

Why solitary reptiles lay eggs in communal nests

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Reptiles are not known to be the most social of creatures. But when it comes to laying eggs, female reptiles can be remarkably communal, often laying their eggs in the nests of other females. New research in the September issue of *The Quarterly Review of Biology* suggests that this curiously out-of-character behavior is far more common in reptiles than was previously thought.

Dr. J. Sean Doody (The Australian National University) and colleagues, Drs. Steve Freedberg and J. Scott Keogh, performed an exhaustive review of literature on [reptile](#) egg-laying. They found that communal nesting has been reported in 255 lizard species as well as many species of snakes and alligators. The behavior was also documented in 136 amphibian species.

"[O]ur analysis indicates that communal egg-laying is much more common than generally recognized," the authors write.

Despite its prevalence, why reptiles share nests remains a mystery. The [phenomenon](#) is easier to explain in birds, many species of which also share nests. Baby birds generally require plenty of parental care after they are born. By nesting together, adult birds can share the burden of feeding and protecting the young—giving a plausible advantage to communal nesting.

Reptiles, on the other hand, generally abandon their [eggs](#) before they hatch, so sharing parental duties cannot be the reason reptiles share nests.

Many researchers have written off communal nesting in reptiles as a by-product of habitat. In many reptile habitats, good nesting spots are scarce. It is possible, therefore, that females share nests because there is simply nowhere else to nest. As such, communal nesting would have no real evolutionary value on its own; it would be something that simply occurs out of necessity.

But Doody and his colleagues doubt the by-product [hypothesis](#). They cite numerous reports of reptiles nesting communally even when good nesting sites are abundant. Doody believes shared nesting may provide an [evolutionary advantage](#) to reptiles after all—despite their lack of parental care.

Building a nest can be hard work for reptiles. Some female lizards, for example, may spend days digging a hole deep enough to deposit eggs. During those days, she is not doing other important things such as finding food. She is also more vulnerable to predators. Females can avoid these costs by simply laying eggs in a [nest](#) that someone else has gone to the trouble to build.

But sharing nests can also have a downside. When the eggs hatch, babies are immediately forced to compete with each other for resources. In addition, closely packed egg groups have an increased risk of disease transmission.

Using a mathematical model, Doody and his colleagues show that if the benefits to the mother outweigh the costs to the offspring, communal nesting makes evolutionary sense for reptiles. But when the costs of nesting together outweigh the benefits, we should expect to see solitary nests. This would explain why many reptile species display both solitary and communal nesting strategies.

More study needs to be done to confirm the model, Doody says, but it is

a starting point for explaining why communal nesting is so common in otherwise solitary reptiles.

More information: J. Sean Doody, "Communal Egg-laying In Reptiles And Amphibians: Evolutionary Patterns And Hypotheses." *The Quarterly Review of Biology* 84:3 (September 2009)

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