Information on the demography and spatial ecology of coastal dolphin populations is essential to understand their ecology and inform spatial conservation planning (Chapter 1). In this study, I used boat-based surveys, photo-identification methods and biopsy sampling to investigate southern Australian bottlenose dolphins (*Tursiops* cf. *australis*) sex-specific demographic parameters (Chapter 2); site fidelity and space use patterns (Chapter 3); identify areas of high probability of dolphin occurrence in relation to ecogeographical and anthropogenic variables, and evaluate the relevance of current sanctuary zones for their protection (Chapter 4) in Coffin Bay, Thorny Passage Marine Park, South Australia. Systematic boat-based surveys were conducted in the inner and outer areas of Coffin Bay between September 2013 and October 2015. Capture-recapture POPAN models estimated a total super-population of 306 (95% CI: 291 – 323) dolphins using the entire study area (263 km^2). For the inner area (123 km^2), Pollock's Closed Robust Design models estimated relatively constant abundance across sampling periods (marked females: 52 – 60, marked males: 46 – 52, and total: 193 – 209), high rates of apparent survival for both sexes (females: 0.99; 95% CI: 0.96 – 1.0; males: 0.95; 0.82 – 0.99), and low temporary emigration rates (0.02; 95% CI: 0.01 – 0.11) (Chapter 2). Agglomerative hierarchical clustering of individuals' site fidelity index and sighting rates indicated that the majority of dolphins within the inner area of Coffin Bay are 'regular residents' (n = 125), followed by 'occasional residents' (n = 28), and 'occasional visitors' (n = 26). A low standard distance (deviation range = 0.7 – 4.7 km, $\bar{X}$ ± SD = 2.3 ± 0.9 km) indicated that resident dolphins remained close to their main centre of use. Representative ranges of resident dolphins were small (range = 3.9 – 33.5 km^2, $\bar{X}$ ± SD = 15.2 ± 6.8 km^2), with no significant differences between males and females, and 56% of the resident dolphins seemed to have ranges restricted to a particular bay within the study area (Chapter 3). Ensemble modelling of species distribution indicated that the shallower waters of the inner area had higher probability of dolphin presence than the outer area. Important areas (> 0.6 occurrence probability) were identified in three different embayments within the inner area, in shallow waters (2 – 10 m depth) within 1,000 m of land and 2,500 m of oyster farms. Distribution patterns were relatively consistent across seasons despite the seasonality in environmental conditions and vessel traffic. Although sanctuary zones covered areas from low (0.04) to high (0.89) probability of dolphin presence, most areas with high dolphin probability of occurrence fell in multiple use areas where human activities are allowed (Chapter 4). The high year-round density of dolphins, strong site fidelity, restricted ranging patterns, and higher probability of dolphin occurrence in the inner area of Coffin Bay are likely driven and maintained by the high productivity of this system possibly coupled with low predation risks. These findings highlight the importance and conservation value of the inner area for southern Australian bottlenose dolphins, and provide the basis for guiding future monitoring and spatial conservation planning of the species within South Australia's marine parks (Chapter 5).