

## Criteria definitions – Conservation Zones Review

### Summary of Criteria

The numbers in the table are a score based on weighting of environmental value criteria and hazard criteria across the C2 Environmental Conservation, C3 Environmental Management (non-urban and urban) and C4 Environmental Living zones.

High Environmental Value criteria and Hazard criteria have a weighting of 1 each. Medium Environmental Value criteria have a weighting of 0.5 each. The minimum score required to assign land to either the C2, C3 or C4 zones is 1.

Criteria	C2	C3 Non- urban	C3 Urban	C4
<b>Area considered</b>				
Low Density Residential Area			Yes	Yes
Rural Area	Yes	Yes		
Land within an RE1 or C2 zone	Yes			
<b>High environmental value criteria</b>				
Conservation Mechanism	1			
Existing C2 Environmental Conservation zones	1			
Natural Open Space	1			
Biodiversity Core Habitat		1		1
Threatened Ecological Communities		1		1
Threatened Species Habitat - Selected		1		1
Deferred Lands Biodiversity – Threatened Ecological Communities (TECs)		1		
Deferred Lands Biodiversity - Very High Value		1		
Deferred Lands Biodiversity - High Value		1		
Wetlands		1		1
Riparian Corridor Category 1		1		1
Riparian Corridor Category 2		1		1
Transitional Areas				1
Heritage Conservation Areas				1
<b>Medium environmental value criteria</b>				
Biodiversity Corridor and Urban Tree Canopy				0.5
Geotechnical Planning Class: C3 Hawkesbury Sandstone with Slope > 25 degrees or C5 Narrabeen Group with Slope > 15 degrees				0.5
Ridgeline or Escarpment				0.5
<b>Hazard criteria</b>				
Bush Fire Prone Land – Vegetation Category 1		1	1	
Deferred Lands Bush Fire Intensity		1	1	
Coast and Estuarine Hazards		1	1	
High and Medium Flood Risk		1	1	
Low Flood Islands		1	1	
Geotech Coastal Cliffs		1	1	
<b>Minimum Score Required</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>

## Land Considered – summary of data

Land Considered	Data Description
Low Density Residential Area	This includes urban land identified on Council's land zoning maps for the Pittwater LEP 2014, Warringah LEP 2011 and Manly LEP 2013 on lands zoned: R2 Low Density Residential; R5 Large Lot Residential; C3 Environmental Management, C4 Environmental Living and RU2 Rural Landscape lots that do not fall within the non-urban area (e.g., Warriewood). It also includes the R2 Low Density Residential zone in Terrey Hills, which is a non-urban area, as the characteristics of this area are like those found in the former Warringah LEP 2011 R2 zones.
Rural Area	Non-urban Areas include the Deferred Lands, under the Warringah LEP 2000, where only low-density development is permitted. It also includes areas zoned for rural or conservation purposes, including areas of Belrose, Terrey Hills, Duffys Forest, Ingleside, Cottage Point and offshore communities including Scotland Island, Elvina Bay, Great Mackerel Beach, Coasters Retreat and Morning Bay. Council's non-urban lands comprise the Metropolitan Rural Area (MRA), future MRA investigation area and Ingleside, which is no longer designated as a growth area due to the decision of the Department of Planning in 2022 not to proceed with the draft Ingleside Place Strategy. LEPs and Zones considered were: <ul style="list-style-type: none"> <li>• WLEP 2000 Deferred Lands</li> <li>• PLEP 2014 RU2, C3, C4 and R5 zones</li> <li>• WLEP 2011 RU4, C3, C4 and R5 zones</li> </ul>
Park or Conservation Area	Land zoned either RE1 Public Recreation or C2 Environmental Conservation.

## Hazard Criteria – summary of data

Criteria – Hazards	Data Description
Bush Fire Prone Land – Vegetation Category 1	Land identified on the Northern Beaches Bush Fire Prone Land Map as having the highest risk for bush fire. This excludes the 100m vegetation buffer. This map is prepared in accordance with the Guide for Bush Fire Prone Land Mapping and certified by the Commissioner of the NSW RFS under Section 10.3(2) of the <i>Environmental Planning and Assessment Act 1979</i> . Source: Northern Beaches Bush Fire Prone Land Map 2020.
Deferred Lands Bush Fire Intensity	Areas where high and very high fireline intensities (over 30,000kW/m <sup>2</sup> ) are likely in a fire event. Source: Deferred Lands Strategic Bush Fire Assessment.
Coastal and Estuarine Hazards	A new proposed estuarine inundation map for inclusion in the Northern Beaches LEP/DCP. Sources: Cowan Creek Estuary Planning Level Study (coastal inundation) and North and Middle Harbour Estuary Planning Level Study (coastal inundation). It also includes land identified as coastal hazards (inundation, erosion, and bluff) in existing adopted planning controls and reports.
High Flood Risk Area	High Risk areas are defined as areas where there is high hazard flooding in a 1% Annual Exceedance Probability (AEP) flood scenario (equivalent to the 1 in 100-year flood). In these areas during the peak of a 1% AEP flood, the depth and velocity of floodwaters result in potentially significant issues to safety, evacuation, and structures. Source: Adopted Flood Studies.
Medium Flood Risk Area	Medium flood risk is also known as the Flood Planning Area. It is defined as flood prone land which is affected by the 1% Annual Exceedance Probability (AEP) flood (equivalent to the 1 in 100-year flood) with a freeboard safety factor or buffer) added. Source: Adopted Flood Studies.
Newport Low Flood Island and Manly Low Flood Island	A low flood island is an area where access routes are inundated by flood waters before the “island” is then submerged by the flood. They are dangerous because residents are often not aware that evacuation routes are flooding until it is too late. Low flood islands have only been used for C3 mapping if they were mapped in a Flood Study adopted by Council for a 1% Annual Exceedance Probability (AEP) flood scenario (equivalent to the 1 in 100-year flood). Sources: Newport Flood Study 2019 and Manly Lagoon Floodplain Risk Management Study & Plan 2018.
Geotechnical Coastal Cliffs	For land along the coastline which have slopes greater than 45 degrees, this buffer extends 20 metres inland from the crest of the steep slope or cliff, and downslope to the mean water level. Headlands are mostly near vertical cliff faces (coastal bluffs) formed within rocks of the Narrabeen Group. Studies have indicated that the overall erosion of the cliff faces is relatively slow (in human terms rather than geological time) but there is the potential at any stage for large sections of the cliff faces to collapse due to erosion and undercutting. Source: Geotechnical Review - Geotechnical Planning Controls.

## High Environmental Value Criteria – summary of data

Criteria – High environmental value	Data Description
Biodiversity Core Habitat	Areas of contiguous native vegetation, generally at least 3.5 hectares in area. Biodiversity Core Habitats are most representative of the original structure of natural areas and provide important habitat for threatened species. May include small areas of cleared or developed land. Source: Biodiversity Planning Review.
Threatened Ecological Communities (TECs)	<p>Thirteen TECs listed under the <i>NSW Biodiversity Conservation Act 2016</i> (BC Act) were identified within the Northern Beaches LGA. Of these, seven TECs were also listed under the Commonwealth Environment Protection and <i>Biodiversity Conservation Act 1999</i> (EPBC Act). Source: Biodiversity Planning Review.</p> <p>Within the Deferred Lands, five different TECs listed under the NSW BC Act and/or EPBC Act are identified as occurring in the deferred lands. Source: Deferred Lands Biodiversity Assessment.</p>
Threatened Species - Selected	Twenty-five threatened species listed under the BC Act and/or EPBC Act were mapped within the LGA, including: twenty-one threatened flora species listed under the BC Act, thirteen of which are also listed under the EPBC Act; and four threatened fauna species listed under the BC Act, one of which is also listed under the EPBC Act. Selected features of the threatened species mapping were considered in the conservation zones criteria. Source: Biodiversity Planning Review.
Deferred Lands Biodiversity - Very High Value	This includes areas adjoining protected bushland (National Parks estate), threatened species habitat (e.g., recent records of threatened flora and fauna), TECs and riparian habitat along larger creeks. Source: Deferred Lands Biodiversity Assessment.
Deferred Lands Biodiversity - High Value	Threatened species habitat (e.g., recent records of threatened flora and fauna), native vegetation (native Plant Community Types (PCTs)), habitat connectivity (large areas of habitat connecting to other large patches), riparian habitats along creeks. Source: Deferred Lands Biodiversity Assessment.
Conservation Mechanism	This could include lands with bio-certification agreements, stewardship agreements, conservation covenants or court approval requirements. Current mapping includes Council records of known Biobank Sites and Biodiversity Stewardship sites. Source: Council records.
Existing C2 Environmental Conservation zones	Land currently zoned for environmental protection where strict controls on development apply. Source: Manly LEP, Warringah LEP 2011 and Pittwater LEP.
Wetlands	Wetlands comprise natural and artificial wetlands, including marshes, mangroves, backwaters, billabongs, swamps, sedgeland, wet meadows or wet heathlands. This includes the estuarine wetlands of Careel Bay and Pittwater, freshwater wetlands at Warriewood and coastal floodplain wetlands lining the four coastal lagoons at Narrabeen, Dee Why, Curl Curl and Manly. Many wetland habitats are now recognised as endangered in NSW, emphasising the need for ongoing conservation. Source: Watercourse, Wetland and Riparian Lands Study.

Criteria – High environmental value	Data Description
Riparian Corridor Category 1	Riparian corridor that potentially supports relatively intact native vegetation and habits within a nominated width measured from the edge of the channel. Riparian corridors comprise the nominated terrestrial environment adjoining the watercourse channel to be managed to support waterway functions, values, and long-term use and to address risks associated with waterways. Source: Watercourse, Wetland and Riparian Lands Study.
Riparian Corridor Category 2	Riparian corridor that potentially supports disturbed lands within a nominated width measured from the edge of the channel. Riparian corridors comprise the nominated terrestrial environment adjoining the watercourse channel to be managed to support waterway functions, values, and long-term use and to address risks associated with waterways. Source: Watercourse, Wetland and Riparian Lands Study.
Transition Areas	Analysis using Nearmap to identify properties that adjoin waterways, reserves with high environmental value, national parks, beaches, and headlands. This generally includes properties separated by a reserve or any unmade roads, but not properties separated by a road or car park. Source: Nearmap analysis.
Natural Area	Natural areas and State Parks identified in Council's Open Space and Recreation Strategy. This map was further refined to identify portions of parks and reserves managed for conservation and natural areas within adopted plans of management and a review of those lands currently zoned RE1 Public Recreation and associated uses. Source: Open Space Audit.
Heritage Conservation Areas	<p>The following heritage conservation areas were found to have high environmental value:</p> <ul style="list-style-type: none"> <li>• Warringah LEP Conservation Areas: <ul style="list-style-type: none"> <li>• Cottage Point: Waterfront Cottages (item C4)</li> <li>• South Curl Coastal Cliffs (item C14)</li> </ul> </li> <li>• Pittwater LEP Conservation Areas: <ul style="list-style-type: none"> <li>• Palm Beach: Florida Road (Item C3)</li> <li>• Palm Beach: Ocean Road (Item C4)</li> <li>• Palm Beach: Sunrise Hill (Item C6)</li> <li>• Avalon Beach: Ruskin Rowe (Item C5)</li> </ul> </li> </ul>

## Medium Environmental Value Criteria – summary of data

Criteria – Medium environmental value	Data Description
Biodiversity Corridor and/or Urban Tree Canopy	Biodiversity corridors identified to facilitate flora and fauna movement across the landscape, providing an important connection to areas of Biodiversity Core Habitat. Source: Biodiversity Planning Review. These areas were considered together with areas of high urban tree canopy. The urban tree canopy data was based on an analysis of Council's 2019 Aerial LIDAR (Light Detection and Ranging) data using the 'urban tapestry' method as outlined in the Greener Neighbourhood's Guide. Areas where tree canopy were greater than 50% within a 100m buffer of a 100m grid were considered when intersected with the Biodiversity Corridor. Source: 2019 Aerial LIDAR data.
Geotechnical Planning Class C3 Hawkesbury Sandstone with Slope > 25 degrees	Land that requires a detailed geotechnical report with most development applications. Slopes developed on Hawkesbury Sandstone are usually relatively stable, the key hazards are the potential for collapse of cliff lines, boulders falling from cliffs caused by weathering of softer layers, root jacking by trees, water pressure along open joints or undermining of large boulders. Source: Geotechnical Review - Geotechnical Planning Controls.
Geotechnical Planning Class C5 Narrabeen Group with Slope > 15 degrees	Land that requires a detailed geotechnical report for most development applications. The rocks of the Narrabeen Group are known to be relatively less stable and weather more rapidly than the Hawkesbury Sandstone. Landslides are relatively common on slopes underlain by the Narrabeen Group rocks, particularly in areas where there have been excavations into the natural slopes or concentrations of stormwater. Source: Geotechnical Review - Geotechnical Planning Controls.
Ridgelines or Escarpment	A 50m buffer was mapped of ridgelines or escarpments which provide scenic landscape values, they are generally vegetated given they have had limited development opportunities over time and thus contribute to the urban ecology. Source: 2019 Aerial LIDAR data.

## Thresholds and exceptions – summary of data

Thresholds and exceptions	Descriptions	Rural Area	Low Density Residential Area
Undeveloped Bushland	Undeveloped bushland sites were identified from an analysis of Nearmap and Council records and reviewed together with maps generated from technical studies.	Site investigated for % cover of High Environmental Value (HEV) Criteria	NA
Excluded Bushland	Sites not identified as 'undeveloped bushland' included sites with key infrastructure (e.g., utilities and schools), heavily cleared sites, sites with poor quality vegetation or sites where vegetation was heavily fragmented.	Site excluded from consideration of % cover of High Environmental Value (HEV) Criteria	NA
Isolated Site	Site or group of 2 sites that meet criteria for a conservation zone but are isolated from other conservation zones.		Site excluded from consideration of conservation zone
Surrounded Site	Site or group of 2 sites below the thresholds for conservation zones but are surrounded by proposed conservation zones.		Site included as a C4 conservation zone
Hazard Criteria Thresholds	<ul style="list-style-type: none"> <li>Bush Fire Prone Land – Vegetation Category 1 affects more than 50% of the site</li> <li>Deferred Lands Bush Fire affects more than 50% of site</li> <li>Coastal and Estuarine Hazards affect the site</li> <li>High Flood Risk Area affects more than 50% of site</li> <li>Both the Medium and High Flood Risk Area affect the entire site</li> <li>Geotechnical Coastal Cliffs buffer affects the site</li> <li>Coastal and Estuarine Hazards affect the site</li> </ul>	Apply to C3 zones	Apply to C3 zones
HEV Criteria Thresholds	<ul style="list-style-type: none"> <li>Site identified as a Transition Area</li> <li>Site identified as a Heritage Conservation Area</li> </ul>	NA	Apply to C4 zones: >50% required
HEV Criteria Thresholds	% Cover of combined map with any of the following: <ul style="list-style-type: none"> <li>Threatened Ecological Communities</li> <li>Riparian Corridor Category 1</li> <li>Riparian Corridor Category 2</li> <li>Biodiversity Core Habitat</li> <li>Wetland Area</li> <li>Threatened Species selected</li> <li>Deferred Lands Biodiversity - Very High or High Value</li> </ul>	Apply to C3 zones: Sites <5,000m <sup>2</sup> , > 50% required  Sites > 5000m <sup>2</sup> Between 30-70% - C3 Split zone applied  >70% - C3 zone applied	Apply to C4 zones: >50% required
MEV Criteria Thresholds	% Cover of combined map with any of the following:	NA	Apply to C4 zones: >50% required

Thresholds and exceptions	Descriptions	Rural Area	Low Density Residential Area
	<ul style="list-style-type: none"> <li>• Biodiversity Corridor and/or Urban Tree Canopy</li> <li>• Geotechnical Planning Class: C3 Hawkesbury Sandstone with Slope &gt; 25 degrees or C5 Narrabeen Group with Slope &gt; 15 degrees</li> <li>• Ridgeline or Escarpment</li> </ul>		