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Maritimes Butterfly Atlas

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Report to
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Common Roadside Skipper. Photograph by John Klymko.

Introduction

The Maritimes Butterfly Atlas (MBA) is a citizen science project documenting the occurrence of butterflies in the three Maritime provinces. This is the first butterfly atlas of this scale for the Maritimes, and is the first broad-scale citizen science butterfly survey that has been undertaken in Canada. The atlas is modeled after state-level butterfly surveys in Maine, Vermont, and Massachusetts and after the Maritimes Breeding Bird Atlas. The project was launched in 2010 and its final field season was in 2015.

The purpose of the MBA is to produce a snapshot of butterfly populations in the Maritimes today, providing a baseline dataset for the future. Information gathered will be used to inform conservation decisions, especially with regards to identifying species of conservation concern and their habitats. It will be valuable in the decades to come, as scientists examine effects of climate change and other disturbances on the distribution and abundance of native animal species. In addition, the atlas fosters public education and engagement in the discovery and protection of the Maritimes' natural heritage.

This report provides some highlights of the MBA's final field season and an update to general progress over the last year.

Greenish Blue. Photographed June 27, 2015 at the St. Leonard, NB, airport. Photo by MBA volunteer Roy LaPointe.

MBA highlights from 2015

2015 (the sixth year and final year of data collection) was an excellent year. In total 6,829 records were submitted, which is the third highest total for any year. The total number of records submitted during all six years of the project stands at 34,761. In 2015, 127 volunteers submitted records. Over the six years of the project, butterfly records were submitted by 460 volunteers.

The major highlight from New Brunswick in 2015 was the first MBA record of Greenish Blue. Roy LaPointe found the species on June 27, 2015, at the St. Leonard Airport in northwest New Brunswick. Greenish Blue was once common across northern New Brunswick - in Ferguson's *The Lepidoptera of Nova Scotia*, published in 1953, the species is described as abundant north of the Miramichi in early July. It was later described as "apparently rare" in Thomas' *A Preliminary Atlas of the Butterflies of New Brunswick* (published in 1996). Thomas' summation appears to apply today. The decline of Greenish Blue has been noted from elsewhere in the east - only one has been reported from Maine in the past decade during the Maine Butterfly Survey

(historic reports are recorded from eight townships), and it has disappeared from central Ontario. The cause of the decline from what is the southeastern edge of the species' range is unclear.

The first ever record of Variegated Fritillary for Nova Scotia was recorded in 2015 by Ron Wilson in Berwick, NS, on August 3. This was also the first record of the species from the Maritimes during the MBA period. Variegated Fritillary occurs in the Maritimes as a vagrant or stray from areas further south. There are several records pre-Atlas records from New Brunswick, including breeding records.

Variegated Fritillary. Photographed August 3, 2015, at Berwick, NS. Photo by MBA volunteer Ron Wilson.

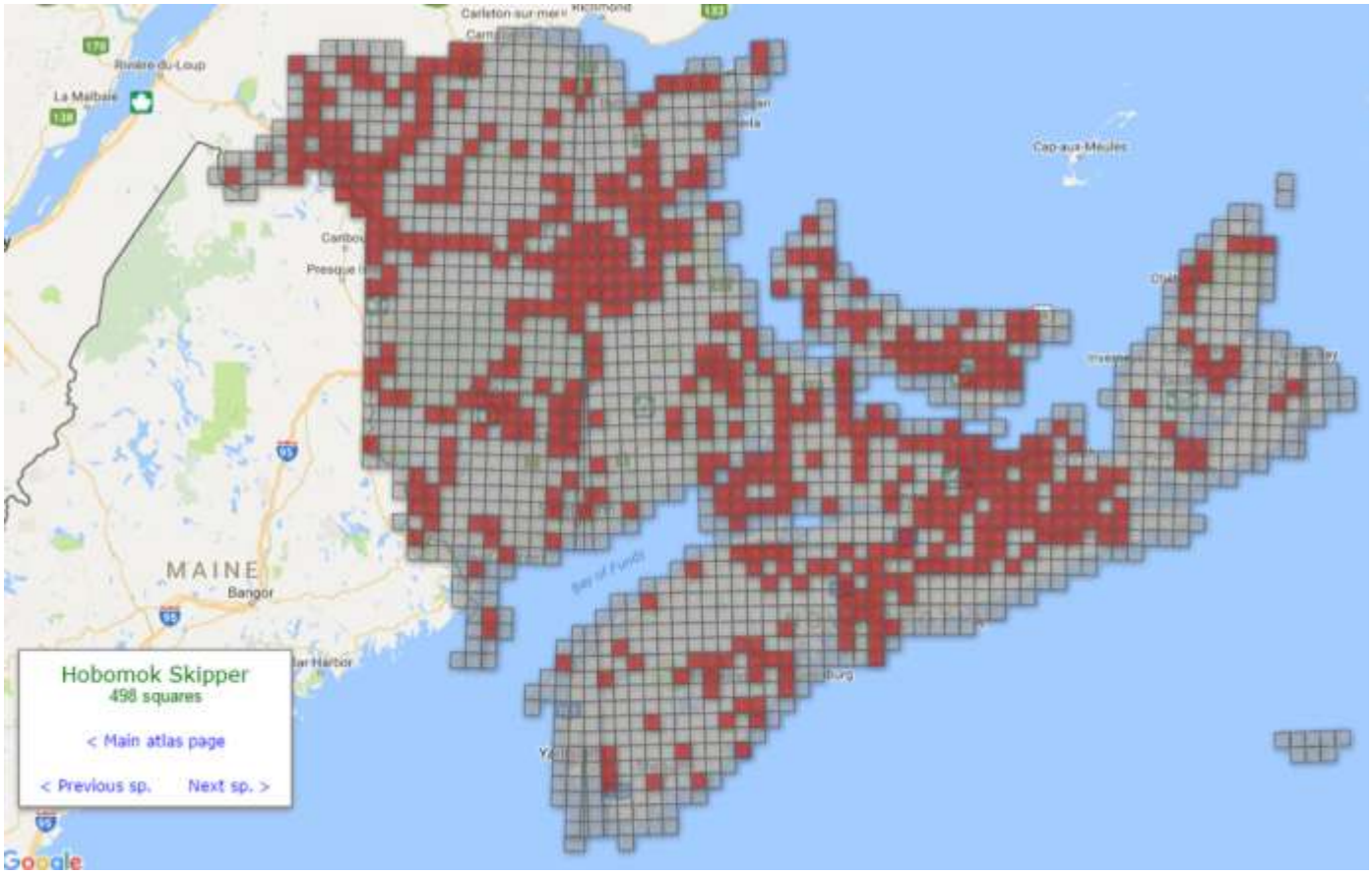
2015 was a really good year for Baltimore Checkerspot (*Euphydryas phaeton*) in Nova Scotia. In the first five years of the MBA there were eight Nova Scotia records from seven atlas squares. In 2015, there were 13 records from 10 atlas squares, including seven new square records.

During the winter and spring of 2016, records submitted by volunteers were vetted and tabulated. Results were posted on the MBA website in spring 2016 (http://accdc.com/mba/index-mba.html). On the website results can be viewed in a tabular format or projected on an interactive map of the Maritimes.

MBA presentations

In the spring of 2016 presentations were done at naturalist clubs in all three Maritimes provinces to provide a summary of the major findings of the MBA and to discuss the project's next steps. Maritimes' naturalists clubs were instrumental in launching the MBA - it was through them that many volunteers were recruited. Presentations were as follows: Natural History Society of Prince Edward Island - April 5; Halifax Field Naturalists - April 7; Miramichi Naturalists' Club- April 12; Blomidon Naturalists Society- April 18; Pictou County Naturalists Club - May 3; and Chignecto Naturalists Club- May 16. The presentation for the PEI Naturalists Club was promoted on PEI CBC radio during an interview March 30, 2016. During all presentations the NB WTF was acknowledged as a major MBA funder.

It was hoped that a presentation could be made to the Saint John Naturalist Club. The club was initially contacted about this in July 2015, but due to their busy speaker schedule, the next available time slot is in fall 2016. On October 17, 2016, John Klymko will provide an update about the Maritimes Butterfly Atlas during a presentation about insect pollinators.



Screenshot of the MBA's interactive results map showing records of Hobomok Skipper submitted during the atlas period.

The reranking of Maritimes butterflies

Every five years the conservation status of every wildlife species in the Maritimes is reassessed[1]. This is the process that identifies which species are secure on the landscape (generally species that are widespread and common) and which species are at risk of extirpation (generally species rare on the landscape). The conservation status of Maritimes butterflies were reviewed in late summer 2015, and the results of from the MBA had a huge influence. The biggest changes for New Brunswick ranks were with Bog Fritillary and Greenish Blue.

Prior to the MBA, Bog Fritillary was ranked S1S2 in New Brunswick, meaning the species was bordering on imperiled. The species was thought to be of high conservation concern in New Brunswick because it was known from only six locations in New Brunswick prior to the MBA. During the MBA the species was found at 13 sites, including five found by John Klymko during targeted surveys as part of NB WTF project B004-003. MBA data clearly shows that Bog Fritillary is widespread and uncommon but not rare across northern New Brunswick. As such the rank was adjusted to S3.

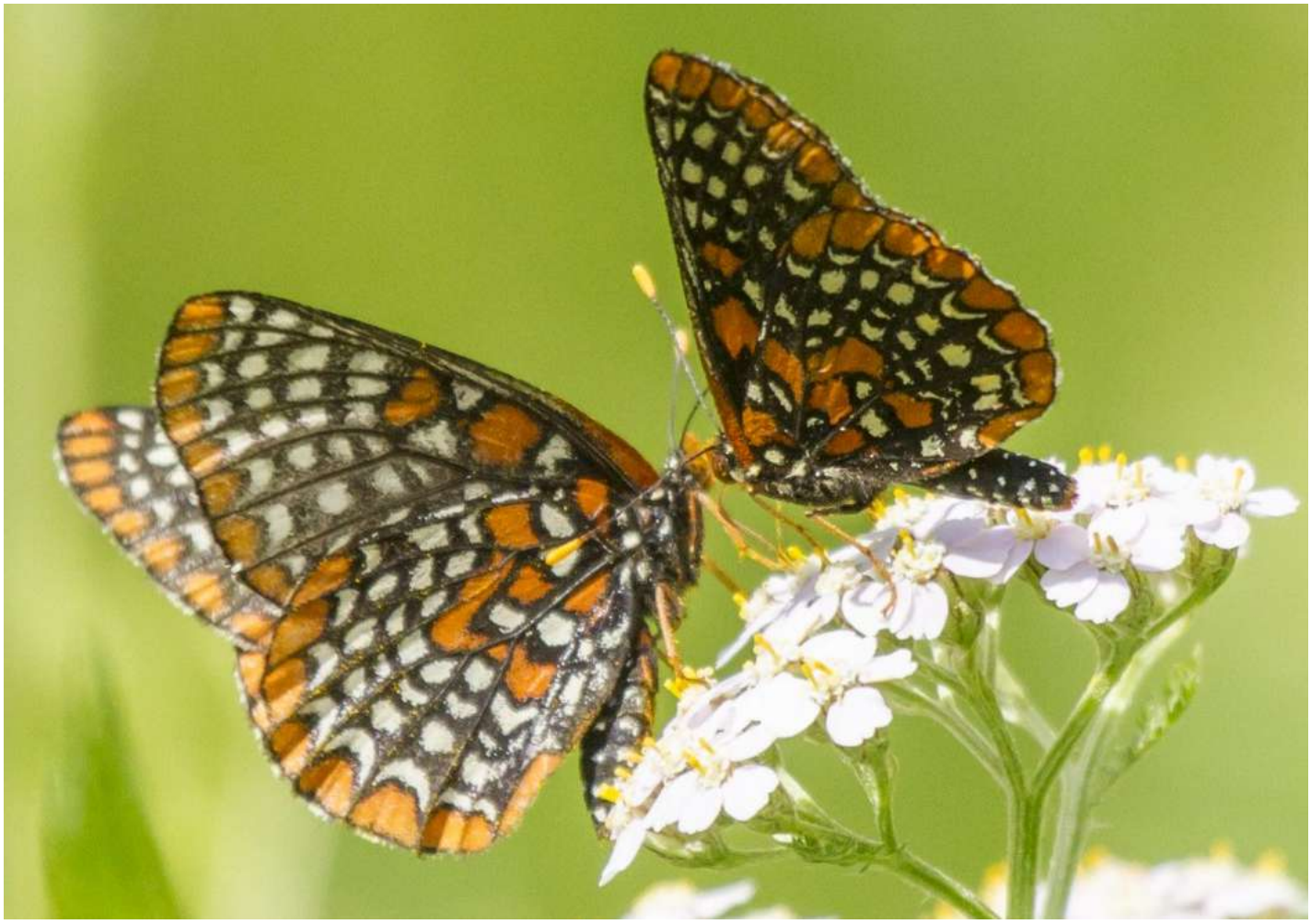
[1] For definitions of the various conservation statuses see http://accdc.com/en/rank-definitions.html

Prior to the MBA, Greenish Blue was ranked S3 in New Brunswick. As mentioned above, the species was known to have been common in the northern half of the province in the past. Given that the species was only found once during the MBA the rank was adjusted to S1S2.

In total, during the 2015 rank review, the number of butterfly ranks adjusted for NB, NS, and PEI was 15, 38, and 26, respectively. Most of these adjustments were made as a direct result of MBA data.

The MBA going forward

The dataset of records created during the six year MBA period is invaluable to our understanding of butterfly conservation now and into the future. This dataset is being incorporated into the AC CDC dataset where it will be available to conservation policy makers. The results of the MBA are also being published in a book along with results from the Maine Butterfly Survey, a citizen-science project of similar design and scope. This book will serve as a permanent record of the results of these two projects, and will be of great interest to conservation policy makers and the general public.



Baltimore Checkerspot. Photographed July 4, 2014, at Miramichi, NB. Photo by MBA volunteer Peter Gadd.