

# Female marine snails trick amorous males

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The photograph shows two marine snails from the *Littorina saxatilis* species mating. Credit: Patrik Larsson

Sexual conflict is not only a human phenomenon. Swedish scientists at the University of Gothenburg have shown that females of the rough periwinkle conceal their gender identity in order to avoid excessive copulation.

The females of most species of snail excrete a substance in their mucous trails that enables males to find them more easily, since they can distinguish between trails from females and those from other males. The males follow the mucous trails laid down by females in order to find a partner for mating. However, the females of one of the species studied (*Littorina saxatilis*) have stopped labelling their mucous trails.

## Males must search twice as long

"The consequence of this for the females is that they copulate less frequently, since the males often follow the trails of other males and must therefore spend twice as long looking for a female. This may appear strange at first sight, since we expect it to be in the females' interests to mate. But we show that copulation is costly for the females and that they already achieve more copulation than is required to fertilise all of their [eggs](#)", says Kerstin Johannesson, professor of marine ecology.

Scientists at Tjärnö have shown in a previous study that a snail may carry offspring that result from copulation with at least 20 males.

## **Less sex is beneficial for the females**

The scientists have now been able to show that evolution has favoured those females who can conceal their [gender identity](#). Females who can mask their trails copulate significantly less often than other females and thus have a greater chance of surviving.

"It is beneficial for males to mate as often as possible, since this is the only way in which they can influence the number of offspring they father. But it is costly for the females to mate often, and this is important for them in surviving during the period they are carrying offspring."

A situation in which individuals of different gender have conflicting interests is known as a "sexual conflict". Such conflicts can arise in various situations, and this is one of few examples of a [sexual conflict](#) in which the females attempt to conceal their gender. There are some other examples, including certain species of damselfly in which some of the [females](#) conceal their gender, simply by having the same colouring as the males.

Provided by University of Gothenburg

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