

2 Description of Towra Point Nature Reserve

2.1 Site location

Towra Point Nature Reserve, which contains Towra Point Nature Reserve Ramsar site, is located on the southern shore of Botany Bay, approximately 16 kilometres from the centre of Sydney (Figures 4 and 5). The nature reserve includes the land mass connected to Kurnell Peninsula protruding into Botany Bay and the tidal area that extends from the southern point of Woollooware Bay around to the eastern point of Quibray Bay (Figure 6).

Botany Bay is a large shallow bay measuring six kilometres north–south and eight kilometres east–west. Dredging of the bay’s ocean entrance and other areas on the northern side of the bay from the 1960s increased the natural depth of Botany Bay from 2–10 metres to up to 21 metres in some areas (Roy and Crawford 1979).

Towra Point Nature Reserve is in the south-eastern part of the Botany Bay catchment (Figure 7). The sub-catchment that influences Towra Point is South Botany Bay sub-catchment, and its land use is industrial, residential and recreational. The Georges and Cooks rivers and their tributaries flow into Botany Bay, which has a tidal range of approximately 0.1–2.0 metres. The bay has a catchment area of 1100 square kilometres and a water area of 80 square kilometres (Wilton 2002). Table 2 shows the relative areas of land uses within the Botany Bay catchment at the time of Ramsar listing and at the time of writing.

The Botany Bay catchment has a high percentage of bushland. However, most of the land adjacent to Botany Bay and Georges River is urban and industrial, and runoff from these areas usually drains directly into the catchment with no filtration through bushland.

Water from the South Botany Bay sub-catchment drains into Woollooware Bay and Quibray Bay. Runoff from the industrial and residential areas of Taren Point and other surrounding suburbs drains into Woollooware Bay including runoff from playing fields, a rugby league stadium and a golf course. Only a small number of gross pollutant traps and water-quality improvement devices are in place to trap rubbish. The main source of drainage into Quibray Bay is from the Kurnell industrial area which contains the Caltex oil refinery and Kurnell Landfill Company (SSC 2004). All land uses in the catchment influence the ecological character of Towra Point to some extent.

There are more than 1.5 million residents in the severely impacted Georges River and Botany Bay catchment, and the population continues to grow (Heap et al. 2001).

Table 2: Land uses in the Botany Bay catchment

Land use	1976–1978 (%) ^a	2006–2007 (%) ^b
Parkland	4	5
Airport	No data	1
Industrial/commercial	7	8
Urban	26	30
Bushland	39	38
Water body	5	5
Rural	19	13

Source: ^a McGuinness (1988); ^b SMCMA (2007c)

Botany Bay's ecology was modified from the time the first settlers arrived; mangroves from Towra Point were used for timber, the burnt ashes were used as a source of sodium hydroxide for soap, and the cleared land was used for grazing and agriculture. The waters surrounding Towra Point were used for oyster cultivation which still continues, although on a smaller scale (Evans and Williams 2001). In addition to population growth and residential development throughout the catchment, Botany Bay became a place for heavy and noxious industries. Oil spills (there have been 31 spills between 1957 and 1987 averaging 49,000 litres) (McGuinness 1988), dredging, shoreline modification, land reclamation, land clearing and sand extraction have all had significant impacts on Towra Point, including loss of habitat and species. Alteration of the natural hydrological regime has caused increased rates of erosion and accretion which continue to impact the site. Despite these modifications Towra Point continues to support a high level of biodiversity.

2.2 Area covered by this description

The Commonwealth Government acquired 281.7 hectares of land on Towra Point in 1975 to satisfy the Japan–Australia Migratory Bird Agreement (NPWS 1989; NPWS 2001a). The land was transferred to the NSW Government and in 1982 was declared as Towra Point Nature Reserve under the *National Parks and Wildlife Act 1974*. The nature reserve was listed as a Ramsar site in 1984, and the site was covered by the provisions for protecting Ramsar sites in the *Environment Protection and Biodiversity Conservation Act 1999* when it came into force in 1999. Additions to the nature reserve in 1991 and 1996 resulted in the Ramsar site being enlarged to about 386.5 hectares (NPWS 2001a). The boundaries of the Ramsar site in 1984 and in 1998 and the area proposed for addition in 2010 are shown in Figure 5.

Further land acquisitions in 2008 have extended the area of Towra Point Nature Reserve to 603.7 hectares. That area is based on the original area of the nature reserve gazetted in 1982 and on the addition of surveyed areas of land since then. It is proposed that the additions to the nature reserve gazetted on 4 April 2008 (an area of about 217.3 hectares) be incorporated into the Ramsar site. This will include Towra Spit Island which provides important habitat for the endangered little tern and areas of mangroves and saltmarsh. Incorporation of those additions would make the total area of the Ramsar site 603.7 hectares.

This description of the ecological character of Towra Point Nature Reserve Ramsar site refers to the whole area within the Towra Point Nature Reserve as well as the areas of seagrass and associated substrate within the adjoining Towra Point Aquatic Reserve. Movement of sediment, flora and fauna is not limited by either Ramsar site or nature reserve boundary and these areas have a significant contribution to and influence on the ecological character of the Ramsar site. A distinction has been made, however, between the ecological character of the wetland at the time of Ramsar listing (1984) and at the time of writing.

2.3 Land tenure

Towra Point Nature Reserve Ramsar site is in Towra Point Nature Reserve which is managed by DECCW. Surrounding areas include Towra Point Aquatic Reserve, also managed by DECCW, which was declared in 1987 and dedicated under the FM Act. The aquatic reserve encompasses approximately 1400 hectares and is divided into a refuge and a sanctuary zone. The area was declared to protect seagrass, mangroves and marine mammals which help protect and maintain the aquatic biodiversity of Towra Point (DECC 2008b).

Land ownership on Kurnell Peninsula is mostly freehold. Land use includes industrial, residential, recreational and conservation areas.

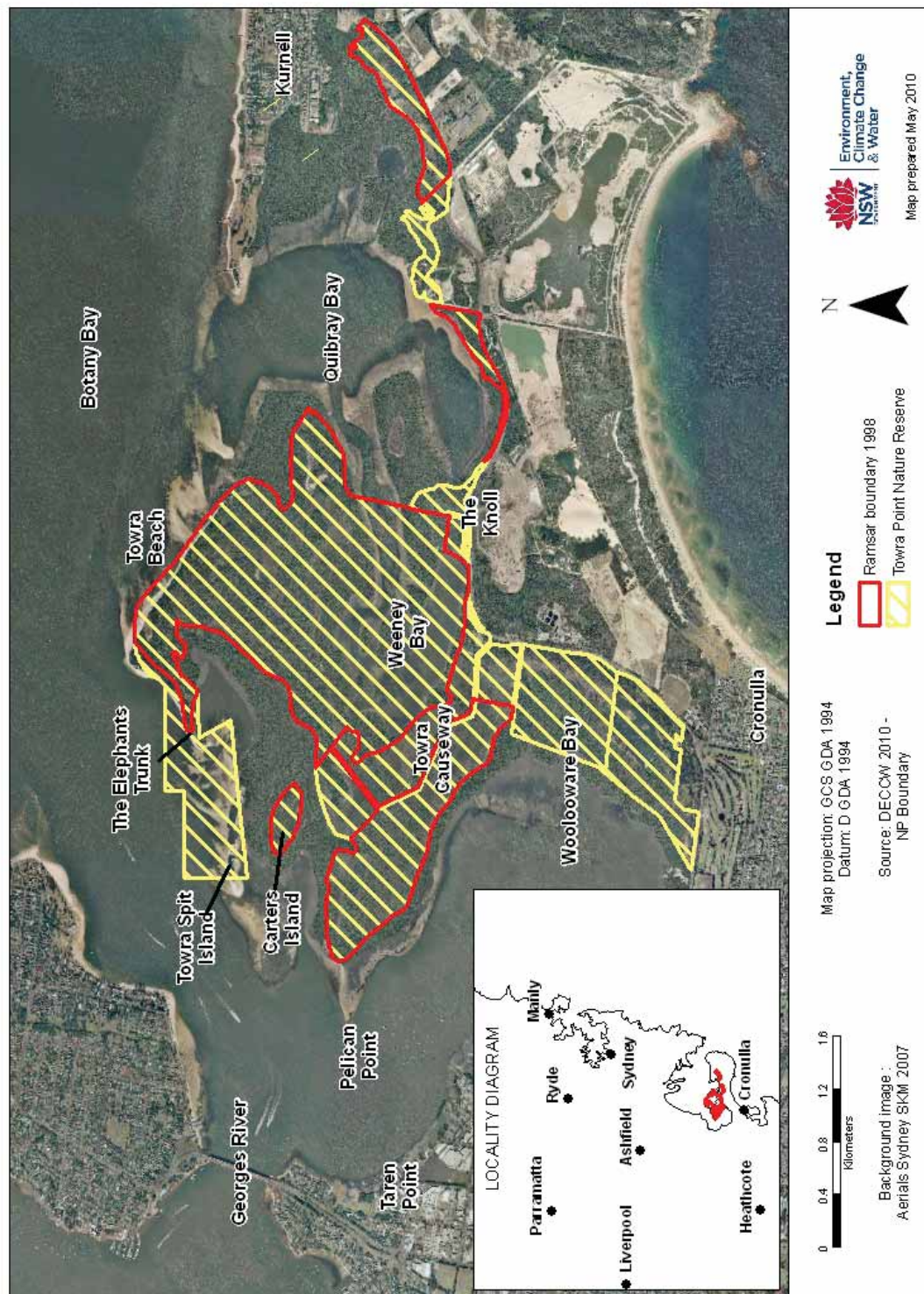


Figure 4: Boundaries of Towra Point Nature Reserve and Ramsar site

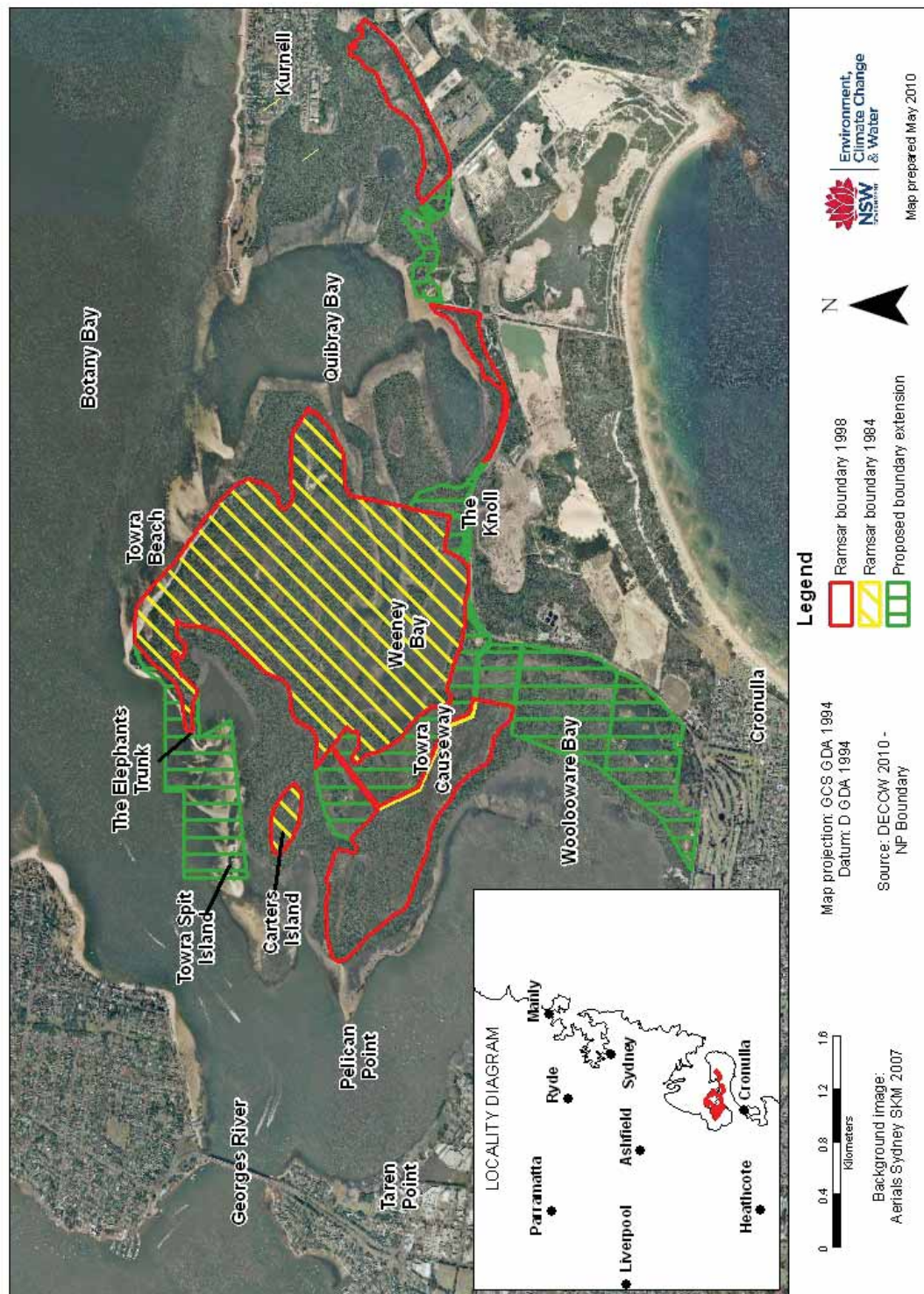


Figure 5: Towra Point Ramsar site and boundary changes

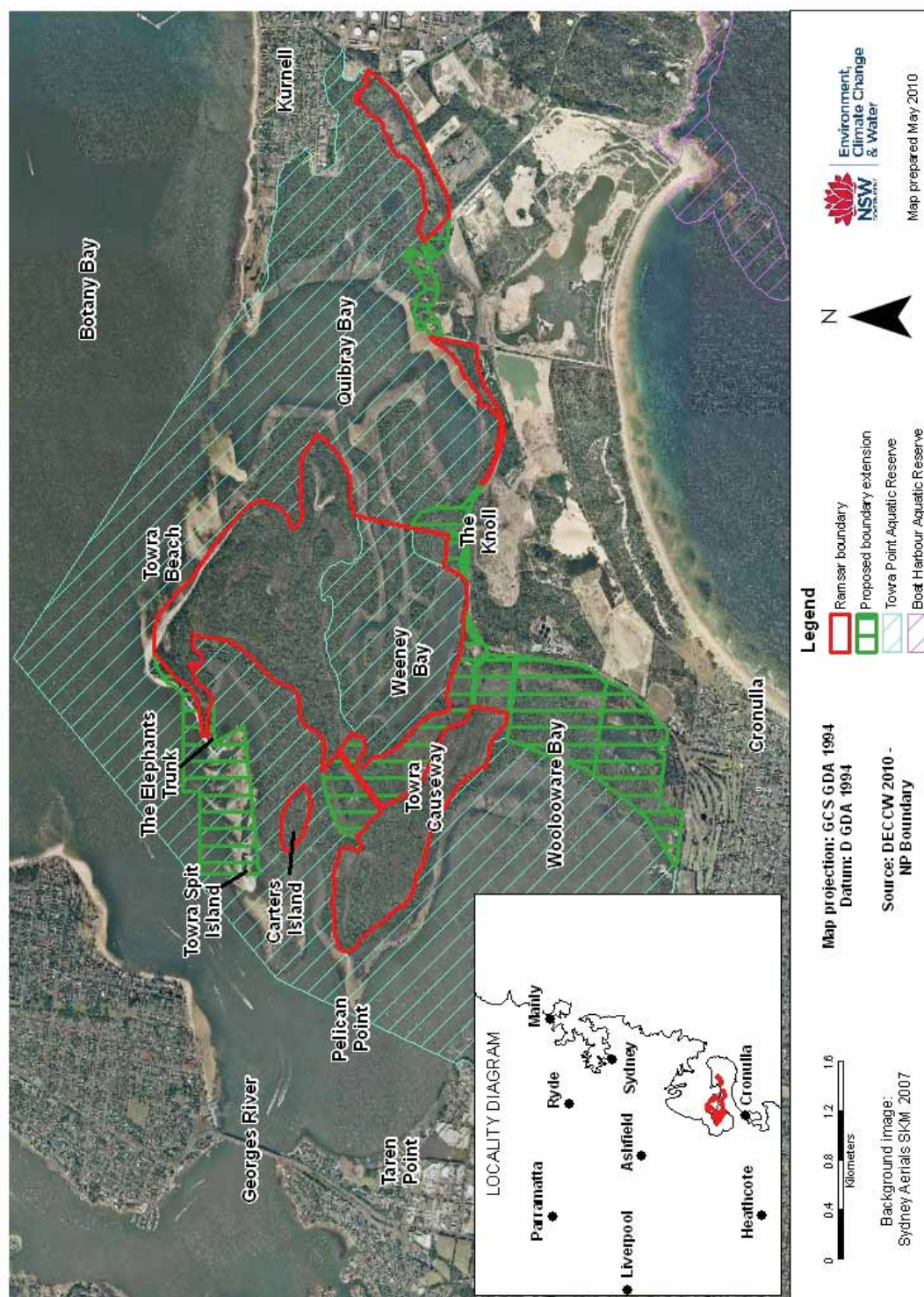
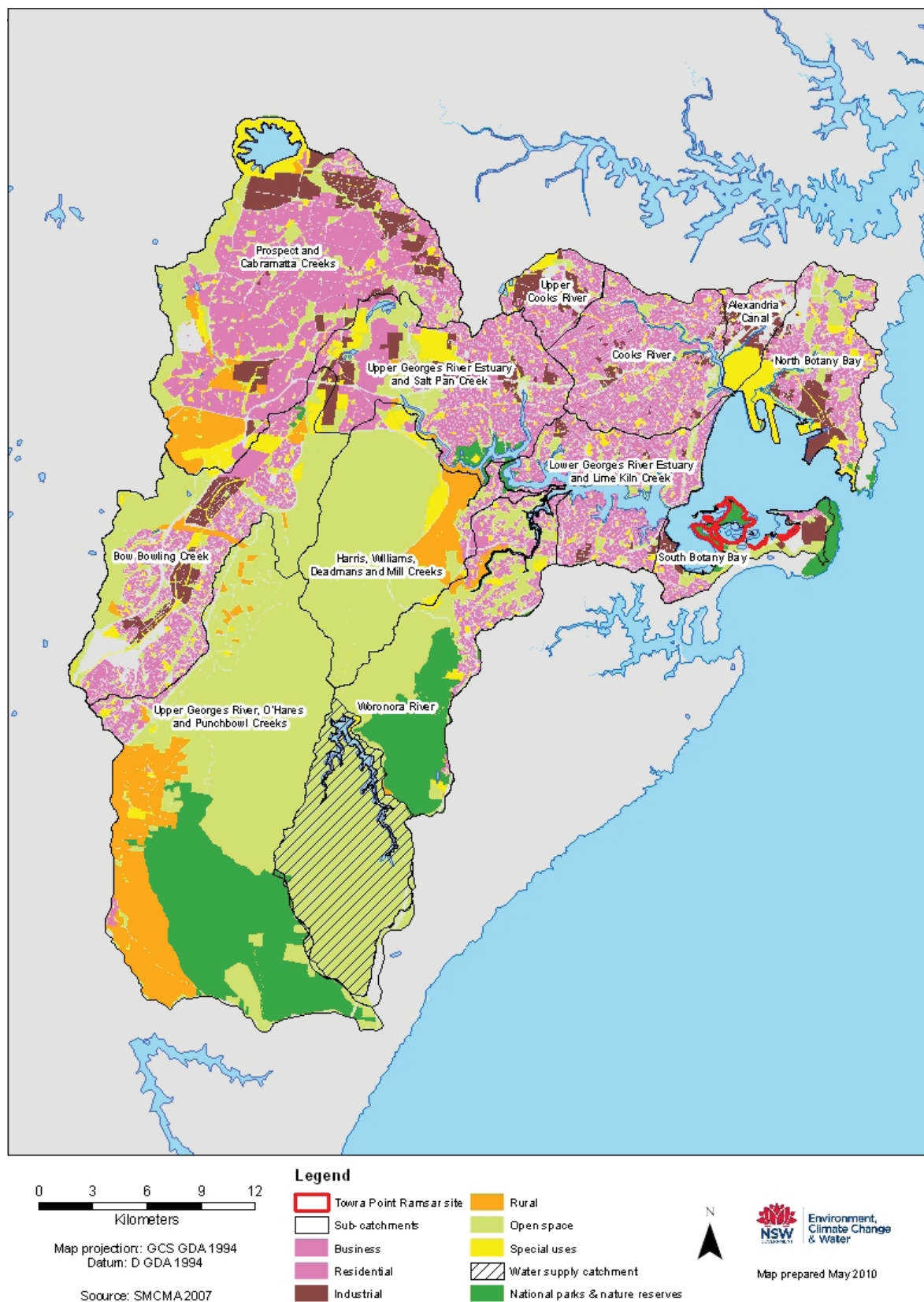


Figure 6: Towra Point Ramsar site and aquatic reserve



Source: SMCMA (2007a)

Figure 7: Sub-catchments within the Botany Bay catchment and land uses