

Sarah Goy, Biological Sciences

University: Harding University

Year in School: Senior

Hometown: Searcy, Arkansas

Faculty Mentor: Dr. Paul Porneluzi, Central Methodist University

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Acadian Flycatcher nest placement: A strategy of survival

Sarah Goy and Paul Porneluzi

Due to recent population declines, the reproductive success of neotropical migratory birds has become a prime research target. Predator-prey interaction, namely nest predation, has been shown to be the leading cause of nest failure of many avian species. Acadian Flycatchers (*Empidonax virescens*) invariably position their nests on thin, flexible branches of understory canopy trees. This placement may act as an anti-predatory defense against adult Black Rat Snakes (*Elaphe obsoleta*). The weight of an adult snake on such flexible branches may cause enough deflection and limb movement to compromise its predation attempt. Conversely, nests positioned on highly flexible, peripheral branches may have an increased chance of damage or loss to high winds. Nest placement of Acadian Flycatchers was evaluated to test the hypothesis that these birds choose branches of an intermediate diameter too thin to support the weight of an adult Black Rat Snake, yet strong enough to resist weather damage, for their nest locations. The study site was located in the Missouri Ozarks in Reynolds and Shannon County. Measurements were taken during the summer of 2008. Microhabitat nest characteristics were measured at eleven Acadian Flycatcher nests. Control trees of similar dimensions were subsequently measured for branch deflection upon application of a model adult snake. The produced results support the hypothesis that Acadian Flycatchers choose branches of intermediate diameter which in turn have an intermediate deflection average. This may increase the chance of nest survival from snake predation and prevent nest failure due to damaging, extreme weather.