BIODIVERSITY REVISITED – THEMES

i) Concepts

Concepts shape how a phenomenon is understood, discussed and managed within society and are thus a critical building block for both research and action. A great deal has been written about the concept of ‘biodiversity’ and the process of its development in the 1980s (e.g. Takacs 1996; Norton 1986). This has generated a range of views from strong defence of the importance of the biodiversity construct to the expression of major concerns that its introduction represented the detrimental technocratic capture of earlier, societally important concepts such as nature and natural resources. There are, however, a range of other ways in which the living systems on earth have been conceptualised, including for example, nature, sustainability, earth system, resilience, the Anthropocene, the planetary boundaries or the biosphere. These concepts may (or may not) provide a more adequate conceptualisation of the different aspects of living diversity on the planet, and they may speak to a broader audience than biodiversity. At this juncture it is worth considering the extent to which the Western, scientific concept of biodiversity crowds out other ways knowing and engaging with life on earth. Such alternatives may provide new understandings of the importance and dynamics of living diversity and natural systems, and the relationships between biodiversity and climate to support more effective stewardship of landscapes and seascapes. A more holistic conceptual framing may create a more compelling object for research, policy and action.

ii) Narratives

Environmental narratives tend to become established and entrenched within influential interest groups that believe in and/or benefit from them, such as researchers and professionals (Leach & Mearns 1996). Plausible narratives can provide a secure-seeming platform for policy-making and as a result they are then disseminated such that they become culturally, institutionally and politically embedded within a complex web of politicians, policy makers, bureaucrats, donors, technical specialists and private sector operators (Stone 2002). Once operationalised into standardised approaches and institutions they persist even in the face of strong empirical evidence against their story line. Narratives cannot easily be overturned by demonstrations that they are inapplicable in particular cases, or even in point-by-point rebuttals. Only ‘counter-narratives’ that are as parsimonious, plausible and comprehensive as the original can supplant rooted narratives (Roe 1991). Many narratives have emerged around biodiversity ranging from aesthetic and moral ideas (biodiversity is beautiful) to more functional notions (biodiversity underpins society). This latter narrative, that biodiversity leads to productivity, stability and resilience is potentially very powerful with decision-makers. While these narratives hold power within certain communities, lack of effective action on biodiversity suggests that they have failed to resonate in ways matter. There are new emerging narratives around ‘nature’s value for humans’, ‘a new deal for nature’ and the risks posed by the degradation of biodiversity. Alternative narratives could consider the importance of non-human life for human futures or provide a more holistic appreciation of the value of life on earth from which to mobilise action. These narratives may inspire new thinking and action, or they may fall into the same traps as existing narratives, simply replacing one problematic concept with another.

iii) Science

Fundamentally, science is the systematic study of the universe through observation and
experiment. Although many scientists would view their discipline as impartial and deterministic, it is widely appreciated that, as a human activity, the scientific method is influenced by values, politics and culture – from problem framing right through to the interpretation of results. This particularly holds true for biodiversity science where different values and preferences have resulted in there being numerous competing and seemingly irreconcilable ideas about what constitutes a conservation priority (Brooks et al. 2006). Despite significant focus on developing metrics and evidence round biodiversity loss, key drivers of biodiversity loss are poorly captured within metrics to measure progress on biodiversity conservation (Driscol et al. 2018); and there remains a rudimentary understanding of what constitutes a dangerous degree of biodiversity loss (Mace et al. 2014). Moreover, documenting processes of biophysical change has received substantially more attention than understanding the processes of social and policy change needed to mobilise effective action (O’Brien 2012). There is a need to critically evaluate the role of biodiversity science and metrics in providing a holistic appreciation of the dynamics and interconnections between life on earth and other biophysical and biogeochemical processes, while also considering other forms of knowledge (for example local, indigenous, practical, etc.) and academic approaches (for example from social sciences, humanities, the arts) that may provide new understandings of the importance and dynamics of living diversity and natural systems.

**iv) Governance**

In its broadest form governance is the processes of interaction and decision-making among the actors involved in a collective problem that leads to the creation, reinforcement, or reproduction of social norms and institutions. The governance of biodiversity involves far wider considerations than the political processes that exist within and between formal and informal institutions that have been established. Governance in this sector is extremely complex as biodiversity and the problems arising thereof are multi-scaled, involving strong issues of sovereignty and multiple stakeholders with a multitude of claims and legitimacy concerning rights to make decisions. There are, for example, strong and inseparable links between biodiversity loss and highly political issues such as land use, land ownership and rights, and access to resources for extraction. Biodiversity governance also has to deal with competing concepts, narratives, and science and a range of epistemic alliances that frame problem definitions and solutions over time. This is particularly important because international frameworks, financial mechanisms, and networks of experts can enable or constrain local approaches to biodiversity and its management (Selnes & Kamphorst, 2014). Given that the inability to mobilise effective action may, at its core, be a failure of governance, there is a need to explore other approaches to the governance of living diversity and natural systems. This includes critically reflecting on the fragmentation within environmental governance arenas and the processes and structures that would support a more holistic approach to sustaining life on earth.

**v) Systems**

A system is a group of interacting or interrelated entities that form a unified and functioning whole. Systems encompass different scales but are generally delineated by spatial and temporal boundaries. Biodiversity is an integral part of the ‘Earth System’ – the interacting physical, chemical and biological processes of the biosphere together with deep Earth and impinging extraterrestrial influences. The Earth System includes human social and economic systems which are now the main drivers of change within the system (Rockström et al. 2009). While the 1992 United Nations Conference on Environment and
Development (Rio Earth Summit) adopted important measures to address key parts of the Earth System, including the creation of multilateral environmental agreements for the governance of climate change and biodiversity, it did not adopt a systems approach to provide a rationale and organising conceptual theme for developing global responses. This may have led to the international community’s single-minded focus on climate and a filtering-out of important signals from the rest of the planetary system, including biodiversity, where these are not seen to be of immediate relevance to climate concerns. Moreover, systems are inherently multi-scalar, and with the increased dominance of ‘globalised’ framings of environmental concerns, more local and contextual understandings are crowded out in ways that can de-motivate action (Jansnoff 2010; Hulme 2010). There are inherent tensions that need to be explored to find ways to express the systemic and globalised nature of the degradation of life on earth while supporting a plurality of perspectives on local impacts and actions.

vi) Futures

Futures studies encompass the postulation of possible, probable, and preferable futures and the world views and myths that underlie them. Integrating future concerns into current day decision-making is of existential importance to humanity, yet the dominant approaches to manage or concern biodiversity are largely reactive and backwards looking – seeking to conserve species or landscape as it was in the past. Moving towards more anticipatory, proactive approaches to decision-making for biodiversity faces fundamental challenges that emerge from the many unknown and unknowable aspects of future social, political and environmental systems. Further, it requires addressing confronting philosophical questions about what level of loss is acceptable and how trade-offs can be made in ways that address the inherent injustices in the distribution of costs and benefits across and within human and non-human life forms. The complexity and contestation inherent to sustaining life on earth therefore requires innovative processes that facilitate dialogue around future challenges enable decisions to be made despite this contestation and uncertainty.