir.”

Such an effort, some experts say, could be complicated by a strengthening of Munduruku land status in the area. That’s because in addition to sending Ibama its report on dam impacts, Funai last month issued a study that recognizes and delimits the Munduruku tribe’s land. This paves the way for official demarcation of a reservation, the last step in the formal establishment of land rights.

Federal prosecutors in Pará state say that even if Ibama grants the permit—a preliminary license which allows the auctioning of a concession for construction and operation of the dam—they will file a lawsuit requesting the project’s suspension. In doing so, they say, they will cite an independent 2015 study in which nine scientists concluded that official assessments seriously underestimated the project’s likely social and environmental impacts.

Environmentalists applaud Ibama’s move. “The Funai report and the Ibama decision are important victories, but just signal that the fight [to cancel the dam] must continue,” Daniele de Aguiar of Greenpeace’s Amazon campaign said in a prepared statement.

Says Brent Milikan, Brazil representative of International Rivers, a California-based green group: “Ibama, in a surprising move, has finally recognized that there is a direct physical conflict between the Munduruku people and the building of the São Luiz do Tapajós dam, whose reservoir, in flooding part of the tribe’s reservation, would violate its territorial rights.”

Government energy planners consider the Tapajós dam a key piece of Brazil’s energy-supply picture, in which hydropower currently accounts for 70% of the country’s power generation. The project represents 28% of the new hydropower capacity slated for installation by 2024. It also would be the principal infrastructure project in the Tapajós Basin, a major Amazon tributary system in which the government has embarked on one of the world’s biggest dam-construction programs.

On the basin’s Teles Pires River, work has already been completed on the 1,860-megawatt Teles Pires Dam and is underway on three smaller hydroelectric projects. Meanwhile, the suspended (8,040-megawatt) São Luiz do Tapajós Dam is one of two projects slated for the Tapajós River. The other, the (2,338-megawatt) Jatobá Dam, is also awaiting a preliminary license.

The government—anticipating that the reservoirs of the two dams would flood 7% of the land encompassed by five federally protected areas, one of which is a national park—

took the unusual step in 2012 of enacting a law that reduced the size of those protected areas. But in doing so, it seems to have overlooked the São Luiz do Tapajós Dam’s impact on Munduruku territory—perhaps, experts say, because that land had not yet been demarcated.

Follow-up: Luís Camões Lima Boaventura, Federal Prosecutor, federal prosecutors’ office, Santarém, Brazil, +(55 93) 3523-2651, prpa-ascom@mpf.mp.br; Brent Milikan, Brazil representative, International Rivers, Brazil office, Brasilia, Brazil, +(55 61) 3034-3033, brent@internationalrivers.org.

Map underscores indigenous peoples’ role in conservation

A new map of Central America showing the lands inhabited by indigenous peoples offers detailed evidence of the communities’ importance in protecting fragile ecosystems. The map, produced by the International Union for Conservation of Nature (IUCN), is designed to press the case for recognizing the land rights of indigenous peoples as part of any national conservation strategy.

“This map shows that where indigenous peoples live, you will find the best preserved natural resources,” says Gretel Aguilar, regional director of the IUCN office of Mexico, Central America and the Caribbean. “They depend on those natural resources to survive, and the rest of society depends on their role in safeguarding those resources.”

Previous research has shown there is strong evidence that granting indigenous communities land rights over the woodlands they inhabit helps prevent deforestation and its resulting greenhouse-gas emissions. The map, which took two years to produce, underscores this finding and suggests their guardianship of marine, coastal and river habitats is also sustainable. It was presented May 12 during the 15th Session of the United Nations Permanent Forum on Indigenous Issues. Spanning the seven countries of Central America from Belize to Panama, the map outlines indigenous territories that cover almost 40% of the region’s land and marine areas. They include about half of all Central America’s forests.

Over a third of the indigenous territories lie within zones that governments have set aside for protection, the map shows. The Caribbean side of the isthmus has greater forest coverage and richer biodiversity—in part, the IUCN says, due to the low impact of indigenous communities and the establishment of protected areas since the mid-1980s.

In addition, the map identifies the coastal marine ecosystems that indigenous communities manage, a connection that has been poorly recorded until now, and shows that collectively they cover an area larger than the landmass of Panama. These marine regions encompass coral reefs, seagrass beds, turtle nesting grounds and manatee habitats.

Most of Central America continues to ignore its marine wealth, the IUCN said in its description of the map’s preparation, and the map offers evidence of the threats those areas face.

The map is the product not only of satellite imagery and the cooperation of national environmental agencies, but also of community engagement. Central American researchers worked closely with indigenous organizations to gather data, identifying bodies of water and topographical elements not spotted by earlier surveys that had relied on satellite images.

Follow-up: To view both sides of the map, titled “Indigenous Peoples, Protected Areas and Natural Ecosystems in Central America,” go to: http://cmsdata.iucn.org/custom/image-viewer/launch.cfm?img_id=48289 and http://cmsdata.
Why are toxic substances a human rights issue?

Everyone has the right to the highest attainable standard of health. Toxic chemicals, which are pervasive in our everyday lives, affect people not just in developing countries, but around the world. [There are] information gaps about the hazardous properties of industrial chemicals when we’re exposed to them. Everyone has the right to know whether they’re exposed to a hazardous substance. In addition, countless victims around the world are unable to access an effective remedy for harms due to toxic chemicals [such as] air pollution, pesticides, industrial chemicals or other sources of exposure. And some people develop cancers or other life-threatening illnesses as a result of toxic chemicals, which directly implicates the right to life.

What do you consider to be key issues in Latin America?

Latin America faces challenges from air pollution, pesticide use, industrial chemical manufacturing, industrial chemical use in the workplace and consumer exposure to industrial chemicals and pesticides through everyday products, [such as] toys or building materials or pesticides in food. Governments continually are playing catch-up with emerging evidence of the widespread risk of toxic pollution and chemicals. [Issues include] highly hazardous pesticides still used in Latin America; toxic heavy metals such as lead, mercury and arsenic. Persistent organic pollutants [POPs] are covered by the Stockholm Convention on POPs, but many chemicals haven’t been added to the convention. Until they are, there need to be stronger measures around the world to combat that global threat.

Latin American countries have gradually set maximum allowable limits for many toxics in water, air soil and so on. Are levels below those limits necessarily safe?

Many industrial chemicals have been grandfathered into commerce. They have been presumed to be safe, and regulators have the burden of proving that a chemical is unsafe in order to remove it from the market or to restrict its use to a certain level. That level [often does not correspond to] a health-based standard. People are exposed daily to toxic chemicals that may be in drinking water, food, cosmetics and in other possible sources of exposure. And these types of chemicals are not regulated globally.

What groups of people are most vulnerable?

Children and workers. Exposure to toxic chemicals during critical windows of [children’s] development can have serious impacts on their right to health later in life. And these impacts may not be visible for many years. There’s another fundamental issue, which is the right to choose whether you are exposed to a hazardous substance. Children don’t have the capacity to know whether they want to use a product that may or may not contain a hazardous substance. And their exposure may come even before they’ve left their mother’s womb. Workers consistently are allowed to be exposed to higher levels than the general population. This doesn’t really sit well from a human rights perspective. When you look at both children and workers, you often see that in the most socioeconomically disadvantaged and marginalized communities, the impacts are typically greater.

How should countries respond to environmental cases?

Those whose health has been impacted or is directly threatened should have access to an effective remedy as quickly as possible. In the case of water contamination, for example, an effective remedy could include compensation for harms, access to health care services, an assurance that there will be non-repetition and, if warranted, an apology. It’s very circumstance-specific. But it should be done as quickly as possible. The finger-pointing that can happen [over who is responsible] shouldn’t stand in the way of stopping ongoing impacts and trying to remedy the situation as quickly as possible.

What can communities do if told they must prove a hazard exists?

Typically in these cases, [a community must find] public-interest advocates, NGOs and other avenues for legal representation. It’s a real problem that there isn’t a public defender of one’s right to a healthy environment. If you’re accused of a crime, you might have access to a public defender, but if your right to health is in jeopardy, you don’t have access to a public defender.

How do you respond to governments that say the cost of environmental safeguards is too high for a developing country?

There are examples [in which] investment in prevention is lower exponentially than the economic impact of inaction. The economic benefits of reducing lead exposure far outweigh the investment in prevention, though we still have a long way to go. Fundamentally, though, I think this cost-benefit analysis can be a disservice to the rights of thousands of people affected by toxic chemicals. It shouldn’t be a line item in a budget [in which you calculate] how many people you compensate for harms that you’re willing to internalize. A transition to safer chemicals will only help the triple bottom line that everyone talks about, and financially there can be huge benefits to governments. There are numerous studies about the costs of inaction [on toxics], and I think these reports should be on the bookshelves of everyone in ministries of finance, because they are staggering costs.