



SCIENCE BY THE SEA®

INSPIRING A SENSE OF WONDER IN THE WORLD AROUND US

Giant tuns weigh much less

Giant tun (*Tonna galea*)

If you've ever searched hours along the shoreline for the rare Scotch bonnet seashell, then you might understand my jubilation when I discovered my first Giant tun. Giant tuns are larger and far more fragile than the infamous Scotch bonnet and, if you can imagine, even more challenging to find along our shores. This gastropod is also referred to as an Oil Lamp Shell, based on historical uses as oil lamps and vases. The term "tun" refers to a beer or wine cask.² Giant tuns are found across the Atlantic Ocean from the latitudes of North Carolina to Argentina and from Portugal to northwestern Africa. This wide range results from the species' lengthy planktonic phase (90+ days) as it travels the Gulf Stream currents.^{2, 3, 4} A closely related Giant tun species, *Tonna zonata*, is found in the Indo-Pacific region.



Image – Giant tuns first appeared in the Miocene Epoch about 11.6 million years ago.¹ [Image Credit: Jeffrey N. Jeffords]

Extensive research of the embryonic development of the species has been conducted in an effort to identify reproductive parameters that might prove beneficial in species recovery as their numbers continue to decline worldwide. Mature females produce a pale pink egg rosette (about 40cm long) in September containing thousands of embryos that develop into free-swimming larvae in 34 days.⁴ Giant tuns are carnivores that reside along sandy and muddy bottoms in waters as deep as 120m (about 400 feet) where they search for their primary prey of sea cucumbers and occasionally sea urchins, sea stars, fish, crustaceans (crabs), and bivalves (shellfish). The tuns saliva secretes sulfuric acid to kill its prey and aid in digestion.⁵ They also emit luminescence in the form of a greenish-white light as they crawl along the seafloor using their extended foot.⁶

Wonder More About Giant Tuns From These References:

¹ Geological Timescale. Tortonian Age. Research Vocabularies Australia – Linked Data API. Australian Research Data Commons.

<http://vocabs.ands.org.au/repository/api/lda/csiro/international-chronostratigraphic-chart/2018-revised-corrected/resource.html?uri=http://resource.geosciml.org/classifier/ics/ischart/Tortonian>.

² Batt, Rick. Shell of the Month: Tonna galea (Giant Tun). <https://harrisrl1998.files.wordpress.com/2017/12/shell-of-the-month-tonna-galea.pdf>. December 12, 2017.

³ RUDOLF S. SCHELTEMA, "LARVAL DISPERSAL AS A MEANS OF GENETIC EXCHANGE BETWEEN GEOGRAPHICALLY SEPARATED POPULATIONS OF SHALLOW-WATER BENTHIC MARINE GASTROPODS," The Biological Bulletin 140, no. 2 (April 1971): 284-322.

⁴ Doxa, Chrisa K., et.al. Encapsulated development of the marine gastropod *Tonna galea* (Linnaeus, 1758) in captivity. Journal of Biological Research-Thessaloniki 16: 304 – 307, April 01, 2011.

https://www.researchgate.net/profile/Chrisa_Doxa/publication/232162893_Encapsulated_development_of_the_marine_gastropod_Tonna_galea_Linnaeus_1758_in_captivity/links/0912f5077c62e964a5000000/Encapsulated-development-of-the-marine-gastropod-Tonna-galea-Linnaeus-1758-in-captivity.pdf

⁵ Toscano, A., F. Bentivegna, and P. Cirino. *Holothurians' responses to attack by the tonnid gastropod Tonna galra*. "Stazione Zoologica di Napoli, Villa Comunale, Italy. Echinoderm Research 1991, L. Scalera-Liaci & C. Canicatti (eds) © 1992 Balkema, Rotterdam. ISBN 90 5410 049 4):

<https://books.google.com/books?id=pcYQGHp514C&pg=PA204#v=onepage&q&f=false>

⁶ Haneda, Y. Studies on Luminescence in Marine Snails. Pacific Science, Vol. XII, April 1958.

<https://scholarspace.manoa.hawaii.edu/bitstream/handle/10125/7903/vol12n2-152-156.pdf?sequence=1>.

Image credit: Myers, P., R. Espinosa, C. S. Parr, T. Jones, G. S. Hammond, and T. A. Dewey. 2020. The Animal Diversity Web (online). Accessed at

https://animaldiversity.org/accounts/Tonna/pictures/collections/contributors/jeffrey_jeffords/misc_inverts/shellfish5/.

Want to see the Giant tun egg rosette? (Look here: <http://www.marinespecies.org/photogallery.php?album=702&pic=48448doi:10.14284/170>) Pilon, Roberto. Eggs of Tonna galea. WoRMS Photogallery. [WoRMS Editorial Board](https://www.marinespecies.org/photogallery.php?album=702&pic=48448doi:10.14284/170) (2020). World Register of Marine Species.

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