

Neoliberal Natures – The Limits of Financialisation in Scotland’s Conservation

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Abstract:

With the acceleration of climate change and biodiversity loss in recent years, the neoliberal economic response to environmental challenges has been to integrate nature into market mechanisms, hoping to account for ecological degradation while funding nature conservation and restoration. This study critically examines the resulting financialisation of conservation, focussing on Scotland in particular. Two emerging policy frameworks related to conservation, namely the Scottish Biodiversity Strategy (SBS) and the Natural Capital Market Framework (NCMF), are critically examined. The analysis reveals that the NCMF represents an escalation of financialisation in environmental policy, while the proposed expansion into new financial products beyond carbon and biodiversity credits raises significant concerns about the long-term viability and ecological integrity of conservation efforts. The study identifies multiple fundamental flaws in the NCMF’s approach which suggest that the NCMF’s market-based solutions are not only ecologically unsound but also risk perpetuating ‘fictitious conservation,’ where the appearance of biophysically grounded conservation is maintained through economic transactions while actual conservation outcomes are absent. Additionally, the SBS’s reliance on private investment to address funding gaps reflects a neoliberal economic agenda that prioritises market mechanisms over public accountability and ecological integrity. The absence of robust public conservation funding and the failure to address key environmental threats, such as fossil fuel extraction, further undermine the strategy’s effectiveness. The study concludes that the policy trajectory shown by the SBS and NCMF is stalling on effective biodiversity restoration and climate action, rendering the achievement of Scotland’s conservation aims improbable.

Keywords: Financialisation; Biodiversity; Scotland; Conservation policy; Natural capital markets

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List of Abbreviations

BDO	Biodiversity Offsets/Offsetting
BSI	British Standards Institution
CBD	Convention on Biological Diversity
CER	Certified Emissions Reduction
CDM	Clean Development Mechanism
COP	Conference of the Parties
CV	Contingent Valuation
Defra	Department for Environment, Food and Rural Affairs
GBF	Kunming-Montreal Global Biodiversity Framework
GDP	Gross Domestic Product
GHG	Greenhouse Gas
NCAI	Natural Capital Asset Index
NCC	Natural Capital Committee
NCMF	Natural Capital Market Framework
SBS	Scottish Biodiversity Strategy
Sepa	Scottish Environment Protection Agency
SNP	Scottish National Party
SSSI	Sites of Special Scientific Interest
UK ETS	United Kingdom Emissions Trading Scheme
UK	United Kingdom
UN	United Nations
WTA	Willingness to Accept
WTP	Willingness to Pay

1. Introduction

Since the 1950s, Scotland has experienced the decline of a third of all terrestrial and freshwater species, species-rich habitats like wetlands, peatlands, and old-growth forests, while one in nine species in Scotland is under threat of national extinction.¹ The loss of biodiversity in Scotland is attributable to multiple direct and indirect drivers, among which are the increase in agricultural land use and changes in agricultural practices, draining of wetlands, climate change, and industrial pollution.² Biodiversity loss is a global issue of such an extent, that it is now reasonable to speak of an ongoing “sixth mass extinction.”³ Against the backdrop of consecutive decades of ecological decline, in 2022 the Conference of the Parties (COP) on biodiversity convened in Montreal for the fifteenth time to ultimately pass the Kunming-Montreal Global Biodiversity Framework (GBF) to much conceit.⁴ It follows years of repeated COPs that started with establishment of the Convention on Biological Diversity (CBD) at the 1992 United Nations (UN) Conference on Environment and Development in Rio de Janeiro. The more than three decades since the Rio Conference have witnessed cycles consisting of COP pledges, publicity about resulting promises, inadequate or non-existent implementation of pledges, and new pledges lamenting inaction on the previous ones, *iterum iterumque*. Preceded by the Aichi Biodiversity

¹ P. Walton et al., ‘State of Nature Scotland 2023’ (The State of Nature Partnership, 2023), <https://stateofnature.org.uk/countries/scotland/>.

² Scottish Government, ‘Scottish Biodiversity Strategy to 2045. Tackling the Nature Emergency in Scotland’ (Edinburgh: The Scottish Government, September 2023), <https://www.gov.scot/publications/scottish-biodiversity-strategy-2045-tackling-nature-emergency-scotland-2/documents/>.

³ Giovanni Strona and Corey J. A. Bradshaw, ‘Coextinctions Dominate Future Vertebrate Losses from Climate and Land Use Change’, *Science Advances* 8, no. 50 (2022): eabn4345, <https://doi.org/10.1126/sciadv.abn4345>.

⁴ The Conference of the Parties referred to here relates to the Convention on Biological Diversity (CBD) and is separate from the Conferences of the Parties that govern the United Nations Framework Convention on Climate Change (UNFCCC).

Convention on Biological Diversity. ‘Kunming-Montreal Global Biodiversity Framework’ (Montreal: Secretariat of the Convention on Biological Diversity, 2022), <https://www.cbd.int/gbf>.

Targets, which were entirely unachieved⁵, the GBF is supposed to deliver the conservation of 30% of the world’s land and oceans, respectively, by 2030; stop and reverse biodiversity loss; and phase-out subsidies which contribute to biodiversity loss, among other pledges.⁶

Following the COP15, the Scottish Government has worked on developing the Scottish Biodiversity Strategy (SBS), to contribute to pledges made in the GBF and reverse the trend of biodiversity loss; a final version of the SBS was published in September 2023. The SBS envisions an investment plan to address a ‘funding gap’ regarding biodiversity restoration, which follows the preceding Scottish Government’s ambition to develop a “values-led, high-integrity market for responsible private investment in natural capital”, to address the “policy goals for economic transformation, climate change and biodiversity.”⁷ To this end, the Natural Capital Market Framework (NCMF) is under development and, at the time of writing, has reached the final consultation stage before the development and implementation of the natural capital market goes ahead. The NCMF is intended to respond to the call made in the SBS for an investment plan with the mission to decrease the funding gaps in biodiversity restoration.⁸

In a development parallel to the ongoing environmental decline and biodiversity loss, financial markets and institutions have been increasingly employed in conservation responses to environmental challenges. This development is visible in the initiation of ‘Clean Development Mechanisms’ (CDM) following the 1997 Kyoto Protocol, which established the offset markets for carbon and biodiversity.⁹ In recent years, more financial

⁵ Secretariat of the Convention on Biological Diversity, ‘Global Biodiversity Outlook 5’ (Montreal: Secretariat of the Convention on Biological Diversity, 2020), <https://www.cbd.int/gbo5>.

⁶ Convention on Biological Diversity, ‘Kunming-Montreal Global Biodiversity Framework’.

⁷ Scottish Government, ‘Interim Principles for Responsible Investment in Natural Capital’, Scottish Government, accessed 18 July 2024, <https://www.gov.scot/publications/interim-principles-for-responsible-investment-in-natural-capital/>.

⁸ Scottish Government, ‘Scottish Biodiversity Strategy to 2045’, 44–45.

⁹ Robert Watt, ‘A Crash in Value: Explaining the Decline of the Clean Development Mechanism’, in *Valuing Development, Environment and Conservation*, ed. Sarah Bracking et al., 1st ed. (London; New York: Routledge, 2019), 147–61.

mechanisms have joined the growing assemblage of neoliberal market responses to biodiversity loss and climate change, such as species banks, habitat banks, or REDD+ carbon sequestration units.¹⁰ The general development of a greater role in economies given to financial markets and institutions is called ‘financialisation’.¹¹

The aim of the following thesis is to investigate financialisation in the context of Scottish conservation. Specifically, the two aforementioned policy documents, the SBS and NCMF, will be subjected to a semi-structured analysis making use of policy and document analysis methods. In the process, financialisation is employed as a framework through which to view developments in Scottish conservation, while the concept of ‘fictitious conservation’, which following Büscher is the outcome of financialising nature, helps in examining the possible disconnect of neoliberal conservation efforts from biophysical nature.¹² In addition, this thesis will be grounded in a critical political economy standpoint which recognises that economic and political decisions are also moral decisions, either explicit in their morality, or implicit through a denial of the moral character of political and economic decisions. The view of economies as ‘moral economies’ will be employed in the analysis to function as a critique of the logic underpinning the current economic status quo. The concepts will all converge in the theoretical framework, to conduct the study in pursuit of the following research questions:

- 1) *How is the financialisation of conservation being implemented in Scotland?*
- 2) *Why are Scotland’s biodiversity conservation aims unlikely to be achieved?*

¹⁰ Sarah Bracking, ‘Financialization and the Environmental Frontier’, in *The Routledge International Handbook of Financialization*, ed. Philip Mader, Daniel Mertens, and Natascha van der Zwan, 1st ed. (London: Routledge, 2020), 214.

¹¹ John Bellamy Foster, ‘The Financialization of Capitalism’, *Monthly Review* 58, no. 11 (2007), https://doi.org/10.14452/MR-058-11-2007-04_1.

¹² Bram Büscher, ‘Nature on the Move: The Value and Circulation of Liquid Nature and the Emergence of Fictitious Conservation’, *New Proposals: Journal of Marxism and Interdisciplinary Inquiry* 6, no. 1–2 (2013): 20–36, <https://ojs.library.ubc.ca/index.php/newproposals/article/view/183690>.

Following a presentation of the theoretical framework composed of financialisation, fictitious conservation, and moral economy, as well as a description of the methodology, a two-part analysis of the policy documents SBS and NCMF will answer the research questions. Firstly, I will describe the development of financialisation, and its permeation into environmental matters. Then, the emergence of ‘fictitious conservation’ from its foundations in financialisation will be critically illustrated, following which the ‘moral economy’ perspective is outlined, along with a formulation of moral economic questions that can guide scrutiny of the two policy documents. Succeeding the analysis of the SBS and NCMF, the study will be concluded with some remarks on the trajectory of conservation in Scotland.

2. Theoretical Framework: Key Concepts

2.1 Financialisation

Contemporary capitalism has transformed into a system that is markedly different from its earlier iterations in the 19th and early 20th century. At least since the rise of neoliberalism in the 1980s, capitalism has undergone a process often referred to as “financialisation”. The most commonly cited definition of this process is provided by Epstein: Financialisation is “the increasing importance of financial markets, financial motives, financial institutions, and financial elites in the operation of the economy and its governing institutions, both at the national and international level.”¹³

John Bellamy Foster narrows down this sweeping, broad definition to mean “the shift in gravity of economic activity from production (and even from much of the growing service sector) to finance”.¹⁴ The trend of capitalist accumulation gravitating from its basis in production towards a larger role for finance has been analysed since the 1960s, prominently by Harry Magdoff and Paul Sweezy. However, the fact that a domination of economies by finance was possible had already been observed by Marx and Keynes, who realised that capital accumulation involves not just the “real assets, but also paper claims to those real assets.”¹⁵

Indeed, following Graeber’s anthropological study of the development of money and credit, one could argue that financialisation as a general process has been ongoing for 5,000 years.¹⁶ Credits, debts and interest are the subject of some of the first writing by humans, dating back to the Bronze Age, and religious traditions have across millennia pondered the morals of these financial instruments.¹⁷ Hence, finance, and its increasing or decreasing role,

¹³ Gerald A. Epstein, ed., *Financialization and the World Economy*, 1st ed. (Cheltenham: Edward Elgar Publishing, 2005).

¹⁴ Foster, ‘The Financialization of Capitalism’.

¹⁵ Foster.

¹⁶ David Graeber, *Debt: The First 5,000 Years* (New York: Melville House, 2011).

See also: Malcolm Sawyer, ‘What Is Financialization?’, *International Journal of Political Economy* 42, no. 4 (2013): 5–18, <https://doi.org/10.2753/IJP0891-1916420401>.

¹⁷ Graeber, *Debt*.

has existed for thousands of years, taking on different forms throughout history. Knowing the historical continuity of finance and financialisation, we can thus see that the current proliferation of historically speaking ‘novel’ financial instruments, and their permeation into all aspects of social and political life as well as the environment, is but the most recent iteration of something that has taken many different forms over time. The economic system is susceptible to change.

Financialisation can be viewed as a historical process reaching back to the first recorded instances of commodities and trading, and as the dominant trend under neoliberalism which pushes novel frontiers for the capture of surplus value. Under neoliberal financialisation, new financial institutions and markets have been created, trading in previously marginal or non-existent financial products such as securitised and re-packaged assets, derivatives, and various futures markets.¹⁸ Hence, financialisation involves the diversification of capital accumulation, as well as a significantly reduced role for production and the ‘real economy’ in economic activity. This diversification is the key attribute underpinning the inverted connection of finance capitalism and economic stagnation: the financial sector has been expanding throughout economic crises, and seemingly “feeds” on stagnant economies.¹⁹ Additionally, financialisation is associated with the prioritisation of shareholder value and financial return over “other economic, social, and environmental values and goals.”²⁰ Money capital is the single most valued variable in the logic of neoliberal capitalist economics, meaning any ecological or environmental value is subsumed under it.

A further development associated with the proliferation of finance, is the simultaneous deterioration of employment in quantity and employment conditions, while certain financial markets have been shown to contribute to

¹⁸ Ben Fine, ‘Financialisation on the Rebound?’, *Actuel Marx* 51, no. 1 (2012): 73–85, <https://doi.org/10.3917/amx.051.0073>.

¹⁹ Foster, ‘The Financialization of Capitalism’.

²⁰ FESSUD, ‘Description of Work’, *Grant Agreement No: 266800 for Collaborative Project Under Framework Programme 7 of the European Union*, 2011, <https://cordis.europa.eu/project/id/266800>.

price increases of, among others, foodstuffs and oil.²¹ In addition, the dramatic intensification of both income and wealth inequality over the past three decades is directly connected to financialisation, in particular the associated financial deregulation. The income gap has grown to unprecedented dimensions over the past decades: in the US the top 0.01% of households have seen an increase in income of 550% since 1979, whereas for the bottom fifth that figure stalls at 39%.²² In the United Kingdom, the richest 20% of households earn more than 12 times the income of the poorest fifth.²³ As a result, the most significant factor determining class membership is ownership of financial, interest-bearing assets.²⁴

²¹ Fine, 'Financialisation on the Rebound?', 4.

²² Income Inequality, 'Figure 1' (Institute for Policy Studies), accessed 4 July 2024, <https://inequality.org/facts/income-inequality/>.

²³ 'The Scale of Economic Inequality in the UK', *Equality Trust* (blog), 27 October 2023, <https://equalitytrust.org.uk/scale-economic-inequality-uk/>.

²⁴ Foster, 'The Financialization of Capitalism'.

2.2 Financialisation of the Environment

Financialisation involves the permeation of financial instruments, language, and markets into non-financial areas of policymaking concerning, for example, healthcare, social welfare, and conservation; I focus on the latter. Subsuming the uncapitalised environment under neoliberal economics means that somehow, nature must be brought in line with monetary valuation. This happens through a reframing of a particular part of nature as a commodity, and the subsequent sale of it, e.g. a forest being framed as a collection of timber or as a parcel of land. This is the first stage of financialising nature, and it is a “socially necessary abstraction” involving the use of technical and seemingly scientific calculative devices.²⁵ For a part of nature to be fully subsumed under finance capital, it must become an *interest-bearing* commodity. Continuing the forest example, a commodified section of forest would be financialised upon being leased to another entity, or if the expected future yield of lumber were made tradable, which is also called ‘futures trading.’ Additional financialisation mechanisms are securitisation (when the interest rate becomes a tradeable asset in its own right), or reframing land “as a species bank, habitat bank or biodiversity offset, a carbon sequestration unit under REDD+, or the Clean Development Mechanism (as a certified emissions reduction or CER unit).”²⁶

An example of the reframing of nature is ‘natural capital’, a term which was coined by E. F. Schumacher in his 1973 collection of essays, where he criticised the growth imperative of mainstream economics and argued for a downsizing of economic activity.²⁷ However, the term has since been appropriated by environmental economists who employ it to argue for the incorporation of nature in finance to account for environmental damage without compromising economic growth. Discursively, natural capital is

²⁵ Bracking, ‘Financialization and the Environmental Frontier’, 216.

²⁶ Bracking, 214.

²⁷ Ernst Friedrich Schumacher, *Small Is Beautiful: Economics as If People Mattered* (New York: Harper Perennial, 1989).

Sian Sullivan, ‘Making Nature Investable’, *Science & Technology Studies* 31, no. 3 (2018): 47–76, <https://doi.org/10.23987/sts.58040>.

increasingly used as a placeholder for nature itself. It is an analytically weak term, since it is employed by entities with greatly varying agendas and commitment to the environment and climate. Nevertheless, natural capital has become a mainstream concept used by businesses and governments alike. For example, the UK Government has appointed a Natural Capital Committee (NCC), while the Scottish Government has initiated a Natural Capital Asset Index (NCAI) to keep track of the monetary value of its environment. Briefly summarised, this process entails the stratification of ecology and nature according to its ability to provide reliable and calculable returns, which becomes the factor deciding whether a part of nature is conserved or left to die. Often, the argument is that commodifying species or (aspects of) ecosystems can help to finance their preservation, a “‘species must pay to stay’ mentality.”²⁸

The natural capital concept exposes the pitfalls of subsuming nature under economics, since the immense complexity of nature is exposed to the simplistic economic value, which, following Hornborg, is “a concept deriving from the market, and the only conceivable metric for measuring it is money.”²⁹ Nature is thus subjected to the primary concern of neoliberal economics: maximising instrumental, monetary value. In order to get an indication of the monetary value of nature, said nature must first be numbered, its different components indexed, so that ultimately nature’s aspects correspond to numbered values, which can then be converted into monetary values. Note that affixing a numerical, exchangeable value to nature does not require material, physical change of the nature in question, but rather is a matter of changing how it (nature) is framed and consequently conceiving novel financial mechanisms to transfer a determined value across space in time while the corresponding nature is, of course, fixed in place.

For example, a parcel of land that contains shrubland, heathland, some forest, can be left *in situ*, but new value can be affixed to it by framing it as a

²⁸ Bracking, ‘Financialization and the Environmental Frontier’, 217.

²⁹ Alf Hornborg, ‘Post-Capitalist Ecologies: Energy, “Value” and Fetishism in the Anthropocene’, *Capitalism Nature Socialism*, 27, no. 4 (2016): 61–76, <https://doi.org/10.1080/10455752.2016.1196229>.

collection of carbon stores, wetlands, or habitats for certain species that contribute to biodiversity. Then, abstraction quantifies these frames into a value that can be equivalenced with money. They have become commodities that can be sold, traded and circulated. Of course they are fixed in place, but the papers or credits can be moved around. Notwithstanding the abstraction necessary for the financialisation of nature, the proliferation thereof has a real, material impact on the lives of humans and more-than-humans.³⁰ By reducing the diversity of ecology, ecosystems, and their inhabitants to a ranking of which parts provide the highest and safest returns, and basing their preservation on it, the fate of species and humans in ecosystems which are less valued is rendered invisible.

Furthermore, the process of valuing nature economically involves contentious valuation techniques. Most common are ‘contingent valuation’ and ‘benefit transfer’. Contingent valuation (CV) employs surveys to ask respondents how much they would be ‘willing to pay’ (WTP) for an environmental outcome, e.g. a restored wetland, or which amount of money they would be ‘willing to accept’ (WTA) in lieu of the environmental outcome.³¹ CV is based in the assumption that subjective notions of appropriate pricing equate with value. This makes it a subjective and inconsistent valuation method, which also raises questions about legitimacy, since it treats the value of nature as if it were a matter of opinion. CV has been contested for as long as it has been applied in economics, however, it has seen consistent application in environmental valuation, for example when “valuing damages from hazardous waste contamination.”³²

Aside from the ontological issue with assuming the value of nature can be determined in a relative price, the CV method is further inhibited in its reliability by practical issues. Reviews of past surveys which employed CV

³⁰ Bracking, ‘Financialization and the Environmental Frontier’.

‘More-than-human’ refers to non-human living beings and plants. The phrase aims to distribute the focus of ecological analysis beyond humans and emphasises the embeddedness of humans in the wider ecological network. .

³¹ Paul Burkett, *Marxism and Ecological Economics: Toward a Red and Green Political Economy*, 1st ed., Historical Materialism Book Series (Leiden; Boston: Brill, 2006), 57.

³² Burkett, 60.

have found extensive differences in the values respondents gave to WTA and WTP. Respondents consistently required much higher compensation for environmental costs than what they were willing to pay to remove the environmental cost, however, the theory underlying the CV method would hold that the two values would be close to equal. Furthermore, respondents to qualitative CV surveys have consistently expressed difficulties to assign WTA or WTP values, due to lacking information and context, concerns about the distribution of responsibility to pay for the environment, and an ethical uneasiness about the monetary valuation of nature.³³ However, CV surveys with a more quantitative design do not record potential qualms of respondents, meaning their WTA and WTP valuations are accepted *prima facie*. Thus, the contingent valuation method appears unable to reliably grasp the subjective valuation of nature by respondents, let alone how that subjective valuation corresponds to a generalised monetary value.

Benefit transfer is mostly employed when site-specific, primary data collection for valuation is deemed too costly or cumbersome. It entails the application of the previously determined economic value of one location to another whose socio-ecological characteristics are claimed to be sufficiently similar. An example of the use of benefit transfer, is in the valuation of ‘ecosystem services’. This typically works by differentiating an area by an ecological category, such as biome or land cover, and establishing which ‘ecosystem services’ the area contains, for example, carbon sequestration, erosion prevention, clean water, et cetera.³⁴ Subsequently, either original data is gathered for the specific area, or, more commonly, benefit transfer is conducted by sourcing already existing studies which provide valuation of corresponding landscape types and ‘ecosystem services’. The derived values are then used to calculate a “constant value” for that combination of landscape and ‘ecosystem services’, to which equation the size of the area is added.³⁵

³³ Burkett, 63.

³⁴ Mark L. Plummer, ‘Assessing Benefit Transfer for the Valuation of Ecosystem Services’, *Frontiers in Ecology and the Environment* 7, no. 1 (2009): 38–45, <https://doi.org/10.1890/080091>.

³⁵ Plummer, 40.

This approach was prominently employed in Costanza and colleagues' economic valuation of the planet, which remains highly controversial.³⁶ For one, the benefit transfer method uses one characteristic to equate two or more areas with each other, for example land cover such as forests, beaches, or marshland. However, achieving correspondence regarding other vital socio-ecological specificities across different areas is unfeasible and has led to criticism for inaccurate generalisations.³⁷ Furthermore, benefit transfers commonly take into account the use values of nature for humans, but the complex interrelationship between different aspects of nature, the various variables which make up an ecosystem, and biodiversity, cannot be distilled into single numerical values. This is the roadblock encountered by economists who attempt to assess the value of biodiversity, for example in the case of NatureScot³⁸, who conceded that the value of benefits provided by biodiversity "cannot be assessed reliably with current valuation methods."³⁹ Hence, diverse species might feature in a benefit transfer estimation, but this is predominantly the case if some value for humans can be derived, e.g. for hunting or observation, whereas the immeasurably complex interconnections of species of different kinds with each other is not accounted for.

Finally, a ubiquitous phenomenon indicative of the financialisation of the environment is offsetting, predominantly as carbon and biodiversity offsets. The carbon offset market is the outcome of the UN Kyoto Protocol conference and was conceived as a CDM to curb climate change-causing emissions. Since their inception, the carbon crediting systems have received overwhelming scrutiny for failing to deliver on their promised effects and had

³⁶ Robert Costanza et al., 'The Value of the World's Ecosystem Services and Natural Capital', *Nature* 387, no. 6630 (1997): 253–60, <https://doi.org/10.1038/387253a0>.

For a critique of the valuation approach, See: Clive L. Spash, 'Ecosystems Services Valuation', *Environmental Values* 17, no. 2 (2008): 259–84, <https://mpra.ub.uni-muenchen.de/101233/>.

³⁷ Plummer, 'Assessing Benefit Transfer for the Valuation of Ecosystem Services'.

³⁸ NatureScot is Scotland's public nature agency, advising Scottish Ministers and Cabinet Secretaries on matters relating to the natural environment. <https://www.nature.scot/about-naturescot/our-work/what-we-do>.

³⁹ I. Dickie, D. Royle, and S. Neupauer, 'Testing a Natural Capital Approach on SNH Land' (NatureScot, 2019), <https://www.nature.scot/doc/naturescot-research-report-1144-testing-natural-capital-approach-naturescot-land>.

no tangible effect on reducing ecological and climate degradation. Moreover, carbon offset projects, including some initiated under the banner of REDD+, have been shown to violate indigenous people's land rights as well as creating a structural bias towards monocultures which has led, in some areas, to deforestation of flora with low carbon sequestration rates in favour of 'more efficient' species.⁴⁰ In addition, an investigation of the foremost certifier of forest carbon credits in 2023 found that over 90% of all carbon credits they certified had no basis in actual emission reductions, making them entirely worthless.⁴¹ While this appears to have been a case caused by industry malpractice and the desire to saturate the carbon market, the latter also exemplified by the recurring over-issuing of credits⁴², there are fundamental issues with the process of valuing offsets.

Firstly, to measure the reduction in emissions caused by an offset project necessitates the determination of a baseline of emissions, or as Watt states, "the emissions scenario for the counterfactual world in which the offset project has not yet occurred", from which the actual emissions are subtracted to derive the value of the emissions reduction.⁴³ Choosing a baseline requires a quantification of the hypothetical emissions in the absence of the emissions reduction initiative in question, and is therefore inherently uncertain. Secondly, related to the unfeasibility of an accurate baseline scenario, is the concept of additionality. The issuance of offset credits requires the assurance

⁴⁰ Tracey Osborne, Laurel Bellante, and Nicolena von Hedemann, 'Indigenous Peoples and REDD+: A Critical Perspective', *Public Political Ecology Lab*, 2014, <https://repository.arizona.edu/handle/10150/605561>.

Mucahid Mustafa Bayrak and Lawal Mohammed Marafa, 'Ten Years of REDD+: A Critical Review of the Impact of REDD+ on Forest-Dependent Communities', *Sustainability* 8, no. 7 (2016): 620, <https://doi.org/10.3390/su8070620>.

⁴¹ Patrick Greenfield, 'Revealed: More than 90% of Rainforest Carbon Offsets by Biggest Certifier Are Worthless, Analysis Shows', *The Guardian*, 18 January 2023, <https://www.theguardian.com/environment/2023/jan/18/revealed-forest-carbon-offsets-biggest-provider-worthless-verra-aoe>.

⁴² Grayson Badgley et al., 'Systematic Over-Crediting in California's Forest Carbon Offsets Program', *Global Change Biology* 28, no. 4 (2022): 1433–45, <https://doi.org/10.1111/gcb.15943>.

Watt, 'A Crash in Value', 149.

Thales A. P. West et al., 'Overstated Carbon Emission Reductions from Voluntary REDD+ Projects in the Brazilian Amazon', *Proceedings of the National Academy of Sciences* 117, no. 39 (2020): 24188–94, <https://doi.org/10.1073/pnas.2004334117>.

⁴³ Watt, 'A Crash in Value', 153.

that an offset project is causally connected to the emissions reductions attributed to it. That is, if an initiative would have existed irrespective of a carbon offset mechanism, it cannot be considered as an offset.⁴⁴ Thus, credits derive their validity from being causally connected to offset projects which exist beyond business-as-usual. This difficult and tenuous attribution of causation encounters similar issues to the baseline question, since defining business-as-usual trends involves inherent uncertainty.

Much of the criticism of carbon offsetting also applies to biodiversity offsets (BDO). BDO projects also need to prove that their offsets lead to additional benefits beyond business-as-usual scenarios. However, BDO faces the added barrier of proving ‘commensurability’, which is described in further detail in a later section, under ‘fictitious conservation’. Furthermore, the ecological complexity, uniqueness and irreplaceability of ecosystems makes biodiversity offsets particularly unfeasible, as they would have to reduce ecosystems into single digits which supposedly encapsulate the complex interconnections of species and habitats inherent in biodiverse areas in one value.⁴⁵ Maintaining the integrity of a biodiversity offset, i.e., an area which supposedly ‘replaced’ another biodiverse area, in the long term without causing the eventual degradation of the ‘replacement’, is another reason why BDOs may not be feasible as a long-term solution for biodiversity loss.

Notwithstanding the evidence for carbon and biodiversity offsetting’s inherent shortcomings, both continue to be included in policies and strategies for climate change mitigation and combatting biodiversity loss. In the UK, carbon offsetting is given a central role through the UK Emissions Trading Scheme (UK ETS), in addition to being a tool in the greenhouse gas (GHG) emissions reduction target for 2050. While the offsetting mechanisms are supposed to comprise a supplementary measure in addition to direct emissions reductions, the overall inaction by the UK Government on climate

⁴⁴ Barbara Haya, ‘Measuring Emissions Against an Alternative Future: Fundamental Flaws in the Structure of the Kyoto Protocol’s Clean Development Mechanism’, *University of California, Berkeley Energy and Resources Group Working Paper*, no. ERG09-001 (2009), <http://dx.doi.org/10.2139/ssrn.1562065>.

⁴⁵ Susan Walker et al., ‘Why Bartering Biodiversity Fails’, *Conservation Letters* 2, no. 4 (2009): 149–57, <https://doi.org/10.1111/j.1755-263X.2009.00061.x>.

change mitigation, as evidenced by their missing of their climate targets⁴⁶, indicates that the true function of carbon offset mechanisms may just be to divert attention away from systemic changes tackling the root causes of emissions. The same goes for Scotland, where only four of the twelve annual GHG reduction targets in previous years were reached, while the legally enshrined emissions reduction target for 2030 has been scrapped altogether.⁴⁷ At present, following the Scottish Government crisis which is explained in greater detail in a following section, Scotland is without a clear set of policies and targets for climate change mitigation since the draft Climate Change Plan policy package has been delayed.⁴⁸ Meanwhile, carbon offsetting is a part of the Scottish Climate Change Act 2009, as an additional measure to supplement direct emissions reductions. In turn, biodiversity offsetting has not been included in law yet, although it does play a role in several ‘guidance’ frameworks for development planning. For example, NatureScot includes “off-site offsetting” in its mitigation hierarchy as a ‘last resort’, if development in an area has damaged biodiverse habitats; on-site offsetting, that is, restoring biodiverse habitats on the site of development, is preferred.⁴⁹ The potential space provided to carbon and biodiversity offsetting in the emerging Scottish Biodiversity Strategy, and Natural Capital Market Framework, will be scrutinised in the analysis section.

⁴⁶ Fiona Harvey, ‘UK Missing Climate Targets on Nearly Every Front, Say Government’s Advisers’, *The Guardian*, 27 June 2023, <https://www.theguardian.com/technology/2023/jun/28/uk-has-made-no-progress-on-climate-plan-say-governments-own-advisers>.

Fiona Harvey, ‘UK Likely to Miss Paris Climate Targets by Wide Margin, Analysis Shows’, *The Guardian*, 5 December 2023, <https://www.theguardian.com/environment/2023/dec/05/uk-miss-paris-climate-targets-emissions>.

⁴⁷ Sam Fankhauser, ‘Scotland Is Ditching Its Flagship 2030 Climate Goal – Why Legally Binding Targets Really Matter’, *The Conversation*, 18 April 2024, <http://theconversation.com/scotland-is-ditching-its-flagship-2030-climate-goal-why-legally-binding-targets-really-matter-228208>.

⁴⁸ Climate Change Committee, ‘Scotland’s 2030 Climate Goals Are No Longer Credible’ (The Climate Change Committee, 20 March 2024), <https://www.theccc.org.uk/2024/03/20/scotlands-2030-climate-goals-are-no-longer-credible/>.

⁴⁹ NatureScot, ‘Developing with Nature Guidance’ (Inverness: NatureScot, 2023), <https://www.nature.scot/doc/developing-nature-guidance>.

2.3 Fictitious Conservation

Fictitious conservation builds on the Marxian notion of “fictitious capital”, that is, following Harvey, “money that is thrown into circulation as capital without any material basis in commodities or productive activity.”⁵⁰ A prominent case of fictitious capital in action is ‘rentier capitalism’, the societal class of those whose income derives from value which accrues and has no origin in the beneficiary’s work, such as credit and rents. Following Büscher, fictitious conservation is a product of fictitious capital, as “conservation without any direct basis in material, socio-biophysical nature.”⁵¹ It is a symptom of neoliberal conservation and a product of neoliberal financialisation. Biodiversity and carbon offsetting, payment for ecosystem services, species banking, and REDD+ are all neoliberal conservation mechanisms which can result in fictitious conservation. As financial tools, these conservation mechanisms are designed for, and depend on, the finance market, either as credits to be brought into circulation (i.e. BDO credits, carbon credits), or as vehicles for capital accumulation, as in the cases of species and wetland banking.

Furthermore, fictitious conservation is the outcome of the neoliberal response to the “second contradiction” of capitalism. The first contradiction of capitalism is the “limitless drive to increase the rate of exploitation ... result[ing] in the amassing of wealth at one pole and relative human misery and degradation at the other.”⁵² The second contradiction, following O’Connor, is capitalism’s tendency towards the destruction of the conditions of its production and existence.⁵³ In other words, as capitalism flourishes and expands, it undermines the natural, environmental basis of its existence. In recent years, the neoliberal economic establishment has come to realise, to

⁵⁰ David Harvey, *The Limits to Capital*, 1st ed. (Oxford: Basil Blackwell Publisher Ltd., 1982), 95.

⁵¹ Büscher, ‘Nature on the Move’, 30.

⁵² John Bellamy Foster, ‘The Absolute General Law of Environmental Degradation Under Capitalism’, *Capitalism Nature Socialism* 3, no. 3 (1992): 77–81, <https://doi.org/10.1080/10455759209358504>.

⁵³ See: James O’Connor, ‘On the Two Contradictions of Capitalism’, *Capitalism Nature Socialism* 2, no. 3 (1991): 107–9, <https://doi.org/10.1080/10455759109358463>.

greater or lesser extent, the connection between conventional forms of capital accumulation and environmental degradation. Their response, however, has presented the issue at hand as one of nature's externality to the economy, and the appropriate solution to environmental destruction would be to account for it economically, that is, to incorporate nature into the neoliberal capitalist system.

There are two predominant arguments brought forward in favour of 'economising nature'. The first is the observation that conservation suffers from a lack of funding, and by making nature part of 'the market', it will either finance its own preservation (by reframing natural aspects as ecosystem services or natural capital), or private investment will direct necessary funds towards conservation.⁵⁴ The second argument, espoused by influential economists such as Robert Costanza and Dieter Helm is that the absence of a valuation of nature is tantamount to valuing it as zero, therefore economic valuation of nature tries to rectify a key shortcoming of neoliberal economics by internalising nature into economics.⁵⁵

But rebuttals abound in academic literature. As previously stated, the valuation techniques for deriving values of nature are heavily contested, due to their subjectivity (contingent valuation) and variability (benefit transfer).⁵⁶ An additional issue with valuation is the reliance on estimates/calculations of 'aggregate values', which holds that aggregated numerical values for natural processes or aspects – such as woodland, freshwater, wetlands, clean air, the total amount of a specific animal or species, et cetera – in a defined area, can be determined and transferred into monetary values.⁵⁷ According to this

⁵⁴ George Monbiot, 'Put a Price on Nature? We Must Stop This Neoliberal Road to Ruin', *The Guardian*, 24 July 2014, <https://www.theguardian.com/environment/georgemonbiot/2014/jul/24/price-nature-neoliberal-capital-road-ruin>.

⁵⁵ Costanza et al., 'The Value of the World's Ecosystem Services and Natural Capital'. Dieter Helm, *Natural Capital: Valuing the Planet* (London: Yale University Press, 2015).

⁵⁶ Sian Sullivan, 'Banking Nature? The Spectacular Financialisation of Environmental Conservation', *Antipode* 45, no. 1 (2013): 198–217, <https://doi.org/10.1111/j.1467-8330.2012.00989.x>.

⁵⁷ Sian Sullivan, 'What's Ontology Got to Do with It? On Nature and Knowledge in a Political Ecology of the "Green Economy"', *Journal of Political Ecology* 24, no. 1 (2017), <https://doi.org/10.2458/v24i1.20802>.

approach, the aim of conservation, and of involving finance in it, is to ensure that the aggregate value of natural capital in a certain area remains constant. However, the aggregated ideal ‘stock’ of natural resources, to use finance’s terms, or the baseline aggregate of ‘natural capital’, itself does not adequately represent an environmentally sustainable situation. Often, the aggregate ‘natural capital’ attempted to be maintained is based on recent estimates, as is the case for the UK where the Office of National Statistics valued the ‘stock of natural capital’ (in the UK) at around £1.6 trillion.⁵⁸ Using estimates of contemporary ‘natural capital’ entirely neglects the preceding decades of environmental degradation and ecological depletion, meaning that conservation and restoration efforts based on such natural capital aggregates will not address the socio-economic causes of climate crises or bring economies in line with sustainability and environmentally just governance.

Another issue with aggregate valuation of nature can be called the ‘fallacy of commensurability’. Aggregated values and estimates of the economic value of nature are employed to claim that environmental damage or ecological deterioration caused in one location and time can be balanced out, or is commensurable with ‘gaining’ nature, or some numerical estimate of natural value, in another location at another time. This is the underlying logic of biodiversity offsetting (BDO). Since ‘natural capital’ is the total sum of all natures quantified in an index, this means under the logic of such neoliberal mechanisms that polluting rivers in one place has the same value as planting some trees in another, despite the obvious fact that different ecosystems have vastly differing functions for humans and the more-than-human. The values determined for deteriorated ecosystems and their ‘replacements’ are incommensurable.⁵⁹ Moreover, BDO and carbon offsetting entirely neglect the fixed nature of space and time; Ecosystems which have been millennia in the making, and are destroyed, cannot be equivalenced with a newly established ecosystem. Hence an abstracted commodity which corresponds to

⁵⁸ Sullivan, ‘Making Nature Investable’, 60.

⁵⁹ Sarah Bracking et al., ‘Conclusion: The Limits of Economic Valuation’, in *Valuing Development, Environment and Conservation*, ed. Sarah Bracking et al., 1st ed. (London; New York: Routledge, 2019), 225–32.

some newly established nature, e.g. an offset credit, does not hold any value to make up for loss of nature. Yet, in practice, the deterioration of habitats, species, or ecosystems is frequently ‘offset’ with the restoration of incommensurable habitats, species, or ecosystems; 10,000 Scots Pines do not have the same function as 10,000 beeches.

These critiques underscore the defining issue of fictitious conservation: the disconnect between financial instruments and real-world ecological outcomes. The valuation of nature as performed through the aforementioned methods does not lead to an accurate representation of nature’s complexity in monetary form, hence conservation efforts based on these valuations cannot be expected to accurately protect or restore the object of their attention. The reliance on flawed valuation techniques and the fallacy of commensurability results in conservation practices that fail to achieve their planned ecological outcomes, but still generate and circulate fictitious capital, which results in fictitious conservation.

2.4 Moral Economy

The final theoretical concept guiding this thesis is “moral economy”. The term was coined by E.P. Thompson in his study of popular uprisings against shifting economic practices in 18th century England. It can be described as the study of moral norms and sentiments which shape and affect economic practices, be they explicit or underlying. Additionally, moral economy can “refer to the object of this kind of inquiry”, that is, describing whether an economic structure conforms to a set of moral norms.⁶⁰ Thus, it can underpin an analysis of economic structures and practices. Further, it is acknowledged that all economic practices and relations inherently involve moral and ethical considerations. This way of viewing economies runs diametrically opposite to the dominant neoliberal view which contends that economic practice is based on maximising utility for the self.

A moral economic approach aims to reintroduce economics to normativity, since the omission of ethics and morals from economics is largely a symptom of the dogmatic and selective contemporary neoliberal interpretation of classical economists. The foundational economic theorists, who are frequently cited by neoliberal utilitarian economists, incorporated normative, moral and ethical concerns in their economic reasoning.⁶¹ These aspects of foundational economic theory are habitually glossed over when the theorists are invoked in support of neoliberal economics. As an example, Adam Smith is often cited favourably by neoliberal economists, who employ his advocacy of minimal government intervention and free markets to argue for deregulation and against any form of progressive government intervention. However, such a selective focus neglects Smith’s work on moral sentiments which suggests that economic activities are embedded in ethical and social

⁶⁰ Andrew Sayer, ‘Moral Economy as Critique’, *New Political Economy* 12, no. 2 (2007): 262, <https://doi.org/10.1080/13563460701303008>.

⁶¹ Andrew Sayer, ‘Moral Economy and Political Economy’, *Studies in Political Economy* 61, no. 1 (2000): 84, <https://doi.org/10.1080/19187033.2000.11675254>.

contexts, and that governments have an obligation to intervene in areas where the free market fails, such as in education, healthcare or infrastructure.⁶²

As previously mentioned, the moral economic view recognises economic decisions as grounded in moral and ethical considerations. Additionally, it holds the potential to help identify if and how economic policies related to nature conservation and biodiversity are defined in and structured through their moral and ethical responsibilities, in the analysis of the SBS and NCMF. This application of moral economy is valuable for detaching economics from its current basis in calculative profit- and utility maximisation onto a level where economic policies and their rationale can be met eye-to-eye, in order to be critically analysed in terms of their moral, normative claims, which have the potential to reveal assumptions and opinions which underpin the Scottish policies. Ultimately, a critical moral economy approach serves to question the validity of economic developments, asking, for example, what kinds of legitimisation is employed in the financialisation turn in conservation.⁶³

With reference to the object of inquiry in this thesis, I have identified a set of moral-economic considerations, questions, and norms which can aid in the reading of the thesis material. This selection is, of course, not exhaustive, but is informed by an initial exploration of the SBS and NCMF. Firstly, a critical moral economy view of the concepts ‘natural capital’ and ‘ecosystem services’ involves scrutinising whether these terms and their associated actions disavow or exclude a recognition of the intrinsic value of nature. That is, is nature only conceived of in its ‘contributions to people’ or its economic value? Is a non-economic eco-centric value of nature recognised, and if so, is this intrinsic value subordinated to economic or human-centred values?

Secondly, an important question regarding new policies aimed at nature restoration is whom they benefit, and whether benefits are distributed disproportionately towards certain groups, such as landowners or corporations. A key moral value is equality, and the pursuit of equalisation.

⁶² Adam Smith, *The Theory of Moral Sentiments*, ed. David D. Raphael and Alexander L. Macfie, 6th ed., The Glasgow Edition of the Works and Correspondence of Adam Smith (Liberty Classics, 1982).

⁶³ Sayer, ‘Moral Economy as Critique’.

Hence, new strategies and policies ought to avoid reinforcing existing inequalities, for example in the access to and distribution of land, which is a long-standing issue in Scotland. Recent research shows that 50% of privately owned land in Scotland, is owned by 433 entities (individuals or companies). The higher concentration of private land ownership in recent years is caused significantly by investment firms buying up forests and estates for ‘green capital’ projects.⁶⁴ In comparison, public and community ownership of land has hardly increased. Thus, patterns of land ownership in Scotland and the ease with which private investor vehicles can acquire swathes of land show signs that investments in the kind of initiatives that reap ‘natural capital’ and ‘ecosystem services’ benefits will favour private and corporate investors and likely exacerbate existing inequalities related to land.

Additionally, the moral question around conservation is one of responsibilities: What are our responsibilities towards the environment and conservation? How should the weight of those responsibilities be distributed, and on what basis? What are the responsibilities of companies and organisations to avoid any environmental and social costs of their operations? If and how should they be held liable for any social and environmental costs caused by their operation?⁶⁵ In analysing the Biodiversity Strategy and the Natural Capital Market Framework, these questions can help to expose the stance of the Scottish Government on moral issues and how the economy of conservation is related to moral norms.

⁶⁴ Andy Wightman, ‘Who Owns Scotland 2024 (a Preliminary Analysis) - Land Matters’, 23 March 2024, <https://andywightman.scot/2024/03/who-owns-scotland-2024-a-preliminary-analysis/>.

Severin Carrell, ‘Land Ownership in Rural Scotland More Concentrated despite Reforms, Study Finds’, *The Guardian*, 23 March 2024, <https://www.theguardian.com/uk-news/2024/mar/23/land-ownership-in-rural-scotland-more-concentrated-despite-reforms-study-finds>.

⁶⁵ Sayer, ‘Moral Economy and Political Economy’, 95.

3. Methods: Policy and Document Analysis

This thesis applies a semi-structured approach to policy and document analysis. Policy and document analyses are both methods that can be rooted in a range of different methodologies, defying a standardised typology.⁶⁶ It is therefore necessary to be specific in clarifying what the analytical approach entails. This thesis is structured around the analysis of two Scottish policy documents with differing positions in the policy landscape. The Natural Capital Market Framework (NCMF) is an engagement paper, a prefigurative stage to the creation of a natural capital market. It is situated within the interconnecting economic and environmental policy as an emerging framework, linked with the Natural Capital Asset Index (NCAI) and the Scottish Green Finance Strategy. In turn, the Scottish Biodiversity Strategy is positioned under Scotland's statutory conservation laws and formulated in nominal alignment with the United Nations Convention on Biological Diversity. Both documents were selected for analysis due to their emerging as formative, influential frameworks and strategies designed to alter Scottish conservation. Critical analysis of these policy documents may provide insights into the outcomes related to their future implementation, and thus provides an opportunity for early scrutiny.

The methodological approach is semi-structured as it departs from policy analysis models that involve a step-by-step process, such as Bardach's prominent 'eightfold path'.⁶⁷ Instead, the approach in this thesis is more iterative, and is mainly guided by the research questions and the concepts that make up the theoretical framework, namely financialisation, its causatum fictitious conservation, and moral economy. Although the latter is better described as a particular view of economy, it will be employed similar to financialisation and fictitious conservation as a lens through which the documents are read. However, since moral economy is a much more macro-oriented concept, the analysis will benefit from a pre-delineation of some

⁶⁶ Susan D. Einbinder, 'Policy Analysis', in *The Handbook of Social Work Research Methods*, ed. Bruce A. Thyer, 2nd ed. (London: SAGE Publications, Inc., 2019), 527.

⁶⁷ Einbinder, 'Policy Analysis'.

guiding moral economic questions, which have been covered in the applicable theoretical framework section. The approach to the material defies a singular typology of policy analysis; it takes aspects of exploratory, descriptive, and explanatory approaches. The approach taken in this thesis is exploratory in the sense that both materials are emerging, and therefore have not been established policies with assessable effects. It is descriptive in that the framework and strategy, their characteristics and suggested measures, as well as their surrounding political-economic contexts are described. Finally, the explanatory component of the analytical approach entails the illustration of potential “unanticipated consequences of policies”⁶⁸ or measures outlined in the material, by drawing on problematisations from the academic literature related to the subjects of financialisation, fictitious conservation, and moral economy.

Thus, the qualitative depth of this thesis does not come from focussing on one strand of policy analysis, exploratory, descriptive, or explanatory, but by tailoring the approach to the selected material in a way that engages elements of each policy analysis typology. In doing so, the method partly overlaps with certain document analysis approaches, which is indicative of the overlap between policy, document, thematic, and content analysis.⁶⁹ The method draws on document analysis by being structured around an initial surface examination, followed by a thorough examination of relevant sections of the material that were identified in the initial phase. The selected sections are then interpreted and scrutinised, employing as theoretical framework the moral economic considerations, fictitious conservation, and the overarching process of financialisation.

⁶⁸ Einbinder, 536.

⁶⁹ Glenn A. Bowen, ‘Document Analysis as a Qualitative Research Method’, *Qualitative Research Journal* 9, no. 2 (2009): 27–40, <https://doi.org/10.3316/QRJ0902027>.

4. Scottish Conservation: Contestations in the Past and Present

Conservation efforts in Scotland have a long and evolving history, beginning with medieval natural resource management primarily driven by hunting. The 18th century saw increased interest in natural sciences during the Enlightenment, leading to the establishment of botanical gardens and natural history collections. The late 19th century marked the nascent conservation movement that eventually led to the founding of the National Trust for Scotland in 1931. In the early 20th century, efforts to establish national parks began, and organisations such as the Scottish Wildlife Trust, founded in 1964, and the Royal Society for the Protection of Birds played pivotal roles in establishing initial safeguards for wildlife and habitats.

Post-World War II, the conservation movement appeared to gain momentum with the ‘National Parks and Access to the Countryside Act 1949’, a UK-wide legislation that laid the groundwork for establishing national parks and nature reserves.⁷⁰ This period also saw the creation of the Nature Conservancy in 1949 (now known as NatureScot), which was tasked with overseeing the conservation of natural habitats and species in Scotland.⁷¹ Private land ownership intersected with a ‘fortress conservation’ approach, whereby humans and protected nature are to be kept separate, leading to the exclusion of the public from designated rural areas to the chagrin of common access advocacy groups.⁷² Contestations of ‘the countryside’ and access to it continued from their nineteenth century ascendancy through to the post-war establishment of nature reserves, along the same or similar lines of conflict: townsfolk versus the countryside, landlords and private landowners versus the public, and ‘Liberal’ versus Tory.⁷³ The governmental establishment of

⁷⁰ Thomas Christopher Smout, *Nature Contested: Environmental History in Scotland and Northern England since 1600* (Edinburgh University Press, 2009), 159.

⁷¹ Smout, 163.

⁷² Bram Büscher and Robert Fletcher, ‘Accumulation by Conservation’, *New Political Economy* 20, no. 2 (2015): 273–98, <https://doi.org/10.1080/13563467.2014.923824>.

⁷³ Smout, *Nature Contested*, 153.

national parks and reserves did not resolve the conflict of access either, since, due to a lack of funding and political will, the land for parks and reserves was rarely bought. Instead, reflecting a practice that continues to the present day, nature reserves were established in cooperation with private landowners without state acquisition of land, which in effect manifested watered-down agreements on land management with the landlords, who were often left unchecked, leading to the erosion of supposedly protected areas.⁷⁴

The 1970s and 1980s were marked by environmental legislation, including the Wildlife and Countryside Act 1981, which aimed to provide protection for wildlife and natural habitats, and the establishment of Sites of Special Scientific Interest (SSSIs) to safeguard areas of ecological or geological importance. Marine conservation began to be addressed, leading to the development of Marine Protected Areas to protect Scotland's marine biodiversity. However, despite growing interest in the state of nature in Scotland and the UK, evidenced by ever increasing membership figures in nature-based organisations and societies and the designation of thousands of SSSIs across the UK, there has not been a significant deceleration of environmental degradation.⁷⁵ In fact, the state of nature in Scotland, and the UK as a whole, has been continuously degraded owing, in large parts, to decades of intensive agriculture.

During World War II, the “Dig for Victory” campaign turned the vast majority of arable land into farmland to combat food shortages, and this approach to land use was continued under post-war governments who ushered in the era of industrial agriculture.⁷⁶ Successive governments enshrined levels of subsidies for agriculture in policy that were unheard-of and exacerbated by

Note: Contestations of public versus private landownership persist in the contemporary political discourse, both in policies such as the ‘Community Empowerment (Scotland) Act 2015’ and civil society campaigns like ‘Community Land Scotland’ or the ‘Revive Coalition’ (<https://www.communitylandscotland.org.uk/land-reform-campaign/>, <https://revive.scot/the-coalition/>).

⁷⁴ Smout, 163.

⁷⁵ Smout, 167–70.

⁷⁶ Isabella Tree, *Wilding: The Return of Nature to a British Farm*, 1st ed. (London: Picador, 2019).

the EU's Common Agricultural Policy.⁷⁷ The expansion of agriculture post-war removed entire ecosystems, such as hedgerows which were culled at a peak rate of 10,000 miles per year, and old growth forests which were judged a waste of space. Such is the extent of these post-war actions, that 70% of the UK's land area remains in agricultural use⁷⁸, with severe implications for biodiversity owing to the use of harmful pesticides and fertilisers, and a disregard for alternative land uses.

The establishment of the Scottish Parliament in 1999 granted more localised control over environmental policies as part of a devolution of powers, leading to the creation of new national parks, such as Loch Lomond and The Trossachs and the Cairngorms in 2002, as well as the development of the Nature Conservation Act and a Biodiversity Strategy in 2004. In recent years, Scotland has attempted to address climate change and biodiversity loss through initiatives like the SBS featured herein, the Peatland Action Programme, and the Nature Restoration Fund. These programs claim to restore and enhance biodiversity, promote sustainable land management, and combat climate change. In fact, the recent State of Nature – Scotland report demonstrates that none of the conservation and biodiversity preservation efforts over the past decades have managed to bend the downward slope of environmental decline, and biodiversity has been degrading steadily.⁷⁹ Furthermore, a government crisis which unfolded in April this year, has had significant ramifications for the trajectory of environmental policies in Scotland. I will briefly present the events and relevant background information, as I believe knowledge of the political context surrounding the material of this thesis is crucial to understand the convolution of the Scottish case.

⁷⁷ Tree.

⁷⁸ Defra, 'Agricultural Land Use in United Kingdom at 1 June 2023' (Department for Environment, Food & Rural Affairs, 14 December 2023), <https://www.gov.uk/government/statistics/agricultural-land-use-in-the-united-kingdom/agricultural-land-use-in-united-kingdom-at-1-june-2023>.

Note: In Scotland, 80% of the land area is used for agriculture, with the majority being used for livestock grazing. See: Scottish Government. 'Scottish Agricultural Census: June 2018'. Accessed 25 July 2024. <https://www.gov.scot/publications/results-june-2018-scottish-agricultural-census/pages/2/>.

⁷⁹ Walton et al., 'State of Nature Scotland 2023'.

Following the Scottish 2021 election, the Scottish National Party (SNP) and the Greens entered a coalition, enabling the SNP to head a majority government. They signed the Bute House Agreement, which set strong environmental and climate policies aimed at a just transition away from fossil fuels in the North Sea, phasing out fossil fuel boilers in private homes, and new policies to mitigate biodiversity loss.⁸⁰ In 2023, Nicola Sturgeon, the long-running leader of the SNP and First Minister, stepped down amid an investigation involving her husband and potential conflicts of interest with business dealings.⁸¹ This departure led to instability within the SNP, splitting the party into two camps, an ideological divide that became particularly evident on volatile issues such as trans and queer rights, and the ambitious climate action targets set by the Greens, which now garnered minimal interest from the SNP.⁸²

In April 2024, after extended disputes within the coalition government concerning climate and environmental policies and facing climate change scepticism from the right-wing of the SNP, the government cancelled the climate targets written into the Bute House Agreement.⁸³ The Greens announced an internal vote among their members to decide whether to remain in coalition with the SNP, but before this vote could unfold, First Minister Humza Yousaf terminated the Bute House Agreement altogether, effectively removing the policy concessions made to the Greens; the Green Party was pushed into opposition. In the subsequent government crisis, First Minister Yousaf resigned and was succeeded by John Swinney leading an SNP minority government as it had in two legislative periods before the 2021 coalition with the Greens.⁸⁴

⁸⁰ Scottish Government, ‘Scottish Government and Scottish Green Party - Shared Policy Programme’, 1 September 2021, <https://www.gov.scot/publications/scottish-government-scottish-green-party-shared-policy-programme/>.

⁸¹ Jonathan Parker, ‘Scotland’s Government Fell Apart in a Week – Here’s What Happened’, *The Conversation*, 30 April 2024, <http://theconversation.com/scotlands-government-fell-apart-in-a-week-heres-what-happened-228969>.

⁸² Ibid.

⁸³ Ibid.

⁸⁴ Ibid.

Against the backdrop of these political upheavals, Scotland's funding for nature has been reduced over the past decade from around 0.55% of its budget to 0.25%, a minuscule contribution considering the challenges of the twin crises of biodiversity loss and climate change.⁸⁵ This reduction has meant that key agencies like NatureScot and the Scottish Environment Protection Agency (Sepa) have seen their budgets cut by 40% and 26%, respectively. Due to years of inadequate funding, Sepa has not updated its assessment of the conditions of SSSIs in a decade, while key projects for restoration and rewilding are competing for limited funding.⁸⁶ Amid this context of wilful underfunding, the government is introducing multiple programs to 'close the funding gap' with private investments, despite repeated calls from conservation government organisations and non-governmental organisations to increase public funding for the environment.

The political context presented illustrates the policy environment from which Scotland's plans on conservation and climate action stem. The report under analysis is a peculiar case because it was produced under a coalition where Scottish Green Members of Parliament held key positions related to the environment. The SBS, for example, was compiled under one of the leaders of the Scottish Greens, and other currently pending efforts such as the Climate Change Plan for 2025-2040 were likewise influenced by Scottish Green policies and SNP concessions made in the Bute House Agreement. At the time of writing, the Scottish Government has continued as a minority government and lacks, as yet, a clear indication of the fate of the Biodiversity Strategy and the Climate Change Plan, two key policies related to conservation and climate action. However, the current government has already put a cabinet secretary, with a decade of experience working for the public relations of oil companies in the North Sea, in charge of Sepa, NatureScot, Net Zero policies, and international climate change

⁸⁵ Severin Carrell, 'Cuts Mean Scotland Will Not Meet Environment Targets, Say Charities', *The Guardian*, 22 November 2023, <https://www.theguardian.com/uk-news/2023/nov/22/cuts-mean-scotland-will-not-meet-environment-targets-say-charities>.

⁸⁶ Carrell.

coordination.⁸⁷ Furthermore, two board members of Sepa appointed by the Cabinet Secretary for Net Zero, whose work partly consists of regulating North Sea fossil fuel extraction, have previously held high-ranking positions in oil and gas exploration for the Shell corporation.⁸⁸

Therefore, there is ample reason to state that Scotland's nature-related policies, whether focused on biodiversity, ecosystem restoration, climate change mitigation, or marine protection, are being undermined. Further concerns stem from the SNPs embrace of the North Sea fossil fuel industry which, as the Scottish Minister for Climate Action Gillian Martin argued, should be supported by issuing new licences for oil and gas exploration "on a case-by-case basis ... based on a climate compatibility checkpoint"⁸⁹, despite the fact that ongoing *and* new oil and gas use is immeasurably exacerbating climate change, and will be contributing to further climate crises down the line, if continued. Against this backdrop, Scotland has already cancelled its flagship climate target to reduce greenhouse gas emissions by 75% by 2030, while delaying the publication of its Climate Change Plan 2025-2040 to an unspecified date.⁹⁰ This is the political landscape in which the current urgency to limit biodiversity loss and mitigate climate change are embedded, and which has produced the material to be scrutinised in this thesis.

⁸⁷ Paul Dobson, 'New Scottish Energy Minister Did a Decade in PR for Oil Industry', *The Ferret*, 1 April 2023, <https://theferret.scot/new-energy-minister-decade-in-pr-oil-industry/>.

⁸⁸ Paul Dobson, "'Hard to Fathom": Second Ex-Shell Employee Added to Sepa's Board', *The Ferret*, 30 January 2024, <https://theferret.scot/second-ex-shell-employee-added-to-sepas-board/>.

⁸⁹ Louise Wilson, 'Energy Minister Gillian Martin Calls for "More Nuanced and Sensible" Approach to North Sea', *Holyrood*, 4 September 2023, <https://www.holyrood.com/news/view,energy-minister-gillian-martin-nuanced-north-sea>.

⁹⁰ 'Scotland to Ditch Key Climate Change Target', *BBC News*, 17 April 2024, <https://www.bbc.com/news/uk-scotland-68841141>.

5. Analysis: The Natural Capital Market Framework

The NCMF was published in April 2024 prior to the government crisis as an “engagement paper” which comprises the penultimate stage of development before the Framework is supposed to be finalised for publication. The final NCMF will provide guidance for the establishment of “a values-led and high-integrity market for responsible private investment in natural capital.”⁹¹ The Framework builds on the assumption that investment in natural capital must provide a financial return, and that such a requirement will not conflict with the environmental aims of the investment.

Key to the mission statement of the NCMF is the emphasis on “high-integrity” markets, which recurs throughout the Framework. The NCMF follows the British Standards Institution (BSI) in its definition of the term:

Integrity is the bedrock of nature markets. It means that credits or units awarded and sold for benefits, such as biodiversity, carbon capture or water quality, must reflect genuine, lasting and additional environmental improvements, which are robustly verified and transparently documented, with no double counting, misleading claims or negative unintended consequences, for example for non-target ecosystem services or local communities.⁹²

The definition encapsulates principles which the NCMF presents as ‘good governance’ for natural capital markets, among which are additionality, permanence, and safeguarding buyer integrity. The BSI principles are central to the NCMF’s claims that it can “build a wellbeing economy” and contribute to preserving the “natural world.”⁹³

Permanence refers to the notion that any benefits to nature that result from natural capital market mechanisms or the offsetting market “must be

⁹¹ Scottish Government, ‘Market Framework for Natural Capital - Engagement Paper’ (Edinburgh: The Scottish Government, April 2024), <https://www.gov.scot/publications/market-framework-natural-capital-engagement-paper/>.

⁹² BSI, ‘BSI Flex 701 v.1 Nature Markets – Overarching Principles and Framework – Specification’ (British Standards Institution, March 2024), <https://knowledge.bsigroup.com/products/nature-markets-overarching-principles-and-framework-specification?version=standard>.

⁹³ Scottish Government, ‘Market Framework for Natural Capital - Engagement Paper’, 2.

maintained indefinitely.”⁹⁴ To guarantee permanence, and therefore ensure that an offset has actual environmental value, requires checks on the environment in question beyond the market transaction. It thus requires an auditing infrastructure that keeps an eye on projects which have been credited, to ensure, for example, that the trees planted by a carbon offset project are not cut down or destroyed in another manner. The NCMF suggests that a legal requirement be placed on market actors which would mandate the replanting of trees that were cut down. However, this severely calls into question the validity of permanence claims, since newly planted and old forests are not commensurable in terms of their contributions to biodiversity, ecology, and as habitats for diverse fauna.

Additionally, to claim a market is ‘high-integrity’ because developers are required to self-report on whether they are achieving permanence, demonstrates a certain ignorance regarding the dominant economic-political dynamics. Industry malpractice regarding the environment is commonly identified ‘after the fact’, if at all. Furthermore, as previously mentioned, the environmental authorities in Scotland have repeatedly faced cutbacks to the extent that the SSSI conservation areas have not been audited in more than a decade and their potential decline is currently under the radar. One cannot expect regulatory and auditing authorities to be more efficient in the case of a natural capital market if the economic-political context the market is embedded in has not changed.

While introducing private investment to conservation is supposed to help close the finance gap, increase nature restoration and work towards climate change mitigation, the environmental outcomes can only be achieved if the measures are grounded in ecological integrity. Hence, the priority should be to guarantee actual positive conservation outcomes, since the basis for the existence of this market is the promise of environmental improvement that provides a financial return. For the sake of market integrity, to use the report’s terms, it must be verified that buyers of environmental products like offset credits are not attempting to greenwash their pollution, as is the case when

⁹⁴ Scottish Government, 10.

credits are used to offset avoidable or repairable environmental damages. The NCMF states that “nature markets will *likely* require buyer integrity checks”⁹⁵ [emphasis added], phrasing which infers that safeguarding actual conservation outcomes is secondary to establishing the nature market for investment in the first place.

The draft NCMF further includes incongruencies concerning the kind of market they envision, which extend to irregularities about how to achieve environmental outcomes. The NCMF repeatedly references the Woodland and Peatland Codes, two ‘high-integrity’ voluntary offset markets, as good practice. However, voluntary markets lack the enforceability necessary to ensure broad compliance and meaningful impact. They depend on the willingness of companies to participate, which results in inconsistent and inadequate engagement, undermining the integrity of the conservation efforts and enabling businesses to sidestep their environmental responsibilities. In the context of a climate and biodiversity emergency, which the NCMF acknowledges, the reliance on voluntary engagement by companies and industries is inadequate. Without stringent compliance and substantial penalties for non-compliance, even high-integrity compliance markets fall short.⁹⁶ Furthermore, most natural capital markets, including carbon credits markets, have not adopted the set of ‘high-integrity’ market principles referenced in the NCMF.⁹⁷

The validity of voluntary markets is further undermined by a study of 470 firms using carbon credits, which found that only 3.8% of said firms would meet integrity requirements as described by the Voluntary Carbon Market Integrity Initiative.⁹⁸ Voluntary markets often result in piecemeal and superficial efforts that fail to address systemic environmental challenges.⁹⁹

⁹⁵ Scottish Government, 8.

⁹⁶ Watt, ‘A Crash in Value’.

⁹⁷ Scottish Government, ‘Market Framework for Natural Capital - Engagement Paper’, 8.

⁹⁸ MSCI, ‘VCMI Claims Code of Practice’ (MSCI, 29 June 2023), <https://trove-research.com/report/vcmi-claims-code-of-practice-important-progress-but-the-difficult-stuff-still-lies-ahead>.

⁹⁹ West et al., ‘Overstated Carbon Emission Reductions from Voluntary REDD+ Projects in the Brazilian Amazon’.

The NCMF’s vision of extending voluntary markets to marine, saltmarsh, and soil environments, and covering biodiversity credits, suggests that the preservation and restoration of critical habitats will be left to voluntary efforts, a strategy entirely unfit to meet the urgent needs of environmental conservation and climate action. This approach risks failing to address the root causes of ecological degradation.

Whether the NCMF would establish a voluntary market, compliance market, or both as separate entities, is not clear from the engagement paper. It does, however, draw inspiration from both. As a compliance market the NCMF cites Defra¹⁰⁰ and its implementation of “Biodiversity Net Gain” in planning, which allows developers to offset biodiversity losses with measures ‘on-site’, or if that is unfeasible due to “impracticalities”, they can buy biodiversity credits from ‘off-site’ measures.¹⁰¹ Hence, if a building project in England deems it unavoidable to fell a forest or drain a wetland, it can invoke ‘impracticality’ of restoration of destroyed habitats nearby, and simply buy biodiversity credits as ‘compensation’. These measures are of little value since the ecological damage has been done, and any newly planted forest or restored wetland will not be commensurable with that which was damaged or destroyed. The Scottish Planning Policy, the devolved equivalent to Defra’s planning policies, does not include mandatory biodiversity offsetting, it merely encourages projects to “seek benefits for biodiversity from new development where possible.”¹⁰² Thus, while the Defra framework cited by the NCMF as an exemplary compliance mechanism is already weak, Scotland's approach is even less robust.

Regardless of the type of natural capital market the NCMF would establish, the adoption of biodiversity offsetting would lead to fictitious

¹⁰⁰ The UK Department for Environment, Food and Rural Affairs (Defra) is responsible for the planning system governing the development and use of land and property. The planning system in the UK is largely devolved, meaning Defra’s planning policies, e.g. on biodiversity, are not applicable beyond England.

Scottish Government. ‘Scottish Planning Policy’. Edinburgh: The Scottish Government, June 2014. <https://www.gov.scot/publications/scottish-planning-policy/documents/>.

¹⁰¹ Scottish Government, ‘Market Framework for Natural Capital - Engagement Paper’, 20.

¹⁰² Scottish Government, ‘Scottish Planning Policy’ (Edinburgh: The Scottish Government, June 2014), 45, <https://www.gov.scot/publications/scottish-planning-policy/documents/>.

conservation. As previously mentioned, offsetting assumes commensurability between inherently distinct entities, and offsets based on restoration or ‘newly established’ nature to make up for destroyed or polluted nature, do not have positive ecological outcomes relative to the status quo pre-pollution or destruction. Since the market treats offset credits as possessing integrity nonetheless, the conservation outcomes being traded are fictitious and not rooted in actual improvements in nature overall.¹⁰³

On a normative level, the financialisation in the Scottish case raises questions concerning the priorities and goals of conservation of nature. As described in this document, the benefit of restoring, protecting, conserving nature is counted as equally important for the public and local communities, as for private. The environmental, i.e., non-monetary benefit of conserved nature, such as its contribution to avoiding climate change, is supposedly felt similarly across public, private and community categories.¹⁰⁴ Some conservation outcomes might be particularly felt by communities local to the conservation project, e.g. when a restored wetland contributes to local flood prevention, but generally the ecological effects of conservation are not bound to anthropogenic boundaries. The monetary benefit, however, would follow similar rules of benefaction as other relations that follow the public/private dichotomy: the higher benefit would be, monetarily, for the landowners and project developers, as well as profit-seeking investors, that is, individuals with disposable capital, whereas that financial benefit would be low to nil for the general public. While the NCMF repeatedly professes the aim of building a “wellbeing economy”, no concrete measures are suggested to ensure equitable distribution of the benefits of financialising nature, and perhaps that should also not be expected since the highly inequitable land access and ownership dynamics in Scotland are not addressed in attempts to ‘bank’ on nature. The vision for investment in nature, or natural capital markets, in the terms of the NCMF, can be expected to follow a similar line of developments as the markets it invokes as good examples, which is that market mechanisms

¹⁰³ Büscher, ‘Nature on the Move’, 29–30.

¹⁰⁴ Scottish Government, ‘Market Framework for Natural Capital - Engagement Paper’, 12–14.

designed to address some of the market causes of environmental decline become fringe vehicles for investment used only by a miniscule part of the industries they are aimed at, with no measurable benefit to either the environment or the communities affected by its degradation.

A natural capital market as suggested in the NCMF would entail certain aspects of nature, or ‘ecosystem services’, becoming financial assets. Either through their removal, or the promise to preserve and/or enhance them to be turned into financial products like credits or derivatives, would nature generate profit for the landowners. This means the natural capital markets hold significant potential in growing the extent of economic rents, and with it, the rentier capitalist class.¹⁰⁵ As was mentioned previously, land ownership in Scotland is heavily concentrated, and large-scale purchases in the interest of ‘green’ or ‘natural capital’ investments have contributed to an increase in ownership concentration in recent years. Thus, it is reasonable to speak of an increased monopolisation of nature in Scotland.

When ownership becomes about controlling the ‘natural assets’, vital and fundamental things like unpolluted rivers, clean air, or healthy habitats, the rentier generates revenue off controlling what others, or in the cases just mentioned, everyone, needs. However, the rentier class oriented towards accumulating ‘natural capital’ comprises a new degree of control over non-rentiers in that through owning natural capital, they control factors that sustain planetary health. Rentiers’ choices in how they manage their property have significant ramifications for vital ecosystems. In a similar way to the fossil fuel industry, whose denial of its impacts on climate change will continue to directly contribute to death and planetary destruction, the rentier class ‘owning natural assets’ are granted disproportionate control over life-sustaining nature by being allowed, even encouraged, to purchase large swathes of land for the accumulation of ‘natural capital’.

The question of ownership is also one of who is supposed to benefit from the restoration and protection of nature and biodiversity. I have just

¹⁰⁵ Andrew Sayer, ‘Rentiership, Improperity and Moral Economy’, *Environment and Planning A: Economy and Space* 55, no. 6 (2023): 1471–84, <https://doi.org/10.1177/0308518X20908287>.

demonstrated the unequal benefit investors and landowners reap from a potential ‘natural capital market’, but the NCMF also claims such a market ought to have “community benefits”, specifically mentioning “farmers and other land managers.”¹⁰⁶ Farming in Scotland and the UK, and ecological as well as biodiversity-oriented causes, are severely at odds with each other. The increase in farming in the UK, which in Scotland is dominated by livestock farming whose widespread grazing patterns inhibit the restoration of forests, is one of the direct drivers of the biodiversity crisis.¹⁰⁷ Additionally, whenever a policy with ecologically progressive aims is discussed, agricultural lobbies such as Scottish Land and Estates and the National Farmers Union in Scotland employ their economic and political weight to minimise or curtail the improvement of non-agricultural, and therefore ecologically relevant, nature.¹⁰⁸ Moral-economic values, and environmental justice principles, maintain the position that “polluters pay”, and certainly they would not be involved in the process of what should effectively amount to the curtailment of their environmentally destructive activities. Thus, the concerns of farmers, *if conflicting with environmental interest*, should not be factored into the decision-making on policies designed to restore nature which is shown to suffer from agricultural practices.

With the NCMF’s commitment to creating a natural capital market, the prospect of conservation becoming fictitious, i.e., disconnected from material, biophysical reality, is significantly heightened. The proliferation of fictitious conservation resulting from offsetting mechanisms has already been covered, but that is not the only path to fictitious outcomes in the NCMF. The commodification inherent to a ‘natural capital market’ abstracts nature from its ecological and social contexts, reducing complex ecosystems and biodiversity to simple financial instruments and units. The result is that conservation efforts, funded by private investors seeking profits, focus more

¹⁰⁶ Scottish Government, ‘Market Framework for Natural Capital - Engagement Paper’, 13.

¹⁰⁷ IPBES, ‘Summary for Policymakers of the Global Assessment Report on Biodiversity and Ecosystem Services’ (Bonn: IPBES Secretariat, 2019), <https://doi.org/10.5281/ZENODO.3553579>.

¹⁰⁸ Rob Edwards, ‘Exposed: The Businesses That Most Often Lobby Scottish Ministers’, *The Ferret*, 19 July 2020, <https://theferret.scot/lobbying-register-businesses-scottish-ministers/>.

on the financial value of these units rather than on the actual ecological outcomes. The NCMF does not adequately describe the ways it would safeguard permanence and additionality, but ultimately, safeguarding incommensurable conservation outcomes is a farcical attempt to legitimise the neoliberalisation of nature.

6. Analysis: The Scottish Biodiversity Strategy

The Scottish Biodiversity Strategy (SBS) is a framework which, in concert with the pending and unpublished Climate Change Plan, is supposed to engender the Scottish Government's response to the "twin reinforcing crises" of the climate emergency and biodiversity loss.¹⁰⁹ The strategy appeals to "large corporate players, small businesses, land managers, non-government organisations and Scotland's communities and citizens."¹¹⁰ The orientation towards business and finance is already apparent from this scope, and is further underscored by the stated intention to deliver environmental goals "through developing and driving investment in nature based solutions."¹¹¹ Funding is positioned as the missing link to tackling the issues of biodiversity loss and climate change, yet this observation does not lead to the suggestion to reverse the trend of budget cuts to government-linked environmental vehicles, or even significantly increase public funding, but rather to increase private investment in nature.

Furthermore, with the intended recipients of this strategy, the SBS takes a "Big Tent" approach to conservation, where first the "large corporate players [and] small businesses" are mentioned, then managers, NGOs and communities. Being a biodiversity strategy, one would expect it is also for species under threat of extinction or expulsion, flora and fauna which has receded, or the climate which is further compromised without biodiverse ecosystems. Yet emphasis is only reserved for the human dimension of biodiversity concerns in the SBS mission statement; the SBS does not appear anchored in a recognition of an intrinsic value of nature but conceives of nature's value in connection with human enterprise and 'wellbeing' throughout the document.

In turn, the repeatedly referenced 'wellbeing' is connected to figures derived from a reframing of nature in economic terms, indicating the process of financialisation. Nature, readers are told, accounts for "more than half of

¹⁰⁹ Scottish Government, 'Scottish Biodiversity Strategy to 2045', 11.

¹¹⁰ Ibid.

¹¹¹ Ibid.

the world's GDP", US\$44 trillion. Gross Domestic Product (GDP) is, in economic historical terms, a recent construct and was designed to measure all the final products and services created and delivered within a specific timeframe. Under neoliberal supervision it has been turned into a singular metric, employed as a gauge for everything from economic production to human and planetary welfare. The SBS, and its authors, here apply GDP as an indication for the value of nature. Yet GDP was never intended to have such a wide scope; its use beyond statistics of economic production has been widely criticised ever since neoliberal economists and governments, as well as supranational institutions like the UN and International Monetary Fund, started employing GDP growth as an indicator of social welfare.¹¹² In fact, GDP negatively correlates with many other indicators that measure aspects of human and environmental well-being, such as pollution, access to nature, or work stress.¹¹³ Ultimately, GDP is unfit to convey any relevant and reliable information related to the welfare of nature and people, and to invoke nature's contribution to GDP as an indicator for the importance of conserving nature misses the point that the current extent of economic activities are by and large incompatible with planetary health.

As previously mentioned, the SBS envisions to resolve funding issues by increasing private investment. To underscore the need for investment, the Strategy identifies a nature-related funding gap which it says is "the difference between required spending and planned spending on the delivery of nature-related outcomes."¹¹⁴ Since the "planned spending" in the private sector is impossible to quantify, the divergence must relate to public planned spending. Consequently, the funding gap, which is estimated to be GBP20 billion over the next ten years, shows regulatory flaws. If the inadequacy of planned State funding is identified in advance by a government department¹¹⁵,

¹¹² See: Jeroen C.J.M. van den Bergh, 'The GDP Paradox', *Journal of Economic Psychology* 30, no. 2 (2009): 117–35, <https://doi.org/10.1016/j.joep.2008.12.001>, for a comprehensive overview of the limitations of the GDP measure.

¹¹³ van den Bergh, 122.

¹¹⁴ Scottish Government, 'Scottish Biodiversity Strategy to 2045', 41.

¹¹⁵ The SBS was conceived under the Minister for Green Skills, Circular Economy and Biodiversity.

then the decision to address the inadequate public spending with private investment as opposed to, for example, levying a biodiversity/nature restoration tax with ‘polluter pays’ and environmental justice principles, or reallocating funds in the government budget, demonstrates that the authors of the SBS place a diminished responsibility for biodiversity and climate action on the government. Also, it would be highly unlikely that government budgets for environmental spending have been determined already for the following decade and are therefore unalterable since, judging from the examples of other nature-related governmental funds like the Scottish Rural Development Fund and the Nature Restoration Fund, the allocations of funding typically cover between five and seven years.¹¹⁶

Additionally, the absence of a plan to increase public spending on biodiversity is telling, in particular alongside the desire to open up nature for “green-investing” in which “Scotland is well placed to take a leading role.”¹¹⁷ These factors imply the authors of the SBS diminish the responsibility of the Scottish Government to take action in matters that clearly relate to the welfare of the more-than-human and human in its dominion. Furthermore, the economic components of the SBS, and NCMF for that matter, belie the supposed commitment to changing Scotland’s economy into a sustainable “wellbeing economy”, as the governmental role, while presented in moral terms (‘wellbeing’), is to establish a market for natural capital and biodiversity aims, while the government relegates the pursuit of conservation outcomes to the workings of this market as well as imagined civic projects. A moral economy concerned with nature’s condition would certainly involve accepting accountability and responsibility for the impact of economic activities on nature, being as it is the enabling condition of all human endeavour. It follows that Scotland’s envisioned ‘wellbeing economy’, as

¹¹⁶ The funding period for the Nature Restoration Fund was determined to run from 2021 to 2025, while the Scottish Rural Development Fund funding period covered 2014 to 2020.

See: NatureScot. ‘Scottish Government Nature Restoration Fund (NRF)’. Accessed 23 July 2024. <https://www.nature.scot/funding-and-projects/scottish-government-nature-restoration-fund-nrf>; Scottish Government. ‘Scottish Rural Development Programme (SRDP)’. Accessed 23 July 2024. <https://www.gov.scot/policies/agriculture-payments/scottish-rural-development-programme-srdp/>.

¹¹⁷ Scottish Government, ‘Scottish Biodiversity Strategy to 2045’, 10.

described in the SBS and NCMF documents, does not mark a shift from the neoliberally financialised economy towards an economy rooted in the genuine pursuit of moral norms, but instead risks further entrenching the environmentally harmful dynamics of the current economic regime by not or inadequately addressing the conditions of environmental decline in Scotland.

Throughout the SBS, diverse indicators are employed to show the decline of a ‘nature-whole’ in Scotland since 1950. Some measure the abundance of terrestrial and marine species, such as the breeding seabird indicator, while others cover the genetic diversity within species.¹¹⁸ These indicators are grounded in ecological analysis, and the state of biodiversity evidenced by them in the SBS appears to be ecologically sound. The data presented covers a wide range of habitats, species and geographic locations. Furthermore, some data is longitudinal, and the quality of habitats, population abundance of species, as well as the human factors causing deterioration of biodiversity are covered. Located amid these ecologically sound indicators is the NCAI, which informs that Scottish “natural capital ... has declined by over 15% since 1950.”¹¹⁹ In comparison to the other indicators of biodiversity loss the statement by the NCAI is hardly informative, rather it represents an abstraction of what has been declining and the consequences of the decline. The decline of natural capital “by over 15%” does not include any information which succinctly presents the importance and urgency of addressing biodiversity loss. In turn, referring to figures such as the ones reported by NatureScot¹²⁰ is more effective in conveying the urgency of restoring biodiversity, because the decline is connected to specific species and sub-species, habitats, ecosystems and other tangible categories that are of consequence to biodiversity.

What the NCAI illustrates is an inherent analytical weakness of the ‘natural capital’ category, especially in its use to stand in for ‘all of nature’ as an index, since one can hardly tell what has been declining or what is gained

¹¹⁸ Scottish Government, 18.

¹¹⁹ Ibid.

¹²⁰ Walton et al., ‘State of Nature Scotland 2023’.

when ‘natural capital’ is reduced or restored. Supposedly, the function of reframing nature as natural capital in this way is to convert the multidimensional, complex values of nature into numbers which will make finance understand and appreciate the importance of preserving and restoring nature through the proxy of monetary value. This use of the NCAI as an indicator of biodiversity loss and the state of nature is a clear sign of financialisation occurring in the planning of biodiversity policy. Even as the SBS employs ecological indicators of biodiversity loss, its use of the NCAI and linkage to the NCMF as part of the wider biodiversity policy framework¹²¹, shows that the immense complexity of nature and interactions contained within as well as across ecosystems, are overlooked by reductionist conceptualisations of value, the supremacy of monetary value being a hallmark of neoliberal financialisation.

Similarly dissonant as the varied indicators employed by the SBS, is the relationship between the biodiversity crisis as presented in the Strategy and the envisioned solutions. The SBS digs deep to underscore the need for action on biodiversity with references to specific ecological crises, as well as their direct and indirect drivers. It shows the spectrum of complex interconnected crises of depleted habitats, ecosystems in distress, and the reinforcing properties of climate change.¹²² Yet the key to achieving quite broadly formulated objectives to address the biodiversity and climate crises is to fund a patchwork of projects, which are envisioned to spring partly from private initiatives, and partly from public planning by an imagined “Strategic Biodiversity Council” composed of a “wide range of interested parties.”¹²³ The funding itself is to be based on unproven markets for various nature-based ‘assets’, the creation of which would be the domain of the NCMF. Thus, in contrast to the convoluted, interconnected complex nature of the biodiversity and climate crises, the effort to address them appears fragmented,

¹²¹ Scottish Government, ‘Scottish Biodiversity Strategy to 2045’, 43–44.

¹²² Ibid, 17–24.

¹²³ Ibid, 48.

and in part dependent on voluntary engagement by private actors and organisations.

Moral economic problematisations focus not merely on what is mentioned, but also seek out silences. One notable absentee concerns the drivers of biodiversity loss and climate change. The SBS cites the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services in listing the direct and indirect drivers of biodiversity loss and mentions climate change liberally.¹²⁴ But there is no problematisation of oil and gas extraction, the fossil fuel industry, unsustainable energy sources, or any other formulation that pertains to fossil fuels and their substantial extraction in Scotland's North Sea territory. Granted, the business of licensing fossil fuel extraction in the North Sea is not devolved but decided in Westminster. Therefore, it cannot directly be stopped in Holyrood, the Scottish parliament. Nonetheless, fossil fuel extraction is arguably the most harmful industrial practice happening in Scottish territory, and beyond Scotland it is one of the foremost drivers of climate change and its associated destructive effects on biodiversity.

A biodiversity strategy which does not address the economic practices that are most harmful to ecological integrity and biodiversity, is likely to be a damp squib. The sincerity of the Scottish Government's pledge to create a sustainable 'wellbeing economy', a term indicating the moral underpinnings of economic activities and policies, is severely undermined by its refusal to ditch fossil fuels and urgently pressure Westminster to stop North Sea fossil fuel extraction. Thus, while on the surface the repeated pledge to create a 'wellbeing economy' could be construed as a turn towards an integration of normative, moral concerns in economic-political activities, the conspicuous absence of key problematisations lends this pledge no credibility.

Finally, due to the unpredictability and acceleration of climate change, restorations of nature and biodiversity as well as the novel creations of natural habitats are challenging to pursue and implement with any certainty of efficiency, both in the short-term and long-term. The attempts to make nature

¹²⁴ Ibid, 17.

and biodiversity internal to the neoliberal economics which has been a direct driver of its decline in the first place, demonstrate an ignorance regarding not only the drivers of ecological decline, but also regarding the widely publicised trajectory of climate change.

Climate change means a destabilisation of biodiversity restoration, because reversing biodiversity loss is a long-term project and the climate will continue to alter dramatically, since the emissions causing future climate change are already locked in. The instability is further aggravated in the face of inaction regarding fossil fuel extraction, something the Scottish Government is implicated in as well. Hence, a logical conclusion of a biodiversity strategy that claims to recognise climate change, would be to implement biodiversity restoration from an ecologically informed historical baseline, while any current and future causes of biodiversity loss need to be curbed before they develop. We should not be causing any more demand for biodiversity restoration seeing as the achievement of restoration necessitated by decades of deterioration gone by is already uncertain.

Additionally, one of the market mechanisms for biodiversity restoration, BDO, can be argued to contribute to the causes of biodiversity loss.¹²⁵ Because BDO incorrectly assumes that biodiverse habitats and ecosystems are interchangeable, those who engage in BDO may be encouraged to be less stringent about avoiding biodiversity loss, since they are told they can replace biodiversity. This false sense of security, like carbon credits, acts as a mitigation deterrent and ultimately leads to efforts that are claimed to conserve, but have no basis in an environmental improvement vis-à-vis the state of nature prior to the offset. Hence, a logical conclusion of recognising climate change, biodiversity loss, and the need for urgent action, would be a wholesale rejection of BDO and a commitment to stringent protection and restoration, or creation, of biodiverse ecosystems and habitats.

The SBS references the need to make Scottish ecosystems resilient against climate change, and restoring biodiversity is supposed to contribute to

¹²⁵ David Moreno-Mateos et al., 'The True Loss Caused by Biodiversity Offsets', *Biological Conservation* 192 (2015): 552–59, <https://doi.org/10.1016/j.biocon.2015.08.016>. Walker et al., 'Why Bartering Biodiversity Fails'.

mitigation. Yet, the aggravating properties of climate change do not seem to cause an evaluation of the feasibility of restoring and replacing, or a wholesale rejection of BDO, as would be a logical inference of a recognition of climate change. Economists and ecologists who advocate for an integration of conservation in 'green finance', through mechanisms such as offset markets, species and habitat banking, environmental futures trading and others, demonstrate either a lack of understanding the urgency of drastic action on the climate and biodiversity, or a deficiency of knowledge concerning the complexity of interactions among and within different parts of nature and the inability of markets to grasp said complexity. As Burkett states, "the singular instrument of a money price is insufficient to register the multiple, overlapping, interacting, and highly uncertain environmental use-values ... bound up with any particular natural phenomena to which the price is applied."¹²⁶ Neoliberal market mechanisms, however well intended, cannot escape the incompatibility of 'uni-dimensional' utilitarianism, the underpinning of neoliberal markets, with the variegation of socio-ecological values.

¹²⁶ Burkett, *Marxism and Ecological Economics*, 80.

7. Conclusion

This study sought to answer how financialisation is affecting conservation in Scotland, and why conservation outcomes pursued under the Scottish Biodiversity Strategy and the Natural Capital Market Framework will ultimately fail to deliver.

Responding to the first question, the NCMF marks the continued entrenchment of financialisation in conservation. This process has already been established with the implementation of carbon and biodiversity offsetting by the credit certification standards ‘the Peatland Code’ and ‘Woodland Code.’¹²⁷ However, the establishment of a natural capital market, as intended by the NCMF, would expand financialisation in Scotland to cover not just carbon and biodiversity offset credits, but also create new ‘financial products’ connected to water quality, soil, hedgerows, and natural flood barriers.¹²⁸ The NCMF claims to be able to deliver real, lasting conservation outcomes, but it overlooks fundamental shortcomings. Firstly, the possibility to achieve permanence of restored biodiversity, habitats, and ecosystems, is yet to be proven. The NCMF claims that buyers of credits, or investors in biodiversity restoration projects seeking financial returns, can be made to prove or safeguard permanence. This assumption conveniently overlooks that no long-term study has shown reliable, lasting biodiversity restoration.¹²⁹ Since the success of biodiversity restoration is yet to be evidenced but biodiversity offset credits are created regardless, establishing markets where developers can trade their environmental damages with supposedly restored nature doesn’t only cause fictitious conservation, it also contributes to further environmental deterioration.¹³⁰ Secondly, underlying natural capital markets is the assumption that ecosystems, habitats, and other units of nature can be made interchangeable with each other. The ecological reality is, that

¹²⁷ Forest Carbon, ‘The Peatland Code’, 2024, <https://www.forestcarbon.co.uk/certification/the-peatland-code>.

¹²⁸ Scottish Government, ‘Market Framework for Natural Capital - Engagement Paper’, 22.

¹²⁹ Walker et al., ‘Why Bartering Biodiversity Fails’.

¹³⁰ Walker et al., 152.

biodiversity, and nature in general with all the interconnections among its known and unknown elements, is non-interchangeable and complex beyond the measurability demanded by markets.

Additionally, the NCMF is formulated in reference to precursing voluntary and compliance markets. Both options are inadequate to face up to the challenge of reversing biodiversity loss and mitigating climate change. Voluntary markets lack the enforceability of rules and regulations, features which are desperately needed considering the unwillingness of companies engaging in voluntary nature markets to pursue ecological integrity.¹³¹ In turn, the existing compliance markets invalidate their claims of ecological integrity by allowing, indeed encouraging, biodiversity offsetting, which promotes fictitious conservation outcomes.

Addressing the second research question, I found that Scotland's biodiversity conservation aims are unlikely to be realised due to the deep-rooted contradictions within the SBS and NCMF policy frameworks, which are shaped by neoliberal economic principles that prioritise market mechanisms over ecological integrity. The SBS and related initiatives rely heavily on private finance, framing nature as 'natural capital' and seeking solutions through private investment and market mechanisms. This approach reduces the complex, multifaceted value of ecosystems to simplistic economic indicators and indexes like the NCAI, which are ill-suited to capture intricate needs of resilient biodiversity. By emphasising financial mechanisms, the strategy perpetuates a form of fictitious conservation – where the appearance of ecological stewardship is maintained through economic transactions, while the underlying ecological degradation continues unchecked.

Furthermore, the SBS's reliance on private investment to fill funding gaps sidesteps the need for robust public funding and shifts the responsibility for biodiversity restoration away from the government towards market dynamics that are notoriously difficult to anticipate. This not only weakens the accountability of conservation projects under private investment, but also

¹³¹ MSCI, 'VCM Claims Code of Practice'.
Greenfield, 'Revealed'.

risks entrenching both the market dynamics that have historically driven environmental degradation., and the unequal distribution of land ownership.

The SBS's silence on critical threats to environmental health such as fossil fuel extraction in the North Sea further undermines its credibility, as it fails to address one of the most significant drivers of climate change and biodiversity loss. Ultimately, the trajectory of Scottish environmental policy, represented by the SBS and NCMF, demonstrates the government's stalling on effective climate action and conservation. While this study did not concern the entanglement of the current conservation trajectory with high polluting industries, it should be noted that the foundational neoliberal conservation mechanisms were conceived amid intense lobbying from the most polluting industries, chiefly among which was the fossil fuel industry.¹³² This connection between fossil fuel industry and the conservation trajectory has not been reckoned with, and the Scottish Government does not seem to be interested in altering it either as the repeatedly professed loyalty to oil and gas exploration in the North Sea shows.¹³³ Without a decisive move away from fossil fuel production and market-based conservation, towards policies grounded in ecological science and environmental justice, Scotland's biodiversity aims are likely to remain aspirational rather than achievable.

¹³² Andreas Malm and The Zetkin Collective, *White Skin, Black Fuel: On the Danger of Fossil Fascism* (London; New York: Verso, 2021), 37–39.

¹³³ Jonathan Geddes, 'Forbes Sets Out SNP's "In-Between" Stance on Oil and Gas', *BBC Scotland News*, 14 June 2024, <https://www.bbc.com/news/articles/cw99vqyz2p4o>.

'Oil Licences Still Needed for Net Zero Transition - Swinney', *BBC News*, 16 June 2024, <https://www.bbc.com/news/articles/c9992j2lkvzo>.

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