Integration of ecology and endocrinology in avian reproduction: a new synthesis

Compiled and edited by John C Wingfield, Marcel E Visser and Tony D Williams

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Birds are some of the most familiar organisms of global ecosystems. Changes in the visibility and abundance of birds are excellent indicators of population and physiological responses to habitat changes, and are a major focus for public concern about detrimental environmental changes.

In order to understand how birds respond to these challenges, it is essential to determine how the environment affects reproduction under natural conditions. The continuum from environmental signals, such as day length and temperature, to reproduction itself depends upon a cascade of neural and physiological processes which determine the extent and rate at which birds will be able to adapt to changes in their environment (such as global warming). For a full understanding of this ability to adapt, ecologists and endocrinologists need to collaborate and build a common framework.

The objective of this theme issue is to address how evolutionary ecologists and endocrinologists can collaborate directly using avian reproduction as a model system. This framework will ultimately apply to all organisms because the principles involved are universal.

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