

Senate Standing Committee on  
Environment and Communications  
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## Recent trends in and preparedness for extreme weather events

Thank you for the opportunity to make a submission to the Senate Committee's inquiry into ***Recent trends in and preparedness for extreme weather events***.

The **Northern Alliance for Greenhouse Action (NAGA)** is an alliance of Moreland Energy Foundation and the nine councils spanning the northern metropolitan region of Melbourne from the CBD to the rural/urban fringe (see footer). The Alliance covers a quarter of Melbourne's population; the region spans major industrial, commercial, and residential areas, activities and types, as well as forests, agriculture, and water catchments on the urban fringe.

NAGA shares information, coordinates emission reduction and adaptation activities, and cooperates on the research and development of innovative projects. NAGA and its members have demonstrated significant climate change action innovation at the local government and regional level. NAGA is actively involved in implementing regional scale climate change projects and developing approaches to governance, project management and business cases to support this work.

Within the NAGA region, a number of significant 'extreme weather events' have been experienced in recent times, including drought, bushfires, heatwaves, floods and storm surges. These events have had serious consequences, some of which are still being felt today (for example, the February 2009 Black Saturday bushfires that reached into the NAGA region and directly impacted on NAGA members). Climate change modelling indicates that such events are likely to become more frequent, and more severe. The current heatwave and associated bushfires have been linked to climate change impacts. Local governments' and communities' responses to these events are powerful in informing research and planning for future events.

NAGA's brief submission focuses on local governments' roles, responsibilities and responses to extreme weather events in the context of climate change adaptation. The submission reinforces the needs for science and research, as well as linking researchers and practitioners to inform practical and applied social research. The current state of scientific research is well documented, particularly by groups such as National Climate Change Adaptation Research Facility (NCCARF), Victorian Centre for Climate Change Adaptation Research (VCCCAR), the Climate Commission and the Victorian Commissioner for Environmental Sustainability's recently released Climate Change Foundation Paper, so this material is not included in this submission.

Please contact me if you would like to discuss any of the issues raised in this submission in more detail.

Yours sincerely

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Judy Bush  
Executive Officer

***The views represented in this submission do not necessarily represent the views of all NAGA members individually.***

### MEMBER ORGANISATIONS

BANYULE CITY COUNCIL, DAREBIN CITY COUNCIL, HUME CITY COUNCIL, MANNINGHAM CITY COUNCIL, CITY OF MELBOURNE, MORELAND CITY COUNCIL, MORELAND ENERGY FOUNDATION LIMITED, NILLUMBIK SHIRE COUNCIL, CITY OF WHITTLESEA, CITY OF YARRA

## Local government roles and responsibilities

The local government sector as a whole has significant exposure to climate change impacts and extreme weather events, for its own operations and planning decisions, and more broadly for its community's well-being. As the level of government with the closest and most immediate links to communities, local government's actions and responses to extreme weather events are necessarily broad, and wide-ranging. This can place significant pressure on local government staff and resources.

Climate change adaptation, including responding to extreme weather events, requires a localised, bottom-up approach that addresses the particular characteristics of the local area and community, and that utilises local government's detailed knowledge, and day-to-day contact with its municipality's residents and businesses.

The COAG Select Council on Climate Change (SCCC) has recently adopted a statement outlining the **Roles and responsibilities for climate change adaptation in Australia**<sup>1</sup>. The SCCC statement defines the respective and complementary roles of Commonwealth, States and local governments. The statement acknowledges that "local governments are on the frontline in dealing with the impacts of climate change". Local governments' roles include to "manage risks and impacts to local government service delivery; facilitate building resilience and adaptive capacity in the local community; and contribute appropriate resources to prepare, prevent, respond and recover from detrimental climatic impacts".

Local government plays a key, long-term role in disaster preparation and recovery, spanning responsibilities across community health and welfare, infrastructure, environment and natural resource management. Extreme weather and disaster responses include both the initial crisis response and the substantial longer-term recovery phase. Local government plays a key role in providing services to and supporting local communities, as well as coordinating the relief efforts of others, including NGOs and other agencies.

The recovery processes following disasters (such as the February 2009 Black Saturday bushfires that directly affected several NAGA member councils), can continue for significant periods, span physical, mental and emotional, social and community aspects, and place substantial pressures on local government staff and resources. Councils need appropriate systems and resources in order to provide such services. Responding to the February 2009 Black Saturday bushfire required a massive effort from NAGA member councils (particularly those directly affected, Whittlesea City Council and Nillumbik Shire Council), and required significant levels of resources. Recovery is a long-term process; a number of studies have documented the issues<sup>2</sup>.

The fires highlighted the complexity of climate change adaptation issues, and the at times conflicting needs of different individuals, communities and sectors. Biodiversity represents one area of conflicting needs. The poor state of much of Victoria's biodiversity and natural systems has been documented in the *State of the Environment* report<sup>3</sup>. The risk to biodiversity in bushfire-prone regions is compounded, both from direct climate change impacts (particularly with more frequent and more intense bushfires), and from increasing pressures to clear vegetation. This is further compounded where there is substantial residential development in bushfire-prone areas on the outskirts of major cities. Clearing vegetation for bushfire protection, particularly clearing understorey vegetation will have significant impacts on habitat and biodiversity values that are already vulnerable with reduced ecosystem resilience.

It is also worth noting that heatwaves, whilst receiving less media coverage than more 'spectacular' events such as bushfires and floods, can also be powerful and destructive events that significantly occupy local government's staff and resources, as well as other health and emergency services. As an example, the heatwave in Victoria in 2009 caused almost twice the deaths of the 2009 Black Saturday bushfires.

Local governments (as well as other levels of governments and communities) are also facing increased costs related to infrastructure and assets upgrades, repairs and increased maintenance related to climate change impacts and extreme weather events. For example, intense storm events are leading to increased maintenance works for roads and footpaths, as well as necessitating asset replacement and upgrade works to drainage systems. Increased spring/summer rainfall is leading to increased mowing and clearing schedules for parks and open space maintenance, and extreme weather events that have caused significant erosion and landslides require substantial reinstatement processes.

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<sup>1</sup> <http://www.climatechange.gov.au/government/initiatives/sccc/meetings/20121116/roles.aspx>

<sup>2</sup> See for example, NCCARF's Emergency Management Network, NCCARF's Social, Economic and Institutional Network and VCCCAR's research projects.

<sup>3</sup> Commissioner for Environmental Sustainability Victoria, 2008, *State of the Environment Report Victoria*  
<http://www.ces.vic.gov.au/CES/wcmn301.nsf/childdocs/-FCB9B8E076BEBA07CA2574F100040358?open>

Extreme weather events' impacts on assets and infrastructure will also have significant flow-on effects to insurance costs<sup>4</sup>, and in some cases, insurance coverage is being withdrawn from areas particularly exposed to extreme weather events (such as flooding in some areas of Queensland).

There is an urgent need for climate change impacts, including extreme weather events, to be incorporated into local governments' planning and implementation of infrastructure and services, as well as urban planning and design; local government preparation of climate change impact risk assessments and adaptation planning should be mandated, and resources provided to support these processes. A range of tools, templates and models have been developed to guide the process of adaptation planning (including VCCCAR's Adaptation Navigator<sup>5</sup>, and NCCARF's Adaptation Tools Selector<sup>6</sup>); funding is required to ensure local governments are trained in adaptation planning processes, tools selection and in understanding and utilising research and science.

## Community capacity

Research into people's responses to extreme weather events and disasters has largely focused on health impacts on individuals; there is an immediate need for further research on the social impacts on individuals, families and communities<sup>7</sup>.

Nonetheless, events such as the February 2009 Black Saturday bushfire have provided vital data on how communities respond to such events, and the critical factors in improving communities' resilience. Research into communities' responses to extreme weather events is showing that communities that are already well-connected (community members connected to each other, and to key local groups and organisations), with existing community structures and a strong sense of self-reliance and agency tend to cope better to extreme weather events. More research is urgently required on communities' resilience and responses to extreme weather events in large cities.

The Victorian Government's recently released *Victorian Emergency Management Reform White Paper* also acknowledges the importance of governments and agencies working together to "enable flexible and networked responses that better support the community and place greater emphasis on mitigating hazards and building community resilience"<sup>8</sup>.

Even so, the after-effects of bushfires and other disasters, that may include the loss of friends, family, housing, community members and structures, and infrastructure, can linger for years<sup>9</sup> and take a significant toll on mental health, family well-being and social processes and structures<sup>10</sup>.

Local government plays a key role in implementation of sustainability and liveability programs, policies and objectives that can contribute to building community resilience. With provision of adequate resources and in partnership with other levels of government, local government, and regional groupings such as NAGA are well-placed to effectively and efficiently implement programs that are locally relevant and respond to local needs as well as state and federal priorities.

### *Roles of 'private parties'*

The SCCC statement on roles also defines the roles of private parties to manage their own risks, and the need for private parties to be aware of the risks; to take steps to understand the magnitude and nature of specific risks, and to develop and implement strategies to manage the risks. These expectations highlight the critical role for research into regional and local impacts and modelling, as well as the importance of communicating these impacts. Nonetheless, vulnerable and disadvantaged members of the community will be much less able to prepare for and manage risks. Recent research by ACOSS has also identified the vulnerability of community organisations in coping with extreme weather<sup>11</sup>. This will further exacerbate

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<sup>4</sup> <http://environmentvictoria.org.au/climatechangeimpactsfoi>

<sup>5</sup> <http://www.adaptation-navigator.org.au/>

<sup>6</sup> <http://www.nccarf.edu.au/settlements-infrastructure/content/government-research-initiative>

<sup>7</sup> Dr Rae Walker: presentation to Municipal Association of Victoria, 28 March 2012, [http://www.sustainability.mav.asn.au/content/upload/files/publications/NAGA\\_Health\\_Social\\_Impacts\\_of3252.pdf](http://www.sustainability.mav.asn.au/content/upload/files/publications/NAGA_Health_Social_Impacts_of3252.pdf)

<sup>8</sup> [http://www.dpc.vic.gov.au/images/images/featured\\_dpc/victorian\\_emergency\\_management\\_reform\\_white\\_paper\\_dec2012\\_web.pdf](http://www.dpc.vic.gov.au/images/images/featured_dpc/victorian_emergency_management_reform_white_paper_dec2012_web.pdf)

<sup>9</sup> <http://www.abc.net.au/unleashed/4456200.html>

<sup>10</sup> <http://www.climateinstitute.org.au/a-climate-of-suffering.html/section/478>

<sup>11</sup> <http://www.theage.com.au/environment/climate-change/extreme-weather-deadly-for-the-vulnerable-20130105-2ca9g.html#ixzz2HDIJFUQn>

disadvantaged and vulnerable members of the community's exposure, in the event that their local community organisations, to which they might turn in emergencies, are themselves struggling to cope.

The Productivity Commission, in its recent inquiry into ***Barriers to Effective Climate Change Adaptation***, stated that "when people are able to identify and evaluate the impacts and risks they face ... they will generally manage them..."<sup>12</sup>. This process obviously requires access to up-to-date and accurate information, and the ability to understand and interpret information on climate change impacts, as well as the knowledge of appropriate measures to respond and manage the impacts. It also assumes that people will have the resources and capacity to manage the impacts. In the case of extreme weather events, the risks may be outside people's experience and therefore they may have limited knowledge and experience in how to effectively manage these 'new' risks.

The Productivity Commission's draft report recognised the need to better align adaptation research with the needs of users and provide more local climate change information. The draft report also noted that "individuals may lack the capacity to make fully effective uses of information"; this reinforces the ongoing need for government roles in information dissemination.

## Science and research

There is a substantial body of research being built on climate change-related extreme weather events. The research bodies NCCARF and VCCCAR play vital roles in coordinating and synthesizing this research, developing research partnerships between researchers and practitioners (including local government), and communicating the results of the research to governments, businesses and community. For local government, NCCARF's ***Local Government Portal*** fills a key need in communicating the research, bridging the potential divide between the work of researchers and the application by practitioners, and consumers of the research findings. There is a critical need for maintaining a bibliography or library of research data (including climate change impacts data at regional and local scales), tools and case studies, and for ongoing support for integrated, multi-disciplinary research programs to build our knowledge and expertise of impacts, and our capacity to respond both reactively and proactively.

Recent research is suggesting that climate change may exhibit step changes rather than gradual change. Professor Roger Jones, Victoria University, has reported in a recent article in the *Journal of Geophysical Research* that "this idea [gradual change] leads to the expectation that people can adapt gradually to a smoothly changing climate. But sudden increases in risk may mean that gradual adjustments fail to cope with rapidly changing extremes – and that's what this research suggests is happening."<sup>13</sup> This demonstrates how important it is that current scientific research is understood by and incorporated into planning and policy approaches by all levels of government, business and communities.

## Recommendations

1. Climate change mitigation requires urgent, wide-ranging responses from all levels of government and the community, as it will be impossible to adapt to climate change if 'business-as-usual' emissions continue unabated.
2. Provision of resources and funding to support local governments' planning and implementation of climate change adaptation measures, including mandated preparation and regular review and updating of climate change adaptation plans and disaster response plans.
3. Provision of resources to local government and regional groupings to implement programs focused on building sustainable and resilient communities.
4. Continued provision of funding and support for research into climate change science, impacts, and social and health responses to climate change impacts and extreme weather events. Support for practitioner involvement in research projects. Focus on effective communication and dissemination of research findings, including provision of training, to all levels of government, as well as to members of the community.

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<sup>12</sup> <http://www.pc.gov.au/projects/inquiry/climate-change-adaptation/draft>

<sup>13</sup> Jones, R. N. (2012), Detecting and attributing nonlinear anthropogenic regional warming in southeastern Australia, *J. Geophys. Res.*, 117, D04105, doi:10.1029/2011JD016328. <http://www.vu.edu.au/news/climate-change-steps-up>