

Editorial

Welcome to *Evolutionary Applications*!

On behalf of the editorial team, welcome to *Evolutionary Applications*. This new and timely journal features top tier papers that use concepts and methods from evolutionary biology to address biological questions of health, social and economic relevance. Papers make significant contributions to a wide spectrum of disciplines, including but not limited to: agriculture, aquaculture, biotechnology, conservation biology, disease biology, evolutionary medicine, invasion biology, fisheries and wildlife management.

Why *Evolutionary Applications*?

Both funding agencies and researchers recognize that evolutionary biology is crucial to predicting how organisms will respond to global crises such as climate change, habitat loss, resistance to antibiotics and the spread of invasive species. This realization, combined with accumulating evidence that the selective pressures exerted by these phenomena induce evolutionary change measurable at contemporary time scales (Smith and Bernatchez 2008), has resulted in a rapid influx of studies addressing applied questions from an evolutionary perspective. However, while there are many excellent journals specializing in evolution, these focus primarily on testing and refining key theories of evolutionary biology. Consequently, papers that address more applied questions are distributed across numerous journals. This makes it difficult to document the vast importance of evolution to practical issues, and hampers the growth of the field of applied evolutionary biology. To remedy this situation, we have created *Evolutionary Applications*, which we hope will:

- 1 Provide a top tier outlet for researchers using evolutionary biology to address questions of applied importance.
- 2 Facilitate communication among scientists asking practical questions from an evolutionary perspective.
- 3 Serve as a primary reference not only for evolutionary biologists, but also to students, educators, policy makers, wildlife managers, journalists, etc. seeking both in-depth reports, and key examples of how evolutionary biology affects our everyday lives.

The *Evolutionary Applications* team

To achieve these goals, we have assembled a team of exceptional associate editors who are each at the forefront of their specialties.

- *Louis Bernatchez* – (also editor in chief), research interests include genotype by environment interactions, particularly in the context of speciation studies and conservation genetics; utilizes population and quantitative genetics, genetic mapping, functional genomics, behavioural ecology and physiology.
- *Troy Day* – mathematical biologist specializing the evolution of the genotypic and phenotypic attributes of individual organisms; his broad interests include evolutionary medicine and the effects of population structure on evolutionary change in human-altered environments.
- *George Gilchrist* – studies the rate and repeatability of evolution in ecological time. Issues he addresses include: adaptation to a changing climate, responses to biological invasions and the genetic architecture of temperature tolerance.
- *Jessica Hellmann* – investigates the dynamics of populations and species interactions and their responses to global environmental change; uses insect and plant systems to study global change.
- *Carol Lee* – explores the physiological and genetic targets of selection during freshwater invasions, particularly in invertebrates; her interest in the evolutionary dynamics at habitat boundaries has broad implications for biological invasions, global change and habitat restoration.
- *Isabelle Olivieri* – specializes in mathematical modelling from both demographic and evolutionary perspectives; her research expertise includes plant–insect interactions and biological control, conservation and invasion evolutionary biology, life-history evolution, population genetics and speciation.
- *Craig Primmer* – investigates genetic processes underlying adaptation and speciation; applies research to developing conservation and management guidelines for a wide range of endangered and exploited organisms, including fishes, amphibians and birds.
- *Thomas Smith* – examines processes maintaining the biodiversity in the tropics; his research covers speciation, role of seed dispersal in rainforest dynamics, population genetics of birds and the evolutionary ecology of disease.
- *Pete Thrall* – addresses questions pertaining to the ecological and evolutionary dynamics of host–microbe interactions in natural systems; investigations include the role of genetic diversity in host resistance and pathogen infectivity in disease epidemics.

An editorial advisory board comprised of researchers who have made outstanding contributions to evolutionary biology, both from a fundamental and applied standpoint, completes

the editorial team. Current editorial board members are: Sally Aitken, Spencer Barrett, Norm Ellstrand, Doug Futuyma, Rosemary Gillespie, Phil Hedrick, Andrew Hendry, Jeff Hutchings, Philippe Jarne, Juha Merilä, Yannis Michalakis, Craig Moritz, Judy Myers, Randy Nesse, Andrew Read, Loren Rieseberg, Barb Schaal, Steve Stearns, Sharon Strauss, Marcel Visser and Joanne Webster.

For authors and readers

The editorial group along with our dedicated journal referees, are committed to providing rapid decision times without compromising the quality of papers being published. Despite the fact that the journal is in its infancy, we have already succeeded in keeping processing times to a minimum. In 2007, the average time from submission to first editorial decision was 40 days, and average time to final decision was 56 days.

This month's issue features 14 papers illustrating both the breadth of the spectrum of *Evolutionary Applications* as well as the high quality of the science that the journal aims to offer. Although the contents span a wide range of topics, all papers are anchored by a solid framework of fundamental evolutionary biology. In the opening paper which deals with adaptation, extinction and global change, Bell and Collins (2008) provocatively argue that evolutionary biology is the key to predicting how the world will change, and they see this as the principal task of evolutionary biologists in the next few decades. The evolutionary consequences of climate and habitat change are also addressed in Aitken et al. (2008) and Purcell et al. (2008). Other contributions in this issue address questions related to medicine and human health (Bull and Ebert 2008; Day et al. 2008; Michalakis et al. 2008; Nesse and Stearns 2008; Webster et al. 2008), biological control (Olivieri et al. 2008), pathogen and agricultural ecosystems (Burdon and Thrall 2008), fisheries (Hutchings and Rowe 2008), conservation genetics and management (Funk et al. 2008; Latta 2008; Vähä et al. 2008).

We are excited to be a part of a journal that not only fills a large gap in the scientific community, but also enables biologists to showcase the multitude of ways evolutionary biology both permeates and informs society as a whole. We look forward to publishing your papers.

Louis Bernatchez
Editor in Chief

Michelle Tseng
Founding and Managing Editor

Literature cited

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