# 17. Pinnipeds

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## 1 TAXONOMY, DISTRIBUTION AND BIOLOGY

Two Families in the Order Pinnipedia are found in Australian waters: the Otariidae (eared seals; fur-seals and sea-lions) and the Phocidae (true or earless seals). Otariid species found in Australian waters are the Australian fur-seal (*Arctocephalus pusillus*), the New Zealand fur-seal (*Arctocephalus forsteri*), the Australian sea-lion (*Neophoca cinerea*), the subantarctic fur-seal (*Arctocephalus tropicalis*) and the Antarctic fur-seal (*Arctocephalus gazella*). The southern phocids include the leopard seal (*Hydrurga leptonyx*), southern elephant seal (*Mirounga leonina*), Weddell seal (*Leptonychotes weddellii*), crab-eater seal (*Lobodon carcinophaga*) and Ross seal (*Ommatophoca rossii*). Southern elephant seals and leopard seals are seen frequently in Tasmanian waters and occur less frequently in other states. Weddell, crab-eater and Ross seals, Antarctic and subantarctic fur-seals and Hooker's sea-lions (*Phocarctos hookeri*) are only occasional visitors to the Australian coast.

Typical lengths and weights of Australian pinnipeds are presented in Table 17.1. Figure 17.1 displays the approximate range of Australian and New Zealand fur-seals in Australian waters, the Australian sea-lion and Antarctic and subantarctic fur-seals, with details on their breeding range.

The southern elephant seal has a circumpolar distribution with a non-breeding range extending from the Antarctic continent to the tropics (Carrick & Ingham 1962). Most breeding occurs on islands on either side of the Antarctic convergence (Bonner 1994). It is not uncommon for healthy individuals to haul out in Australia, particularly on the Tasmanian coast, and New Zealand.

The leopard seal is the most widely distributed of the Antarctic pinnipeds, ranging between 50–80°S (Hofman et al. 1977). Although primarily a resident of the pack ice where breeding occurs (Siniff & Stone 1985), there is some movement of individuals to the subantarctic islands and the southern continents including south-eastern Australia and frequently Tasmania (Gwynn 1953; Rounsevell 1988; Bonner 1994). Individuals hauling out in more northerly locations are commonly debilitated. Weddell, crab-eater and Ross seals also have a circumpolar distribution and are generally found south of the Antarctic convergence.

## 2 ANATOMY AND PHYSIOLOGY

### 2.1 Anatomy

Otariids and phocids differ anatomically. For example, otariids have prominent external pinnae, large fore flippers and smaller hind flippers that can be rotated forwards under the body to enable them to walk quadripedally, assisting in terrestrial locomotion. Propulsion through water is primarily from the long fore flippers, while the hind flippers control direction. In contrast, phocids are unable to rotate the hind flippers under the body and therefore have a less agile, slug-like terrestrial locomotion. They employ lateral undulating movements of the hind flippers and lower body for aquatic