

In praise of the midges pestering footballers in the World Cup

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Credit: AI-generated image ([disclaimer](#))

England's opening match in World Cup 2018 was a dramatic clash between Gareth Southgate's Young Lions and [several million gnats](#), not to mention Tunisia's wrestling footballers. England pulled a win out of the bag [at the last minute](#) – but only after a gruelling fight with some determined insects. Those plucky gnats also had to fight off the

insecticide treatments of nearby swamps and insect repellent sprays deployed by the team and the media.

I suppose this could open up new possibilities for product endorsement – in addition to the usual shampoo and shaving adverts – if you need to [shave your chest](#) and remove any unsightly insect life that might have got stuck to you during a game.

But, despite the bad press, these swarms of midges are a very heartening sight. The last year has seen a series of reports spotlighting the grim decline of insect abundance in Europe (notably [long-term data from Germany](#)) which has provoked headlines of ecological Armageddon and a fond nostalgia for the days of bug-filled countryside jaunts.

The trouble is that while bees and butterflies readily gain our sympathy, other vital groups that do much of the pollinating and other crucial work that helps keep the planet turning have a dodgier reputation. Of all the bugs, it is flies that may be the hardest to like. The ones that generally attract our attention sit around on poo, vomit on our food or bite us for blood.

Flies can take little solace from their place in high culture. Shakespeare points out their appetite for public casual sex (King Lear, Act 4), while the Old Testament threatens plagues on multiple occasion in Exodus, or the Book of Isaiah where they are summoned from the furthest rivers (which at least shows an appreciation of the powers of gnat dispersal).

But we dismiss flying "pests" at our peril – and the Volgograd pitch invaders may be a particularly important group for our welfare – if we can work out what they are.

The precise identification of the pesky Volgograd Diptera (fly) is uncertain: are they mosquitoes, midges or gnats? The general abundance

and behaviour suggests midges – but midges come in many forms. In much of the northern temperate world the biting midges of the family Ceratopogonidae are notorious. The UK version – the Highland Midge – is credited with [scaring away tourists](#) from Scotland. They are tiny but determined females in search of a blood meal. They get in ears, eyes and noses and make them a tickling mess.

However the Volgograd midges seem bigger, almost beautiful as they sparkled in the setting sun, much more like Chironomidae – so called non-biting midges. Lacking the bloodthirsty reputation of their biting cousins, it is easy to take the Chironomidae for granted – but they deserve our thanks.

Fighting pollution

In countries with sewage treatment works it is Chironomidae larvae that do much of the sewage processing, preventing the gross pollution of waterways. Sewage treatment commonly involves filtering out the larger debris we flush away, then dribbling the resulting liquid slowly through large gravel beds. In these gravel beds, billions of midge larvae feast on the organic soup, turning much of our waste in midge biomass. This is why sewage plants are often prized by bird watchers as the sheer quantity of flies that eventually emerge make a great food source, attracting all sorts of avian visitors.

The midge's larvae are tough. Some species hang on in severely degraded rivers, familiar as "blood worms" – vivid red because of haemoglobin in their bodies to glean the limited oxygen from the mud. Each midge may be tiny but hatching numbers are colossal. East African rift valley lakes may seem to smoke [as rising clouds of Chironomidae](#) emerge.

The massive swarms can be harvested, squished into midge-balls and eaten by lakeside villagers. Midge swarms seem to show [remarkable](#)

[collective manoeuvres](#), individual midges adjusting velocity and direction response to their immediate neighbours, detecting shifts up to at least a centimetre away (although studies do not account for the impact of footballers waving their hands about).

Evening is prime time for swarms as males dance in the hope of attracting a mate, so the Volgograd kick-off was perfectly timed to attract midge trouble as millions of males, newly emerged and looking their best, hit the town. Let's not be too down on midges. The 2-1 scoreline will encourage England fans. For those who appreciate flies, the dancing swarms will also gladden the heart.

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