



Thousands of congregating Grest and Little Egrets in the mudflats of the Pampanga Delta, Manila Bay in December 2016.
(c) Ivan Sarenas

MUDFLATS

where life teems

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What are Mudflats?

Mudflats are unvegetated wetlands that form in sheltered coastal areas where tides and rivers deposit soft mud. These intertidal flats get flooded by tidal water twice daily. At first view, mudflats may seem barren expanses of muck. But despite the lack of vegetation, they teem with microscopic life.

Cyanobacteria, diatoms, and small invertebrates thrive in nutrient-rich tidal sediments. These mud-dwellers in turn feed shorebirds, fish and crabs that rely on mudflats for all or part of their life cycle. Vast migratory bird flocks descend to feast in these bountiful intertidal habitats. Though appearing inhospitable, mudflats thus sustain critical nurseries and feeding grounds supporting rich coastal biodiversity and productivity.



Pacific Golden Plovers at roost in a coastal area in Bulacan, Manila Bay. (c) Mark Villa



Mudflat area beside a mangrove forest in Bulacan in 2022. (c) Wetlands International Philippines

Benefits of Mudflats

Mudflats are dynamic and vital coastal habitats that provide ecosystem services.

➤ Provisioning Services

Mudflats provide habitat for clams and other shellfish that coastal communities rely on for food and income. The muddy areas also support worms, shrimp, and fish nurseries. Beyond seafood, mudflats supply materials for local crafts, medicine, and fertilizer.

➤ Regulating Services

With gentle slopes that absorb water, mudflats help control flooding, filter out pollutants, and protect coastlines from storms and wave damage. Their ability to store water also stabilizes water supplies. Mudflats further assist climate regulation by trapping carbon.

➤ Supporting Services

While low in species diversity, this nutrient-rich mud sustains algae, microbes, and small organisms that feed resident and migratory shorebirds, crabs, and fish that congregate seasonally.

➤ Cultural Services

Mass shorebird migrations draw wildlife tourism. The rich intertidal areas enable traditional fishing and harvesting practices that hold meaning to cultural heritage.



Mudflat in Sasmuan, Pampanga damaged due to conversion by mass planting of Rhizophora mangrove seedlings. (c) Robert Hutchinson

Threats to Mudflats

All over the world, coastal wetlands face numerous threats. Mudflats, being perceived as barren wastelands, are often threatened by urban development, reclamation, dredging, salt production, aquaculture, pollution, overexploitation, and invasive species. The degradation of these habitats has detrimental effects on birds living in the area and migratory water birds stopping over to rest, feed, and replenish for the next leg of their journey in the East Asian-Australasian Flyway.

Moreover, since mudflats are dependent on the ebb and flow of freshwater and saltwater flows, building dams, channels, and diversions in the upstream and seawalls, dikes, piers, ramps, ports, harbors, and docks in the coast alter the natural seasonal changes in salinity and decreases the sediment accumulation required to stabilize the fringes of coastal wetlands and prevent erosion.

Sea-level rise also has dire consequences on mudflats. While mudflats accrete when sea levels rise, there is a limit beyond which the mud accumulates. Additionally, if mudflats are submerged all the time, they could simply be lost altogether. Other climate change-related threats to mudflats include changes in temperature and rainfall patterns, and extreme weather events.

Saving the Mudflats

For many humans, mudflats are useless, barren lands. Failing to recognize the vital uses of this intertidal zone, humans resort to converting

mudflats into spaces they deem productive, leading to the destruction of mudflats, the services they provide, and the lives they support and protect.

To save mudflats, we must go back to the basics: science and education. More research and mapping is needed on Philippine mudflats in order to come up with solutions that fit the needs of the local community and mudflat biodiversity.

Reducing threats to mudflats such as reclamation, pollution, overfishing, harmful algal blooms, erosion, and nutrient overloading will help conserve these areas. If needed, apply bioengineering solutions that reduce the threats to mudflats such as disturbances in hydrology, sediment, and imbalances in salinity, or solutions for the settlement of substrate.

Further, mudflats need to be included in policies like coastal defense strategies and coastal management plans. Integrating them in protected areas through legislation will likewise encourage their conservation.

Finally, since mudflats represent a critical link between land and sea, recognizing and understanding the value of mudflats is essential for their conservation and restoration. Thus, there must be greater public awareness on these areas and their value. A Communications, Education, and Public Awareness (CEPA) strategy must be implemented to change the perception of policymakers and other stakeholders on the benefits of mudflats.

Our vision is a world where wetlands are treasured and nurtured for their beauty, the life they support and the resources they provide. Our mission is to inspire and mobilise society to safeguard and restore wetlands for people and nature.



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