

Ruff courtship a matter of genes

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(Phys.org) —A Simon Fraser University biologist who has spent three decades studying the ruff, a migratory shorebird, has found that its distinct approaches to courtship and mating are governed by genes and not influenced by environmental factors.

David Lank, a research associate and adjunct professor in SFU's Department of Biological Sciences, oversees one of the world's largest ruff aviaries, housed at SFU's Burnaby campus. He currently has 300

ruffs in his outdoor facility and breeds an additional 60 birds each year.

The ruff, or *Philomachus pugnax*, breeds in low, tundra marshes of Russia and northern Europe and winters in Africa, southern Asia and Australia. Lank started a breeding flock in 1985 with 40 eggs imported from Finland.

The ruff is also the only bird species to have three genetically different types of males. Territorial males sport impressive plumage and exhibit exaggerated courtship displays, while the slightly smaller and whiter-plumaged "satellite" males compete with territorial males for females. A small number are female mimics, who lack elaborate plumage, are just slightly bigger than female ruffs, and mate with both [males](#) and females.

Lank's studies have proven that, contrary to many of the complex characteristics in most species, genetics accounts for the differences in behavior and morphology among male ruffs. "Ruffs lack developmental plasticity, which means they do not change their mating behavior with social circumstances, or learn from experience," he says.

Lank, in conjunction with colleagues at the University of Sheffield in the U.K., is currently sequencing the genome of the ruff.

Provided by Simon Fraser University

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