# Multitalented mangroves: Spotlight on the trees that could save the planet

March 22 2021, by Tim Knight

Credit: Alex Mustard

Picture the perfect tree. In your mind's eye it is probably as majestic as a mighty oak, as tall as a towering redwood, bursting with fragrant, brightly coloured blossom and weighed down with succulent fruit. Mangroves are none of these things, but in their own inimitable way they are so much more.

Their party piece is turning salt water into fresh water, a natural talent that enables them to thrive in the hostile hinterland between land and sea – an intertidal environment that most trees find too inhospitable. Many mangrove species are able to filter out as much as 90% of the salt found in seawater as it enters their roots. Some are able to excrete salt through glands in their leaves.

And that is just one of the numerous attributes that make mangroves so valuable – indispensable, in fact.

## Many strings to their boughs

Their branches support myriad creatures, from praying mantids to primates. Their leaves are food for swamp specialists such as the proboscis monkey. And their elaborate root structures provide vital shelter for marine life, creating natural harbors for aquatic mammals such as manatees and dolphins, and nurseries for countless reef fish and crustaceans in their early stages of development when they are most vulnerable to predation.

But their importance doesn't end there. These trees form a crucial two-way natural barrier between land and sea. They slow soil erosion, and collect ocean-bound river sediment that would otherwise smother the life out of offshore coral reefs. When floods, storms and tidal waves strike, they are often all that stands between coastal communities and catastrophe, providing a structure that is far more beneficial and cost-effective than engineered solutions.

Male proboscis monkey feeding on mangrove leaves. Credit: Zafer Kizilkaya

As if that wasn't enough, they also help prevent climate collapse. Mangroves sequester and store vast quantities of carbon – estimated by the UN to be over four billion tons, equivalent to the combined annual emissions of the US and China – and they do this up to ten times more efficiently than rainforests and other terrestrial treescapes.

Mangroves are a true nature-based solution, helping to address many of the interlinked challenges we face relating to biodiversity loss, climate change impacts and supporting sustainable livelihoods.

## Blue in green

In light of the huge potential of mangroves to store carbon and the need

for conservation projects to diversify away from tourism-based revenue streams, these trees are set to play a pivotal role in so-called blue carbon projects, which focus on the capture and storage of carbon in coastal and ocean ecosystems, such as mangroves, seagrasses and tidal salt marshes.

Blue carbon is set to become an important part of the global climate response, with governments and organizations supporting nature-based carbon projects that reduce emissions. Safeguarding existing mangroves and improving the management of these forests, while restoring those that have already been ripped out or degraded, not only prevents the release of further emissions but also increases the rate of removal of carbon dioxide from the atmosphere. This combined approach could help pave the way to achieving global climate goals, while providing all the co-benefits to nature and people that we know mangroves offer.

Aerial view of extensive mangrove forest, Borneo. Credit: Zafer Kizilkaya

And yet, despite their incalculable importance, mangrove forests have been subjected to more destruction and degradation during the past 50 years than any other type of forest on the planet.

## Forests on the front line

The level of loss is staggering. According to the Food and Agriculture Organization of the United Nations, more than 20% of the world's mangroves have been cleared since 1980 alone. Over a third of the world's mangroves have already disappeared and in many countries less than half the original mangrove forest cover remains.

Mangroves are being ripped out at such an eye-watering rate largely to make way for a range of commercial enterprises including large-scale agriculture, shrimp farms, harbor construction, tourist development and other forms of human settlement. They are also suffering from unsustainable harvesting of their wood both for subsistence use and for financial profit.

Regrettably, their disproportionately large contribution to climate regulation also means that their disappearance has a correspondingly huge climate impact; emissions from mangrove destruction account for up to 10% of emissions from global deforestation even though the worldwide coverage of these trees extends to only 0.7% of the land surface.

Snapper hiding among mangrove roots, Belize. Credit: Zafer Kizilkaya

## Root and branch reform

When these forests disappear, all the life-giving, life-saving services they provide disappear with them. That's a loss our planet cannot afford. The protection and restoration of mangroves is critical to the fight against climate change, to the livelihoods and food security of coastal communities and to the health of terrestrial and marine ecosystems.

Today is the International Day of Forests. What better time to highlight the plight of arguably the most neglected and undervalued forest type of all? Too often, mangroves are viewed solely as resources to be exploited or cleared for short-term gain. Fauna & Flora International (FFI) recognizes their vital importance for the future of our planet, and we are

working closely with communities, governments and businesses across our project portfolio to ensure that others see them through our eyes and begin to view mangroves as crucial coastal allies in our collective crusade against climate chaos.

Provided by Fauna & Flora International