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Namoi
CATCHMENT MANAGEMENT AUTHORITY

New Inquiry into Australia's Biodiversity in a Changing Climate
House of Representatives Standing Committee on Climate Change, Environment and the Arts
PO Box 6021
Parliament House
Canberra ACT 2600

Friday 29th July 2011

Dear Committee Members,

Thank you for the opportunity to provide input into the New Inquiry into Australia's Biodiversity in a Changing Climate.

Overall Concerns with Biodiversity in a Changing Climate in the Namoi Catchment

Climate change is a significant concern for the Namoi Catchment Management Authority. Climate change is expected to impact on the risk of crossing a number of the biodiversity thresholds listed above via the exacerbation of a range of existing (and well understood although not well managed) threats to our biodiversity and the environment.

The projections for impacts on Biodiversity Assets for the Namoi Catchment are sobering. Generally it can be expected that higher altitude forests such as those found at Mt Kaputar and on the Liverpool Ranges are likely to contract significantly. A radical change in the species composition of these areas is likely causing a marked reduction in the range limits of the original ecosystem. Climate change will increase the pressure on species and ecosystems that are already stressed due to fragmentation. Heat and dryness will impact on species and lead to structure and species changes in ecosystems. Increased fire frequencies will also lead to changes in the structure and species found in ecosystems.

The highly fragmented grasslands and grassy woodlands on the western slopes are considered to be particularly vulnerable to increased degradation due to changed rainfall patterns and increases in temperature. Many species will disappear from these ecosystems leaving them much simplified.

Wetlands are also likely to be heavily impacted by increased temperature, increased fire frequency and changes in water regimes. Fauna species such as koalas, flying foxes and cave dwelling bats are likely to be impacted by high temperature extremes resulting in heat stress and deaths of individual animals and in some cases whole colonies. In the western parts of the Catchment, the combination of increased temperatures, greater extremes, improved conditions for pests and weeds and large wildfires are expected to impact on ecosystems to the point where some species are likely to be lost form the region altogether. Species likely to face increased extinction risks include bats and koalas due to their vulnerability to heat stress and death over long hot spells. A dramatic decline is likely in some places.

Priorities for action to protect biodiversity in a changing climate
It is essential to retain intact ecological systems if we are to maintain any resilience in natural systems (and the industries reliant on them) and not suffer further catastrophic loss of species and ecological communities along with the breakdown of ecosystem processes in the face of climate change. The range of strategies and initiatives to protect biodiversity from climate change impacts will remain ineffective whilst ever native vegetation, rivers, and land are not being adequately protected. An integrated approach must be developed. Two priority threats critical to retaining biodiversity and ecosystem services given climate change impacts, are any ongoing clearing of native vegetation and over-extraction of surface and ground water.

The extent and condition of native vegetation communities is critical to biodiversity conservation and land clearing as a key threatening process must be controlled. This is particularly relevant for current (such as agriculture) and emerging industries (such as mining) as any further clearing has the potential to be highly destructive given climate change impacts. Land use patterns such as this will make the task of adaption to a new more sustainable footing harder for industries dependant on biodiversity and ecosystem services. The priority should be to avoid clearing of further native vegetation rather than attempting to find "offsets" to facilitate that clearing. Any land clearing also contributes to an increase in greenhouse gas emissions.

Aquatic & riverine ecosystems are also critical and further degradation of these systems must be halted if biodiversity and biodiversity dependant industries are to survive climate change impacts. It is critical that meaningful water reform is delivered and environmental flows are genuinely restored alongside sustainable agricultural production systems. A clear need exists to have a fully integrated "all sources" Water Sharing Plan based on sustainable yield.

Biodiversity Conservation on Public Land
Protected areas will be vital refugia for biodiversity as climate change impacts take effect. The aim should be to create large functional landscape scale linkages across the continent, and not just the rarest ecosystem types. Furthermore greater investment in the management of existing conservation areas is required to control critical threats such as weed and feral animals.

Travelling stock routes (TSRs) and reserves are also a critical resource, and provide opportunities to retain connectivity across the landscape. They should be incorporated into the "protected area" network. In the Namoi TSRs contain significant conservation values. In some overcleared regions of NSW they are the only significant stands of remnant vegetation. TSRs should be maintained and managed for their conservation values to assist in maintaining environmental resilience. They provide a vital network that can be the basis of further essential landscape scale linkages in combination with remnant vegetation on private land.

Biodiversity Conservation on Private Land
The scale of existing public lands will never be adequate to conserve biodiversity given climate change impacts. A combination of private and public lands is required to adequately achieve landscape scale linkages. Conservation on private land is thus critical to the successful creation of landscape scale linkages vital for the protection of biodiversity and increase resilience of natural systems in the face of climate change.

Many investments in biodiversity conservation on private land, outside the formal reserve system, are undermined by surrounding land use decisions. Incentive and market-based mechanisms – often promoted as the solution – can be ineffective if not supported by an effective legislative regime. Existing private land conservation programs need greater support and resourcing and effective monitoring and evaluation needs to be prioritised.

Well managed conservation areas on private land, especially when linked with public lands, could prove to be vital refugia for biodiversity given the threat of climate change.

Enhancing resilience in the face of climate change: The Namoi Resilience Assessment & revised Catchment Action Plan

Namoi CMA recently undertook a Resilience Assessment of the Namoi Catchment as part of our Catchment Action Plan Review. Climate change is acknowledged as a key driver of change in that assessment, and in the new Catchment Action Plan that has been developed as a result. Key learning's from this assessment relevant to biodiversity included that biodiversity is highly dependant on extent of native vegetation communities and woody native vegetation extent in the catchment. Also relevant to biodiversity is that riparian values are highly dependant on keeping enough natural flow in rivers and protecting the geomorphology of streams, rivers and floodplains.

A series of critical thresholds have been identified as part of the draft Namoi Catchment Action Plan (2010 – 2020). These have been developed so as to maintain a resilient landscape and community. Within it are contained as series of critical thresholds have been identified that should not be crossed if we are to manage our biodiversity and biodiversity dependant industries so that they are resilient to impacts such as climate change.

For details of this, please refer to the draft Namoi Catchment Action Plan (2010 – 2020) along with the Preliminary Resilience Assessment (Supplementary document 1) on which it is based which are available at http://www.namoi.cma.nsw.gov.au/274456.html?5

Namoi CMA can also provide more detailed feedback regarding the information provided if requested by the Standing Committee on Climate Change, Environment and the Arts.

Yours sincerely

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