Vita

Candidate's name: Abigail Victoria Malayny

Universities Attended:

Mount Allison University (2021)
Bachelors of Science
Biology

University of New Brunswick (2024)
Masters of Science
Biology

Conference Presentations:

Conference of the Biological Sciences (UNB): Wild bees in agroecosystems: abundance and diversity in forests, field margins and potato fields in New Brunswick. Malayny, Parachnowitsch and Vickruck.

Acadian Entomological Society: Wild bees in agroecosystems: abundance and diversity in forests, field margins and potato fields in New Brunswick. Malayny, Parachnowitsch and Vickruck.

Wild bees in agroecosystems: abundance and diversity in forests, field margins and potato fields in New Brunswick

UNIVERSITY OF NEW BRUNSWICK

THESIS DEFENCE AND EXAMINATION

in Partial Fulfillment

of the Requirement for the Degree of
Master of Science

by

Abigail V. Malayny

in the Department of Biology

U.N.B., Fredericton, N.B.

Friday, April 5th, 2024
12:00 p.m.

Bailey Hall, Room 27

Examining Committee

Dr. Amy Parachnowitsch	co-Supervisor
Dr. Jess Vickruck	co-Supervisor
Dr. Mark Sherrard	Internal Examiner
Dr. Alana Pindar	External Examiner
Dr. Jason Addison	Chair of Oral Examination

Abstract

Bees are the most important and recognized pollinators for plants across the globe and have been studied extensively in agricultural fields in relation to increasing pollination services. Bees in crops that do not require pollination have not been a large area of study, even though wild bees are still present in these ecosystems. During June, July, and August of 2022, we examined what bees are found in the non-pollinator dependent potato agroecosystems in New Brunswick, Canada. We collected bees in potato fields, field margins and in the surrounding forest landscape using blue vane traps. When potato crops were flowering, we collected a subsample of bees in each environment using aerial nets to examine pollen on the bees bodies. To determine what floral resources are available in each environment type we ran a transect to count and identify floral resources during each month and in each environment of the agroecosystem. We found 41 species of wild bees, the most common of which were from the genera *Lasioglossum* and *Bombus*. Bees were abundant in the field margin and agriculture field but were rarely found in the forest. Seven bee species were found to collect potato pollen, but the majority was collected by *Bombus impatiens*. This suggest that wild bees are present in potato agroecosystems and are using the potato floral resources when available. Farmers and policy makers can use this information to help protect wild bees in agroecosystems and the surrounding environments by leaving un-mowed patches of wildflowers, specifically Asteraceae and Fabaceae, in the field margin to support the bee community. Farmers should also consider limiting the use of pesticides to only necessary use, by using less chemicals and implementing precision spraying for areas of the crop field in need instead of general application to the whole field.