


## VULNERABILITY ASSESSMENT TABLE

# Shipwrecks

This table highlights some of the ways shipwrecks (partially or fully exposed, and submerged) may be vulnerable to the effects of climate change. It is not intended to be comprehensive and the examples of possible management approaches will not be appropriate in all cases. Qualified and experienced heritage specialists should be consulted in undertaking any climate vulnerability or risk assessment of your place or object.





### EXPOSURE — GENERAL

Climate change variables	Key climate change impacts	Sensitivity of the place to climate change impacts	Examples of impacts on the place and its values	Examples of possible management approaches
 <p>Ocean acidification and general change in chemical composition</p>	<p>Changes in material deterioration rate</p> <p>Changes in marine pest distribution</p>	<p>Depends on fabric, and local conditions</p>	<ul style="list-style-type: none"> <li>○ Increase in marine pest infestation leading to material degradation</li> <li>○ Changes in material degradation rate due to acidification</li> </ul>	<ul style="list-style-type: none"> <li>○ Assess risk and consider appropriateness of protecting or relocating at-risk wrecks or artefacts</li> <li>○ Consider further use and more frequent changing of sacrificial anodes to protect metal elements</li> <li>○ Document wrecks and artefacts at risk</li> </ul>




## EXPOSURE — COASTAL

Climate change variables	Key climate change impacts	Sensitivity of the place to climate change impacts	Examples of impacts on the place and its values	Examples of possible management approaches
 <p>Sea-level rise</p>	<p>Worsened coastal flooding, storm surge and coastal erosion that over time can result in permanent inundation of low-lying areas</p>	<p>Depends on terrain and potential defences (e.g. sea wall) – refer to local information</p>	<ul style="list-style-type: none"> <li>○ Potential for inundation and flooding with damage to and destruction of buildings; depending on the elevation of the building, this may be intermittent during high tide and storm surge events (acute) and eventually permanent</li> <li>○ The setting of the building may be impacted</li> <li>○ Salt water may affect construction materials in different ways</li> </ul>	<ul style="list-style-type: none"> <li>○ Retreat: plan for site recording and accept loss or relocation of site where feasible, in consultation with local community</li> <li>○ Protect: add barriers/diversions where possible</li> <li>○ Consider early nature-based solutions such as revegetation of mobile coastal dunes</li> </ul>
 <p>More intense or more frequent storms</p> <p>More extreme rainfall events (acute) leading to riverine floods</p>	<p>Coastal erosion impacts, flooding, erosion and landslips caused by river flows in estuarine locations</p>	<p>Depends on terrain and potential defences (e.g. sea wall) – refer to local information</p>	<ul style="list-style-type: none"> <li>○ Potential for storm damage or destruction of wrecks</li> <li>○ Potential for loss or movement and exposure of wrecks and artefacts during storms and through coastal erosion caused by individual and recurring storm events or changes in river flows caused by flooding</li> </ul>	<ul style="list-style-type: none"> <li>○ Assess risk and consider appropriateness of protecting or relocating at-risk wrecks or artefacts</li> <li>○ Document wrecks and artefacts at risk</li> </ul>



## EXPOSURE — COASTAL *continued*

Climate change variables	Key climate change impacts	Sensitivity of the place to climate change impacts	Examples of impacts on the place and its values	Examples of possible management approaches
 <p>More hotter days (&gt;35°C and &gt;40°C)</p>	<p>Temporary increase in water temperature, especially in shallow water</p>	<p>Exposed wrecks or those resting in shallow water</p>	<ul style="list-style-type: none"> <li>Possible damage to, or destruction of, exposed wrecks, and artefacts</li> <li>Increase in marine pest infestation leading to material degradation</li> <li>Types of material will be affected differently</li> </ul>	<ul style="list-style-type: none"> <li>Assess risk and consider appropriateness of protecting or relocating at-risk wrecks or artefacts</li> <li>Document wrecks and artefacts at risk</li> </ul>
	<p>Bushfires</p>	<p>Exposed wrecks or those resting in shallow water</p>	<ul style="list-style-type: none"> <li>Debris and deposits from bushfires can damage wreck or artefacts, especially those carried away by run-off</li> </ul>	<ul style="list-style-type: none"> <li>Assess risk and consider appropriateness of protecting or relocating at risk wrecks or artefacts</li> </ul>

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