

Clarence Valley Coastline and Estuaries

Coastal Management Program

Stage 2: Vulnerabilities and
Opportunities

Appendix 4: Regional Scale Erosion Mapping

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Acknowledgement of Country:

Clarence Valley Council and Hydrosphere Consulting acknowledge the Yaegl peoples, Traditional Custodians of the lands discussed in this Scoping Study and pay tribute and respect to the Elders both past and present and emerging of the Yaegl nations.

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**JOB 22-009: CLARENCE VALLEY COASTLINE AND ESTUARIES COASTAL MANAGEMENT PROGRAM
STAGE 2: VULNERABILITIES AND OPPORTUNITIES**

REV	DESCRIPTION	AUTHORS	REVIEW	APPROVAL	DATE
0	Draft for CVC and DPE review	R. Campbell, J. Fullerton			

APPENDIX 4: REGIONAL SCALE EROSION MAPPING

For the remainder of the coastline not considered in the detailed assessment of erosion and recession, regional scale mapping is available from spatial data developed by Hanslow *et al.* (2016) derived from a volumetric coastal response model applied with a statistical approach to forecast immediate and future coastal erosion and recession based on the approach by Kinsela *et al.* (2016). The First Pass (Proximity analysis) and Second Pass (Regional-scale modelling) assessments have been completed for the NSW coastline, with the latter moving towards a probabilistic framework. The First Pass assessment used a simple proximity analysis to consider potentially erodible sandy coast featuring properties that may be affected by coastal erosion at present or in the future. This used proximity buffers extending 55, 110 and 220 metres landward from open-coast sandy shorelines. The Second Pass assessment used a sediment-compartment templating approach to characterise the morphology and sediment budgets of NSW beaches. This was applied through a probabilistic framework to consider uncertainty in model inputs. It used a Volumetric Beach Response model, where the long-term erosion was calculated based on a sediment budget imbalance between sources and sinks.

Mapping is available for the 2015, 2050 and 2100 timeframes and 50%, 10%, 1% and 0.1% exceedance levels. The approach is intended to provide a consistent analysis suitable for application to all NSW beaches. Regional scale mapping for the remainder of the Clarence coastline is provided in the following figures. The mapping is a broad-scale assessment and does not consider all potential local-scale influences and should not be used to assess erosion risk to individual properties and assets. Detailed assessment for urban areas, where the risk of erosion has been identified for planning purposes is provided in JBP (2023) and discussed above.

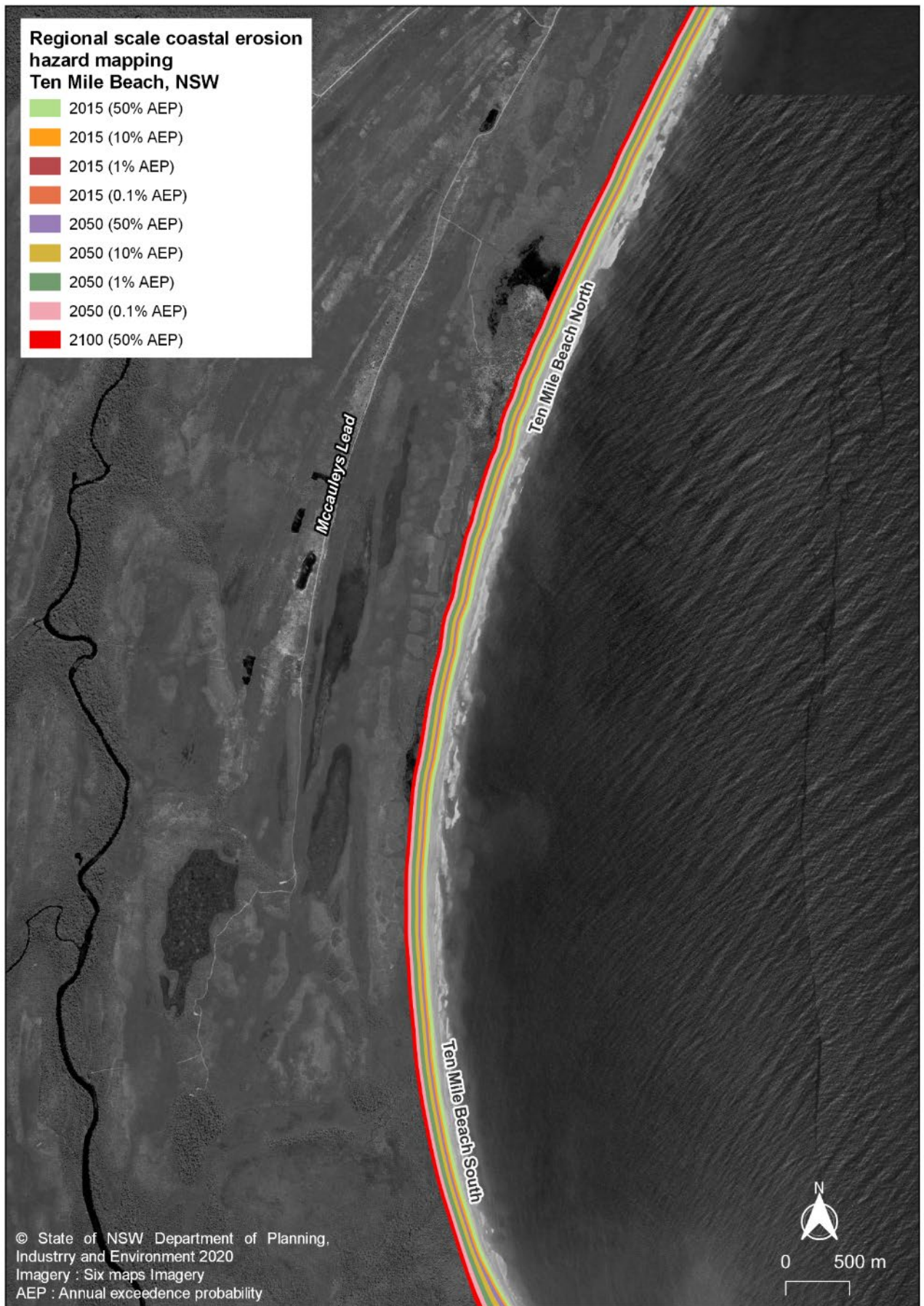


Figure 2. 1: Regional scale erosion and recession mapping – Ten Mile Beach

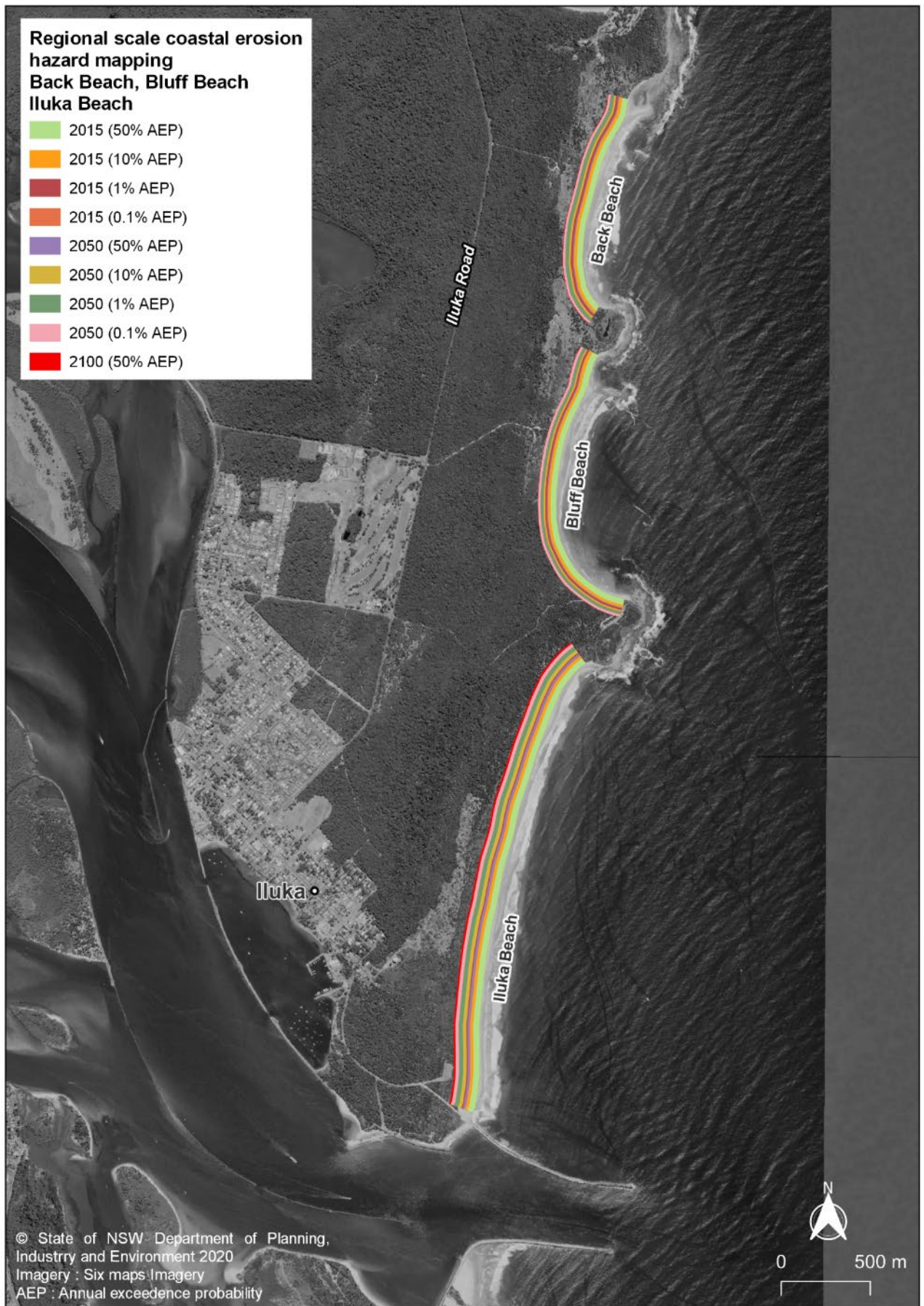


Figure 2. 2: Regional scale erosion and recession mapping – Iluka area

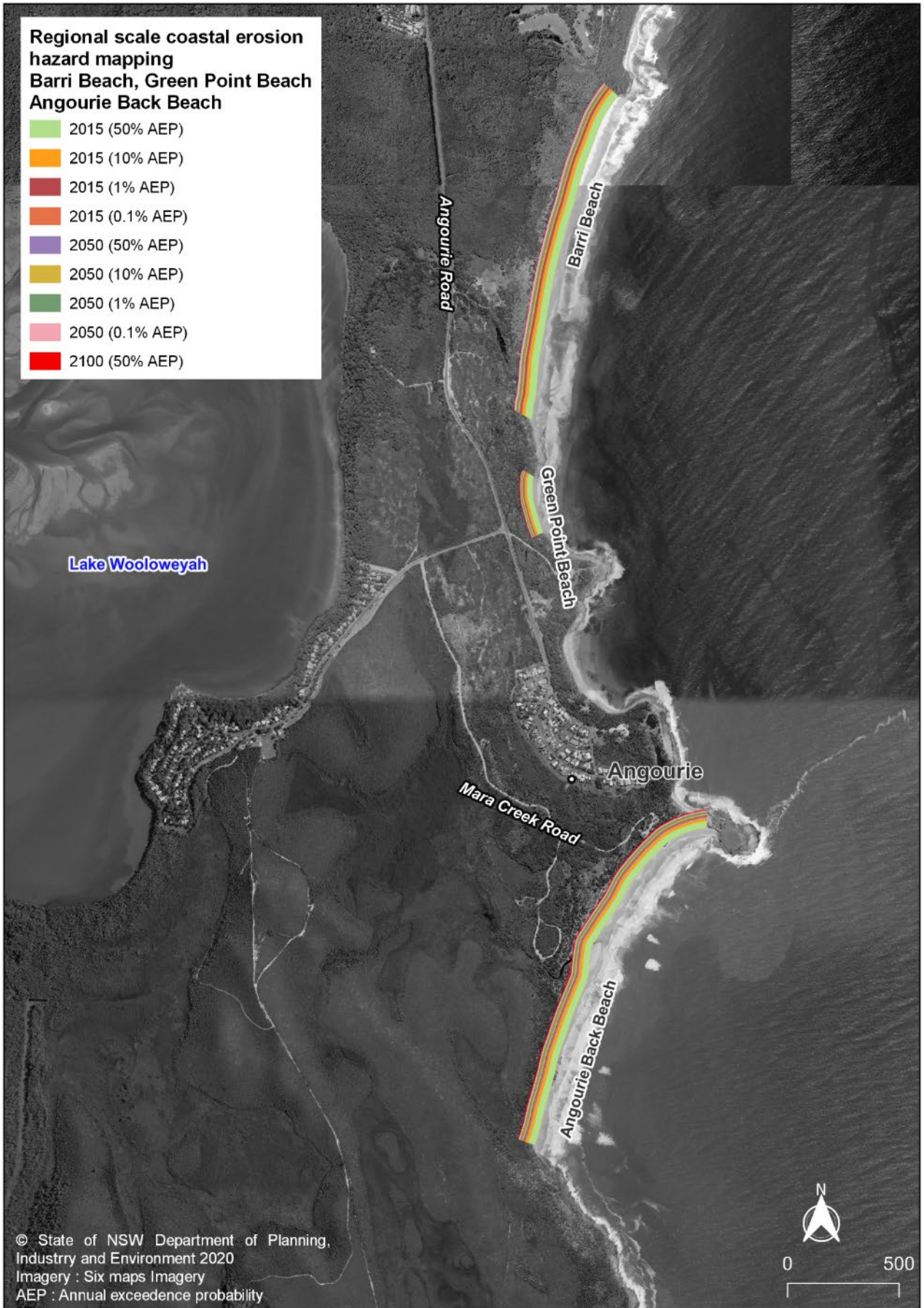


Figure 2. 3: Regional scale erosion and recession mapping – Angourie area

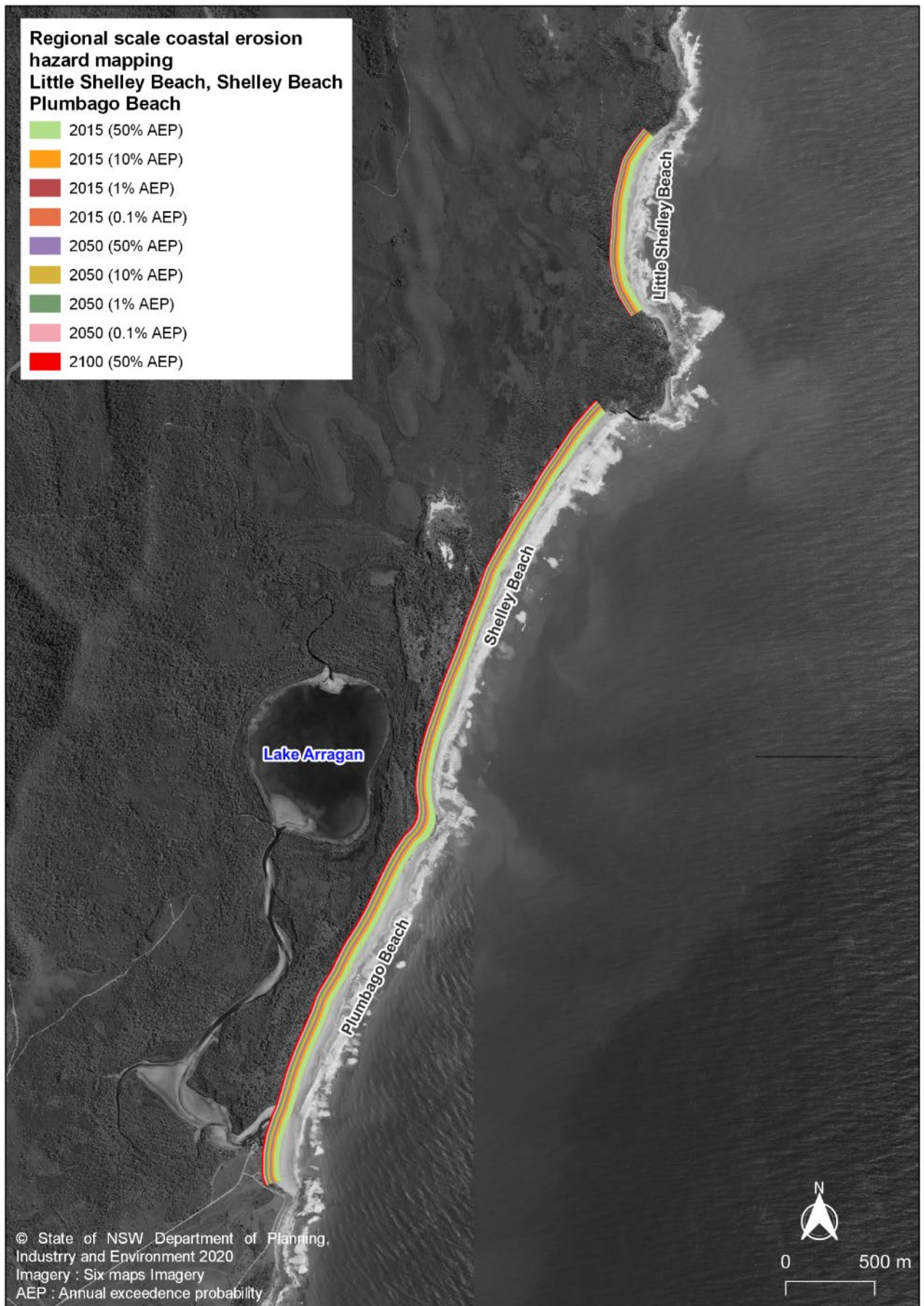


Figure 2. 4: Regional scale erosion and recession mapping – Lake Arragan area

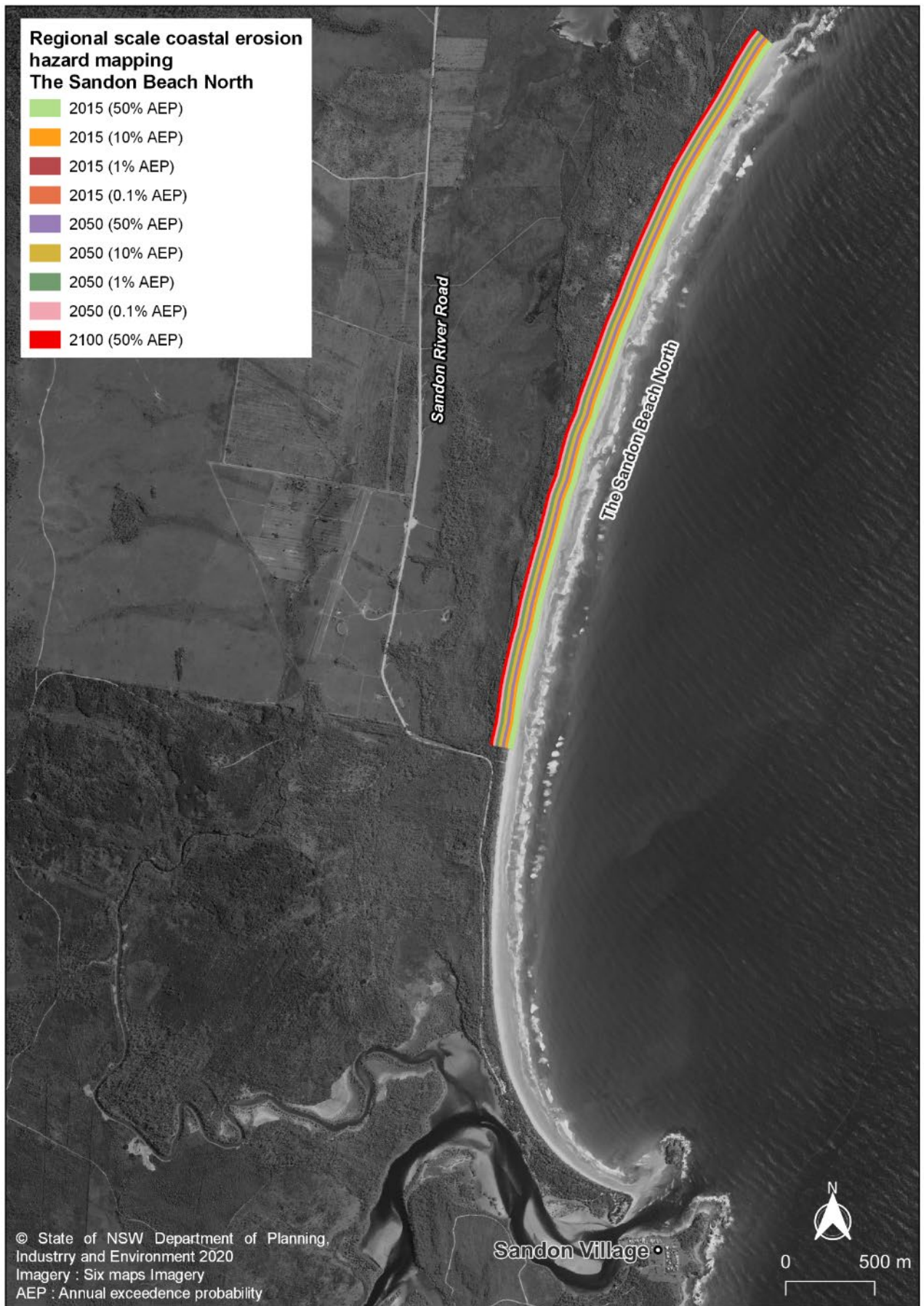


Figure 2. 5: Regional scale erosion and recession mapping – Sandon area (north)

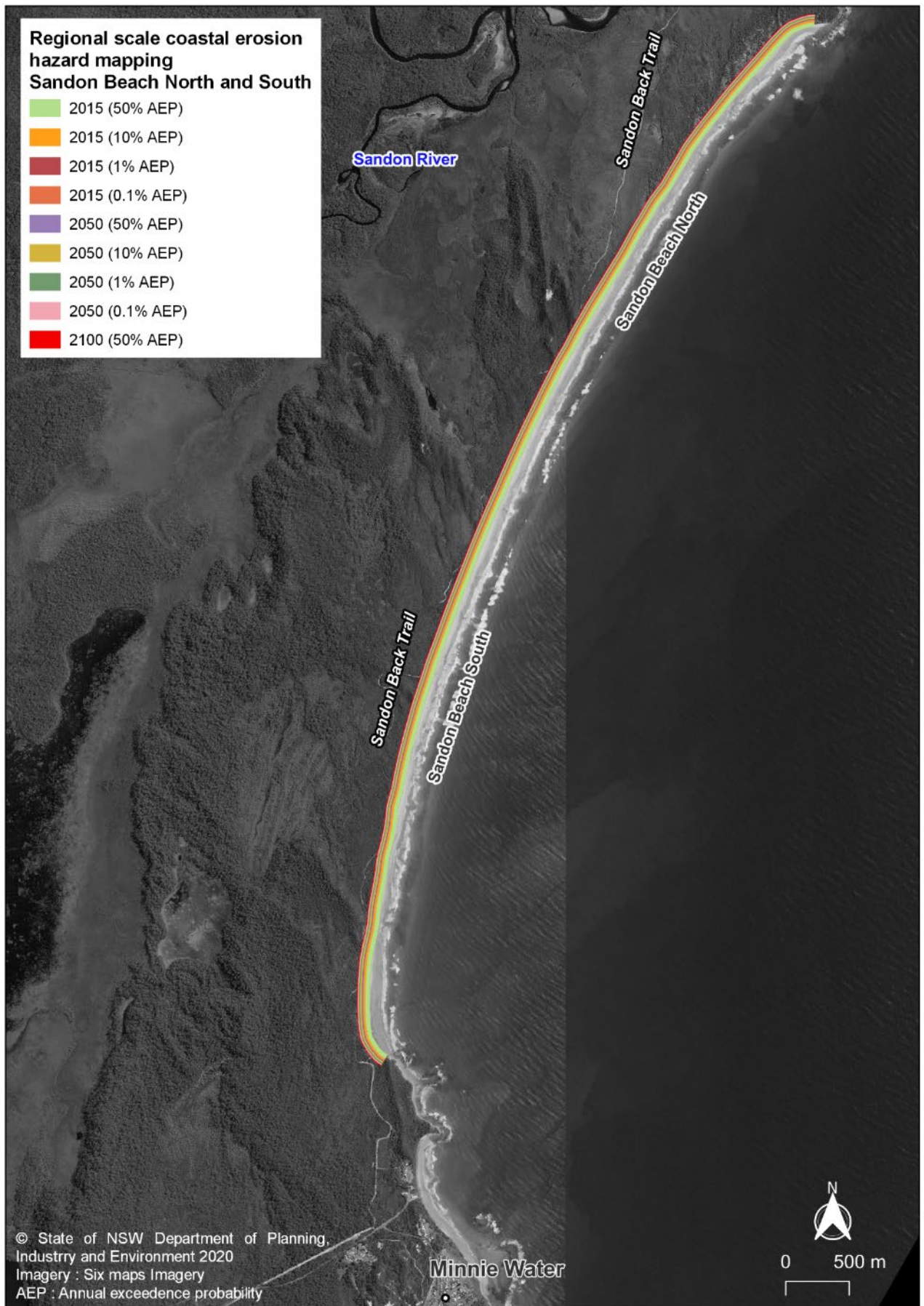


Figure 2. 6: Regional scale erosion and recession mapping – Sandon area (south)

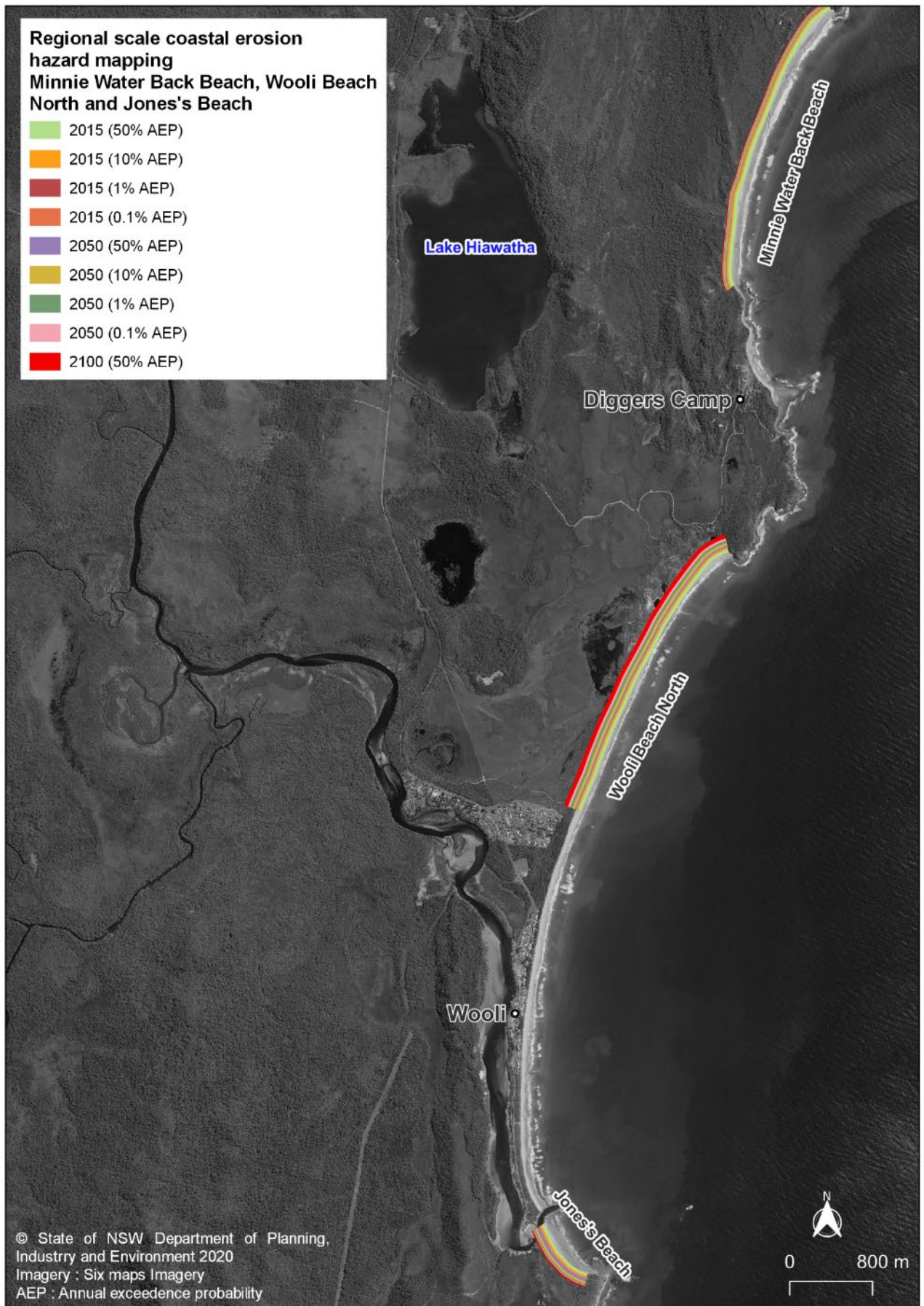


Figure 2. 7: Regional scale erosion and recession mapping – Woolli area