



VNPA and EDO Submission

in response to

Coastal Climate Change Advisory Committee Issues and Options Paper February 2010

prepared by

Environment Defenders Office (Victoria) Ltd

Victorian National Parks Association Inc

12 May 2010

About the Environment Defenders Office (Victoria) Ltd

The Environment Defenders Office (Victoria) Ltd ('EDO') is a Community Legal Centre specialising in public interest environmental law. Our mission is to support, empower and advocate for individuals and groups in Victoria who want to use the law and legal system to protect the environment. We are dedicated to a community that values and protects a healthy environment and support this vision through the provision of information, advocacy and advice. In addition to Victorian-based activities, the EDO is a member of a national network of EDOs working to protect Australia's environment through environmental law.

About the Victorian National Parks Association Inc

The Victorian National Parks Association Inc (VNPA) is Victoria's leading nature conservation organisation. VNPA is an independent, non-profit, membership-based group, which exists to protect Victoria's unique natural environment and biodiversity through the establishment and effective management of national parks, conservation reserves and other measures. We will achieve our vision by facilitating strategic campaigns and education programs, developing policies, through hands-on conservation work, and by running bushwalking and outdoor activity programs which promote the care and enjoyment of Victoria's natural heritage.

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EXECUTIVE SUMMARY

The EDO and VNPA recommend a series of Coastal Growth Boundaries be implemented along the Victorian coast, complemented by coastal zoning and overlays, that will protect coastal biodiversity and assist it to adapt to sea level rise and other climate change impacts. These mechanisms are aimed at firstly allowing coastal biodiversity to remain in situ for as long as possible, and then assisting its retreat to inland areas once sea level rise begins.

The planning proposals contained in this submission aim to meet the following objectives:

1. Protect existing biodiversity from immediate development, especially 'coastal squeeze', so that it is more resistant to the impacts of climate change.
2. Protect biodiversity in its current location from sea level rise for as long as possible to increase its ability to adapt to climate impacts.
3. Assist biodiversity to adapt to sea level rise and other impacts of climate change.

A simplified outline of the EDO and VNPA's strategy is as follows:

1. Conduct comprehensive mapping of current settlements, 'biodiversity priority areas', and predicted sea level rise for the whole Victorian coastline.
2. Combine this with mapping of projections of where both settlements and biodiversity will, and can, move to as a result of sea level rise.
3. Establish a Coastal Growth Boundary around existing settlements as soon as possible (which takes account of the need for settlements to move as a result of sea level rise) to define the limit of coastal settlements and thereby balance biodiversity protection and development priorities.
4. Review the zoning and conservation status of all identified 'biodiversity priority areas' to determine whether they will adequately protect biodiversity in those areas.
5. For each 'biodiversity priority area', determine on a case-by-case basis what planning tools will best provide for biodiversity adaptation after sea level rise begins. Such planning tools may include:
 - protected biolinks to another current conservation area;
 - rezoning areas that are likely to support biodiversity adaptation inland from the predicted new coastline; and
 - implementing existing overlays such as Environmental Significance Overlay and Public Acquisition Overlay to protect the area behind the conservation area from development so that biodiversity can adapt.
6. Additional investment and policy development will be required from all levels of government in order to protect key areas of biodiversity in their current locations. In some cases physical protection may be necessary, which may include sea walls, artificial reefs, and translocation.

In contrast to the CCCAC recommendation that change proceed slowly in this early phase¹, Coastal Growth Boundaries should be implemented as soon as possible to ensure that coastal biodiversity does not get locked into the coastal strip due to coastal squeeze and as a result be unable to adapt to sea level rise.

¹ Coastal Climate Change Advisory Committee, *Issues and Options Paper Main Report* (2010) [75] <<http://www.dse.vic.gov.au/DSE/nrenpl.nsf/LinkView/9FAE15FEAFA51EC4CA2575F90019FF7BE82B85B30B18B0A4CA2572FF00270933#1&O%20Paper>> at February 2010, Chapter 12.

INTRODUCTION²

The Victorian National Parks Association (**VNPA**) and the Environment Defenders Office (Vic) Ltd (**EDO**) have prepared this submission in order to contribute to the Coastal Climate Change Advisory Committee (**CCCAC**) process by highlighting key areas of concern in the protection of coastal biodiversity and ecological integrity.

Since 1991 successive Australian and Victorian Government inquiries, taskforces, panels, and reports have concluded that climate change will result in large-scale changes to coastal areas and unprecedented biodiversity loss.³ In 2008 this position was finally cemented in Victorian coastal policy through inclusion of broad restrictions and the 0.8 metre assessment requirement, which has dramatically changed the planning requirements for those proposing new development.⁴

While there are many planning issues that will need to be resolved in order for Victoria to adapt to climate change, our submission focuses on the protection and adaptation of coastal biodiversity. It identifies specific habitats and ecosystems that should be prioritised for protection, and proposes an option for future planning to allow coastal settlements to proceed without threatening habitats or ecosystems.

The majority of Victoria's coastline and natural coastal areas are publicly owned. That said, many of the publicly-owned coastal areas are relatively small and share a boundary with private land. Australian connection to coastal areas results in extraordinary demand to allow new development in coastal areas. Climate change will place unprecedented additional pressures on marine and coastal biodiversity. If today's planning reforms do not protect Victoria's endemic rich coastal and marine biodiversity, then Victoria will simply have nothing left to lose.

We recommend that any change to the planning process as a result of this review provide for:

- recognition of Victoria's coastline and its biodiversity as a unique and priceless asset;
- recognition that coastal areas are limited and will be uniquely affected by climate change-induced sea level rise. As a result, in order to properly plan for coastal climate change some upheaval and rearrangement of the current planning or other regulatory regime will be unavoidable;
- recognition that without appropriate planning controls, high levels of pressure will be placed on local decision-makers to allow coastal development to spread well beyond existing town "boundaries"; and
- broad-scale comprehensive planning for the entire Victorian coastline that both protects biodiversity and prevents 'coastal squeeze' by incorporating knowledge about the movement of development on future coastline projections.

With these objectives in mind the EDO and VNPA have developed a set of interrelated proposals to amend the Victorian planning system to assist coastal biodiversity to adapt and survive in light of climate change impacts, particularly sea level rise. The purpose of this submission is to draw attention to the problem of biodiversity loss in light of sea level rise and to demonstrate that workable solutions can be found through the planning system to assist biodiversity to adapt and survive.

² The VNPA and the EDO would like to acknowledge and thank the following people for assisting in the formation of ideas and provision of information: Geoff Wescott, Michael Buxton, Matt Edmonds, Tim O'Hara. Special thanks go to Simon Perraton, EDO Solicitor, for researching and drafting this submission.

³ See e.g. Australian Government Resource Assessment Commission, *Coastal Zone Inquiry Final Report November 1993* (1991) at 13; and Port of Melbourne Authority and Environment Protection Authority, *Victorian Coastal Vulnerability Study* (1993) State Government of Victoria.

⁴ See e.g. Victorian Coastal Council, *Victorian Coastal Strategy 2008* (2008) [13] State Government of Victoria <<http://www.vcc.vic.gov.au/2008vcs/home.htm>> at 10 December 2008; and *Planning and Environment Act 1987* Section 12(2)(a) Ministerial Direction no 13, *Managing Coastal Hazards and the Coastal Impacts of Climate Change*, 18 December 2008.

WHAT IS THE PROBLEM?

Rising sea levels, increasing ocean temperatures and growing ocean acidity are just some of the many pressures climate change will place on our fragile marine environment. On their own they would be formidable challenges, but sadly they will only compound already serious marine threats, including mounting pest problems, overfishing of marine stocks, pollution and over-development of our coastal areas. If Victoria is to have a coastal and marine environment strong enough to withstand all of these challenges, we must improve the way we manage these ecosystems by protecting significant habitats and, as a matter of urgency, addressing all current threats to our seas and shores.

Probably the greatest threat to the future of our marine world is ocean acidification, a direct result of unsustainable amounts of carbon dioxide being pumped into the earth's atmosphere. As well as ocean acidification and more frequent and severe weather events, climate change will mean rising sea levels, warmer water temperatures and dramatic changes to ocean currents.

Global sea levels are predicted to rise by up to 0.8 metres, which could result in parts of the Victorian coast moving up to 80 metres inland.⁸ Rising sea levels will affect low-lying coastal populations at intertidal areas, mangroves and wetlands⁵. Habitats that cannot retreat because of coastal developments may be lost entirely.

Changing sea temperatures and currents will force significant changes to the biological make-up of marine communities, for example through the invasion of pest species as warmer waters allow them to claim new areas. Major changes to ocean currents will affect the distribution of larvae in Victoria's marine environment, with serious and unpredictable consequences for many species.

In Victoria, bays and estuaries are most threatened by climate change, but its effects could be felt anywhere along the coast. It is already being blamed for declining seagrass beds in Port Phillip Bay.⁶

If there is no centralised strategic planning to counter the combined effects of climate change-induced biodiversity loss, and if significant early investment is not made into the long term protection of coastal ecosystems, then it is extremely likely that many or most coastal biodiversity hotspots and protected areas will be lost through sea level rise.

It has been suggested that there is currently a substantial gap between biodiversity protection policies and the process of granting a planning permit under the Victorian planning system.⁷ In coastal areas this amounts to pressure to extend settlements beyond currently settled areas. Without early intervention we anticipate the following is likely:

- The inherently limited development potential of coastal areas will continue to lead to intense pressure being placed on decision-makers, who will continue to be asked to approve new inappropriate residential developments in coastal areas.
- Land use planning will not account for long-term protection of biodiversity by providing space for natural or artificial retreat of natural systems.

⁵ Hobday AJ, T.A Okey, E.S. Poloczanska, T.J.Kunz and A.J. Richardson [editors], (2006); *Impacts of climate change on Australian marine life*. Report to the Australian Greenhouse Office, Canberra, Australia.

⁶ Edmunds M, S. Mustoe, K. Stewart, E. Sheedy and J. Ong (2010); *Draft Nature Conservation Review: Marine and Coastal Issues Paper*. Report to Victorian National Parks Association. Australian Marine Ecology Report 405, Melbourne.

⁷ Buxton M, *The Land use planning system: potential problems for biodiversity*, (2003) Proceedings of the Conference on Ecologically Sustainable Agriculture –Victorian Government Department of Sustainability and Environment, 4.

- Restriction of development in low-lying areas will result in pressure to permit new settlement to form behind the Victorian Coastal Strategy 2008 0.8 metre sea level rise planning limit,⁸ without regard to the need for coastal ecosystems to migrate inland.
- Once the predicted impacts of sea level rise are felt both human settlements and natural systems will adapt, migrate inland, be artificially protected and translocated, or cease to exist.
- Once infrastructure and settlements are established in the migration pathway of an ecosystem, there will be limited ability to provide for natural biodiversity protection through migration.
- In such situations, the resources required to artificially protect natural systems in order that they simply continue to exist will be much higher than had space been provided to allow natural adaptation to occur.

In summary, without proper planning, current development and post sea level rise development may mean that biodiversity has nowhere to go as the inland area has been developed. This effect has been referred to as "coastal squeeze".

What is coastal squeeze?

Coastal squeeze describes the process whereby an ecosystem or habitat is hemmed in by human infrastructure. The resulting effect is that as sea level rises there is no possibility for the ecosystem to mitigate or adapt. In particular, within the spectrum of various coastal and marine ecosystems that exist in proximity to current human settlements, the following situations may be found:

- Coastal squeeze has already occurred under current levels of development. Some ecosystems will be already "squeezed" by human infrastructure and as a result translocation or in situ protection will be the only options.
- Coastal squeeze may also occur if urban settlement and infrastructure is located behind natural areas currently threatened by sea level rise. Ecosystems that have the capacity to migrate will require planning protection to ensure this capacity is maintained. This may involve protecting areas outside of the 0.5m datum or the 0.8m sea level rise policy marker.

If natural migration and adaptation is not planned for, then when sea level rise does occur the only option to enable many ecosystems to survive will be artificial translocation. For many ecosystems this is most likely impossible. Where translocation is theoretically possible the resources required to successfully move an ecosystem will be very high. It would be more efficient and practicable to plan for the known future and provide space for coastal ecosystems to naturally adapt and migrate.

⁸ Victorian Coastal Council, *Victorian Coastal Strategy 2008* (2008) State Government of Victoria <<http://www.vcc.vic.gov.au/2008vcs/home.htm>> at 10 December 2008, 13.

WHICH ECOSYSTEMS ARE UNDER THREAT?

The EDO and VNPA have identified the following coastal habitats as being most at risk from the impacts of climate change and rising sea levels:

- **Intertidal habitats** – there will be a general reduction of the intertidal zone as sea-level rises and before a new shoreline is cut. Many open coast rock platforms will be submerged. This will cause population reductions in many intertidal species.
- **Soft (muddy) habitats in our bays, i.e. mangroves and salt-marsh areas** could go locally extinct. These habitats are already of limited extent and threatened by urbanisation around our major bays.
- **Estuarine habitats** will shift further up rivers (with rising sea levels and falling rainfall) and potentially be pushed into more degraded areas.
- **Land-based coastal ecosystems, communities, flora and fauna** – coastal vegetation (including grasses, heaths, woodland, scrub and Moonah) and dunes are particularly important for building ecosystem resilience, and providing ecosystem processes and services.

VALUE OF PROTECTING MARINE AND COASTAL AREAS

Providing legal and planning protection to marine and coastal areas will help protect those ecosystems in many ways, including:

- helping aquatic ecosystems withstand the impacts of climate change by removing existing stressors on marine ecosystems.
- maintaining and enhancing species diversity, genetic diversity and habitat complexity. Reef communities in “no-take” marine protected areas eventually transform into communities not otherwise present in the regional seascape⁹.
- protecting rare species or populations, unique and fragile habitats, representative and highly productive areas and the general functioning of marine ecosystems.
- protecting habitats from damaging industries such as oil exploration, the aquarium trade, damaging fishing practices and aquaculture.
- creating opportunities for education, research and tourism in marine systems.
- Providing scientific reference sites and benchmarks.
- helping to achieve sustainable fisheries and insuring against fish stock collapses.
- storing huge amounts of carbon, particularly in coastal areas. Saltmarshes, mangroves and seagrass beds all have important potential to store carbon¹⁰.
- protecting fish stocks – there is a significant body of evidence now pointing to the important role marine protected areas play in increasing fish stocks¹¹. Marine and coastal protected areas provide vital insurance for fisheries and must form the core of a comprehensive approach to managing Victoria’s marine environment in the face of climate change.

⁹ Edgar, G.J, N.S. Barrett, R.D. Stuart-Smith, (2009); Exploited reefs protected from fishing transform over decades into conservation features otherwise absent from seascapes. *Ecological Applications*, 19:8; 1967-1974

¹⁰ Dudley, N., S. Stolton, A. Belokurov, L. Krueger, N. Lopoukhine, K. MacKinnon, T. Sandwith and N. Sekhran [editors] (2010); *Natural Solutions: Protected areas helping people cope with climate change*, IUCNWCPA, TNC, UNDP, WCS, The World Bank and WWF, Gland, Switzerland, Washington DC and New York, USA

¹¹ Ibid.

WHAT SHOULD THE PRIORITIES BE FOR COASTAL BIODIVERSITY PROTECTION?

The EDO and VNPA believe that protection of Victorian marine and coastal ecosystems and biodiversity from the impacts of climate change and rising sea levels should focus on:

1. **significant habitat** – for building ecosystem resilience (near coastal and coastal marine habitats are particularly important, including saltmarsh, mangrove, Seagrasses, and coastal vegetation)
2. **areas that provide good biolinks**– for migration of threatened species (intertidal species, saltmarsh/mangrove, estuaries)
3. **specific species**– particularly those with limited dispersal capacity
4. **natural areas likely to adapt to climate change** – for building ecosystem resilience
5. **high value conservation areas** – to maintain biodiversity

We refer to these five things throughout this report as '**biodiversity priority areas**'.

WHAT CHANGES CAN BE MADE TO THE CURRENT PLANNING SYSTEM?

Stage 1: Determine biodiversity priority areas

The process of developing an accurate knowledge base is already under way in Victoria. The Future Coasts program is part of the Victorian Climate Change Adaptation Program and is being run by the Victorian Government Department of Sustainability and Environment ('DSE') and the Victorian Government Department of Planning and Community Development ('DPCD').¹² This process is providing the data for a Victorian Coastal Hazard Vulnerability Assessment for the entire Victorian coastline. Future Coasts is mapping the predicted coastline after sea level rise of 0.8m. The program is collecting land based and sea floor elevation models.¹³

The Government should extend this process to also map existing biodiversity priority areas and the biodiversity values they contain. This data should be combined with information on current settlements and predicted future coastlines to give clear information on which settlement and biodiversity areas are most under threat from sea level rise.

The CCCAC recognition that some Local Governments may possess insufficient resources and expertise to be responsible authorities for planning decisions in this area necessitates a top down approach.¹⁴ That is, early intervention by a centralised body is required to ensure planning decisions are informed by the best possible evidence. This work should be driven by the Victorian Government in order to reduce duplication and ease the burden on local governments.

Why is this necessary?

There is currently insufficient knowledge to decide which coastal ecosystems require protection in relation to sea level rise.

Planning decisions rely on the adequacy of data that is fed into the system. In the past, the placement of overlays designed to protect biodiversity has been criticised as being made without sufficient knowledge as to which ecosystems and areas actually needed protecting.¹⁵

The CCCAC recommends that interim measures be established subject to the need to develop "finer scale" knowledge of vulnerability.¹⁶ These investigations should also focus on the location of coastal ecosystems, and identify which ecosystems have the ability to adapt to coastal inundation through migration. This information is crucial to inform the process of biodiversity offset and adaptation planning.

¹² Department of Sustainability and Environment, *Future Coasts* (2010) <<http://www.climatechange.vic.gov.au/Greenhouse/wcmn302.nsf/childdocs/-0A075FE0F68F56D6CA2575C40007BF74-A2C8013E5CEDE429CA25766D0016E286>> at 2010.

¹³ State of Victoria, *Vicmap Data Service Providers* (2007) <<http://www.land.vic.gov.au/vicmapdsp>> at 8 February 2010.

¹⁴ Coastal Climate Change Advisory Committee, above n 2.

¹⁵ Buxton M, (2003) *The Land use planning system: potential problems for biodiversity*, above n 7, 5.

¹⁶ Coastal Climate Change Advisory Committee above n 2, 161.

Stage 2: Determine statewide priorities for growth areas and biodiversity

Once current settlements and biodiversity priority areas along the coast have been mapped, the Government should review and map the areas where species within biodiversity priority areas could move to once sea level rise commences.

We agree with the CCCAC concern that human population should not be intensified within vulnerable areas.¹⁷ Vulnerable settlements will require suitable inland areas to move to that will not be inundated, preferably close to existing settlements. Similarly, vulnerable native flora and fauna will require suitable space to move to where possible.

In order to map suitable areas for future biodiversity protection, data on the new coastline (after sea level rise) should be combined with data identifying which land is suitable for settlement along the new coastline and data on areas that may support biodiversity. Protected areas, public and private land that has intact native vegetation and cleared land that is suitable for revegetation should all be identified.

Stage 3: Strengthen coastal settlement boundaries

New coastal urban development, particularly in rural areas, presents a real and foreseeable risk of permanent loss of habitat, biodiversity and coastal spaces. Suggestions have been made that a legislated settlement boundary should be introduced.¹⁸

Our key recommendation in this submission is that the Victorian Government develop a legally binding Coastal Growth Boundary mechanism, whose operation would combine the policy basis of the current coastal settlement boundaries with the legislative reinforcement of Melbourne's Urban Growth Boundary ('UGB').

This would create a series of boundaries around coastal settlement that provide clear and permanent protection for coastal spaces. Future settlement will be focused into appropriate areas above the expected sea level rise, as opposed to along the coast which will squeeze out biodiversity and natural landscapes. This boundary should be based on a review of the mapping and identification of suitable settlement areas identified in stage 1 and 2 above, as well as the current boundaries. Unlike the current coastal settlement boundary, but as with the urban growth boundary, the Coastal Growth Boundary should be contained in legislation and therefore be legally binding, except where an alteration is approved both houses of Parliament. This recommendation is discussed in more detail below.

Why is this necessary?

Victorian coastal policy states that coastal settlements should be confined within existing settlement boundaries in order to protect coastal values. The combined scarcity and popularity of coastal land will continue to cause increasing pressure on decision-makers to allow development to proceed in inappropriate and low lying areas.¹⁹ As the Future Coasts process demonstrates, the Victorian Government does not intend for planning decisions to simply proceed in a 'business as usual' fashion without regard to future sea levels.

¹⁷ Ibid.

¹⁸ Department of Sustainability and Environment, Coastal Spaces Recommendation Report (2006) <<http://www.dse.vic.gov.au/DSE/nrencm.nsf/LinkView/F04AEE35C8BD0DC4CA256FA8007F8D8FECB889FC23A66A6ECA256F94000CA543>> at May 2010.

¹⁹ Victorian Coastal Strategy, above n 8.

The EDO and VNPA submit that the most effective way to give coastal ecosystems the greatest chance of adapting to unprecedented change is to prevent inappropriate coastal urbanisation. That is, to allow development to proceed in specified areas in a planned manner, and as a result to maximise the probability of successful adaptation.

The CCCAC Issues and Options Paper discussed the pressures that will be placed on coastal biodiversity, including:

1. an illustrative example of “coastal squeeze” in which the infrastructure in place to protect a road blocks the retreat of a Saltmarsh and Mangrove community.²⁰
2. the conflicting pressures and competing demands on limited resources regarding climate change adaptation. The words of the CCCAC express this as follows:

“The implication being that early adaptation in planning decisions will reduce the demand on resources and be more cost efficient.”²¹

Existing Coastal Settlement Boundaries

The Victorian Coastal Strategy (**VCS**) aims to establish clear boundaries around coastal settlements. Part 4.2 of the VCS directs that coastal settlement boundaries will be incorporated into planning schemes by 2010. This section of the VCS focuses on the idea of preventing urban sprawl by clearly defining boundaries around coastal settlements and refers to the DSE Coastal Settlement Boundaries Planning Practice Note (October 2006).

With respect to limiting coastal urban sprawl, policy aims 1-5 read:

1. Identify a clear settlement boundary around coastal settlements to ensure that growth in coastal areas is planned and coastal values protected. Where no settlement boundary is identified, the extent of a settlement is defined by the extent of existing urban zoned land and any land identified on a plan in the planning scheme for future urban settlement.
2. Ensure coastal settlements and growth are appropriately planned and managed by:
 - supporting a network of diverse settlements as outlined within the Coastal Settlement Framework to provide for a broad range of opportunities and diversity;
 - implementing and reviewing coastal settlement boundaries as part of the settlement planning process, consistent with the Coastal Settlement Boundaries Planning Practice Note, and having regard to the best available information on sea level rise and climate change risks and impacts;
 - implementing the Coastal Spaces Landscape Assessment Study, State Overview Report, 2006 into relevant planning schemes;
 - directing residential, other urban development and infrastructure within defined settlement boundaries of existing settlements that are capable of accommodating growth;
 - encouraging urban renewal and redevelopment opportunities within existing settlements to reduce the demand for urban sprawl.

²⁰ Coastal Climate Change Advisory Committee, above n 2, 31.

²¹ Ibid.

3. Maintain existing non-urban breaks between all coastal settlements to support community identity, sense of place and limit urban sprawl.
4. Avoid linear development along the coastal edge and major transport routes and within rural landscapes to preserve areas between settlements for non-urban use.
5. Retain non-urban uses between settlements and protect visually significant landscapes, views and vistas.²²

Clause 15.08 (State Planning Policy Framework) of the Victorian Planning Provisions (**VPP**) states that a clear coastal settlement boundary should be applied around existing settlements. Where a boundary has not been established the boundary should be defined by the existing zones. The 2006 DSE VPP practice note 'Implementing a Coastal Settlement Boundary' describes how boundaries are implemented. Settlement boundaries are contained within the local planning scheme, in particular, they are found within objectives, strategies and framework plans of coastal councils' Local Planning Policy Framework.²³ Boundary amendments come under the same approval process as any other planning scheme amendment.

In regard to reviewing coastal settlement boundaries, the 2006 DSE Practice Note 'Implementing a Coastal Settlement Boundary' indicates:

"There may be a need to review a coastal settlement boundary over time due to emerging information about the environmental values of an area, increased infrastructure capacity or other strategic considerations.

Any change to a coastal settlement boundary should be the product of a comprehensive strategic review. This will involve assessment of progress against the established coastal settlement boundary in the context of other planning issues arising across the municipality. The extent of the review will depend on the issues to be addressed."²⁴

Ministerial Direction no 13, 'Managing Coastal Hazards and the Coastal Impacts of Climate Change', provides guidance to Responsible Authorities as to what must be included in an explanatory report where a planning scheme amendment would have the effect of rezoning land from non-urban to urban use.²⁵

The cumulative policy structure created by these mechanisms amounts to a process where decisions to rezone non-urban land to urban rely on the restraint of the planning system in individual cases. Not all coastal planning schemes contain reference to climate change and where they do there is variation in the choice of local policy mechanisms through which they are implemented. Responsible authorities may lack the resources and expertise to apply individual Coastal Hazard Vulnerability Assessments into the future reviews of boundary locations.

Bass Coast Council provides an example of how this boundary has been applied. This is discussed in Section 5.3 of the CCCAC Issues and Options Paper.²⁶ Bass Coast Planning Scheme Municipal Strategic Statement includes *Clause 21.05 – Settlement*. This contains strategic objectives for decisions on where

²² Victorian Coastal Strategy, above n 8, 60.

²³ Department of Sustainability and Environment, *Implementing a Coastal Settlement Boundary: VPP Practice Note* (2006) <<http://www.dse.vic.gov.au/DSE/nrenpl.nsf/LinkView/A43412BBE06AAD9BCA25733800838956F6AD6161A7CF8626CA2572FF00260672>> at October 2006, 3.

²⁴ Ibid.

²⁵ Justin Madden, Minister for Planning, *Planning and Environment Act 1987* (Vic) Section 12(a) Direction no 13, *Managing Coastal Hazards and the Coastal Impacts of Climate Change*, 18 December 2006.

²⁶ Coastal Climate Change Advisory Committee, above n 2, 59-61.

new coastal settlements should be located. A map included in that clause categorises towns into a "Settlement Hierarchy".²⁷ The settlement boundary is then contained in the Structure Plan for each settlement. When a Structure Plan is approved it is made an incorporated document in the Bass Coast Planning Scheme. New urban developments should only be approved where:

- the relevant Structure Plan identifies the area as being within a future settlement boundary, and
- this has been incorporated into the Planning Scheme, and
- where staging of the development extends to areas approved in a development plan approved by council.

Amendments to a boundary (if one has been drawn) are made by amending the Structure Plan or Municipal Strategic Statement, whichever applies.

Coastal settlement boundaries are not defined in the *Planning and Environment Act 1987* (Vic). If a settlement boundary exists it is found in the Local Planning Schemes, through Township Zones or various Residential Zones, and possibly a strategic settlement boundary as described above.²⁸ Therefore, as boundaries are defined by strategic documents of the responsible authority, changes to the current boundary rely to a large extent on decision-making in individual cases.

Cases such as the recent Point Lonsdale Waterways Development (see Appendix 1) indicate the uncertainty posed by this process of dealing with new settlement on an individual basis.

The lack of a strict legislative mechanism to prevent approval of settlements in undeveloped coastal areas results in conflict between Victorian coastal policies and the planning process. That is, the planning process is being relied upon to enforce a boundary which the system does not necessarily have the rigidity or resources to support. This conflict is creating an immediate threat to what is now a limited amount of biodiversity.

Recommendations for implementing this stage

If planning decisions are informed by future sea level, current biodiversity priority areas and future migration pathways of species, coastal development should be able to proceed in selected growth areas that do not hinder the adaptation of biodiversity.

The impact of coastal climate change necessitates that a Coastal Growth Boundary be established by amendment to the *Planning and Environment Act 1987*. A legislative Coastal Growth Boundary would be similar in operation to Melbourne's UGB.

As is the case for the UGB, alteration of the location of the Coastal Growth Boundary should only be done through a planning scheme amendment (that is, public exhibition, consideration of public submissions, possible panel hearing, adoption by the planning authority, approval by the Minister)²⁹ as well as the additional burden of parliamentary ratification.³⁰

²⁷ Bass Coast Shire Council, *Bass Coast Planning Scheme: Clause 21.05-1* (2010) < <http://www.dse.vic.gov.au/planningschemes/basscoast/home.html> > at 18 February 2010.

²⁸ State of Victoria, *State Planning Policy Framework* (2010) [6] < www.dse.vic.gov.au/planningschemes/aavpp/15_sppf.pdf > at 18 December 2008.

²⁹ *Planning and Environment Act 1987* (Vic), Part 3.

³⁰ Sections 46AF-AM of the *Planning and Environment Act 1987* (Vic) contain the procedure for approval of a decision to alter the location of the Urban Growth Boundary.

In accordance with the VCS and 15.08 of the VPP,³¹ we recommend that the location of a legislated Coastal Growth Boundary be decided with reference to:

- current settlement boundaries;
- 2100 sea level estimates of at least 0.8 metres; and
- the need to target future settlements away from areas that will block key biolinks or result in future losses of biodiversity through coastal squeeze.

We agree with suggestions that statewide strategic land use planning should be pursued as a priority.³² Whilst we note the CCCAC recommendation that change proceed slowly in this early phase,³³ this boundary should be implemented as soon as possible to ensure that coastal biodiversity does not get locked into the coastal strip due to coastal squeeze in the next 15 years and as a result be unable to adapt to sea level rise. The urgency and importance of these matters necessitates that the designation of Coastal Growth Boundaries be driven through a centralised body.

Stage 4. Zoning outside of coastal settlements

The identification of coastal growth areas and a permanent Coastal Growth Boundary (as described in Stage 1 to 3 of this submission) will encourage development in appropriate coastal areas. Any new settlements would be made in accordance with the VCS, and located in a strategically planned manner in accordance with established biodiversity priorities.

However, even with a Coastal Growth Boundary in place to contain coastal settlement, careful planning and management of land will be required on coastal land outside the boundary to ensure existing and new land uses are not detrimental to the future location of biodiversity.

Careful zoning of land outside the Coastal Growth Boundary will have two positive impacts on biodiversity:

1. ensuring that non-urban development does not impinge on existing priority biodiversity areas and the ability of ecosystems to adapt to climate change, particularly sea level rise; and
2. minimising development which will eventually require protection from sea level rise, thereby reducing the strain on resources and allowing more investment in other adaptation measures such as protection of biodiversity.

The EDO and the VNPA agree with the CCCAC suggestion that implementation of an urban growth boundary-style approach would necessitate the development of a new VPP zone to regulate land use outside the boundary.³⁴ To this extent, we propose that a new zone be developed, and have provided discussion of the restrictions and guidelines that would be necessary to ensure coastal and marine ecological integrity is ensured.

Why is this necessary?

Inappropriate non-urban use and development outside coastal settlement boundaries will likely threaten the last remaining examples of valuable coastal or adjoining marine species and ecological communities.

³¹ Victorian Coastal Council, above n8; State Planning Policy Framework Clause 15.08, *Environment – Coastal*, at 6.

³² de Wil E, Webb R, *Planning for coastal climate change in Victoria*, (2010) 27 EPLJ 23, 33.

³³ Coastal Climate Change Advisory Committee, above n 2, Chapter 12.

³⁴ *Ibid*, 110.

A new zone can be used to provide transparency and consistency for future coastal land uses, when compared to relying on a variety of existing zones and instruments.

Although this submission focuses on protection and adaptation of coastal biodiversity, we support the CCCAC proposal for a “Coastal Transition Zone” (CTZ) within coastal townships.³⁵ The use of a CTZ within settled areas would provide increased certainty and flexibility, and as a result would decrease pressure for development to be placed in areas necessary for future coastal biodiversity adaptation. This process could facilitate the removal of old and inappropriate zones, and should be driven by the centralised process described in stages 1-3 of this submission.

Recommendations for implementing this stage

The EDO and VNPA submit that a specific ‘coastal protection zone’ should be developed and applied to undeveloped coastal areas to cater for the unique value and character of coastal areas. The zone should apply to areas outside the Coastal Growth Boundary. This zone could be used to manage areas identified as key areas for future biodiversity adaptation or migration. This would provide certainty to landholders as to the development potential of their land. A zone would also allow current land use to continue and private ownership and land management to be maintained.

The areas to which this zone would be applied are unlike other Victorian land areas in that they will be subject to the impact of sea level rise within the near future. The risks within this zone will require particular criteria to be met before a permit should be granted to allow a property to be used for any permanent residential development.

In order to ensure that coastal biodiversity, open space and significant landscapes are maintained, it is crucial that the minimum size of any subdivision that would be permitted by this zone is restricted to preserve the remaining open spaces on the Victorian coastline. If any residential development is permitted within this zone then it should be contained within a minimum subdivision area specified in a schedule to this zone, or of at least 40 hectares where there is no minimum specified within the schedule.

Decision guidelines could be included within this zone to provide certainty to responsible authorities as to the mandatory considerations required before a permit is granted for a land use within this zone. Decision guidelines could apply to decisions to allow a land use for a period of not more than 10 years.

It is expected that significant pressure will be placed on marine and estuarine habitats with respect to artificial structures designed to protect human infrastructure. We support the extension of planning schemes seaward of their current boundaries and into marine areas where this is supported with new marine-specific zones that provide strict planning restrictions and sufficient guidelines to allow proper consideration of the impact of new developments on marine species, as well as climate adaptation infrastructure such as sea walls.

Stage 5: Other planning tools

Additional planning controls in biodiversity priority areas

Any planning scheme containing overlays that do not account for climate change and future coastlines does not protect coastal and marine ecological integrity. As previously discussed in this submission, planning in coastal areas should proceed on a platform of avoiding new development in inappropriate areas, and protecting coastal and marine ecological systems by acting early to plan for the protection of coastal ecosystems.

³⁵ Ibid, 179.

The EDO and VNPA agree with the recommendations of the CCCAC that many of the overlays which are currently used will provide useful mechanisms when planning for the changes that will occur as a result of climate change.³⁶ In particular we support the CCCAC's suggestions on the use of Vegetation Protection Overlay, Environmental Significance Overlay and on the use of the Public Acquisition Overlay to maintain public space and reserves.³⁷

Use of existing overlays

As discussed in Stage 1 of this submission, it is highly desirable that decisions on the location of boundaries, zones and overlays are accompanied by sound knowledge of key biodiversity priorities, as well as being based on a presupposition that coastal ecosystems will be provided with the maximum space required to adapt to the impacts of climate change.

The information produced by the Victorian Government Future Coasts program will provide an opportunity for minor realignment of existing overlays, where they are identified as inappropriate based on current knowledge. This process should be driven by a central authority and decisions should be made in order to maintain marine and coastal ecological integrity based on an estimate of the coastline in 2100.

It is submitted that at least two new overlays will be required in order to properly account for both the natural coastal areas and the developed coastal areas which exist within the expected inundation areas, which require starkly different planning considerations. The impacts of sea level rise, as well as increased desire to live near the coastline, mean that natural coastal areas should be subject to different considerations than many inland protected areas.

Planning to provide appropriate offsets for biodiversity and public land lost by inundation could include the use of the Public Acquisition Overlay, and other overlays that have been suggested by the CCCAC.³⁸

New coastal specific overlays

If planning controls are to provide proper protection to coastal and marine ecological integrity, the seaward limit of planning schemes should be extended below low tide mark in order to allow a similar mechanism to be placed over vulnerable coastal ecosystems such as mangroves and mudflats.

In many areas new overlays to deal with emerging coastal hazards will be required. Under the Tasmanian proposal included within the 2010 CCCAC Issues and Options Paper, development within dune systems and within 50 metres of a tidal flat, lagoon or estuary would be prohibited. All other development (apart from modifications to existing buildings) would require a permit and the granting of that permit would be at the council's discretion.³⁹

Planning scheme overlays which should be considered by the CCCAC include:

- coastal management overlay;
- coastal hazard overlay; and
- sea level rise overlay.

³⁶ Coastal Climate Change Advisory Committee, above n 2, Section 8.3.4.

³⁷ Ibid, 62-3.

³⁸ Ibid.

³⁹ Ibid, 129.

The CCCAC Issues and Options paper mentions a policy-neutral restructure of the State Planning Policy Framework under Settlement, which would seek to avoid development on primary coastal dunes and low lying coastal areas.⁴⁰ The development of a Coastal Management Overlay would provide certainty to landholders and give local authorities a method for defining areas where development will be prohibited.

Stage 6: Provide protection for key biodiversity priority areas to buy time for adaptation

As discussed in Stage 1, the adaptation rates of many marine and coastal species are unknown. Where coastal ecosystems and protected areas are identified to be of very high value then interim measures should be taken to prevent their destruction. This should be done in a manner that will preserve habitat until steps can be taken to either translocate the population or to provide biolinks to allow the migration of the community.

The use of artificial structures in the marine environment has profound implications for marine species. Sea walls and other protection infrastructure should be designed to mimic natural structures as much as possible to allow greatest biodiversity protection. For example, the construction of a sea wall before an estuary will impact the salinity of the estuary. Conversely, some estuarine environments will be impacted by an increase in salinity due to rising sea levels. The need to appropriately design and locate protection structures should at the very least be reflected in any design and development guidelines associated with coastal areas.

The concept of artificially maintaining an ecosystem which has been threatened by human action whilst a more permanent solution is being sought is a well established and necessary practice. In the Murray-Darling Basin the Commonwealth Department of Environment, Water, Heritage and the Arts' 'Environmental Watering' program aims to provide water to key wetland ecosystems to keep them functioning until over-extraction can be addressed permanently.⁴¹ A panel of scientific experts advises on the best locations and uses for the environmental water allocations. Rather than being a permanent environmental solution, this is an example of a necessary interim measure without which the ecosystems would not survive and therefore any long-term strategy would be worthless.

Not all initiatives under this stage relate specifically to planning, however the Victorian Government should consider which planning and other complementary measures should be taken to allow priority biodiversity to remain in situ for as long as possible. This may include consideration of sea walls or other barriers to prevent inundation of key biodiversity priority areas, translocation of priority species and building of infrastructure to facilitate the movement of fauna to inland areas.

⁴⁰ Ibid, 59.

⁴¹ Australian Government Department of Water Environment Heritage and the Arts, *Commonwealth Environmental Water Holder* < <http://www.environment.gov.au/water/policy-programs/cewh/index.html> > at 22 April 2010.

CONCLUSION

Victorian coastal policy changed dramatically in 2008 and as a result, some land holders and developers who planned to seek planning scheme amendments to change land uses and enable new residential developments are no longer able to do so. Despite this, with each amendment or approval, biodiversity continues to lose out in an ongoing battle for space and resources on the coast.

If coastal and marine ecological integrity is to be maintained then future urbanisation of coastal areas will need to be strictly controlled.

In order to achieve this aim, we suggest that the Victorian Government immediately implement a legislative-based settlement boundary in order to prevent coastal sprawl and coastal squeeze from detrimentally affecting biodiversity and natural landscapes. This submission promotes the strengthening of the coastal settlement boundaries that have been implemented since the 2008 VCS in the form of a Coastal Growth Boundary.

Other planning mechanisms such as a Coastal Protection Zone should also be implemented as strategic mechanisms to reduce speculation in low-lying and sensitive coastal and marine areas, and to prevent coastal and marine biodiversity disappearing completely from Victoria.

If any coastal and marine ecological integrity is to survive the combined effects of human development and climate change, then any changes to the planning system must be made early.

APPENDIX 1 – CASE STUDY

Point Lonsdale Stockland Residential and Waterways Development

The Point Lonsdale Stockland Residential and Waterways Development is a recent example that demonstrates a lack of correlation between State coastal policy and planning decisions, and the inappropriate development that can occur when strong legal protections are not imposed.

On 22 April 2010 the Minister for Planning announced the approval of a \$330 million dollar 'green fields' residential subdivision adjacent to Point Lonsdale.⁴² The development will be a canal-style estate of approximately 600 lots, located on low-lying coastal land which currently adjoins Port Phillip Bay via a large artificially constructed tidal lagoon.⁴³

The opposite boundary of the site is in close proximity to an overflow from Lake Victoria. In extreme events flood waters overflow from Lake Victoria, and sea water and storm water may also run over the site. The site is marked by seasonally inundated holes which serve as a reminder of the site's history as an extractive industry site. It also hosts lakes, canals, and swamps, some of which were (partially) constructed as part of unsatisfied conditions from a previous residential development in the late 1980s. The residential dwellings will sit on soil consisting of Quaternary sand dunes, ancient swamp beds, and fill taken from the existing swamp system.⁴⁴ The lagoon that joins the land to Port Phillip Bay will be widened as part of the development. An excerpt from the EES panel report site description reads:

"The site is in a low lying coastal area, part being below sea level, and some of which is subject to occasional inundation by stormwater or seawater."⁴⁵

The VCS states that it is policy to prohibit new canal-style estates because they 'can have major adverse impacts on the host estuary, causing loss of habitat, polluting estuarine waters by urban runoff and boating activities and disturbing coastal acid sulfate soils.'⁴⁶ Canal estates are defined as 'any development that requires a constructed waterway, canal or water body that is then inundated by or drains to a natural water body'. In this project the artificial canals that are to be expanded and deepened will join the coast through an artificial canal that already exists, but will be widened as part of this project.

In order to distinguish this residential development from the prohibition in the VCS, the Minister's Report relies on an unconvincing distinction between what is prohibited by the VCS and the project, i.e. that the canals in the project drain into an artificial canal which then drains into a natural water body, as opposed to draining directly into a natural water body.⁴⁷ The Minister's distinction has resulted in approval of a residential waterways estate within an area subject to existing coastal inundation.

⁴² Victorian Government Minister for Planning Press Release, '\$330 Million Residential Development for Port Lonsdale', 22 April 2010. Available at <http://www.premier.vic.gov.au/component/content/article/10101.html>.

⁴³ Ibid.

⁴⁴ EES Inquiry Report, *Greater Geelong Planning Scheme: Amendment C150 and PP673/2007 Stockland Waterways and Residential Development Point Lonsdale*,

Report of the Panel, 12.

⁴⁵ Ibid, 2.

⁴⁶ Victorian Coastal Strategy, above n 8, Section 2.2.

⁴⁷ *Stockland Residential and Waterways Development, Point Lonsdale*, EE Act Assessment Report, Minister for Planning, January 2009, 22.