

# Real angry birds 'flip the bird' before a fight

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Male sparrows are capable of fighting to the death. But a new study shows that they often wave their wings wildly first in an attempt to avoid a dangerous brawl.

"For [birds](#), wing waves are like flipping the bird or saying 'put up your dukes. I'm ready to fight,' " said Duke biologist Rindy Anderson.

Male swamp sparrows use wing waves as an aggressive signal to defend their territories and mates from intruding males, Anderson said. The findings also are a first step toward understanding how the birds use a combination of [visual displays](#) and songs to communicate with other males. Anderson and her colleagues published the results online Jan. 28 in the journal [Behavioral Ecology and Sociobiology](#).

Scientists had assumed the sparrows' wing-waving behavior was a signal intended for other males, but testing the observations was difficult, Anderson said. So she and her co-author, former Duke engineering [undergraduate student](#) David Piech ('12), built a miniature computer and some robotics, which the team then stuffed into the [body cavity](#) of a deceased bird. The result was a 'robosparrow' that looked just like a male swamp sparrow, which could flip its wings just like a live male.

Anderson took the wing-waving robosparrow to a swamp sparrow [breeding ground](#) in Pennsylvania and placed it in the territories of live males. The robotic bird "sang" [swamp sparrow](#) songs using a nearby sound system to let the birds know he was intruding, while Anderson and her colleagues crouched in the swampy grasses and watched the live birds' responses. She also performed the tests with a stuffed sparrow that stayed stationary and one that twisted from side to side. These tests showed that wing waves combined with song are more potent than song on its own, and that wing waves in particular, not just any movement, evoked [aggression](#) from live birds.

The live birds responded most aggressively to the invading, wing-waving robotic sparrow, which Anderson said she expected. "What I didn't expect to see was that the birds would give strikingly similar aggressive wing-wave signals to the three types of invaders," she said. That means that if a bird wing-waved five times to the stationary stuffed bird, he would also wing-wave five times to the wing-waving robot.

Anderson had hypothesized that the defending birds would match the signals of the intruding robots, but her team's results suggest that the males are more individualistic and consistent in the level of aggressiveness that they want to signal, she said.

"That response makes sense, in retrospect, since attacks can be devastating," Anderson said. Because of the risk, the real males may only

want to signal a certain level of aggression to see if they could scare off an intruder without the conflict coming to a fight and possible death.

Still, the risk of severe injury or death didn't keep the studly males from swooping in and clawing at the robotic intruder, whether it wing-waved or not. "It's high stakes for these little birds. They only live a couple of years, and most only breed once a year, so owning a territory and having a female is high currency," Anderson said.

She and her team had planned to test how the sparrows use wing waves combined with a characteristic twitter called soft-song to show aggression and fend off competition. But the experiment may be on hold indefinitely because robosparrow's motor seems to be burned out, and its head was ripped off in an attack, a true fight to the death.

**More information:** "Male response to an aggressive visual signal, the wing-wave display, in swamp sparrows," Anderson et. al. (2013). Behavioral Ecology and Sociobiology. Online ahead of print. [DOI: 10.1007/s00265-013-1478-9](https://doi.org/10.1007/s00265-013-1478-9)

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