

College of Natural Resources and the Environment

University of Massachusetts Amherst

Competitive Agricultural Systems in a Global Economy

Introgressive hybridization between *Colias* butterflies and their mutual adaptation to forage Crops

Issue

Pest control strategies affect everyone. The project will assess whether we need to study these butterflies as one ecological species in order to develop one control strategy, or as two separate pest species in order to develop two (perhaps coordinated) control strategies.

What has been done?

Our theoretical and statistical work is the first for measuring the rate that genes are shared between sympatric, hybridizing species. This measure is fundamental to any strategy to manage the spread of adaptations (for example, resistance to pesticides or herbicides) between species. Our genetic marker data will be helping us progress toward the development of the one of the first

fine scale maps of any butterfly genome, and among the first to assess the long-suspected role of sex-chromosome differences in blocking the spread of genes between species.

Impact

The project will assess whether we need to study these pest butterflies as one ecological species in order to develop one control strategy, or as two separate pest species in order to develop two (perhaps coordinated) control strategies

Primary impact area(s)

- Research
- Education
- Extension

Funding sources

- Hatch Act

Contacts

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