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Increasing protection of habitats critical for biodiversity, says study

Only about 5 per cent of land is currently protected in Singapore, which includes four nature reserves. ST PHOTO: CHONG JUN LIANG

Researchers urge safeguarding of existing nature reserves, expanding park connectors

Cheryl Tan

Strengthening the protection of existing nature reserves and expanding park connectors by just 1 per cent of the planet's land area can help safeguard the habitats of close to 1,200 animal species – and thus prevent them from becoming extinct, a new study has found.

Currently, about 70 per cent of around 5,000 threatened species have either no apparent representation in protected areas, or are found in protected areas that have been downgraded, downsized or degazetted.

This usually occurs when governments decide to roll back legal protections governing a park, diminishing the degree or extent of protection afforded to it.

These changes could result in forest clearance for infrastructural expansion, mining or other activities that will lead to the loss or degradation of habitats.

As at 2021, more than 278 million ha of parks are known to have been downgraded, downsized or degazetted, according to a study by researchers from the National University of Singapore (NUS), Princeton University in the United States and Durham University in Britain.

In South-east Asia, about 1.6 million ha of parks have been affected due to agricultural expansion, although in some cases, governments have reversed these and eventually restored protection to some, said research assistant professor Zeng Yiwen from the NUS Centre for Nature-based Climate Solutions, the lead author of the study.

The researchers focused on 5,000 terrestrial species such as mammals, amphibians and birds from the International Union for Conservation of Nature (IUCN) Red List that required the maintenance of their natural habitats, and would have difficulty surviving in man-made or artificial habitats, said Dr Zeng.

For instance, the Megophrys damrei is a critically endangered frog found only in Cambodia and nowhere else in the world. Even though its habitat is protected, the area continues to experience habitat degradation and loss within national park boundaries and in the adjacent surroundings.

The national park where the frog resides currently faces threats from recreational and tourism-related infrastructure, illegal drug manufacturing, land clearing and illegal logging, among others.

Therefore, the study, which was published on Saturday in the scientific journal Science Advances, highlighted the importance of ensuring that existing protected areas remain a conducive space for biodiversity to thrive.

The Sangihe golden bulbul is a critically endangered songbird species found only on the Sangihe island in Indonesia. PHOTO: BURUNG INDONESIA

The Singapore freshwater crab is largely found in the Bukit Timah Nature Reserve but has populations in areas that are not protected as nature reserves. PHOTO: NPARKS

At the same time, creating new protected areas for biodiversity conservation is just as crucial.

At the United Nations' COP15 biodiversity conference held in December 2022, countries had agreed to set aside 30 per cent of the planet's land and seas as protected areas by 2030.

Currently, only about 17 per cent of land is protected, and 8 per cent of marine areas are under protection.

In South-east Asia, particularly, greater connectivity and links between parks, or isolated areas or patches of greenery, would allow more protected space for wildlife to roam, said Dr Zeng, who was a researcher at Princeton when he conducted the study.

For instance, the study found that protecting an additional 330 km sq of natural landscapes in Indonesia can safeguard the habitats of 53 species that currently have protected area coverage, but have limited suitable habitat spaces.

Population estimates of the Sangihe golden bulbul – a critically endangered songbird species found only on the Sangihe island in Indonesia – is said to be between 50 and 230 at one site that is currently not protected.

Globally, by enhancing the protection of existing protected areas and expanding the existing park networks across just 1 per cent of the planet's land area, the essential habitats of 1,191 animal species that are especially at risk of extinction can be protected, the study found.

In Singapore, the Government has established a network of nature parks that act as buffers for its nature reserves against the impact of human activity and urbanisation, as well as ecological corridors that strengthen connectivity between the green spaces.

Only about 5 per cent of land is currently protected in Singapore, which includes four nature reserves.

Asked if any key biodiversity species in Singapore that reside beyond the boundaries of its four nature reserves could benefit from added protection, Dr Zeng said that many native species have populations that can benefit from increased protection.

However, while Singapore does not face pressures from agricultural expansion or illegal logging, the Republic's space constraints owing to high levels of urbanisation would mean that it could be a challenge to manage competing uses for a single plot of land – making it difficult to expand current protected areas.

Despite this, some species, such as the Singapore freshwater crab, which is largely found in the Bukit Timah Nature Reserve but has populations in areas that are not protected officially as nature reserves, may still be protected in other ways.

This can happen if access to them is restricted, like in the case of military areas, or having their exact locations kept confidential, said Professor Darren Yeo, who is head of the NUS Lee Kong Chian Natural History Museum.

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