

# Sexual size dimorphism in the Black Swan and an alternative to cloacal sexing

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Morphometric data from two study locations, one in South-East Queensland and one in the Australian Capital Territory, were used to establish a non-invasive technique to accurately determine sex in the Black Swan *Cygnus atratus*. Age and breeding status disparities in morphometric variables were also examined. Males were heavier and larger in all other morphometric measurements than females at both locations. There were no significant differences in morphometrics between adults and immature birds, but adult males and females were heavier than immature males and females. Presumed paired males and females were significantly heavier than presumed non-breeding birds of the same sex. Total head length and tarsus and radius lengths each allowed over 80% of birds caught to be sexed, with an accuracy rate of over 90% for birds within 'sexable' measurement ranges. Discriminant function analysis using these three predictor variables increased that accuracy further, with 92.1% of birds being correctly assigned. This approach offers an alternative to the use of cloacal examination in sexing Black Swans for researchers unfamiliar with this technique.

**Keywords:** *Cygnus atratus*; sexual dimorphism; morphometric variation.