

# Spotted hyenas can increase survival rates by hunting alone

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Recent research by Michigan State University doctoral student Jennifer Smith has shed new light on the way spotted hyenas live together and – more importantly – hunt for their food alone.

In a paper recently published in the journal *Animal Behaviour*, Smith, a student in MSU's Department of Zoology, shows that while spotted hyenas know the value of living together in large, cooperative societies, they also realize that venturing on their own now and then to hunt for food is often the key to their survival.

"Although spotted hyenas do cooperatively hunt, there is a large cost for doing that," said Smith, who did her research at the Masai Mara National Reserve in Kenya. "This cost is feeding competition within their own group."

The problem is that spotted hyenas live in a social group, they all know each other and there is a well-established hierarchy. So when a kill is made, it is the spotted hyenas that are higher up on the totem pole that get to eat.

Smith and colleagues report that spotted hyenas do join forces to protect themselves from danger. They aggregate to defend their food from their natural enemy – the lion, and cooperate during turf battles with neighboring hyenas. And, it is easier for spotted hyenas to catch prey when they do so in teams.

"Although spotted hyenas are 20 percent more likely to capture prey with one or more members of their social group, cooperative hunting results in multiple new competitors showing up because former allies quickly turn into noisy competitors once the kill is made," she said. "So it's the individual, especially if he or she is low in the hierarchy, that suffers a cost for having group members at that prey."

It is known that more than a million years ago spotted hyenas were solitary scavengers. "My research," said Smith, "shows because there is this cost of competition, that spotted hyenas retained this ability to remove themselves from the larger social group to hunt."

Scientifically speaking, this is known as fission-fusion dynamics – members of the same society repeatedly splitting up from the group (fission) and then reuniting (fusion).

"Human societies exhibit fission-fusion dynamics," Smith said. "For example, we repeatedly depart from our loved ones in the morning and then rejoin them in the evening."

Spotted hyenas, like humans, frequently leave one another but rejoin on a regular basis to maintain social relationships, especially with family members.

Source: Michigan State University

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