



5.11 HNRS Catchment Companion

The process of developing this CMP has included the identification of a number of actions located across the broader HNRS catchment area. Although these actions sit outside the legally defined coastal zone (see Section 1.2.3) and are therefore not part of the certifiable CMP, they are nonetheless integral to achieving the overarching objectives of estuary health and resilience. Many of the pressures that shape estuarine condition originate upstream in the catchment, through processes such as stormwater inflows, sediment delivery, riparian degradation, and nutrient loading. Addressing these drivers is essential if improvements within the coastal zone are to be sustained over the long term.

For this reason, the HNRS Catchment Companion has been retained in this document as a distinct but complementary set of actions. While delivery will occur outside the formal CMP certification framework, including these actions within this document ensures that critical system linkages are not lost, and that councils, agencies, and stakeholders are provided with a clear picture of the broader management context. By documenting the Catchment Companion within the CMP, this Plan recognises that estuary management cannot be isolated from its catchment context. Although not certifiable, these actions remain critical to the integrated management of the HNRS and to the long-term achievement of the CMP's strategic objectives. This approach aligns with the NSW Government's guidance on *Coastal Management Programs and Integration with Catchment Management* (DPE, 2022).

A summary of the actions within the Catchment Companion are provided in Table 5-10. Maps depicting relevant actions are provided in Appendix B.

Table 5-10 Action Table – The Catchment Companion

CMP Strategy	Implementation Plan	S4 ID	Functional Zone	Locality	Action Name	Action Description	Lead	Support	Priority (Score)	Timing	Performance Criteria
Strategy 2: Monitoring, Evaluation, and Reporting	Collaborative System Implement Plan	S2.CMP.D	Entire HNRS	Upper catchments	Implement a bank stability and condition monitoring program across the creeks and waterways of the catchment	The objective of this action would be to collate and integrate existing bank stability and geomorphic condition monitoring information collected by the Partner Councils across the Hawkesbury River Estuary catchment. Rather than duplicating efforts, this action would focus on bringing together the existing datasets at a system-wide scale to better understand erosion patterns, riverbank health, and key risks across the entire estuary. The collation process would include use of the NSW SEED Portal as a central platform for data sharing and access. By adopting an integrated and coordinated approach, Partner Councils would gain a more holistic understanding of estuary health, identify system-wide priorities, and unlock opportunities for resource sharing and cost efficiencies	CCC, NBC, HSC, KC, THSC, HCC	DCCEEW, NPWS	High (24)	Within 1-4 years	Monitoring undertaken and recorded. Collected data is of tangible benefit from a risk and asset management perspective.
Strategy 3: Resilience, Planning, and Adaptation	Collaborative System Implement Plan	S3.CMP.F	Lower Estuary	Ku-ring-gai Chase National Park	Support the proposal for the development of the Ku-ring-gai GeoRegion	In October 2018, Friends of Ku-ring-gai Environment (FOKE) resolved to initiate a campaign advocating for the UNESCO World Heritage listing of Ku-ring-gai Chase National Park (KCNP). This campaign has since focussed on the development of a designated 'GeoRegion,' which will include the creation of geotrails, signage, and efforts to promote the region's geological significance. The proposal aims to leverage the area's existing recognised values, which include its biodiversity, natural and cultural heritage, as well as its exceptional geological and geomorphological features. These elements have shaped the landscape and created the distinctive traits that make the region globally significant. Once agreed upon by stakeholders, a defined area within the 'Ku-ring-gai GeoRegion' could be put forward for submission as an Aspiring UNESCO Global Geopark. Establishing this GeoRegion and pursuing UNESCO Global Geopark status will provide significant environmental benefits, particularly for downstream estuary health. By preserving and enhancing the region's geological and ecological integrity, the project will support the natural hydrological processes that flow downstream, ensuring better water quality and habitat conditions for estuaries. The protection of this vital landscape will help mitigate erosion, reduce sediment runoff, and preserve natural buffers, all of which contribute to healthier estuarine ecosystems and improve the overall resilience of coastal environments. Relevant stakeholders can offer continued support for the proposal through the provision of technical advice and political support. Note to reword, awaiting NPWS advice - might split into 2 actions?	KC, HSC, NBC	N/A	Low (5)	Opportunistic, within 8-10 Years	Proposal submission advanced with supporting technical and political advocacy.



CMP Strategy	Implementation Plan	S4 ID	Functional Zone	Locality	Action Name	Action Description	Lead	Support	Priority (Score)	Timing	Performance Criteria
Strategy 4: Community & Stakeholder Engagement	Collaborative System Implement Plan	S4.CMP.C	Entire HNRS	Estuary-Wide	Develop and implement a Hawkesbury River school environmental education program focused on water quality, estuary health, and coastal hazards	This Action would be a specialised extension of the broader community and stakeholder education program (S4.CMP.01). It would involve the development and implementation of a coordinated school education program across the HNRS catchment that educates the local school students regarding the unique values of the river system and current and emerging stressors and risks. The program would focus on water quality, estuary health, and coastal hazards. The program may include a curriculum-based program, and/or excursion based learning modules - and could make of the existing environmental education centres that are active across the HNRS catchment.	NSW Department of Education	CCC, NBC, Hornsby Council, KC, THSC, HCC, First Nations Groups, GS LLS	High (24)	Within 1-4 years	Program and materials created, and program implemented.
Strategy 5: Estuary & Waterway Health	Collaborative System Implement Plan	S5.CMP.D	Entire HNRS	Estuary-Wide	Undertake a coordinated creek rehabilitation works program across the Partner Council's upper catchment waterways	This action includes the implementation of a targeted creek rehabilitation works program – with the aim of managing both the spread and introduction of weeds across the foreshore of the four estuaries, and improve the condition of riparian vegetation across the coastal zone. The works program would use this mapping and prioritise weed control in high value riparian areas - prioritising high value riparian areas, particularly those that overlay the presence of weeds with Threatened Ecological Communities (TEC's) using the most relevant Plant Community Type (PCT) mapping available at the time. This will require a “targeting multi-species” approach, along with both follow up control and planting of native vegetation suited to that PCT.	CCC, NBC, HSC, KC, THSC, HCC	DPHI-Planning and Assessment, GS LLS	High (24)	Within 1-4 years	Restoration works successfully implemented.
Strategy 5: Estuary & Waterway Health	Local Implementation Plan: Hawkesbury City Council	S5.HCC.C	Freshwater Tidal Pool	Richmond	Implement the recommendations of the Hawkesbury Floodplain Drainage Review	In 2023, a review was undertaken into the drainage network across the Hawkesbury River floodplains, within the Hawkesbury LGA boundary from Yarramundi bridge in the west down to Pitt Town in the east. The purpose of the study was to identify locations where drainage was inhibited and provide recommendations on site specific solutions for each drainage channel. The broader conclusion is that the condition of the drainage channels has deteriorated over time, resulting in poor drainage and giving rise to further damage to the area in flood events. The deterioration is partly due to failure by landowners or Council to maintain flood mitigation and drainage infrastructure, and partly due to farm works or practices which have changed the topography of the area. The review identified a number of specific Actions for Council to improve drainage across the floodplain. These Actions include: > Action 6: Investigate whether drainage improvements can be made upstream of Pughs Lagoon. > Action 7: Keep pipes clear of debris at Pughs Lagoon > Action 10: Repair or replace floodgates at Cooley Creek > Action 14: Investigate whether drainage improvements can be made at Cooleys Creek and Bakers Lagoon > Action 21: Replace floodgate and repair and stabilise levee at South Creek Implementation of these actions will help restore the functionality of the drainage network, improving water flow efficiency and reducing prolonged inundation following flood events. By addressing blockages, maintaining flood mitigation infrastructure, and ensuring effective drainage, the risk of water stagnation and back-flooding will be minimized. Enhancing drainage across the floodplain will also provide significant benefits to downstream estuary health. Improved water movement will help reduce sediment accumulation, nutrient buildup, and the risk of hypoxic conditions that can lead to fish kills and other ecological imbalances	HCC	N/A	Medium (12)	Within 4-8 years	Works completed.
Strategy 4: Community & Stakeholder Engagement	Local Implementation Plan: Ku-ring-gai Council	S4.KRG.A	Lower Estuary	LGA Wide	Support Community Engagement undertaken as part of the Ku-ring-gai Council – Water Sensitive City Strategy	Action 2.2 of the Ku-ring-gai Council – Water Sensitive City Strategy (WSCS) includes the extension of community engagement programs to educate the community regarding how they participate in environmental protection, advocacy, clean up and celebration, and act on climate change, extreme events, resilient and water sensitive neighbourhoods.	KC	N/A	Medium (12)	Within 4-8 years	Program and materials created, and program implemented.



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Strategy 5: Estuary & Waterway Health	Local Implementation Plan: Ku-ring-gai Council	S5.KRG.A	Lower Estuary	Cowan Creek	Prepare and implement a catchment study and management plan for the Cowan Creek catchment	Catchment runoff from urban areas is a key issue for estuarine water quality across Cowan Creek. Therefore, this option involves undertaking a review of the Council's stormwater assets that discharge into the estuary, in order to identify and prioritise upgrading and maintenance of stormwater assets and infrastructure to improve estuarine health. The plan should analyse the local stormwater network, and identify strategic locations to minimise stormwater pollution using Water Sensitive Urban Design (WSUD) principles. The plan may also include the installation of stormwater infrastructure such as gross pollutant traps (GPTs) and detention basins. This plan should aim to reduce the impacts of urban stormwater runoff on water quality, marine litter, and siltation on the downstream coastal zone waters within Cowan Creek.	KC	NPWS	High (27)	Within 1-4 years	Plan prepared.
Strategy 5: Estuary & Waterway Health	Local Implementation Plan: Ku-ring-gai Council	S5.KRG.B	Lower Estuary	Cowan Creek	Update the catchment studies for Ku-ring-gai Creek and Lovers Jump Creek	This would involve Council undertaking a review and update of the catchment studies for Ku-ring-gai Creek and Lovers Jump Creek. The purpose of these updates will be to incorporate current information regarding catchment land usage, water quality, and the Ku-ring-gai Council – Water Sensitive City Strategy. The updated studies should identify management actions to reduce the impacts of urban stormwater runoff on water quality, marine litter, and siltation on the downstream coastal zone waters.	KC	N/A	High (24)	Within 1-4 years	Study completed.
Strategy 5: Estuary & Waterway Health	Local Implementation Plan: Northern Beaches Council	S5.NBC.C	Pittwater	Careel Bay	Investigate WSUD solutions within the Careel Creek Drainage catchment.	Undertake a planning investigation to identify opportunities to implement Water Sensitive Urban Design (WSUD) approaches within the Careel Creek drainage catchment. Identified WSUD opportunities can be used to help manage the quantity and quality of runoff, improve water quality in Pittwater, and enhance local ecological health around the waterway. This investigation will include site assessments, analysis of current drainage infrastructure, and the identification of opportunities for implementing WSUD solutions.	NBC	DCCEEW	High (27)	Within 1-4 years	Study completed.