



Commentary

Offsets and Investments: Thoughts on De-linking Economic Development and Biodiversity Loss

A D A M D A V I S



This article originally appeared on the [Katoomba Group blog](#).

This year marks the 25th anniversary of the first Katoomba Group meeting – a community that first came together in 1999 with a shared quest to convert the theoretical value that comes from restoring nature into a practical way for people to make a living. It's hardly been a simple or straightforward path, but we've made a lot of progress together.

I'd like to share some of what I've learned on that path since 1999, when I became a dedicated student of “applied ecosystem service theory,” and eventually started a firm—with much leadership and help from my stalwart partners—that is now a significant investor in ecological restoration.

Since we founded the firm, called [Ecosystem Investment Partners](#), in 2007,

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7,900 tons of nutrient and sediment pollution each year. And they provide livelihoods for people who are protecting and restoring nature where they live.

This feels like success, for sure, but it's a very humbling kind of success too. One of the things that sticks with me as I've grappled with the challenges of building a business and making investments is the "Big Problem," of how **inadequate the available financial resources for nature are, compared to the resources for destructive and damaging human activity.**

I won't repeat the depressing statistics here; you likely know them well enough already. But suffice to say the pace of progress is not sufficient. What follows then are some thoughts on at least one aspect of the Big Problem, which has to do with the concept of mitigating harm from economic activity. These are informed by my experience working in the United States—I don't want to pretend to have deep understanding of, much less answers for, the myriad variations on government structure and law and custom that are found around the world. My hope is to provoke curiosity and more dialog, in the spirit that has characterized the Katoomba Group for these past 25 years.

The Mitigation Hierarchy: A Brief History

The principle of mitigation, or making up for harm, is a fundamental part of environmental permitting systems in the United States. But it's seen as a last resort, after harm has been avoided and minimized. A hierarchy of "avoid, minimize, *then* mitigate" is the structure for law and regulation for limiting the damage of the great human systems for mining, harvesting, drilling, manufacturing, transportation, building, consumption, and throwing the leftovers away.

The Clean Water Act, first signed into law in October of 1972, established the basic structure for protecting the "physical, chemical, and biological integrity" of waters in the US, and it was certainly a great step forward. One part of that law aimed at stopping the further destruction or filling of wetlands, which had been at that point reduced from some 220 million acres down to under 110 million acres in the lower 48 states.

But just five years later the National Wetlands Policy Forum

every five years, then roads and houses and schools and all manner of infrastructure to support the growth would be needed. The Forum recommended that some type of structure for “no net loss” be put into place, whereby some impacts could be allowed, but only if they were offset by an equivalent amount of restoration in the same watershed.

It was the administration of President H.W. Bush that ultimately put the new No Net Loss policy into place, and from the beginning the mitigation hierarchy of “avoid, minimize, mitigate” was emphasized. Good planning had to precede a permit to damage Waters of the United States, and a permit applicant had to demonstrate that they had done as much as they could practically do to reduce harm before they would be given permission to proceed.

The fundamental problem with this policy formula, however, is that there is no bright line or absolute standard that allows us to know *how much avoidance and minimization is enough*. Theoretically, it’s possible to avoid and minimize all the way to zero by simply not doing the development project at all, or moving it to a location that has no wetlands. But certain types of development, like roads, pipelines, and transmission lines that cross entire landscapes are very hard to route around *all* wet ground, and there are parts of the country that exist on low elevation land that goes on for tens or hundreds of miles in all directions.

So the mitigation hierarchy makes sense as an approach and a principle, but in practice the permitting decision is necessarily a compromise. Some damage is ultimately going to happen on the land even in the presence of good policy that is well enforced. And this is where a well-designed mitigation program should enter the picture.

Good Mitigation and Bad Mitigation

In the United States, the response was to develop a compensatory mitigation program that allowed some damage, but only if it was tied to scientifically verifiable restoration in the same watershed. Permitted entities who impacted waters of the United States could mitigate for unavoidable residual damages themselves, or they could contract with a third-party provider, like a “mitigation bank” that creates and sells wetland, stream, and other ecological credits by restoring and protecting degraded ecosystems.

followed. A chief lesson has been that good mitigation requires that certain core criteria be met: credits need to represent real, meaningful, additional, and durable benefits.

“Real” and “meaningful” matter, because otherwise when damage on the land is allowed, how would we know if the impacts of that damage have been made up for? In order to do that, we have to be able to measure how much damage there was, not just in terms of the number of acres, but in terms of the ecological function provided on those acres. The metrics for the system that relate to biodiversity, clean water, and the full set of functions and values provided by nature need to be tracked before the damage and afterwards. Then those metrics need to be similarly applied to a restoration site to understand the amount of uplift created there. This emphasis on functional equivalence helps to ensure that wetland mitigation is truly compensating for the ecological loss resulting from development.

High standards for durable land protection and for measurable improvement from a baseline ensure that wetland mitigation bank results are clearly “additional” to what would have happened otherwise, and their restoration or enhancement activities are directly related to the investment made in them.

As for the standards for durability, while “permanence” is beyond the scope of human control, and therefore should be beyond the scope of human laws, mitigation banks are very durable indeed. They are required to have long-term management plans and financial assurances in place to ensure that the restored wetlands can be monitored and maintained well into the foreseeable future.

Ultimately, the effectiveness of any environmental offset program depends on the integrity of the credits being traded. By ensuring that credits represent real, additional, durable, and ecologically meaningful benefits, programs like wetland mitigation banking provide a model for how market-based approaches can be used to balance economic development with environmental conservation.

And it's working. This market-based approach has been remarkably effective: as of 2021, there were 1,642 approved mitigation banks in the United States, including 1,692,748 acres of wetland mitigation banks and 406,351 acres of stream mitigation banks² that make permitting economic

Mitigation banking is not a perfect solution. But it's still the right idea, and ethically superior to giving up on at least trying to offset damage or just suggesting that all development should come to a halt. Of course it would be better if no one ever impacted wetlands again, and it would also be better if we could just stop burning all fossil fuels today. But high quality offsets help. As a model for recognizing the value of nature and ensuring that the costs of environmental damage are internalized by those who cause it, mitigation banking represents a significant step forward.

The critics of biodiversity and carbon offsets should take note: it is not the existence of good offsets that allows damage to occur, but rather the *absence* of them. By placing a value on natural resources and requiring those who harm them to bear the cost of restoration, mitigation banking (and good carbon offsets too) create a powerful incentive to minimize impacts from the start. The less damage they cause, the less they will have to pay in mitigation costs. This encourages both more thoughtful planning and more investment in environmental protection.

So: good mitigation is different than bad mitigation. Good mitigation uses scientifically verifiable methods and metrics to ensure that the amount of offset is equivalent to the amount of impact. And it has legal and financial assurances in place to make sure that the offset—the restored area—is durable over time. Mitigation credits come from work that is truly “additional” because restoration simply doesn’t occur without land control, a design that receives permits, and activity on the ground. Finally mitigation credits have to be in place *before* they may be sold as offsets. So there’s no temporal loss between the time of impact and the benefit of restoration.

Many criticisms of carbon and biodiversity credits and offset programs are really criticisms of bad mitigation program design. If a credit does not really make up for the damage it is being sold to make up for, then the program is flawed and the whole notion of offsetting is in jeopardy.

What is the Alternative to Mitigation?

In June of 2023, the European Union (EU) Commission recently stripped biodiversity offsets from its taxonomy of “sustainable activities” that

conservation challenges in front of us, to eliminate one of the most established, readily investable, and impactful mechanisms for financing environmental improvement. And because income from credit sales provides the only incentive for private investment in restoration, this decision goes directly against the ethical investment and business practices that the EU Commission is trying to encourage.

What could be the rationale for such a move? As the Senior Economist at WWF, a member of Platform on Sustainable Finance, put it: “Offsetting is intrinsically tied to biodiversity harm elsewhere, the result is a zero-sum game for biodiversity and on that basis, it cannot represent a substantial contribution to biodiversity.”

I’d argue that this position entirely misses the essential point: requiring offsets that allow a project to prevent healthy natural systems from dropping below baseline conditions is the very definition of what it means to be sustainable—i.e., taking away no more than can be replaced. And of course, “zero sum” is vastly preferable to continuing to lose biodiversity. In fact, offsets qualified by scientifically verifiable restoration of land along with permanent protection through endowments for long-term monitoring and maintenance are in fact the very definition of what sustainability requires. This is also what a high quality offset requires.

In a world where impacts to biodiversity will continue to occur, the only alternative to offsetting impacts is *not* offsetting impacts. Restoration projects are needed, and the wildlife and natural systems that benefit from those projects do not know or care how the restoration work is ultimately funded.

While the EU Commission now opposes offsets, it still supports biodiversity credits. These credits, however, appear to be mainly a repackaging of existing conservation and restoration activities (already being funded by government and philanthropy) into credit form. While crediting that improves measurement is laudable, it does not represent a significant source of new revenue to pay for restoration and conservation efforts.

As David Sternlicht of the investment firm, Ethic, recently wrote in his article, [Beyond Priceless](#), “We can’t solve the ecological crisis without considering the role of money and markets. Per Bloomberg, [current annual](#)

\$830 billion in annual additional capital flows must be redirected this decade to [begin to bend the curve](#) on nature loss.” There is simply no compelling evidence for the notion that measuring traditional conservation action using biodiversity “credits” will provide additional funding.

Offsets that come from good mitigation projects require the actual accomplishment of restoration goals under rigorous scientific standards represent new and additional funding that is now critical. Offsetting will continue to provide the best available mechanism to replace what we take now for the benefit of future generations because the alternative to “no net loss” is simply “net loss.”

Parting Thoughts

I hope what I’ve written here is helpful as a discussion of the elements of good mitigation or biodiversity credit program design. But there’s one more item that needs to be addressed, which is the question of whether or not people should be able to make money from nature at all. The controversy around this question has been around for decades, but it still swirls around the debates about program design and credit integrity.

While some of the criticism against private capital investment in restoration is simply anti-capitalist rhetoric in a more subtle form, there’s also the notion that restoration projects paid for by government or philanthropy are inherently more ethical than those that make up for the impacts of current economic activity. But the government and philanthropic funds that are available originate from past economic activity; activity that was not required to provide offsets. If offsets had been required in the past, the damage these funds are seeking to correct might never have occurred in the first place.

In the end, the question of who pays for environmental restoration involves issues of fairness and responsibility, but also of effectiveness.

By shifting the burden of making it right onto those who cause the damage, rather than those who inherit it, we can create a system that incentivizes both ecological conservation and emissions reductions. Mitigation banking offers a promising model for how this can be achieved, not by allowing damage to occur, but by ensuring that it comes with a price tag. Only by recognizing the value of nature in the

But there's an even more fundamental point about the ethics of making money through the protection and restoration of nature. And it's simply this: the choice before us is *not* whether to place a financial value on the ecosystem services related to carbon, water, and biodiversity. That choice was made long ago when real estate and natural resource extraction placed a financial value – a number – on the land. As soon as land was recognized as being valuable to build things on or take things from there was a price for each and every acre. The price, however, was for development and production, for roads and buildings, and for mining, oil and gas, agriculture, and timber.

So it's not that biodiversity, carbon, or wetland credits “put a value on nature.” That was done long ago. These new credits put a value on the protection and stewardship of nature. Credits are a countervailing force that represents not what we can take from nature, but what nature does when it is sufficiently protected and left alone.

And only by tying credits to offsets will we send the *right* price signal, that makes it more expensive to damage the natural world and at the same time make it more valuable to protect it. The old ways of government and philanthropic protection that tried to take nature *out* of the economy by turning it into parks and protected areas have made a huge difference for the good, and they need to continue. But they are simply not sufficient to the scale and the urgency of the task at hand today.



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