

Timing clutch for greater sage-grouse

September 15 2014, by Beth Staples

(Phys.org) —It's an oft-repeated phrase that the early bird gets the worm. And, according to a collaborative study between the University of Maine and University of Nevada, Reno, it's also true that a greater sage-grouse that lays her eggs earliest, lays the most eggs.

During a 10-year study of greater sage-grouse (*Centrocercus urophasianus*) in Eureka County, Nevada, UMaine wildlife biologist Erik Blomberg found the single most-important determining factor of clutch size (number of [eggs](#) a hen lays in one nest) was the date the clutch was started.

Clutches laid earlier in the season had, on average, more eggs than those laid later in the season. The earliest clutches contained, on average, twice as many eggs as those laid later in the season.

The span of time during which greater sage-grouse laid eggs varied as much as 67 days in one nesting season, which typically occurs during April and May. The average clutch contained seven or eight eggs.

Similar seasonal patterns have been demonstrated in a number of other avian species.

The results are important, Blomberg says, as the U.S. Fish & Wildlife Service is considering greater sage-grouse—a large ground-nesting species that resides in western North America where sagebrush dominates the landscape—as a candidate for protection under the Endangered Species Act.

The "sagebrush sea" where they breed is an imperiled ecosystem due to residential development, oil and gas drilling, wind farms, invasive plant species and other human uses of land, according to the U.S. Fish & Wildlife Service.

"An important finding from this work is that clutch size in greater sage-grouse is influenced by the same evolutionary factors that we see throughout the avian world," says Blomberg.

"This means that general principles of conservation known to benefit populations of other species (improvements to habitat quality that increase the availability of food resources to pre-breeding females) are likely to also be a good fit to the life histories of sage-grouse."

Blomberg and his colleagues found that females laid more eggs during wetter years and at high-elevation sites, which also suggest that a degree of large-scale resource availability affects the numbers of a clutch.

Females that entered breeding season in better than average condition also laid more eggs. This was particularly true for second clutches laid after the females' first nesting attempts had failed, which Blomberg says also indicates that food availability affects how many eggs a female sage-grouse will lay in a single [clutch](#).

Studies conducted in northern latitudes consistently reported larger clutches for sage-grouse than those done at southern latitudes, according to the researchers. This pattern has been demonstrated repeatedly with bird species around the world, he says.

The research team located 400 sage-grouse nests using radio-telemetry, and flushed the females to record the number of eggs in each nest and to measure the size of the eggs.

More information: "Individual and environmental effects on egg allocations of female Greater Sage-Grouse." Erik J. Blomberg, et al. *The Auk* 131(4):507-523. 2014 doi: [dx.doi.org/10.1642/AUK-14-32.1](https://doi.org/10.1642/AUK-14-32.1)

Provided by University of Maine

Citation: Timing clutch for greater sage-grouse (2014, September 15) retrieved 21 March 2023 from <https://phys.org/news/2014-09-clutch-greater-sage-grouse.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.