

Successful mothers get help from their friends: Dolphin study

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Shark Bay dolphin "Scooter" leads her calf "Harley", with friend close by. Photo courtesy Amanda Coates and Janet Mann

(PhysOrg.com) -- Female dolphins who have help from their female friends are far more successful as mothers than those without such help, according to a landmark new study.

Previous research into [reproductive success in animal populations](#) has had mixed findings: some studies point to the benefits of inherited [genetic characteristics](#), while others show the benefits of social effects, such as having an honorary aunt or uncle or other unrelated helpers.

The new study is the first to look at the effects of these factors together in a wild animal population and has shown that social and genetic effects

are both important for reproduction.

The finding, published in the journal [Proceedings of the National Academy of Sciences](#), was only possible thanks to 25 years of field observations by an international team of behavioural researchers on the dolphin population at Shark Bay, in Western Australia, plus more than a decade of genetic samples taken by a team led by Dr Bill Sherwin of the UNSW School of Biological, Earth and Environmental Sciences and Dr Michael Kruetzen of the University of Zurich.

"Surprisingly, the genetic and social effects on reproduction have never been studied together in natural populations," says Dr Sherwin. "One of my doctoral students, Celine Frere, who led the latest study, realised that we could do so by using the long-term observations about which females were associating with each other, and putting that together with what we knew about their genetic relationships."

Dr Frere found that a female's calving success is boosted either by social association with other females that had high calving success, or by the female having relatives who are good at calving.

"Not only that, but the social and genetic effects interact in an intriguing way," says Dr Sherwin. "Having successful sisters, aunts and mothers around certainly boosts a female's calving success. But the benefits of social associates were more important for female pairs who were less genetically related."

Dr Frere, who is now at the University of Queensland, says it is still unclear why female [dolphins](#) need such help to be more successful mothers: "Dolphins in this population are attacked by sharks, so protection by other females may help reproduction," she says. "But the females may need protection against their own species as well, especially when they are younger."

In another study published earlier this year, the team showed that younger females are susceptible to inbred matings, which reduce their reproductive output because such calves are slower to wean.

Provided by University of New South Wales

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