

COVID-19 imposed lockdown might be a boon for aquatic ecosystem

Due to the pandemic outbreak of COVID-19, like other countries, India also issued a lockdown notification from 24 March 2020 to break the chain of virus transmission at community level¹. Though it is a bane to human health howbeit might be a boon for aquatic ecosystem. Even though strict rule has been imposed by the pollution control board, most of the industrial effluents containing heavy metals and other obnoxious chemicals often end up into the aquatic ecosystem and exert an enormous damage to aquatic food chain through bioaccumulation to biomagnifications. As most of the industries are closed during this lockdown period, it might have a positive culminating effect to the system. Moreover, the emission of greenhouse gases and particulate matter concentration have also been reduced drastically during the lockdown period due to decreased coal-based power generation, restricted automobile use and complete arrest in public transport². Studies have shown the detrimental effect of heavy metal toxicity on the physiology of fish and morphological deformities of their larvae^{3,4}. This lockdown period is turning out to be a rare opportunity to revive aquatic ecosystem especially capture fisheries as most of the fishing activities are now completely stopped due to plummeting demand by the restaurants, hotels and seafood export; which might have increased the plausibility for survival of gravid female fishes unlike other years. From the last couple of decades, to support the increasing demand of market, coastal fishing activities have increased manifold. Nevertheless, strict rule imposed by the government authorities against catching gravid female and juvenile fishes albeit unauthorized/unreported fishing activities continues. As a classic example, economically important anadromous fish like *Tenualosai-*

lisa (commonly known as *Hilsa*) initiate upstream migration from marine to freshwater realm during May at river Brahmaputra and onset of monsoon at the Hooghly–Bhagirathi system, the component of Ganga river for major spawning and are often caught in illegal small meshed gears used by the fishermen⁵. Besides for another minor peak spring, spawners enter the river in January–March and return to the sea during July–August^{5,6}. Seemingly not only for brooder but also for the offspring and juveniles this lockdown could be a blessing and might be a substantial replenishment to the dwindling fish stock. If this lockdown period is further extended, it will have a potential impact on the marine ecosystem too. Historically, studies have shown a spectacular recovery of fish landing after the Second World War due to the pause in commercial fishery⁷. It is expected that unintended lockdown might escalate the recovery of fish stock and act as a potential tool for conservation purpose. In a tropical country like India, most of the aquatic animals' breeding period synchronized with monsoon season⁸. Furthermore, ceased tourism pressure has also provided aquatic animals an undisturbed and pollution-free environment as shown by return of flamingos in Navi Mumbai, successful mass nesting of olive ridley turtle in Odisha's Rushikulya rookery and reappearance of Gangetic dolphins in Bihar during the lockdown period^{9–11}. Finally, there might be a silver lining amongst all the gloom and doom due to corona pandemic. Although aquatic ecosystem might rejuvenate itself and would return mankind with successful fisheries and healthier environs in coming years, it might only be a short-term gain.

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Beehive charcoal briquettes: clean cooking fuel for rural households

Cooking is the major energy-intensive activity in many households of rural India¹. A significant number of rural households still depend on biomass for cooking fuel due to easy access, socio-

political situation, age-old cultural practice and low income². The Ujjala Yojana of the Government of India had provided LPG connection to 80 million households, but the second and consecutive fil-

ings are less common³. Use of fuelwood for cooking has serious health implications especially for women and children due to indoor pollution⁴. On an average a woman spends 3 to 4 h per day for