

## *Aurelia aurita* (Moon Jellyfish)

Order: Semaestomeae (Four-armed Jellyfish)

Class: Scyphozoa (Jellyfish)

Phylum: Cnidaria (Corals, Sea Anemones and Jellyfish)



**Fig. 1.** Moon jellyfish, *Aurelia aurita*.

[<http://www.bioexpedition.com/moon-jellyfish/>, downloaded 15 February 2017]

**TRAITS.** *Aurelia aurita* is a common and widely recognized type of jellyfish (Jellyfish1, 2005) that exhibits radial symmetry. It can be easily recognised by the four horseshoe-shaped gonads seen through the top of the translucent saucer-shaped bell (Fig. 1). The bell, sometimes referred to as the umbrella, is thicker to the middle and thin towards the edge (Jellyfish1, 2005). The gonads are the reproductive organs and appear white in males and pink in females. The animal is usually 5-40cm in diameter, with the mouth on the concave lower side (Myers, 2001). The tentacles are short compared to other jellyfish species (Bio Expedition, 2012) and are found at the edge of the umbrella. When younger, moon jellyfish have many stripes and spots around the middle of the bell (Bio Expedition, 2012). This species also has radial canals and four oral arms used for feeding.

**DISTRIBUTION.** *Aurelia aurita* is semi-cosmopolitan (Catalogue of Life, 2017), found near the coast, in mostly warm and tropical waters of the North Atlantic, Pacific and Indian Oceans where its prey can be found in high concentrations. It is commonly located in Europe and North American coasts (Fig. 2), while high populations can also be found off Canada and New England (Bio Expedition, 2012). The animal can withstand temperatures as low as -6°C and as high as 31°C with an optimum temperature of 9-19°C (Rodriguez, 1999). It can also be found in waters with low saline content, which diminishes the bell curvature of the medusa (Bio Expedition, 2012). Moon jellyfish observed in the Caribbean may be *A. aurita* or a closely related species that can only be distinguished by genetic analysis (eNature, 2007).

**HABITAT AND ACTIVITY.** Moon jellyfish are found primarily inshore in coastal regions close to the water surface but are also prevalent in open oceans and around coral reefs. They occur in huge numbers (Fig. 3) in coastal or brackish waters such as estuaries and bays, with a salt content as low as 0.6%, but can also be seen individually (Rodriguez, 1999). The jellyfish prefers water bodies with a constant current as it is dependent on the current for movement.

**FOOD AND FEEDING.** *Aurelia aurita* feeds on zooplankton such as protozoans and larvae of molluscs and fish, small hydromedusae, and ctenophores. The layer of mucus covering the jellyfish is used to catch food sources. Cilia are hair like structures that cover the body, and transport food towards the edge of the bell where it is then moved to the mouth (Wildscreen, 2017). The animal uses stinging cells to capture other prey and small fish.

**POPULATION ECOLOGY.** *Aurelia aurita* is one of the most common species of jellyfish. It is almost morphologically identical to a few other species of the *Aurelia* genus making it difficult to identify without genomic testing (eNature, 2007). It is primarily found in large groups in coastal or oceanic regions.

**REPRODUCTION.** The life cycle of *Aurelia aurita* include both sexual and asexual reproduction. Medusae are sexually mature jellyfish and can be seen floating in open waters. Adult females and males release eggs and sperm respectively into the open water after development in the gonads. Once the egg is fertilized, the resulting zygote develops into a larva then resides in the pelagic zone for a period of time (Oceana, 2017). This is the sexual reproductive stage. As the larva continues to grow, it attaches to the sea floor in shallow waters and grows into a polyp. During this phase, several clones of the polyp bud off and drift away. They are now referred to as ephyra (Fig. 4). This is the asexual phase. The ephyra then grows and develops into an adult medusa (Oceana, 2017). The sexual maturation of *Aurelia aurita* usually occurs during summer or spring.

**BEHAVIOUR.** *Aurelia aurita* has a limited range of motion and depends greatly on the current of the water and the wind to move from one location to the next (Bio Expedition, 2012). However, the jellyfish does swim by pulsations of the bell-shaped body to primarily keep the animal at the water surface (Collins, 2016).

**APPLIED ECOLOGY.** This species is very plentiful and not in immediate danger of extinction. Over time many of the other predators of its prey have been removed from the sea due to overfishing. This reduces the competition for food allowing the jellyfish to flourish in abundance. *Aurelia aurita* stings do not usually penetrate human skin (Jellyfish1, 2005).

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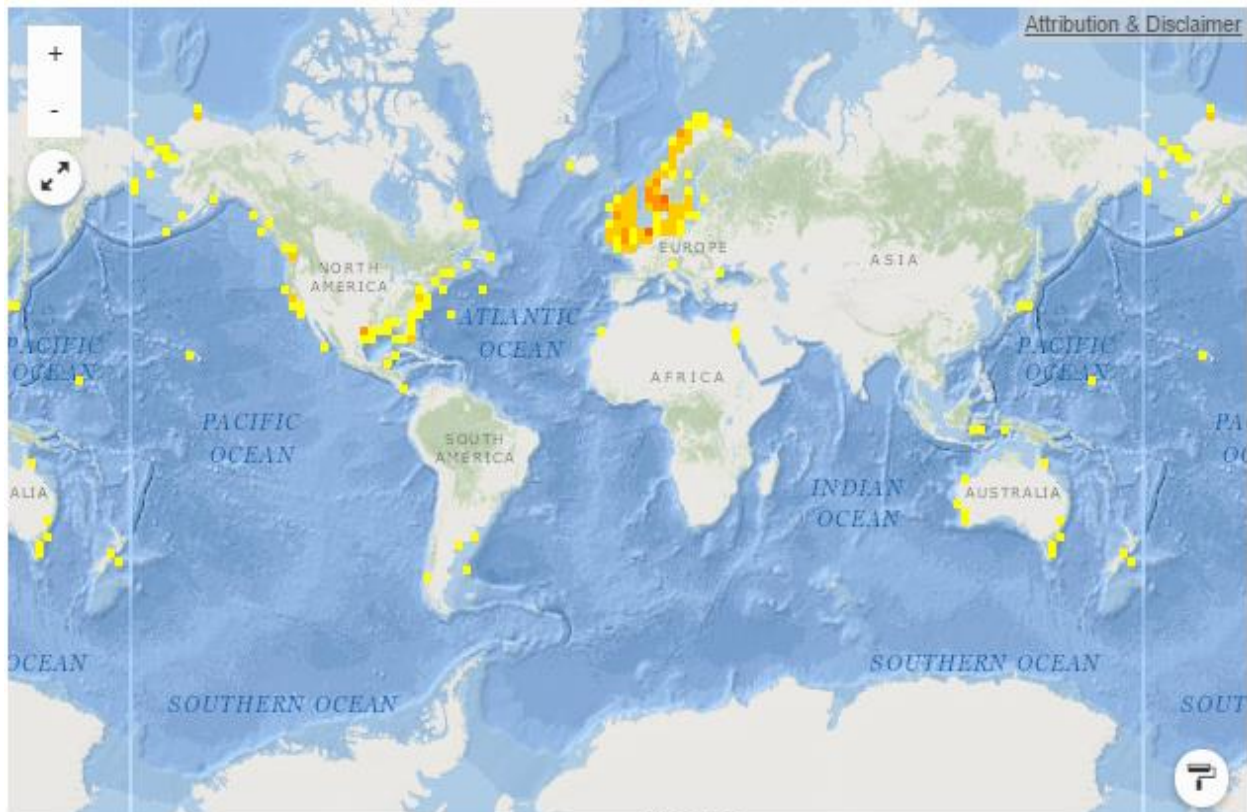
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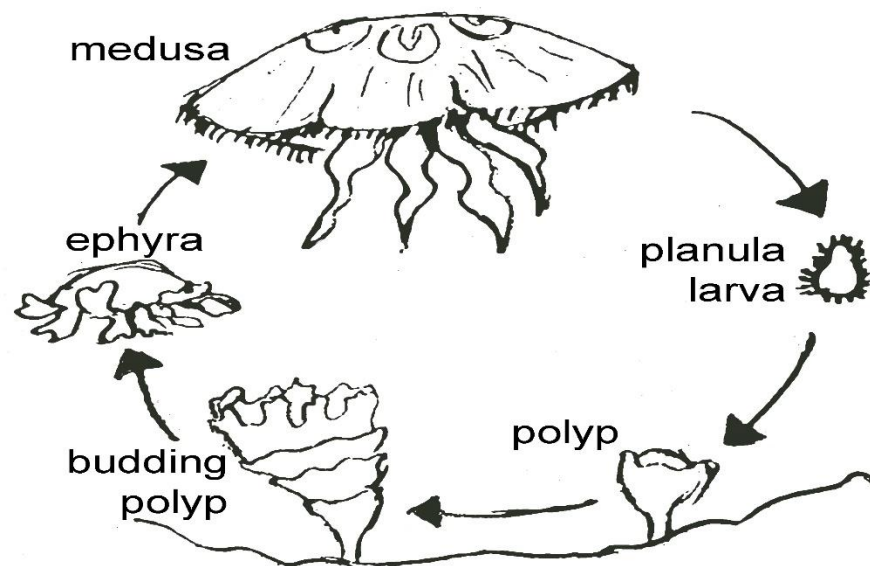
**Fig. 2.** Moon jellyfish geographic distribution.

[<http://marinebio.org/species.asp?id=231>, downloaded 7 March 2017]



**Fig. 3.** Moon jellyfish in large numbers in oceanic waters.

[<http://reproductive17.weebly.com/aurelia-autila.html>, downloaded 4 March 2017]



**Fig. 4.** Life cycle of *Aurelia aurita*.

[[http://tolweb.org/treehouses/?treehouse\\_id=3373](http://tolweb.org/treehouses/?treehouse_id=3373), downloaded 7 March 2017]