

North Central Climate Change Adaptation and Mitigation Plan

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Summarised by Dr Peter Mitchell, Biolinks Alliance

North Central CMA began development of a Climate Change Adaptation and Mitigation Plan when there was a carbon tax and a potential market for carbon in the landscape. The Plan aims to identify strategies to build landscape integrity, guide actions to address climate change impacts on natural ecosystems, identify priority landscapes for carbon plantings.

CSIRO has recently produced climate projection data for the region. This was used to help understand the likely changes in the future, and assess the potential vulnerabilities of important assets such as rivers, wetlands, biodiversity and soils. One example is the vulnerability of native vegetation in the North Central CMA region, which will increase from moderate in 2030 to very high in 2090 (based on the high emissions scenario). These vulnerability assessments were based on broad-scale national and global modelling with a lot of assumptions - there is still some uncertainty about the degree of climate change and a lot of uncertainty about how our natural assets might respond. But the assessments do give us some indication of the more vulnerable parts of the catchment.

In developing the Plan, the CMA spoke to a lot of different people in workshops across the region. They gained some good insights into what people were thinking. For example, while many landholders did not believe in climate change, they had actually been adapting the way they do things to changes in the weather over the past 20-30 years. They were using technology to keep up with these changes, and recognised the benefits of actions such as provision of shade trees for livestock.

The Plan looks at the adaptation options for the main assets (rivers, wetlands, biodiversity and soils), the specific assets identified in the Regional Catchment Strategy, and some broader adaptation options that might apply to people and systems across the catchment.

For the main assets, the Plan looks at the impact of different climate change variables. For example, with reduced and more variable rainfall, the options for waterways and floodplains include increasing riparian vegetation connectivity to shade waterways and providing both environmental and base flows in streams where possible. The range of options provided in the Plan gives us some ideas about what we can do to help our natural assets adapt and become more resilient to climate change. We are already doing many of these things, and

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this gives us some re-assurance that the work we are doing across the landscape will help to provide that resilience.

For the specific assets listed in the Regional Catchment Strategy, the Plan uses the vulnerability assessments to identify climate change threats and adaptation options for each asset. For example, the lower Loddon is a regulated river so there are some options for managing flows in dry times in that river system. Other ongoing actions such as protecting the riparian vegetation (and providing a drought refuge) will be even more important in the future.

For the broader climate adaptation options, the CMA went out to the community and came up with a list for things that could be done. There is no clear "answer" for adapting to climate change, just a lot of questions and ideas for actions. For example, the thinning work described by Judy Crocker may be a bit controversial, but under specific circumstances may be a really effective way to help natural assets deal with climate change.

The CMA also did some adaptive pathways work with the community. This pathways approach "allows us to move forward in the face of uncertainty by considering a range of adaptation actions and sequences as new information and data become available". There is uncertainty, particularly around the climate projections and how natural assets will respond to climate change. The adaptive pathways approach gets people thinking about what scenarios might happen and what they might do about it. It doesn't necessarily mean they will do something immediately; as they get new information, they will make decisions around that.

One of the areas the CMA worked on was the Bunguluke wetlands – a floodplain system on the lower Avoca including areas of agriculture. The CMA sat down with a group of landholders and asked them what they were doing now and how they were using their land, and what they would do in 2030 and 2050 if climate change projections were accurate. And they came up with a list of options. Plenty of these options could be done now – and they are already doing some, like protecting environmental assets. But others need more information and thought. For example, with a hotter climate and less rainfall in 2030, what will that do to the assets on their land? In this area, there has been a big change from grazing to cropping over the past 10-15 years. With climate change, will there be a change back to grazing and what does that mean for environmental assets? And by 2050, will there be even bigger changes in the landscape?

The adaptive pathways approach is about getting people to think about change and all the different aspects to work through. They might not be ready to make decisions now, but communities do need to start preparing for change. One of the keys is having the information provided by long-term data such as that presented by Andrew Bennett. This data will really help make informed decisions into the future.

The second aspect of the Plan is climate change mitigation. Locally, actions to limit the magnitude or rate of long-term climate change include planting vegetation to capture carbon, and putting and retaining carbon in the soil (discussed in the NCCMA Sustainable

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Agriculture Strategy). The corridors and linkages discussed in this Symposium have a role in carbon capture, but there isn't the great driver of a carbon price at the moment. A carbon price may be a driver in the future, and this raises the question around where to put carbon to get the best environmental outcomes. The NCCMA has identified benefits and risks associated with carbon plantings. They are considering major north-south corridors of vegetation along the rivers (with a range of benefits for rivers and biodiversity). They are also considering links between the large patches of box ironbark forest in the region. The proposals will rely on local people and groups adding their bits to the bigger vision.

The Climate Change Adaptation and Mitigation Plan provides the CMA and local communities with something to work with among all the uncertainties. Decisions need to be guided by the information coming from research. Management of existing threats to environmental assets needs to continue, to provide better resilience to climate change. And people need to think about solutions, possibly through the adaptive pathways approach, to identify and adapt to the changes that are coming.

Q&A

Q: How do you get people thinking outside the box? A: With difficulty. Many farmers are optimistic that, if they can grow crops in the drier mallee, why not here (not recognising the differences in soils, etc), or that some technological change such as new crop varieties will allow them to keep doing what they are doing. It is hard to get people thinking about something that is really different. Perhaps a really big drought or other catastrophe may finally get people to realise they can't keep doing what they are doing and need to do something very different.

Q: How will this Adaptation and Mitigation Plan flow into government thinking and planning. A: Green Infrastructure is starting to be discussed but it is early days – it may be part of the “good debt” concept. It is hard to get policy makers to think about this. (Ed: A simple rule is if it increases your net worth or has future value, it's good debt).

Useful information

North Central Climate Change Adaption and Mitigation Plan

<http://www.nccma.vic.gov.au/climate-adaptation-and-mitigation-plan>

North Central Sustainable Agriculture Strategy

http://www.nccma.vic.gov.au/sites/default/files/publications/north_central_victoria_regional_sustainable_agriculture_strategy_2015_-_final_version_1.pdf

NRM Climate Change Portal

<http://www.nrmclimate.vic.gov.au/>

Climate Change in Australia

<http://www.climatechangeinaustralia.gov.au/en/>