

## MY WAY OF THINKING

## MARK CARWARDINE

The conservationist discusses why dams are a disaster for wildlife and invites your thoughts on the subject.

**S**urely, hydropower has had its day? I've never understood why it's always touted as an environmentally friendly source of renewable energy, when it is anything but green.

It comes from dams built in large rivers. They block the flow and store vast quantities of water behind them, in reservoirs. When the water is released, it spins turbines, which, in turn, activate generators to create electricity.

Hydropower currently accounts for nearly two-thirds of all renewable electricity worldwide. It's a booming industry: more than 3,700 hydropower dams are currently under construction, or planned, and this will double current capacity. Brazil is responsible for nearly a third of all new builds, but they are being pushed hard in China (which now controls at least half of the hydropower dam-building market worldwide), Pakistan, Ethiopia and other countries.

There's no denying that huge swathes of the human population desperately need electricity to get out of poverty – about 37 million Tanzanians, for example, have no access to mains electricity (out of a population of 57 million). And it's true that hydroelectric dams don't burn fossil fuels and don't directly release greenhouse gases into the atmosphere. So what is the problem?

For a start, hydropower dams are a disaster for wildlife. They flood vast areas of critical habitat (an area the size of California has already been inundated worldwide), fragment wildlife populations, block migrations and make vital feeding and breeding areas inaccessible. They dramatically change water levels, stratification, and currents, and disrupt the downstream flow of nutrients. Itaipu Dam, for example,

between Paraguay and Brazil, has resulted in a 70 per cent loss in local biodiversity. Meanwhile, a proposed hydropower dam in Sumatra, Indonesia, would likely result in the extinction of the Tapanuli orangutan, the world's rarest ape.

These mega-dams are harmful to people, too. At the turn of the century, the World Bank estimated that as many as 80 million people had been displaced by them – thrown out of their homes and villages with little or no compensation. Worldwide, nearly half a billion more have had their livelihoods severely altered or destroyed in the process. In the 1990s, a staggering 1.3 million people were relocated from 1,600 villages and 13 cities during the building of the Three Gorges Dam, in China (which was the

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final nail in the coffin for the now-extinct Yangtze river dolphin).

Despite claims to the contrary, hydropower dams do contribute to global warming. Flooded forests can no longer act as carbon sinks and, as they decay, release vast quantities of greenhouse gases. Then there is the massive carbon footprint caused by the millions of tonnes of cement and all the new roads and other associated infrastructure. Indeed, greenhouse gas emissions from dams worldwide add up to about a billion tons annually (nearly 3 per cent of global emissions).

Yet new mega-dams are being built all the time without robust environmental, social or economic impact assessments.

Under international pressure, some are being aborted. Last year, Zambia halted plans to build a mega-dam across the Luangwa River, one of the most iconic and wildlife-rich regions on the continent. Others hang in the balance. Tanzania's staggeringly contentious Stiegler's Gorge Dam is due to be built in the heart of the wildlife-rich Selous Game Reserve, one of Africa's last remaining great wildernesses. It's highly unlikely to generate as much electricity as projected (the calculations are based on a 25-year-old feasibility study) and the final bill (as much as US\$9.9 billion) could bankrupt the country.

No renewable energy is perfect, of course, but hydropower is undoubtedly the least 'green' of the lot. 🦋

**MARK CARWARDINE** is a frustrated and frank conservationist.

**WHAT DO YOU THINK?** If you want to support Mark in his views or shoot him down in flames, email [wildlifeletters@immediate.co.uk](mailto:wildlifeletters@immediate.co.uk)

