

Male pipefish pregnancy, it's complicated

January 4 2017



A variety of factors determine mating success in the sex-role reversed pipefish, according to new research. Credit: National Institute for Mathematical and Biological Synthesis

In the upside-down world of the pipefish, sexual selection appears to work in reverse, with flashy females battling for males who bear the pregnancy and carry their young to term in their brood pouch. But new research shows even more factors appear to play a role in determining mating success.

For most species, [males](#) compete for access to females—think, a peacock's tail or a buck's antlers. But in some species, the sex roles are reversed and males carry the brood, as in the case of [pipefish](#) and other

members of the Syngnathus family like the seahorse. In these cases, females must compete for access to available mates, and indeed, researchers have found secondary sex traits, such as brightly colored ornamentation, evolving in female pipefish instead of males. Previous studies have also found that large female pipefish, which are able to transfer more eggs to the male's pouch, are more attractive to the males.

But, in new study published in the journal *Behavioral Ecology and Sociobiology*, researchers found that the size of male pipefish matters too. The paper can be read [here](#).

A team of researchers in the United States and Sweden sampled a population of broad-nosed pipefish (*Syngnathus typhle*) at the beginning of the [breeding season](#) in shallow eelgrass beds in Kyllaj, Gotland, Sweden. They found that larger males bred first and their offspring had a better chance of surviving.

Large males with larger embryos invested more energy per embryo than smaller males, produced more newborn offspring, and their offspring survived predation better as compared to the offspring from small males.

The study suggests that larger males have a clear reproductive advantage in the wild over the smaller males. And timing is important too—if they breed earlier, they increase their chances of being able to have more pregnancies before the end of the breeding season.

"From a research standpoint, pipefish are interesting because of the unique opportunity they provide to study [sexual selection](#) in reverse, which can tell us a lot about how variation works in mating and reproductive success," said lead author Sarah Flanagan, a postdoctoral fellow at the National Institute for Mathematical and Biological Synthesis.

"This study shows that there are many factors at play in this system, more than perhaps we ever realized, but it's that variation in traits and fitness which allows for sexual selection to work," Flanagan said.

At NIMBioS, Flanagan is extending the research by exploring the role that genetics plays in complex systems in species like pipefish.

More information: Sarah P. Flanagan et al, Mate quality and the temporal dynamics of breeding in a sex-role-reversed pipefish, *S. typhle*, *Behavioral Ecology and Sociobiology* (2016). [DOI: 10.1007/s00265-016-2255-3](https://doi.org/10.1007/s00265-016-2255-3)

Provided by National Institute for Mathematical and Biological Synthesis

Citation: Male pipefish pregnancy, it's complicated (2017, January 4) retrieved 28 April 2024 from <https://phys.org/news/2017-01-male-pipefish-pregnancy-complicated.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.