

Penguins use their personalities to prepare for climate change

October 10 2014, by Stacy Brooks



As the global climate continues to change, the ability of many animal species to adapt is being put to the test. Bird populations may be at particular risk. According to the Audubon Society, nearly half of all North American bird species are severely threatened by shifts in climate. The threat reaches beyond North America and could have similar effects on global bird populations.

John Cockrem of the Institute of Veterinary, Animal and Biomedical Sciences at Massey University in New Zealand suggests that a bird's individual personality may be among the factors that could improve its chances of successfully coping with environmental stressors. He studied differences in the level of the stress hormone corticosterone that native little penguins (*Eudyptula minor*) secreted when exposed to stressful stimulus.

"There is considerable individual variation in corticosterone responses, and a stimulus that initiates a large response in one bird may initiate a small response in another bird," Cockrem wrote. "Corticosterone responses and [behavioural responses](#) to environmental stimuli are together determined by individual characteristics called personality. Birds with low corticosterone responses and proactive personalities are likely to be more successful (have greater fitness) in constant or predictable conditions, whilst birds with reactive personalities and high corticosterone responses will be more successful in changing or unpredictable conditions."

These findings may help in predicting the adaptability of bird species as they face a new normal. Cockrem will present the talk "Corticosterone responses and the ability of birds to cope with environmental change" at the American Physiological Society (APS) intersociety meeting "Comparative Approaches to Grand Challenges in Physiology" on October 8, 2014.

Provided by American Physiological Society

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