

Evidence suggests chipmunks and woodchucks respond to each other's warning calls

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A nearly motionless individual, alert to danger, will whistle when alarmed to warn other groundhogs. Image: Wikipedia.

(PhysOrg.com) -- Working with the University of Southern Maine, Northwest State Community College researchers Lisa Aschemeier and Christine Maher have proven what might seem common sense; that some animals react to the warning signals of animals of other species. In an article published in the *Journal of Mammalogy*, the two describe how they recorded the alarm calls of eastern chipmunks (*Tamias striatus*) and woodchucks (*Marmota monax*), rodents with several common enemies and found that both responded to some extent, to each other's calls.

Animals responding to alarm calls of their own species has been well

documented over the years, but far less studied is the effect such calls have on [animals](#) of other species, in particular animals that are more the loner type, such as chipmunks and woodchucks, who despite what many people see in cartoons and commercials are considered to be quite solitary, living out their days as loners in a dangerous world. Both are prey for eagles, hawks, fox and other predators.

To begin their study, the team recorded alarm calls from both species in the wild in a nature preserve in Maine, they then broadcast those recordings on portable speakers in the same environment in situations where they were able to watch the responses of several animals of both species. They found that while the woodchuck's response to the chipmunks call was mild, and sometimes ignored, the chipmunks responded quite clearly to the calls of the woodchuck. Aschemeier, leader of the research team, postulates that the differences in response are likely due to the size difference between the two [species](#); the woodchuck is much bigger than the chipmunk, and thus less likely to be targeted by predators. Also, she notes that chipmunks are much noisier in general, so it's possible that woodchucks have come to simply tune them out, except perhaps when the alarm level goes exceptionally high.

To make sure the results weren't just coincidental, the team also recorded chickadee and crow cries and found that when played back for the woodchucks and chipmunks, such alarms were ignored entirely by both [rodent](#) groups. Aschemeier next plans to reverse the experiment to see if the birds respond to the alarms of the rodents, or of course to one another.

More information: Eavesdropping of woodchucks (*Marmota monax*) and eastern chipmunks (*Tamias striatus*) on heterospecific alarm calls, *Journal of Mammalogy* 92(3):493-499. 2011. [doi: 10.1644/09-MAMM-A-322.1](https://doi.org/10.1644/09-MAMM-A-322.1)

Abstract

Individuals of 1 species might obtain information by eavesdropping on calls produced by a syntopic species. Intercepting alarm calls allows the eavesdropper to respond with antipredator behavior without the need to produce its own call, which might attract the attention of a predator. We examined eavesdropping on heterospecific alarm calls by nonsocial eastern chipmunks (*Tamias striatus*) and woodchucks (*Marmota monax*), which live in the same community, share some predators, are solitary, and produce distinct alarm calls. If these 2 species recognize heterospecific alarm calls, we should see antipredator behaviors similar to those displayed upon hearing a conspecific's alarm call. We broadcast single alarm calls of woodchucks, eastern chipmunks, and American crows (*Corvus brachyrhynchos*) to individuals of the first 2 species, using the territorial song of the syntopic male black-capped chickadee (*Poecile atricapillus*) as a control. Woodchucks became more vigilant after hearing both conspecific and heterospecific alarm calls compared with controls; however, they spent more time vigilant in response to conspecific alarm calls compared to heterospecific alarm calls. Thus, woodchucks apparently can recognize heterospecific alarm calls, but they appear to process conspecific and heterospecific calls differently. Eastern chipmunks responded to heterospecific alarm calls, but sample sizes were small and the results not definitive. Our results suggest that nonsocial mammals might benefit from eavesdropping on heterospecifics.

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