

## Towards a National Ecological Network for Scotland

Initial reflections & proposals arising from the National Ecological Networks conference held in Edinburgh 6-7<sup>th</sup> February, 2013

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- Key international and European policy drivers for a National Ecological Network in Scotland include the **EU biodiversity strategy** and the Convention on Biological Diversity **Aichi Targets**. Several speakers noted that we need to make rapid progress now if we are to meet the 2020 targets
- There is a need for a compelling, easily understood and longer term **vision** for Scotland's natural environment to underpin sometimes quite difficult concepts such as green infrastructure, ecological coherence, ecosystem services and restoration. We also need to constantly remind decision makers of the benefits of green infrastructure which include improved air quality, recreation, health and well being, education, biodiversity, water management or landscape character
- The science underpinning ecological networks in relation to ecosystem functions and services is increasingly well developed. However, the basic message derived from **island biogeography theory** of larger, better condition and better connected 'patches' of habitat being more resilient to species losses still holds true. Complex network modelling is a useful tool in some circumstances but basic principles can be applied in all types of landscape, and at all scales
- There was some discussion at the conference about networks facilitating the spread of **non-native invasive species**. There was no consensus on this as non-natives are often more successful in fragmented and disturbed landscapes anyway e.g. grey squirrel. This may be different for freshwater ecosystems and more research is probably required on this with the answers likely to be complex and different for different species in different landscapes
- Action on the ground needs to be '**scalable**' i.e. projects should be implemented at multiples scales from 'window box to regional green network' with interventions at different scales all contributing to **ecosystem health** (stocks of *natural capital*) and by extension ecosystem services (the flows of *natural capital*). Projects should also seek to make connections – physical and functional – between semi-natural patches of green infrastructure, thereby contributing to connectivity and coherence in the longer term (Article 10 Habitats Directive)
- Effective planning, indicator development, monitoring and target setting at the appropriate scale is essential. There was broad support for the use of **Ecosystem Health Indicators** (EHIs) at a sub-basin **catchment level** (but also applicable to local government / National Park boundaries etc.). There are clear synergies here with **River Basin Management Planning** and scope for combining terrestrial and freshwater planning and reporting processes. Even catchments with poor EHIs scores can still set targets for improvement in 5, 10, 20 year timeframes. Reporting must be simple and well designed using 'scorecard' formats

- Barriers to species movement (particularly large mammals) were also discussed in several presentations and there is a need to carefully assess where green bridges, underpasses and similar **engineered solutions** might be created or built in to improve **connectivity** across transport networks and in river systems
- Although the conference was entitled National Ecological Networks, it was stressed by the Scottish Wildlife Trust and others that connectivity per se is only one element in the delivery of such networks. Full **implementation of the Aichi Targets**, particularly species action, protected areas and ecosystem restoration, will be required for the delivery of an NEN, though clearly connectivity and coherence are important facets of such an approach
- In rural environments, primarily the farmed landscape, funds could be better targeted at fixing the '**systemic threats**' which threaten ecosystem health (and therefore services). These threats could be assessed via EHIs on a catchment / regional basis. Hence de-fragmentation of forests or soil erosion may be particular priorities in one catchment, or wetland restoration and diffuse pollution in another. In all this it is vital not to forget about targeted species action for keystone and vulnerable species
- In urban environment, Gehl Architects (David Sim) presented a biodiversity 'pick list' approach as used in Malmo whereby developers chose from a list of **biodiversity design features** for incorporation into new developments. This is an approach well worth exploring further in Scotland, perhaps linked to a practical Green Infrastructure manual for urban areas along the lines of DPZs Light Imprint <http://lightimprint.org/> work
- The point was made by several people that Green Infrastructure is not just about preventative spend, but also about competitive spend and a way, for example of attracting entrepreneurial talent and inward investment to Scotland. Green infrastructure spend *is* 'economic development' and we need to communicate this to politicians and decision makers through valuations such as those summarised in initiatives such as TEEB [www.teebweb.org](http://www.teebweb.org) . Creation of synergies and overlaps between a NEN and **sustainable walking and cycle networks** was also flagged as a priority and a potential easy win