

# ***Hydrophis elegans***

Tracy Schulte, 2002

Authority: Gray, 1842

**Common Name:** Elegant sea snake

**Description** (Storr *et al.* 1986; Gow 1989; Mirtschin and Davis 1992; Anonymous 1997; Heatwole 1999; Cogger 2000): *H. elegans* are characterised by an elongate body of which the head is indistinct from the neck. The tail is vertically compressed and paddle-like. The body is generally slender, but becomes bulkier towards the rear. The average length is 1.7m, with a maximum length of approximately 2m. Snout-vent length (SVL) can measure up to 1.83m, the tail can amount to 10% of SVL. Adult dorsal colour is highly variable, ranging from pale grey to fawn to brown. A series of dark cross-bands can be found along its length, alternating with paler interspaces. The pale interspaces contain separate dark patches. The cross-bands narrow on the side of the body and tail. Ventrally, it is a pale whitish colour except for the throat and fore-body, where it may be black. The head is grey, olive-yellow or black. Body scales overlap, mid-body scales are in 37-49 rows at thickest part of body. Dorsal scales with a short keel are evident in 25-30 rows at the neck and 35-45 rows at thickest part of body. Ventral scales are undivided, smooth, slightly larger than flanking body scales and number 345-432. Head shields are large and regular. Adults have noticeable projecting spines on supraocular or postocular scales. The tongue protrudes from a closed mouth through a notch in the rostral scale. Fang length is on average 2.6mm, with a venom yield of 7.20mg, mean toxicity 0.27mg/kg (venom is approximately 1.1 times more deadly than the Indian Cobra *Naja Naja*). There are less than nine maxillary teeth. Males and females appear to be identical in marking and colour, females tend to be longer than males (Ward 2000b, 2001). Unlike the adults, juveniles have more obvious markings. They are usually pale brown in colour, with highly contrasting bands and a black head. They have 35-55 bands, which are widest on the mid-dorsal and mid-ventral lines, but taper on the sides and frequently appear incomplete. The neck and tail may have spots or narrow bands in the paler inter-band regions. Juveniles have tubercles on their scales rather than projecting spines.

**Similar species:** There have been no readily accessible reports of mis-identification of *H. elegans*, indicating that its individual and recognisable markings ensure it is not often confused with other species.

**Range** (Storr *et al.* 1986; Limpus 1987; Gow 1989; Heatwole and Cogger 1993; Anonymous 1997; Heatwole 1999; Cogger 2000; Ward 2000b): One of the most widespread and abundant sea snakes in tropical Australian and southern New Guinea waters, this snake ranges from the south-west of Western Australia, across northern Australia, throughout the tropical waters of the Great Barrier Reef in QLD and south to the north-eastern coast of NSW. In terms of water bodies, it is commonly found in the Coral Sea, Torres Straight, Gulf of Carpentaria, Gulf of Papua, Arafura and Timor Seas, the Northwest Shelf and eastern Indian Ocean. Generally, only during the warm summer months does this species move into the southern temperate waters.

**Ecology and behaviour** (Gow 1989; Mirtschin and Davis 1992; Heatwole and Cogger 1993; Anonymous 1997; Heatwole 1999; Cogger 2000; Ward 2000a): *H. elegans* is essentially found in two habitat types; on coral reefs in shallow coastal waters, and between reefs in shelf waters greater than 30m in depth. They commonly occur in moderately turbid water over sandy or muddy substrates. Additionally, Limpus (1987) explains that this species can be found in the estuaries of Australian rivers at high tide. Wassenberg *et al.* (1994) suggest that movement between inshore and offshore waters may be linked to seasonal breeding cycles. It seems that for *H. elegans*, the only species interaction that occurs is with prey. This snake feeds primarily on benthic species of eels and elongate fish (Voris and Voris 1983; Limpus 1987; Gow 1989; Mirtschin and Davis 1992; Heatwole 1999; Ward 2000b). However, its diet may not consist entirely of eel and elongate fish, as Herring, Cardinal Fish and shrimp have been found in the gut of one specimen (Covacevich, 1994). *H. elegans* is one of the most abundant species incidentally captured by prawn trawlers (Wassenberg *et al.* 1994; Anonymous 1997; Heatwole 1999; Ward 2000a, 2000b; Wassenberg *et al.* 2001).

**Breeding biology:** *H. elegans* grow rapidly and mature early (2 years). They maintain high fecundity and produce large numbers of young in one breeding season (Heatwole 1999; Ward 2000b, 2001). Mating occurs during late autumn and winter, ovulation during early spring, and gestation during spring and summer (Ward 2000b, 2001). They breed once every 2-3 years and produce between 12 to 23 offspring per clutch (Gow 1989; Anonymous 1997; Ward 2000b, 2001). According to Ward (2000b, 2001), it is likely that females are able to decide to defer whether to allocate energy to reproduction until just prior to ovulation. The young are born live (Limpus 1987; Mirtschin and Davis 1992) and tend to be approximately 30 -35 cm in length (Ward 2000b, 2001).

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