

Moose hearing aids? CSU professor helps show antlers are just that

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John Horton, **Plain Dealer Reporter**

Tony Bubenik believed in his theory. A foremost expert on deer, he looked at the sweeping antlers of a moose and saw an evolutionary wonder. The bony headgear, he said, had morphed into a hearing aid.

But the scientific community didn't exactly listen. The idea Bubenik pitched in a documentary film two decades ago lacked the validation to be accepted as fact. The Canadian researcher died before he could prove his point.

So his son stepped in. Two years ago, George Bubenik -- also involved in the study of the deer in Canada -- re-created and expanded his late father's work on the subject. He compiled data with a new round of sound tests. But, still, he couldn't substantiate the theory.

So he turned to the next generation of Bubenik here in Northeast Ohio.

Peter Bubenik, a math professor at Cleveland State University, crunched and analyzed the information compiled by his father. And in the end, the rebel who broke the family's line of deer researchers confirmed his grandfather's original hypothesis.



Click to [listening the broadcast from WCPN](#) about this subject.

The reception of a sound improved by nearly 20 percent when it was bounced off the palm of a bull moose's hand-shaped antlers, according to the research study written by George and Peter Bubenik and published in the latest issue of the European Journal of Wildlife Research.

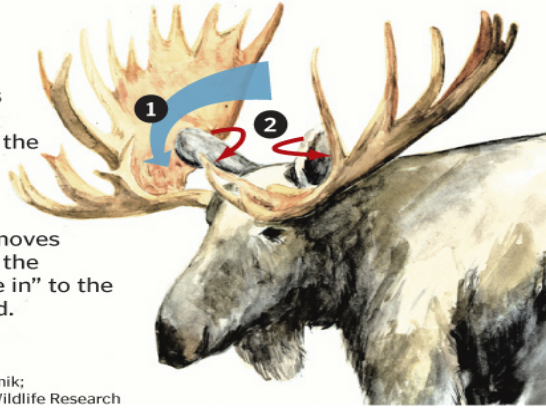
Natural hearing aids

Peter Bubenik, a math professor at Cleveland State University, helped confirm a family theory that a bull moose's antlers help the animal to hear better.

How it works

1. Sound waves bounce off the broad palms of the bony antlers.

2. The moose moves its ears toward the antlers to "tune in" to the amplified sound.



SOURCES: Peter Bubenik;
European Journal of Wildlife Research

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The finding generated international attention: "My father," George said, "would be very happy."

Moose -- whose listening is also aided by ever-rotating ears 60 times larger than a human's -- may qualify as the only land mammal to develop such a volume booster, said George, 65, a retired biology professor. The skull structure of certain whales and dolphins may serve the same purpose.

Big antlers help male moose to find dates, he said. In essence, the antlers on a bull moose can amplify the sweet whispers of in-the-mood females, increasing the odds of a tundra tryst. Amorous mating calls can travel up to two miles across open wilderness.

All that breeding by superhearing moose helped pass the substantial antler attribute to the next generation of males, building to the animal seen today. (Except, of course, in Ohio -- a place where moose have never trod, according to state wildlife officials.)

George conducted his study for the filming of another documentary. He placed a sound meter inside a reproduction of a moose ear and positioned it between trophy antlers his father claimed on an Alaskan hunt. Decibel readings rose when the ear faced the bony growth.

Peter then used his math and physics skills to convert the decibel readings to sound pressure measurements and determine the acoustic role of the antlers and whether the results held statistical significance.

The answer hardly surprised the 33-year-old Bay Village man.

"I expected it to be true," he said. "My grandfather knew his stuff."

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