



# BIOLUMINESCENCE

See the sea light up with a glow-in-the-dark swim.

By **Susanne Masters**



**M**y friends told me they had seen sparkles in the sea, aka sea fairies, on a night-time skinny dip, and they wanted to go back for more. In the summer's heat pretexts for swimming were multiplying rapidly, but here was a compelling reason to get immersed. We went to our secret swimming spot and as our hands moved through the water green sparks flashed in eddies and swirls. We could stir sparkles up with our toes.

In daylight the creatures providing our entertainment are invisible to the naked eye; it takes a microscope to see dinoflagellates. By day they convert energy from the sun into luciferin.

In the dark they release light from luciferin in response to movement in the water. Dinoflagellates' flashes of light are thought to disrupt predators grazing on them, and to attract a bigger predator to eat what might be consuming the dinoflagellates.

Bearing in mind that the biggest dinoflagellates are only 1mm long, swimmers need not worry about what is consuming dinoflagellates. Seeing the sea light up with bioluminescence might take your breath away, but every other breath you take is thanks to phytoplankton like dinoflagellates. Phytoplankton, or microscopic algae, release about half of the oxygen we need to breathe.

Over 1,500 marine species are bioluminescent, on land only a baker's dozen of insects, a few mushrooms and a scattering of soil-dwelling bacteria illuminate themselves. Bioluminescent displays are at their most spectacular in the deep ocean's perpetual night. Predators sport glowing red lures that entice prey into their jaws. Sex is when the lights are on as fish let potential mates know where they are there in

the dark via their flashing appendages. It is an alien world for swimmers as the crushing pressure of water at such depths can only be visited by creatures adapted to withstand it.

Dinoflagellates aren't the only glowing life forms swimmers can encounter. One night, floating in bioluminescent sparks near Durdle Door, we looked up to see pinpricks of glow-worms on the cliffs. It was a night when the star speckled sky seamlessly merged with the sea.

## GO FOR A BIOLUMINESCENT SWIM

Bioluminescence peaks in July, but can be visible between May and October. More often it is subtle

displays of sparks in the water.

Occasionally it can be visible as a blue glow at the edge of the shore and around swimmers. It occurs in salty or brackish water, not fresh water. It is brightest in calm water conditions and shallow seas in the absence of artificial light. To be safer sea

swimming at night have at least one daytime swim at your chosen location to ensure familiarity with entry and exit points. Check tide times and how the currents will run. Take a swimming light in case you need to make yourself visible.

THE STAR  
SPECKLED SKY  
SEAMLESSLY  
MERGED WITH THE  
SEA

Wildlife &  
Swimming

## 4 SPARKLING SWIMS

Lough Hyne, county Cork, Ireland

Broadsands, North Devon coast

Penmon, Anglesey

Sound of Mull – Tobermory on Mull and Glenmore bay off the Scottish mainland