

# 6. Platypuses

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## 1 TAXONOMY, DISTRIBUTION AND BIOLOGY

The platypus is a highly specialised semi-aquatic, burrowing, carnivorous egg-laying mammal that is so well-adapted that it has survived relatively unchanged since the time of the dinosaurs. The platypus belongs to the Order Monotremata, the egg-laying mammals. The monotremes ('one hole') possess a common opening, the cloaca, for the reproductive, urinary and digestive systems, and the testes are abdominal (testicond). The Family Ornithorhynchidae contains one extant species, the platypus (*Ornithorhynchus anatinus*).

Platypuses are sexually dimorphic. Males are larger than females (45–63 cm long and weigh 1000–3000 g, females are 39–55 cm long and weigh 700–1750 g) and can be distinguished from adult females by the presence of a spur on the medial side of the tarsus (Grant 1989; Connolly & Obendorf 1998). Bergmann's rule applies to the platypus, with larger animals found in the cooler parts of their range (Dunn 1949).

Monotremes are long-lived for small mammals and have been maintained for up to 21 years in captivity. Grant (2004a) recorded a female platypus surviving 21 years in the wild.

Platypuses occur in freshwater streams and lakes along the eastern seaboard of Australia from Cooktown to Tasmania, mainly east of the Great Dividing Range (west only in permanent rivers) and were introduced to Kangaroo Island in 1940. They occupy a wide range of habitats, from tropical to cool temperate and pristine to

degraded, and are classified as common but are potentially vulnerable to environmental perturbation (Grant & Temple-Smith 1998). Prior to their protection, thousands of platypuses were killed for the fur trade. Legal protection of platypuses was first given in Victoria in 1892, with all other states following suit by 1912 (Grant 1995).

Platypuses have a solitary nature (except when breeding or suckling) and are mainly nocturnal, but may be crepuscular during the winter. In some locations they are regularly diurnal. They depend on relatively undisturbed stream banks to support their resting and nesting burrows and show site fidelity with riverine home ranges of up to 7 km (Gardner & Serena 1995). Juvenile platypuses disperse, moving away from their natal stream.

## 2 ANATOMY AND PHYSIOLOGY

### 2.1 External features

The platypus has a streamlined body that is compressed dorsoventrally and is covered by fur except for the bill and feet. Platypuses moult seasonally with patchy loss of guard hairs. Females may also lose significant hair on the dorsal surface of the tail during the breeding season due to pugging of burrows (the process of building a mud partition within the tunnel). The platypus snout is covered by soft leathery pigmented skin (Fig. 6.1). The dorsal nostril position allows the platypus to breathe while most of its body is underwater.