

Models for Citizen Science Insect Data

Award Year:

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Associated Program:

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The recent explosion of citizen science programs is a result of an increasingly engaged citizenry eager to document their interactions with nature coupled with the science community's need for biological data at the largest spatial and temporal scales. Insects have an increasingly high public profile, are known to be sensitive indicators of change, and are key ecosystem service providers. The surge in the number of citizen science insect monitoring programs, together with the recent release of powerful climate products, offers new possibilities to make the most of insect distribution data over continental scales.

Before we can develop the best visualization and analytical platforms to share these data and increase the connection between the public and the scientific, conservation, and policy communities, we must first determine the best approach for utilizing these neglected datasets.

This project assembles a team of experts in informatics, computational biology, and mathematical, statistical, and ecological modeling. The focus will be four diverse insect orders: Lepidoptera (butterflies and moths), Odonata (dragonflies and damselflies), Hymenoptera (bees and ants), and Coleoptera (beetles). The three main goals of this Venture are to:

1. develop general analytical models to extract the most robust population indices from citizen science insect monitoring data;
2. integrate daily growing degree day models to improve model parameterization and account for changing climates; and
3. perform cross-validation analyses for programs with different protocols.

This Venture will be a timely effort to take advantage of the current enthusiasm for citizen science programs and lay the groundwork to develop novel platforms to increase public engagement in understanding our current biodiversity crisis.

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Links

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- [2] <https://collab.sesync.org/groups/insectmodels>
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