

Disappearing nannies force parents to accept their duties

April 12 2013



Cichlid (*Julidochromis ornatus*). Credit: Heinz Buescher

(Phys.org) —Large helpers (nannies) in a cichlid fish allow the dominant male and female to reduce their personal contribution to their offspring and territory, according to new research published today in *Functional Ecology*.

By removing the large helper for 30 days – which corresponds to one breeding cycle in this species – a team from the University of Bristol and the University of Bern (Switzerland) studied the investment strategies of the dominant pair and the survival of their [brood](#), while checking for immigration of new helpers.

Dr Rick Bruintjes, NERC Science & Business Marine Renewable Energy Fellow at the University of Bristol described: "In the cichlid *Julidochromis ornatus*, one large male helper spends almost all of his

time close to the breeding shelter, whereas the dominant pair is only around half of their time. By removing the large helper we found that one day after removal the dominants increased territorial duties, however, seven days after removal the initial higher investment was back to pre-removal levels."

Senior statistician Dr Dik Heg from the University of Bern said: "Already after seven days, 36 per cent of the removal groups had a new large subordinate immigrant. Only with a new immigrant large helper did dominants relax their territorial duties, showcasing the benefit of having a large subordinate for the dominant pair."

MSc Zina Heg-Bachar, research assistant at the University of Bern, explained: "Removal of the nanny did not change [survival](#) rates of fry and small fish, most likely because the parents and/or the new nanny compensated for the absence of the original nanny."

This study shows the importance of large helpers in allowing the dominant pair to reduce their personal contribution to their [offspring](#). Moreover, it highlights the importance of immigration of new helpers to relieve dominants from carrying out parental behaviours in cooperative breeding systems.

More information: Brintjes, R. Heg-Bachar, Z. and Heg, D. Subordinate removal affects parental investment, but not offspring survival in a cooperative cichlid, *Functional Ecology*. [onlinelibrary.wiley.com/doi/10 ... -2435.12088/abstract](https://onlinelibrary.wiley.com/doi/10.1111/1365-3113.2435.12088/abstract)

Provided by University of Bristol

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April 2024 from <https://phys.org/news/2013-04-nannies-parents-duties.html>

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