

Sexual selection may result in bigger-billed male birds

January 9 2014, by Beth Staples

(Phys.org) —To female coastal plain swamp sparrows, male bill size matters.

When looking for a mate outside of their pair bond, female coastal plain swamp sparrows (*Melospiza georgiana nigrescens*) choose [males](#) with large bills, according to a University of Maine-led study conducted along Delaware Bay.

Small-billed males are more at risk of being cheated on by their mates. Males with larger bills than their avian neighbors, on the other hand, sire a greater percentage of young birds in their territory, says Brian Olsen, assistant professor in UMaine's School of Biology and Ecology and Climate Change Institute.

Thus, Olsen says, sexual selection may explain why males have larger bills than females along the Delaware coast.

"Conventionally, bird bills have been considered one of the premier examples of how diet shapes morphology: the right tool for the right job," he says.

For the past 40 years, researchers have explained differences between the shapes of male and female bills by differences in diet. But Olsen and his colleagues say their research suggests that female mating preferences alone could do it.

"It really makes me wonder how much of bill shape, or the shape of any other structure for that matter, is due to mating preferences instead of better survival," Olsen says.

Olsen and his fellow researchers also found that bill size increases with age. So, by selecting males with larger bills, females are picking a mate that has the right stuff to survive and successfully defend a territory over multiple years.

"In other words," says Olsen, "the genes of older males have been tested and proven worthy, and [females](#) who prefer to mate with the largest-billed males can then pass these good survivor genes on to their offspring."

Since the difference in large and small bills is only a few millimeters, Olsen says he doesn't know how female swamp sparrows make the distinction. He suspects song may play a role, since male bill shape can greatly influence singing.

Russell Greenberg of the Smithsonian Migratory Bird Center at the National Zoological Park; Jeffrey Walters of Virginia Tech's Department of Biological Sciences; and Robert Fleischer of the Center for Conservation and Evolutionary Genetics at the National Zoological Park also participated in the study.

More information: Brian J. Olsena, Russell Greenberg, Jeffrey R. Walters and Robert C. Fleischer. "Sexual dimorphism in a feeding apparatus is driven by mate choice and not niche partitioning," *Behavioral Ecology* (2013) 24 (6): 1327-1338. [DOI: 10.1093/beheco/art071](#) . First published online: August 19, 2013

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