Classification of Wolf Subjects Based on Hunting-Stressed Physiological Effects Using Support Vector Machines (SVM)

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Abstract

In North America, wolf populations have been relentlessly hunted and persecuted since Europeans landed in the new world. In recent years, in an effort to restore the balance of flora and fauna in ecosystems, wolves have been reintroduced in some areas. In other areas, wolf populations are still hunted, based upon the premise of "managing them." Prior studies have suggested that physiological indicators, specifically elevated hormone levels, are symptomatic of higher stress levels in individual wolf subjects in heavily-hunted populations. This stress has far-reaching implications for reproduction, social structure and pack dynamics. The current study supports prior studies that used statistics to show elevated stress levels in hunted wolf populations and classification of individual wolf subjects as belonging to hunting-based stressed populations, based on physiological data, and by using machine learning.

Keywords: Machine Learning, data mining, Support Vector Machines, physiological indicators, Classification, Data Analytics

A full and updated manuscript of this abstract appears at https://jisar.org