Saving Philippine peatlands

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In Photo: Agusan Marsh peatland
In the middle of a flooded forest, if the water is acidic and the color is somehow dark, like tea, it is not polluted. You may be in a peatland.

The Department of Environment and Natural Resources (DENR) has identified nine peatland ecosystems in the country—mostly within protected areas or in the heart of swampy forests.
The total area of identified peatlands in the Philippines is 20,000 hectares. This is relatively small compared to the country’s total land area of 30 million hectares, 15 million hectares of which, having been classified as “forest lands”.

DENR officials, however, underscored the need to save peatlands because of the very important ecosystem services they provide.

**What are peatlands?**

Peatlands are wetland ecosystems where the soil is composed of 65 percent or more organic matter derived from dead and decaying plant materials submerged under high water saturation.

According to the DENR, peatlands cover an estimated area of 400 million hectares globally. This is equivalent to about 3 percent of the Earth’s land surface.

Most, or 350 million hectares, are in the northern hemisphere, covering large areas in North America, Russia and Europe.

Tropical peatlands occur in mainland East Asia, Southeast Asia, the Caribbean and Central America, South America and southern Africa where the current estimate of undisturbed peatland is 30 to 45 million hectares or 10 percent to 12 percent of the global peatland resource.

According to the International Union for Conservation of Nature (IUCN) peatlands exist in at least 175 countries.

While peatlands are relatively small in terms of providing services to society—particularly in providing clean drinking water and climate regulation—they have significant contribution in terms of keeping the planet cool.
The IUCN reported that peatlands store 30 percent of global carbon, and when drained and damaged, they exacerbate climate change, emitting 2 gigatons of carbon dioxide (CO\textsubscript{2}) every year, which accounts for almost 6 percent of all global greenhouse gas emissions.

However, the IUCN noted the role played by peatlands in the supply of very important ecosystem services has not been widely appreciated.

“This has led to widespread damage across the world, from the tropics to the poles, caused by a number of factors, including land-use change, pollution and, increasingly, the adverse impacts of climate change,” it says.

The IUCN said in recent years, international biodiversity and climate-change conventions have recognized peatlands as a priority for action “with peatland conservation and restoration identified as the low-hanging fruit in tackling climate change”.

**Philippine peatlands**

The DENR is currently in search of peatland ecosystems, said Director Theresa Mundita S. Lim of the Biodiversity Management Bureau (BMB) of the DENR.

According to the DENR-BMB, citing the 2016 *Atlas of Philippine Inland Wetlands and Classified Caves*, there are currently nine identified peatlands in the country.

They are the Tan-ag Ilaya in Quezon Province, Sab-A in Leyte, San Teodoro and San Vicente Peatlands in Agusan del Sur; and the Agusan Marsh peatlands in Talacogon, Caimpugan, Novelle and Bayugan III, Kalingayan-Consuelo and Pag-Asa.
The total area of identified peatlands is 17,019.90 hectares.

However, Lim said there could be more peatlands in areas that have yet to be discovered.

There are other lesser known and relatively disturbed smaller areas of peatlands in Mindoro, Samar and Quezon.

**Important ecosystem; carbon sink**

Peatlands are known to have unique vegetation, Lim said, including *Lanipao (Terminalia copelandii)*, and *syzigium* flowering plants.

Lim said peatlands are also home to wild animals the same as in surrounding areas “as the peatland is part of their range, and some vegetation could provide food to bats and birds”.

The DENR-BMB is calling for the preservation and conservation of peatland ecosystems. “Peatlands should be preserved, because if they are degraded or destroyed, they will emit CO$_2$ and contribute to greenhouse-gas emissions [GHG]” and climate change, Lim said.

When preserved, peatlands could sequester more carbon, thus, limiting GHG emission. Peatlands keep carbon locked up, and absorb and store more.

This is particularly important, as the Philippines is committed to reduce its carbon emission by 70 percent under the Paris Agreement. Expanding the country’s forest is being eyed as a strategy by the DENR so the country can offset its carbon emission as the country struggles to maintain growth and development.
It was estimated that all peatlands in the world collectively contain 550 gigatons of carbon, twice as much as all carbon stored in the world’s forests.

Once peatlands are degraded, they will emit CO$_2$ and other greenhouse gasses, which contribute to climate change.

“Peatlands store a significant amount of carbon. We have estimated that around 5,000 hectares of peatland in the Philippines could store up to 23 million tons of carbon. So if our peatlands are destroyed, can you imagine how much greenhouse gases we will be releasing into the atmosphere? One of the reasons for the haze in Southeast Asia in the recent years were the massive destruction of peatlands in Indonesia,” Lim said.

**Defense against flood**

Peatlands also act as sponge. Peatlands, hence, absorb a huge volume of water during the rainy season—releasing it slowly during the dry season.

Peatlands, hence, “ensure a continuous supply of fresh water throughout the year, and play an important role in flood mitigation,” said Joy Navarro, senior ecosystems management specialist at Caves, Wetlands and Other Ecosystems Division, DENR-BMB.

“Peatlands also provide a healthy habitat for thousands of species, many of which are endemic, rare and endangered,” she said.

A source of livelihood by providing timber and nontimber products for biodiversity-friendly products, such as *tikog* for mat-making, peatlands also have ecotourism potential.
The forests of Lanipao in both the Agusan Marsh and Leyte Sab-a Basin are some of peatlands that exhibit aesthetic beauty.

**Threatened ecosystem**

Peatlands are among the most threatened ecosystems.

According to Lim, land conversion is the most serious threat to peatlands.

“There is not much awareness on peatlands, and, because of their unique characteristic, which allows only limited types of vegetation to grow, they are often mistaken as open areas, converted to agricultural land, but more often planted with the wrong crops. Thus, they are considered unproductive, then unsustainably altered for oil-palm plantations, or even developed as residential areas,” Lim said.

Lim said one major underlying reason for all these is the lack of awareness about peatlands.

**Identifying peatlands**

The DENR-BMB’s thrust is to raise the awareness on the country’s peatlands, particularly its unique characteristics.

“We are assisting in identifying peatland areas in the Philippines, assessing and characterizing them and providing recommendations on the appropriate uses and management prescriptions,” Lim said.

Lim said two confirmed and most prominent peatland areas in the Philippines is in the heart of the Agusan Marsh and Leyte Sab-a.
“There are reportedly peatlands in Liguasan Marsh [Maguindanao] and in Santa Teresita, Cagayan [province in Cagayan Valley], which remain to be better explored,” she said.

However, Navarro said identifying peatlands is difficult, and would require proper training by experts.

Because there is no special program for peatland conservation, it being part of the regular activities of the DENR, there are also budgetary constraints.

“Training field personnel will cost money. But we do not have budget for that,” she said.

The search for peatland ecosystems is being carried out by field employees of the DENR, but not all employees are equipped with the technical expertise, Navarro said.

**Danger warning**

According to Lim, because of its “combustible” nature, particularly when it is drained for land conversion into plantations or farmlands, or even residential areas, peatlands can easily cause fire and haze that not only contributed to worsening climate change, but also result in more immediate impacts on human health and wildlife populations, such as displacement, loss of habitat, diseases or death.

“Agusan Marsh is protected, but we need more awareness and protection mechanisms, as well as more awareness on the appropriate use of our peatlands,” she said.
Farmers in Agusan cultivate peatland areas, thinking they are suitable for rice or root crops with commercial value.

However, farmers tend to burn agricultural waste, which could trigger fires, especially because of the combustible gas stored underneath. Sometimes, peatlands continue burning for days, threatening to destroy nearby forests.

Farming activities do not only destroy peatland ecosystems, but also put communities in danger, Lim said.

“There are crops and farming systems that can be adopted for peatlands, without destroying the integrity of the ecosystem. We need to disseminate and promote this information. In some peatland areas in other countries, they have also developed them for sustainable tourism. We can also look into this possibility,” she said.

Partnering with local governments and communities, she said, will boost national government efforts to save peatlands while exploring options to optimize benefits from the ecosystem services they provide.

“If revenue can be generated without destruction of the peatlands, then we expect that LGUs [local government units] and communities can better appreciate and be mobilized as our partners in peatland conservation,” Lim said.

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