

Maritimes Butterfly Atlas



Photograph by Denis Doucet

A Citizen Science Case Study

John Klymko

Atlantic Canada Conservation Data
Centre

Today's presentation

- Maritimes Butterfly Atlas
 - Background
 - Results to date
- Application to BSC
 - Potentials
 - Limitations

Maritimes Butterfly Atlas

- 5 year effort launched in 2010
- Grant funded
 - 2009 & 2010: Environment Canada's EcoAction Community Funding Program
 - 2011: Gosling Foundation and NB WTF Fund
- Coordinator and steering committee

Maritimes Butterfly Atlas

- Goals
 - better assess the conservation status of butterfly species in the three Maritime provinces
 - produce robust baseline dataset
 - raise public awareness of butterfly diversity and conservation

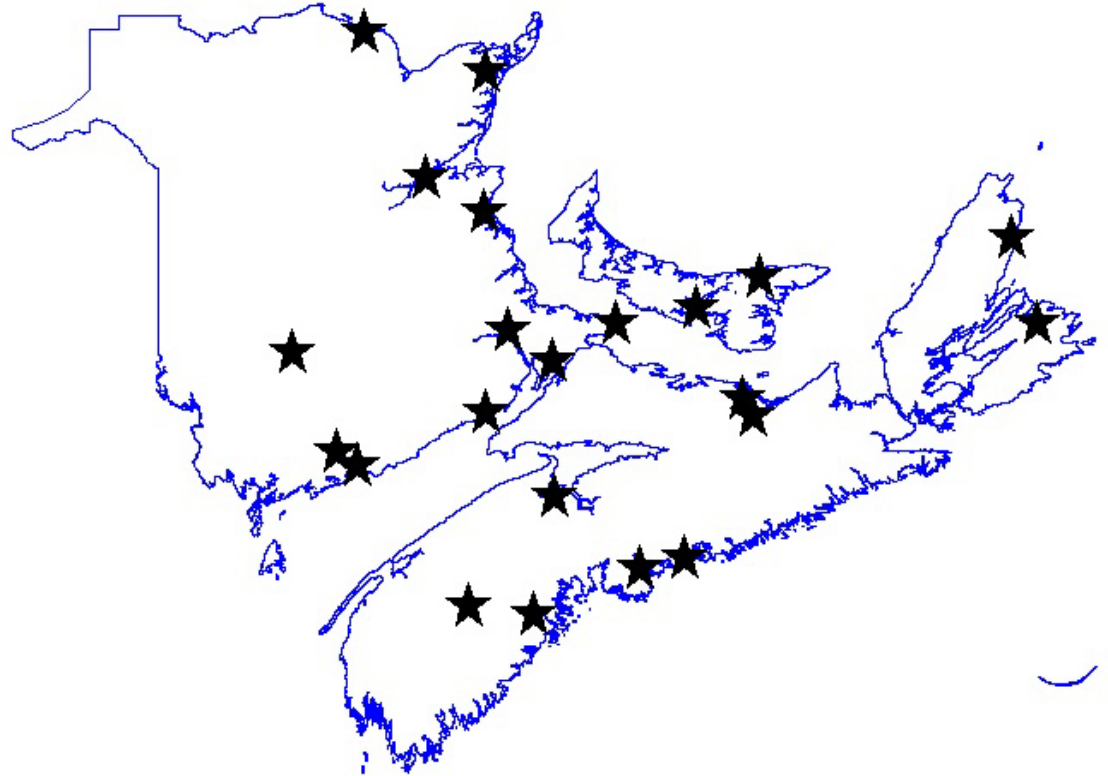
Maritimes Butterfly Atlas

- Voucher driven
 - Specimens or photographs
 - Permanently housed at NS Museum and NB Museum
- Even the most novice participant can contribute



Public Engagement



- Naturalist Clubs
- Radio interviews
- Newspaper,
Radio, TV
- Partnership with
Parks Canada



Participation


- Free
 - \$20 donation suggested for kits
- Any species, anywhere, anytime
- Datasheets
 - Voucher Data Card
 - Site Visit Form

Voucher Data Card

 Maritimes Butterfly Atlas – Voucher Data Card 			
Atlantic Canada Conservation Data Centre—Sackville, New Brunswick			
Observer: John Klymko		MBA Voucher #: 00001	
Confirmer:		Site Name: Sackville Waterfowl Park	Province: NB
Date: 12 June 2010	Site Code: JDK001	Site Location: Sackville, park	MBA Square #: 20LR98
Common Name: Canadian Tiger Swallowtail		bordered by Main St., Weldon St., and TCH	
Scientific Name: <i>Papilio canadensis</i>			
Voucher Type: <input checked="" type="checkbox"/> Specimen <input type="checkbox"/> Photo <input type="checkbox"/> Roadkill <small>Put X in front of appropriate choice</small>		Lat: 45.9036	Long: -64.3667
# of Vouchers: 1	# Observed: 3	RETURN TO John Klymko Atlantic Canada Conservation Data Centre Box 6416 Sackville NB E4L 1G6 jklymko@mta.ca (506) 364-2660	
Voucher condition (F,S,W,E): F			
F = Fresh S = Slightly Worn W = Worn E = Extreme			

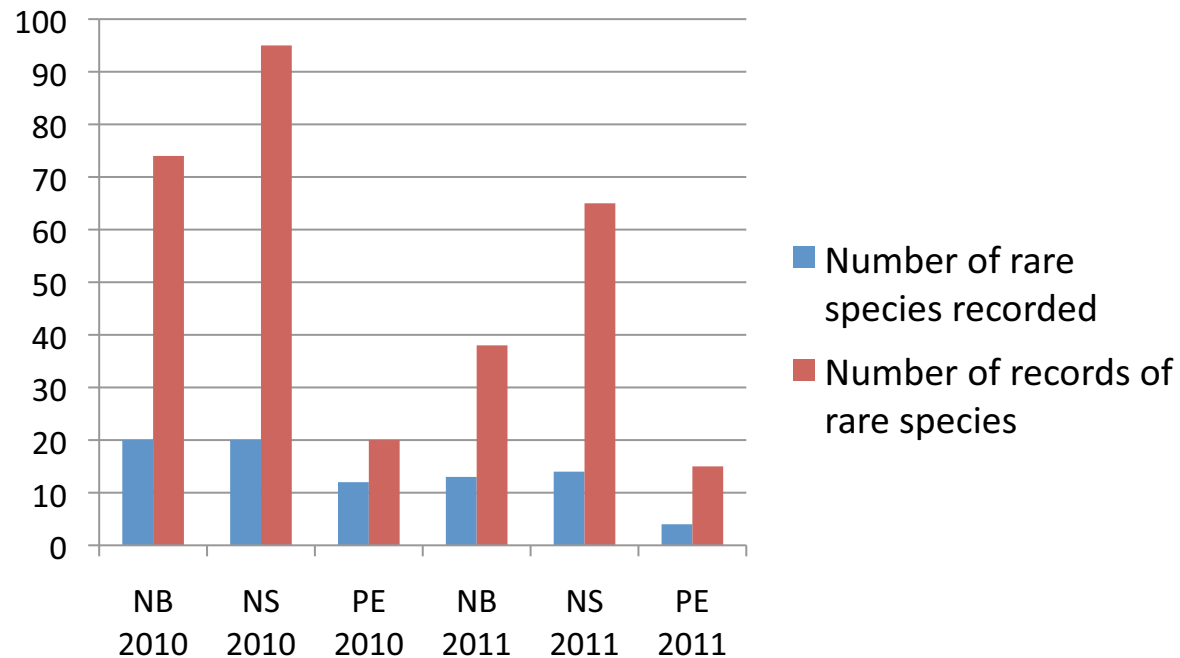
HABITAT (PUT X IN FRONT OF APPROPRIATE CHOICE)			
Old or Regenerating Fields <input type="checkbox"/> Barren (little vegetation) <input type="checkbox"/> Grass/Herbs (no shrubs) <input type="checkbox"/> Few Shrubs <input type="checkbox"/> Shrubland (more shrubs than grass) <input type="checkbox"/> Brush-hogged Cuts/Year _____ Last Cut _____ Agricultural <input type="checkbox"/> Active Crop Land <input type="checkbox"/> Pasture or Hayfield <input type="checkbox"/> Orchard or Vineyard Other Openings <input type="checkbox"/> Power Line Right-of-Way <input type="checkbox"/> Rock Outcrop <input type="checkbox"/> Coastal Barren	Forest Gaps <input type="checkbox"/> Natural (blowdown, etc.) <input type="checkbox"/> Forestry (log landing, etc.) <input type="checkbox"/> Regenerating Area <input type="checkbox"/> Woods Road or Trail <input type="checkbox"/> Ski Slope Forest Type <input checked="" type="checkbox"/> Deciduous Dominated <input type="checkbox"/> Coniferous Dominated <input type="checkbox"/> Mixed Woods	Wetlands <input type="checkbox"/> Sedge/Grass <input type="checkbox"/> Cattail/Reed <input type="checkbox"/> Shrub <input type="checkbox"/> Beaver Pond <input type="checkbox"/> Wooded <input type="checkbox"/> Deciduous <input type="checkbox"/> Coniferous <input type="checkbox"/> Mixed <input type="checkbox"/> Bog/Fen	Shoreline <input type="checkbox"/> Natural Lake (>5 ha) <input type="checkbox"/> Pond (<5 ha) <input checked="" type="checkbox"/> Reservoir <input type="checkbox"/> Ocean River or Stream <input type="checkbox"/> River (>10 feet wide) <input type="checkbox"/> Stream (<10 feet wide)
	Road/Roadside <input checked="" type="checkbox"/> Dirt <input type="checkbox"/> Paved	Residential <input type="checkbox"/> Lawn <input type="checkbox"/> Garden <input type="checkbox"/> Urban	<input type="checkbox"/> Other (please describe)
NECTAR PLANT(S) Lilac		HOST PLANT(S)	
NOTES Reservoir bordered by young forest and walking trails			

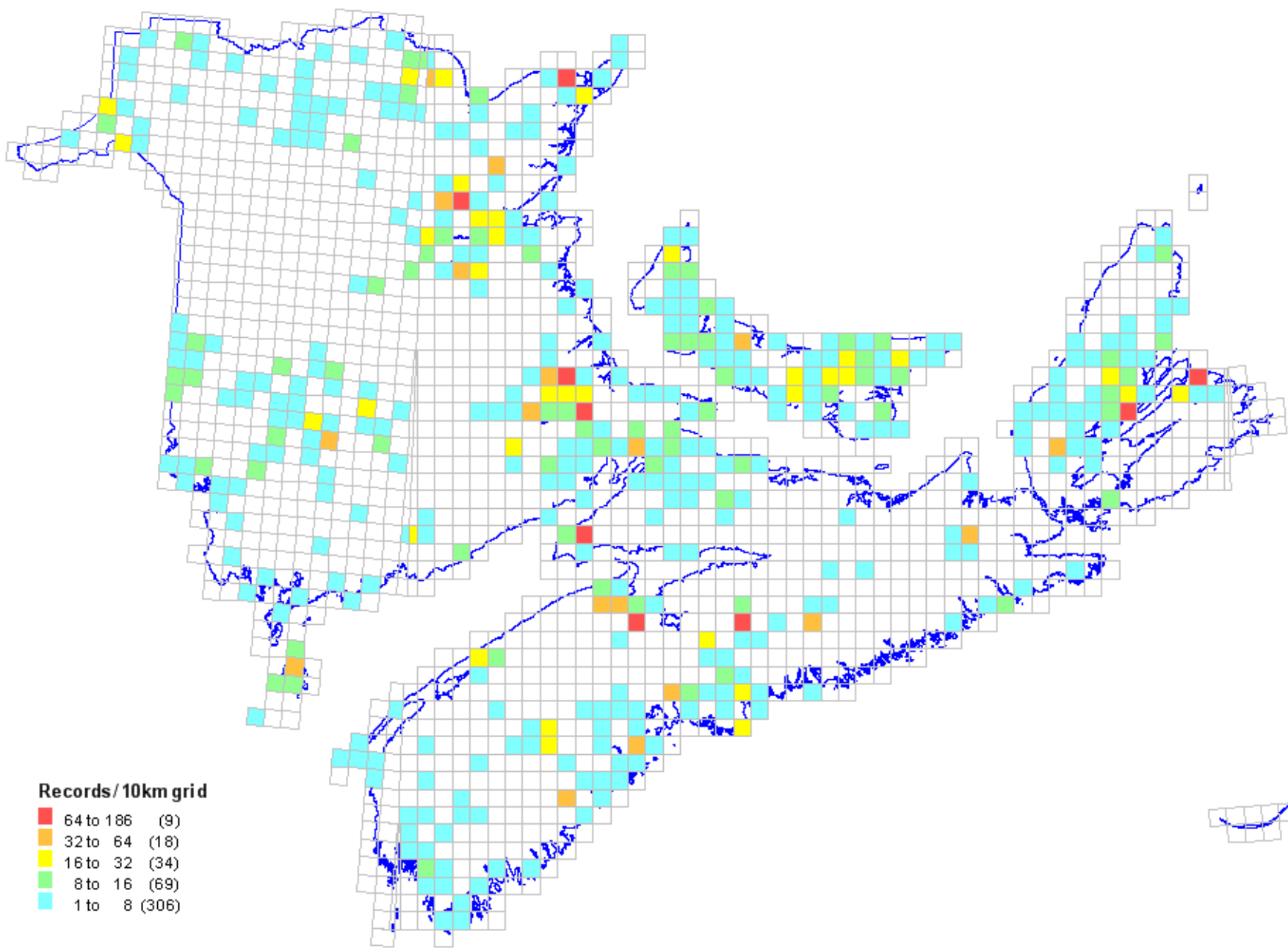
Site Visit Form

Maritimes Butterfly Atlas 	Site Name (Use the same name for each visit) Sackville Waterfowl Park		Site Location (give directions or attach a photocopy of a map and mark the site location) Sackville, park bordered by Main St., Weldon St., and Trans Canada Highway	
	Site Code (your 3 initials & 3 digit #. e.g. ABC001) JDK001			
Site Visit Form		Survey square # (e.g. 19EP50) 20LR98	Latitude dec.degrees 45.9036	Longitude dec.degrees -64.3667
Return To: John Klymko Atlantic Canada Conservation Data Centre Box 6416, Sackville NB E4L 1G6 jklymko@mta.ca (506) 364-2880		Town Sackville		Observer(s) John Klymko
ID Codes S = Specimen R = Road-killed P = Photograph or Video		County Westmorland	Province NB	Cloudcover <input type="checkbox"/> <10 <input type="checkbox"/> 10-50% <input type="checkbox"/> 50-90% <input type="checkbox"/> >90% Wind <input type="checkbox"/> Still <input type="checkbox"/> Light <input type="checkbox"/> Moderate <input type="checkbox"/> Strong
Habitat Codes		Park or Protected Area Name Sackville Waterfowl Park		Temperature <u>22</u> °C
Old or Regenerating Fields <input type="checkbox"/> Barren (little vegetation) <input type="checkbox"/> Grass/herbs (no shrubs) <input type="checkbox"/> Few Shrubs <input type="checkbox"/> Shrubland (shrubs > grass) <input type="checkbox"/> Brush-hogged Cuts/year _____ Last Cut _____		Landowner (if known)		Date (Format: 24 May 2010) 12 June 2010
Agricultural <input type="checkbox"/> Active Crop Land <input type="checkbox"/> Pasture or Hayfield <input type="checkbox"/> Orchard or Vineyard		Species		Start Time 12:00
Other Openings <input type="checkbox"/> Power Line Right-of-Way <input type="checkbox"/> Coastal Barren <input type="checkbox"/> Rock Outcrop		# of Vouchers	# Observed	End Time 13:30
Forest Gaps <input type="checkbox"/> Natural (blowdown, etc.) <input type="checkbox"/> Forestry (log landing, etc.) <input type="checkbox"/> Regenerating Area <input type="checkbox"/> Woods Road or Trail <input type="checkbox"/> Ski Slope		ID Code	Voucher #	
Forest Type <input checked="" type="checkbox"/> Deciduous Dominated <input type="checkbox"/> Coniferous Dominated <input type="checkbox"/> Mixed Woods (<80% Dom.)		Canadian Tiger Swallowtail	1	3
Wetlands <input type="checkbox"/> Sedge/Grasses <input type="checkbox"/> Cattail/Reed <input type="checkbox"/> Shrub <input type="checkbox"/> Beaver Pond <input type="checkbox"/> Wooded <input type="checkbox"/> Deciduous Dominated <input type="checkbox"/> Coniferous Dominated <input type="checkbox"/> Mxed (<80% Dominated) <input type="checkbox"/> Bog/Fen		Mourning Cloak	1	1
Road/Roadside <input checked="" type="checkbox"/> Gravel <input type="checkbox"/> Paved		?	1	5
Residential <input type="checkbox"/> Lawn <input type="checkbox"/> Garden <input type="checkbox"/> Urban				
Shoreline <input type="checkbox"/> Natural Lake (>5 ha) <input type="checkbox"/> Natural Pond (<5 ha) <input checked="" type="checkbox"/> Reservoir <input type="checkbox"/> Ocean				
River or Stream <input type="checkbox"/> River (>10 feet wide) <input type="checkbox"/> Stream (<10 feet wide)				
Other (use Habitat Description)		Habitat Description and Notes (Dominant vegetation, plants flowering etc.) Reservoir surrounded by young predominantly birch woods with gravel waking trails. Flowering plants were chokecherry, buttercup and Lilac. Canadian Tiger Swallowtail (scattered throughout site, nectaring at Lilac), Mourning Cloak (sunning on path), unknown butterfly (scattered throughout site).		

Results

- 2010: 2,463 records (93 participants, 1,120 specimens, 1,343 photographs)
- 2011: ~2,500 records





Results

- New provincial records
 - American Snout for New Brunswick
 - Dorcas Copper for Nova Scotia



Results

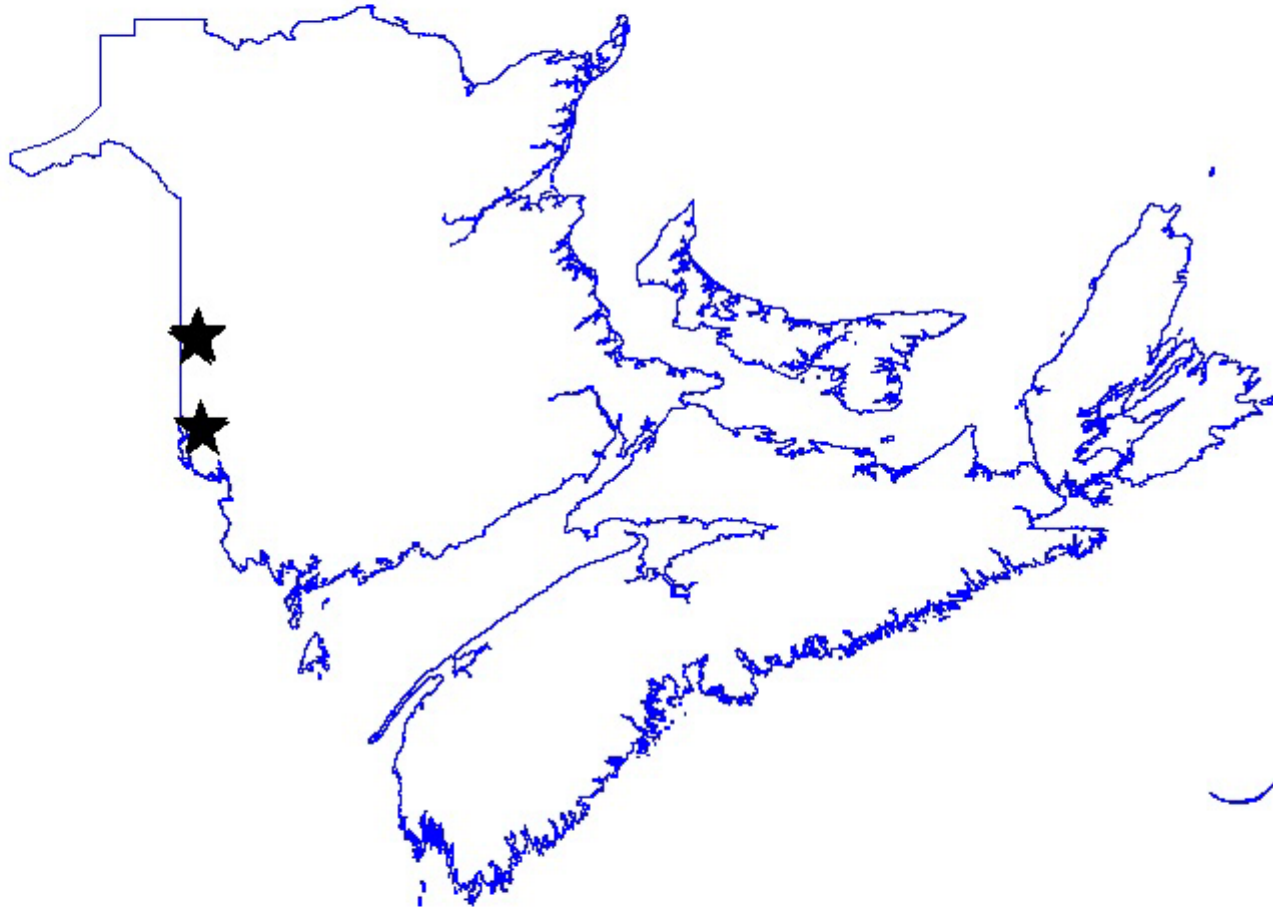
- Significant contribution to the understanding of several rare species

Dorcas Copper

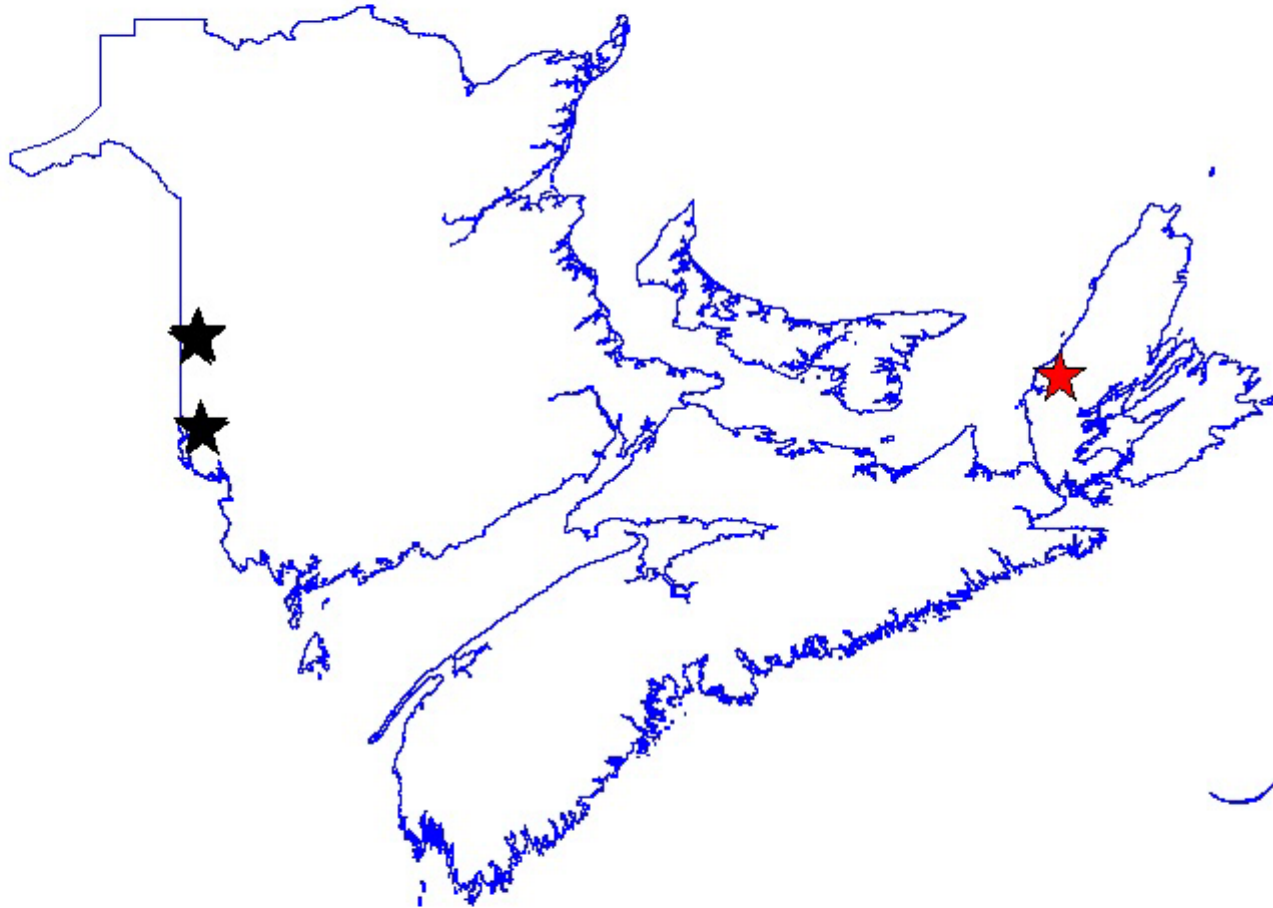


D. Doucet

Dorcas Copper



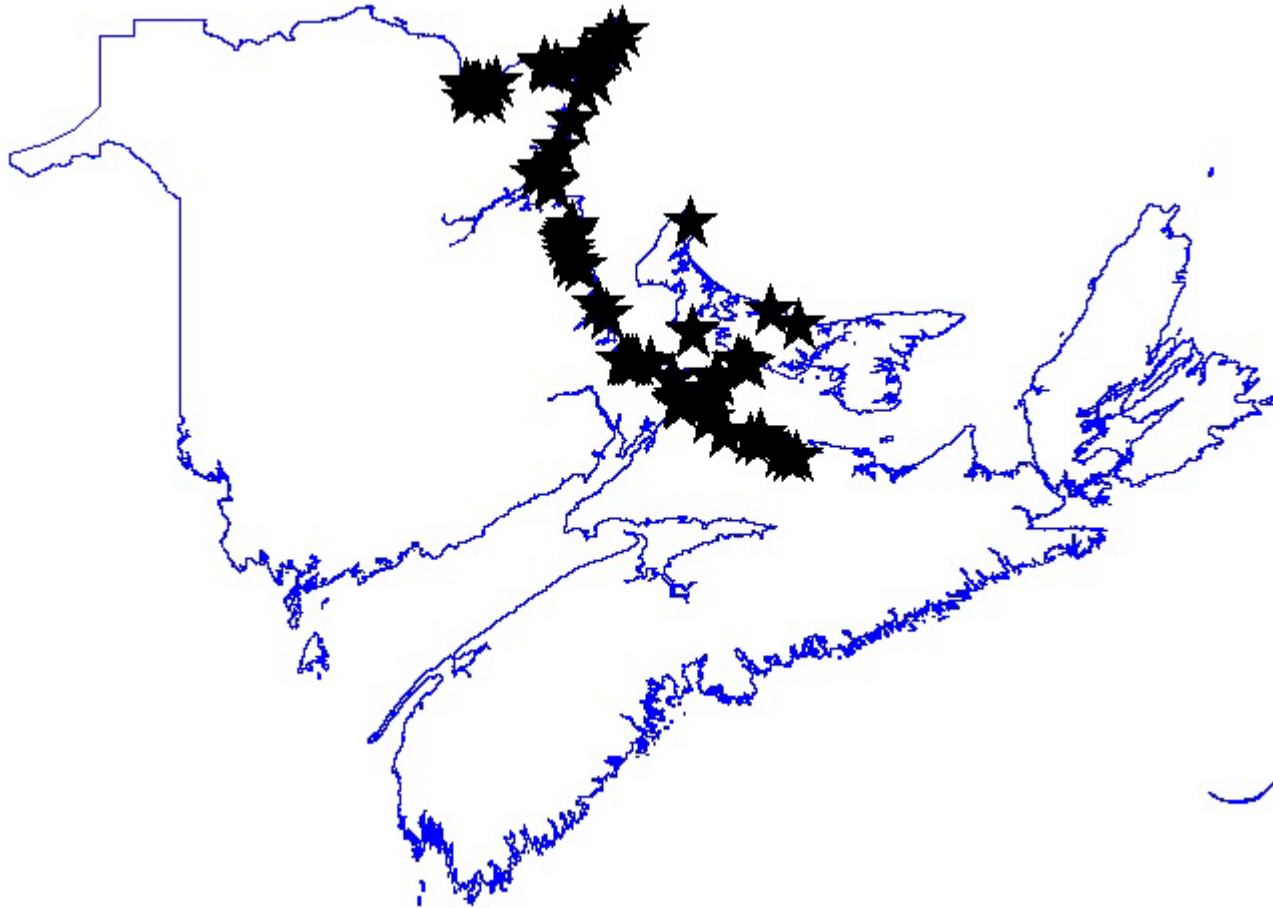
Dorcas Copper



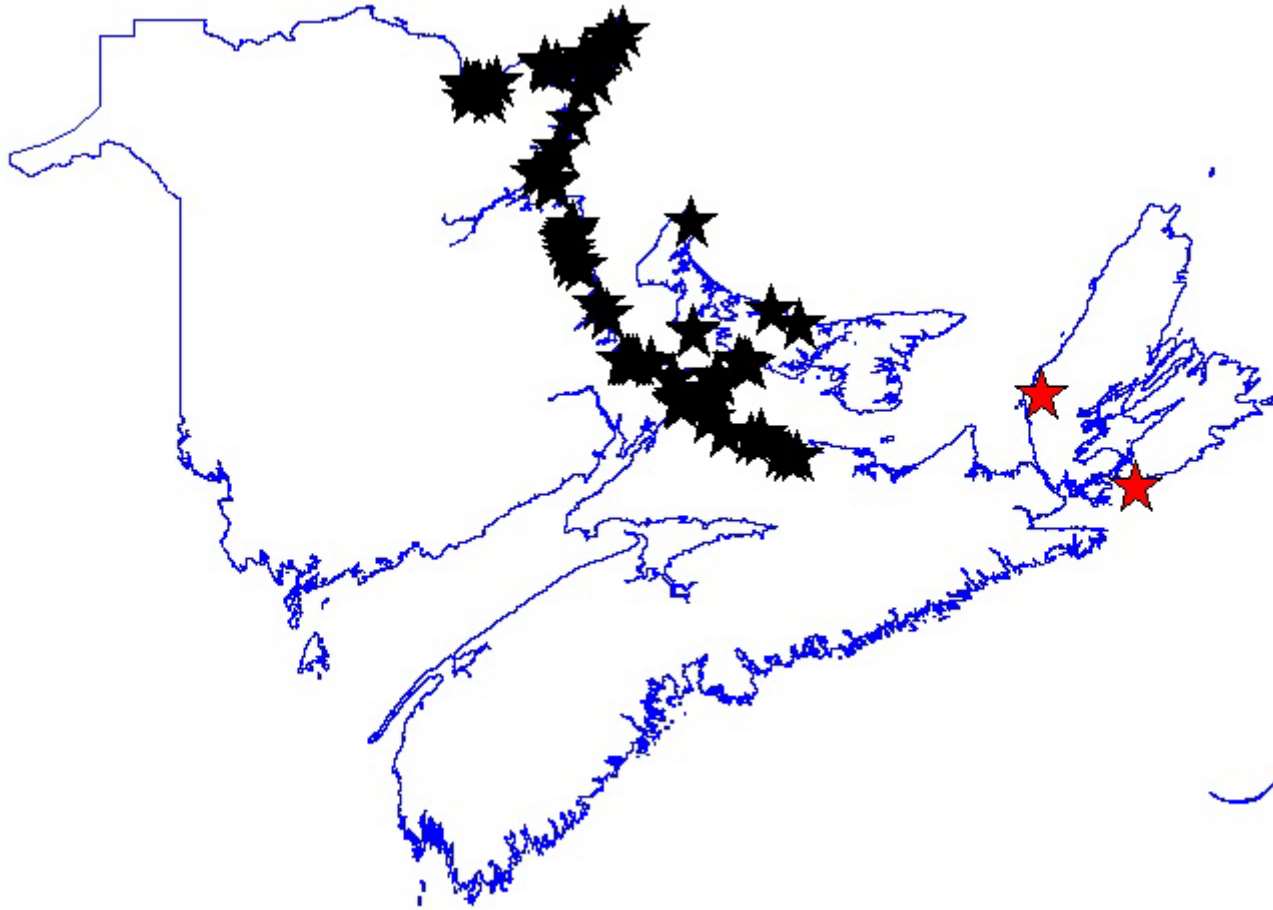
Saltmarsh Copper



Saltmarsh Copper



Saltmarsh Copper

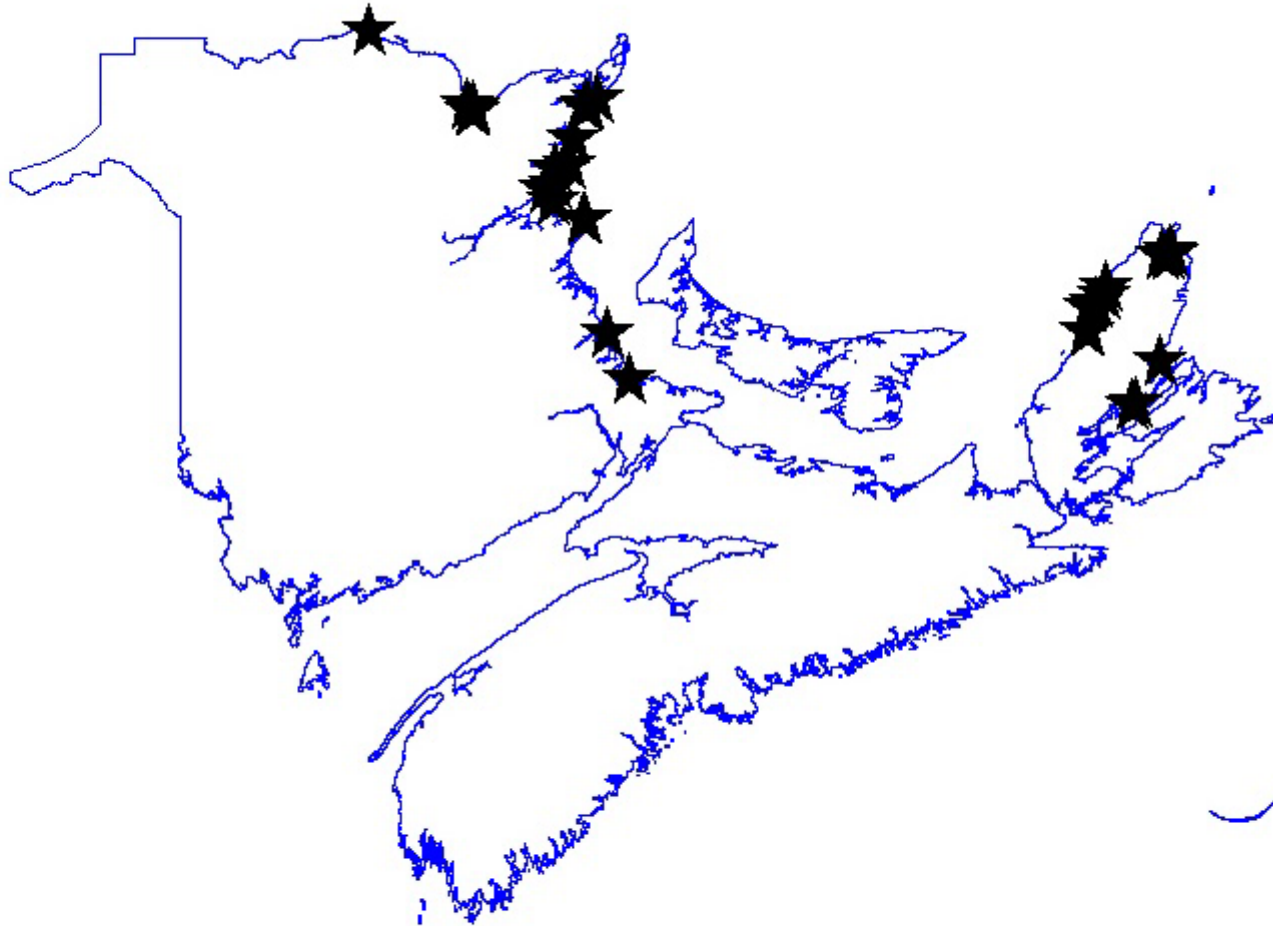


Short-tailed Swallowtail

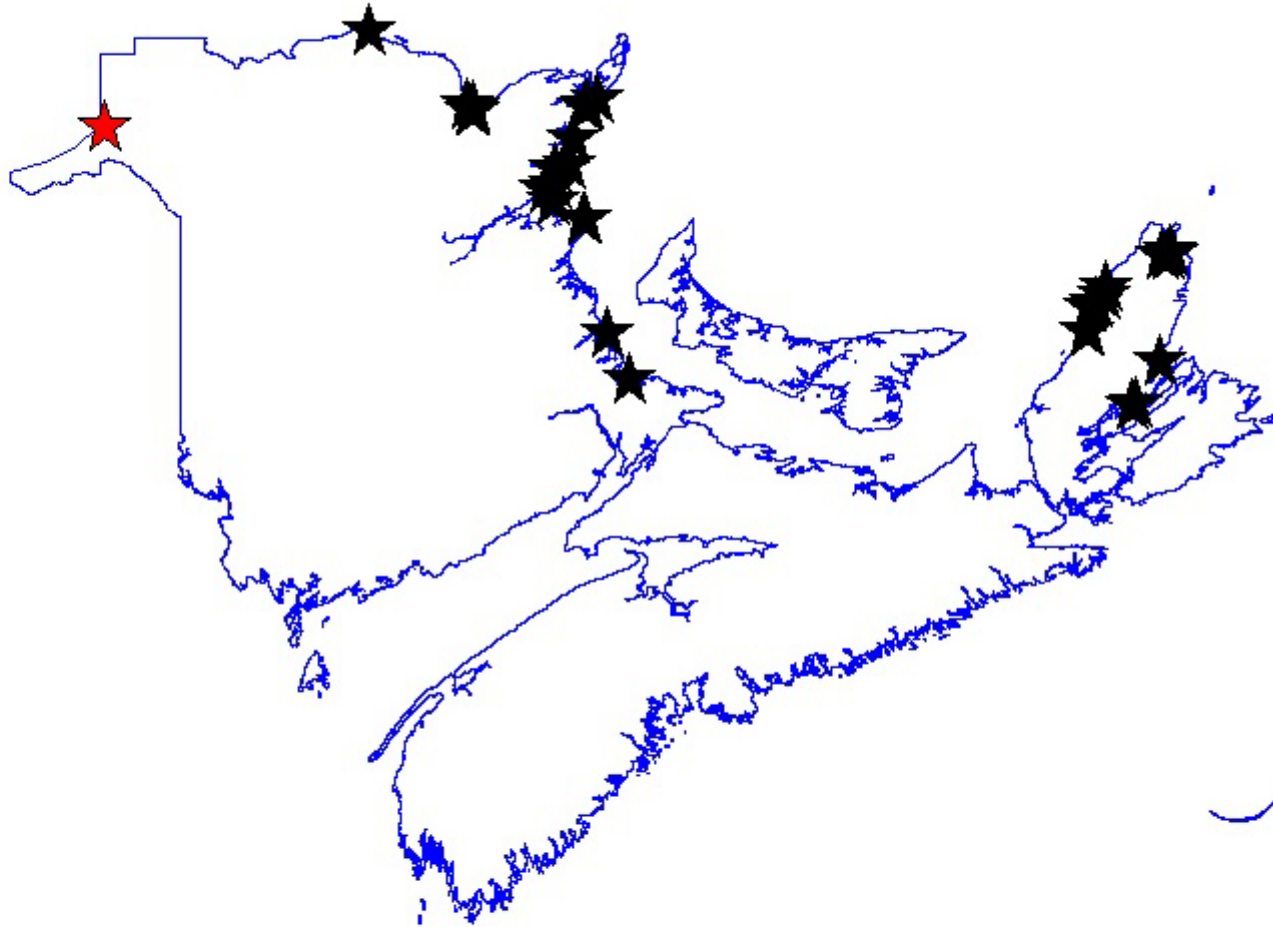


Eric Sullivan

Short-tailed Swallowtail



Short-tailed Swallowtail



Disseminating Results

- Website
- Newsletter
- Blog
- ListServ

Maritimes Butterfly Atlas



Photograph by Denis Doucet

[About the Atlas](#)

[Updates and News \(Meeting and Workshop Information\)](#)

[Provincial Butterfly Checklists and Species Pages](#)

[Atlas Organizers](#)

[Atlas Sponsors and Partners](#)

[Butterfly Resources and Links](#)

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[Get Involved](#)

[Instructions for Atlassers](#)

[Manuel des Participants](#)

[Field Sheets](#)

[Formulaires](#)

[Priority Square Maps](#)

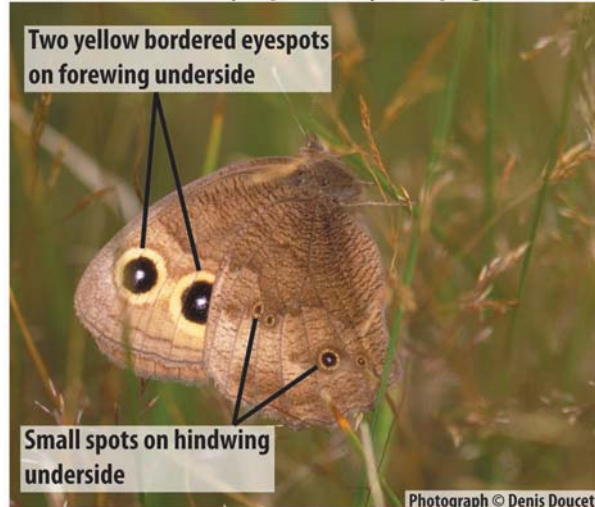
[Survey Results](#)

This project received funding from Environment Canada's EcoAction Community Funding Program and Gosling Foundation

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Common Wood-Nymph (*Cercyonis pegala*)



Two yellow bordered eyespots on forewing underside

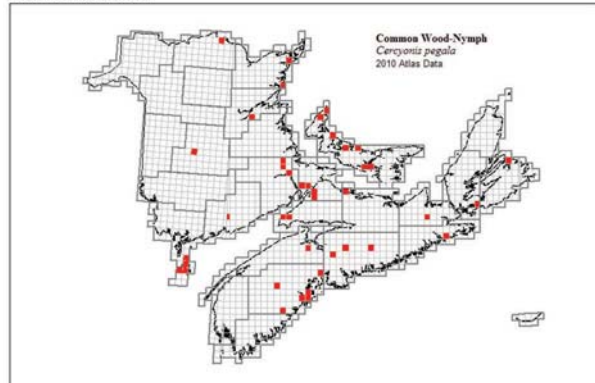
Small spots on hindwing underside

Photograph © Denis Doucet

Description: A medium sized dark brown butterfly. Above and below the forewing has two widely spaced large bold eyespots that are surrounded by a varying amount of yellowish-brown scaling. This characteristic, its summer flight period and habitat should distinguish it from other satyrs. Wingspan: 38 to 58 mm.

Maritime Distribution: Widespread throughout the Maritimes.

Atlas records to date:



Provincial Ranks: NB: S5. NS: S5. PEI: S5.

Flight Period: Early July to mid September.

Host Plant: A variety of grasses including Wild Oats (*Avena fatua*).

Notes: Common Wood-Nymph is a common species of open habitats including wet meadows, old fields, margins of farm fields and woodland clearings. It is an avid flower visitor.

American Copper (*Lycaena phlaeas*)



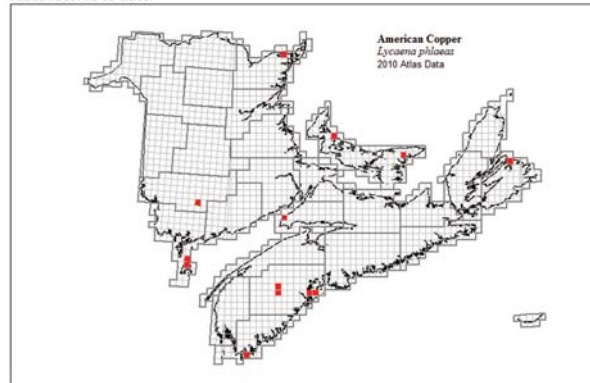
Hindwing with orange border

Photograph © Jim Edsall

Description: This is a small orange and grey butterfly with the forewing orange above with large black spots and paler orange below with large black spots and a grey margin. The hindwing is dark grey above with a wide orange margin and light grey below with small black spots and a narrow orange margin. Female Bronze Coppers are similar in pattern but at least twice the size and have a more prominent orange margin on the underside of the hindwing. Wingspan: 21 to 30 mm.

Maritime Distribution: Throughout the Maritimes.

Atlas records to date:



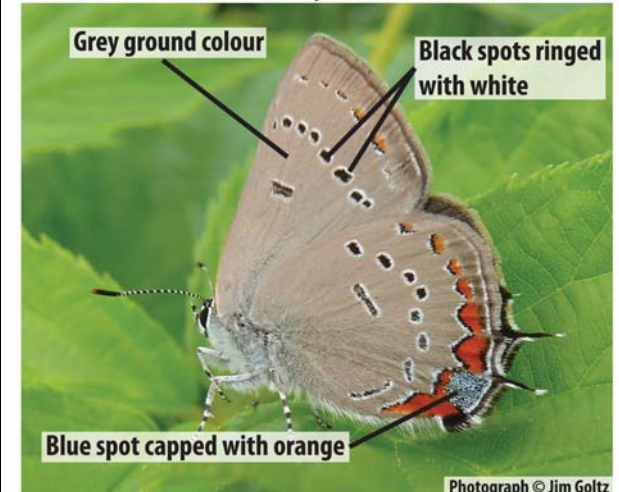
Provincial Ranks: NB: S5. NS: S4. PEI: S4.

Flight Period: There are two flights, one from late May to early July and a second from late July to early September and occasionally a third flight in late September, early October.

Host Plant: Curled Dock (*Rumex crispus*) and Sheep Sorrel (*Rumex acetosella*).

Notes: American Copper is found in a variety of weedy disturbed areas, from vacant city lots, suburban lawns, abandoned fields and coastal headlands. It is hard to find, although at one time it was much more common. It is a quick flier, hard to follow when disturbed. It is an aggressive butterfly, often chasing much larger species from its territory.

Acadian Hairstreak (*Satyrrium acadica*)



Grey ground colour

Black spots ringed with white

Blue spot capped with orange

Photograph © Jim Goltz

Description: This small butterfly is dark grey above, with an orange spot in posterior corner of hindwing. Below it is light grey, the forewing has prominent black spots, the hindwing has prominent black spots, an orange submarginal band, a blue spot in the posterior corner, and a single tail. Acadian Hairstreak is the only hairstreak in the Maritimes with black wing spots. Wingspan: 24 to 32 mm.

Maritime Distribution: Southern New Brunswick, Prince Edward Island, northern mainland of Nova Scotia.

Atlas records to date:



Provincial Ranks: NB: S3. NS: S1. PEI: S1S2.

Flight Period: Early July to mid August.

Host Plant: Various willows (*Salix* spp.).

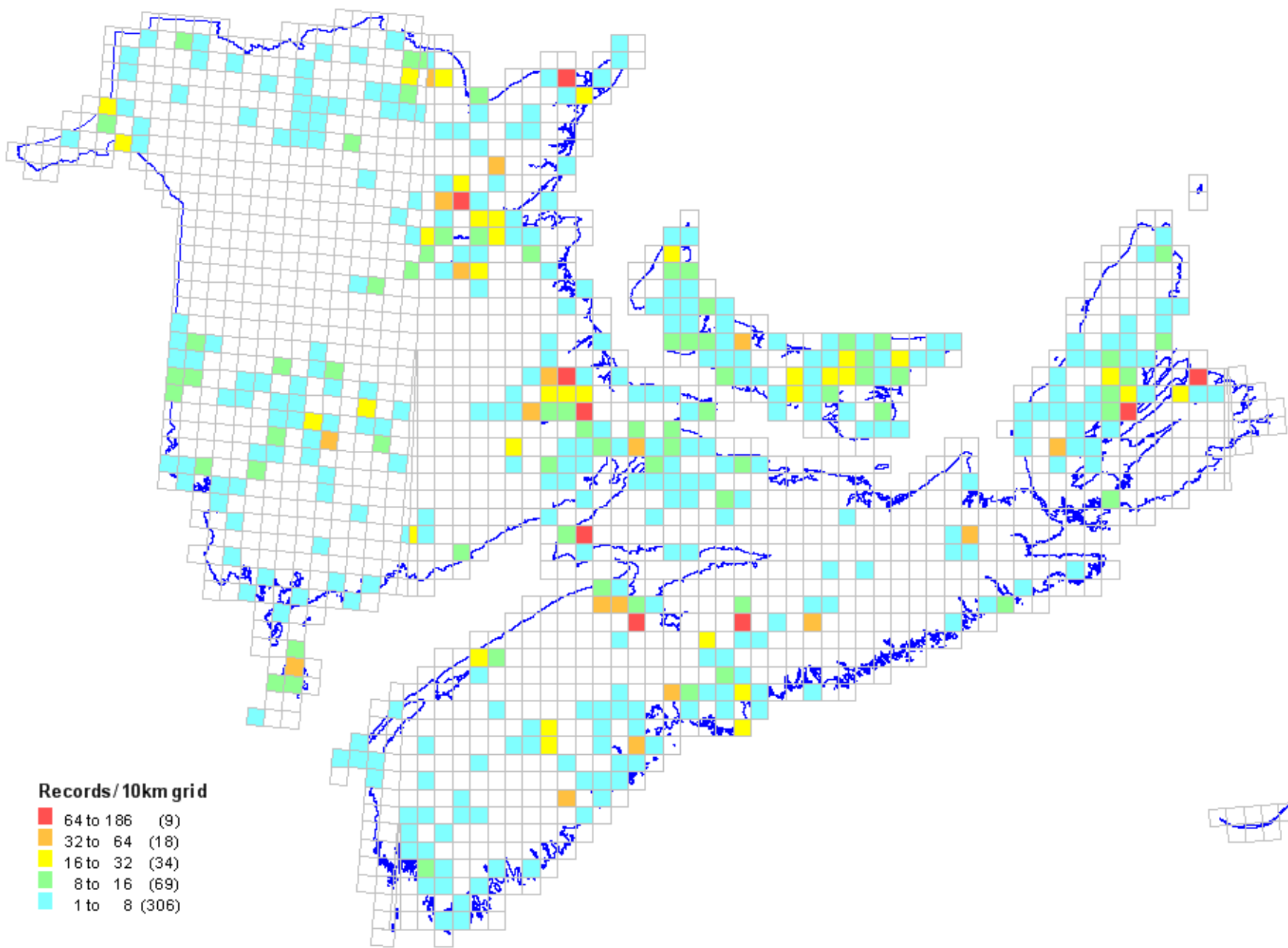
Notes: Acadian Hairstreak occurs in a variety of wet and dry habitats where small shrubby willows grow. It is highly localized and colonial, often occurring in the same place year after year, but it is seldom common. Colonies are rare despite the presence of suitable habitat. The adults sit on the leaves of the foodplant and also perch on coarse grasses.

Citizen Science and the Biological Survey of Canada

- Discover, survey, and inventory Canada's biological diversity and provide universal access to biodiversity information;
- Detect, measure, and predict changes in Canadian biological diversity, and provide science-based advice for sustaining native biodiversity in Canadian ecosystems;
- Promote the importance of fundamental taxonomic research on Canadian species and provide access to expertise on Canadian biodiversity;
- Promote awareness of the values and vulnerabilities of Canada's biological diversity by inspiring, educating, and engaging Canadians.

Benefits

- Wide coverage for reasonable cost



Records/10km grid

- 64 to 186 (9)
- 32 to 64 (18)
- 16 to 32 (34)
- 8 to 16 (69)
- 1 to 8 (306)

Benefits

- Wide coverage for reasonable cost
- Raise public awareness



Benefits

- Wide coverage for reasonable cost
- Raise public awareness
- Projects are well underway
 - Lost Ladybug Project
 - Nova Scotia Herpetofaunal Atlas
 - Atlantic Dragonfly Inventory Program
 - breeding bird atlases
 - Christmas bird counts

Limitations

- Few taxa are suitable
 - Charismatic, common, easy to handle
 - Odonata
 - Butterflies and some macromoths
 - Bees
 - Ladybeetles

Limitations

- Few taxa are suitable
 - Charismatic, common, easy to handle



Limitations

- Few taxa are suitable
 - Charismatic, common, easy to handle



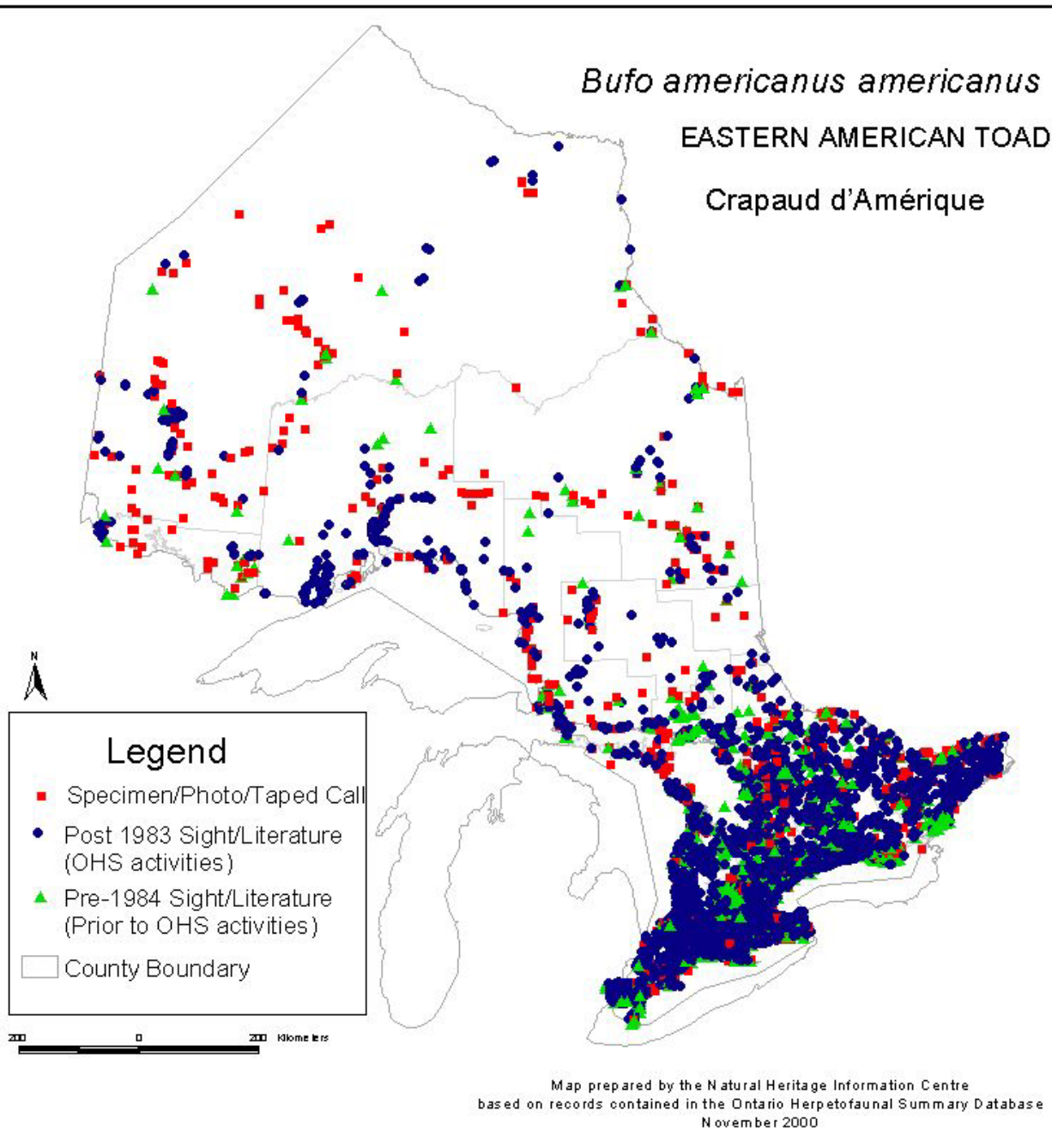
Limitations

- Sparsely populated areas undersurveyed

Bufo americanus americanus

EASTERN AMERICAN TOAD

Crapaud d'Amérique

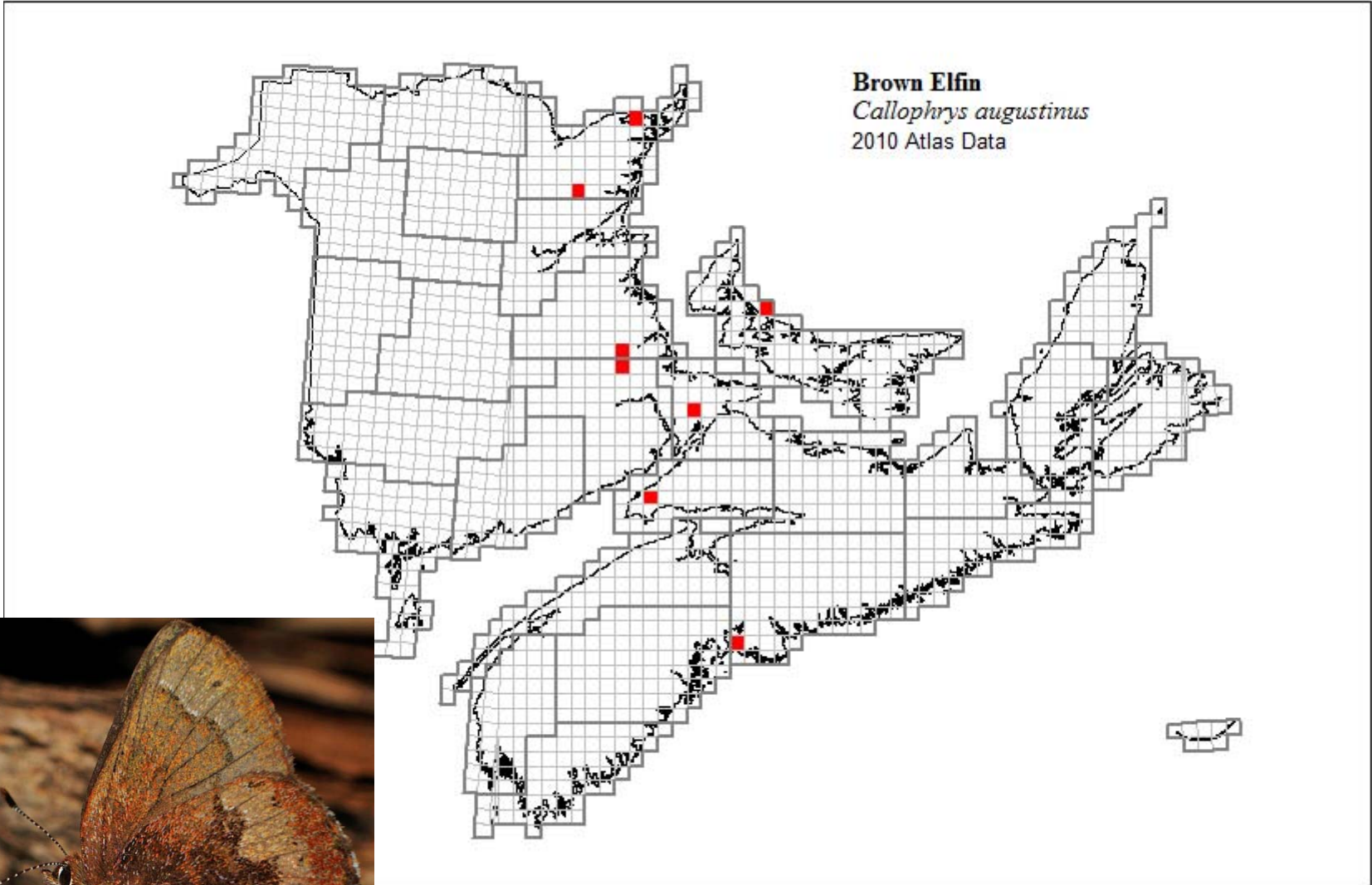


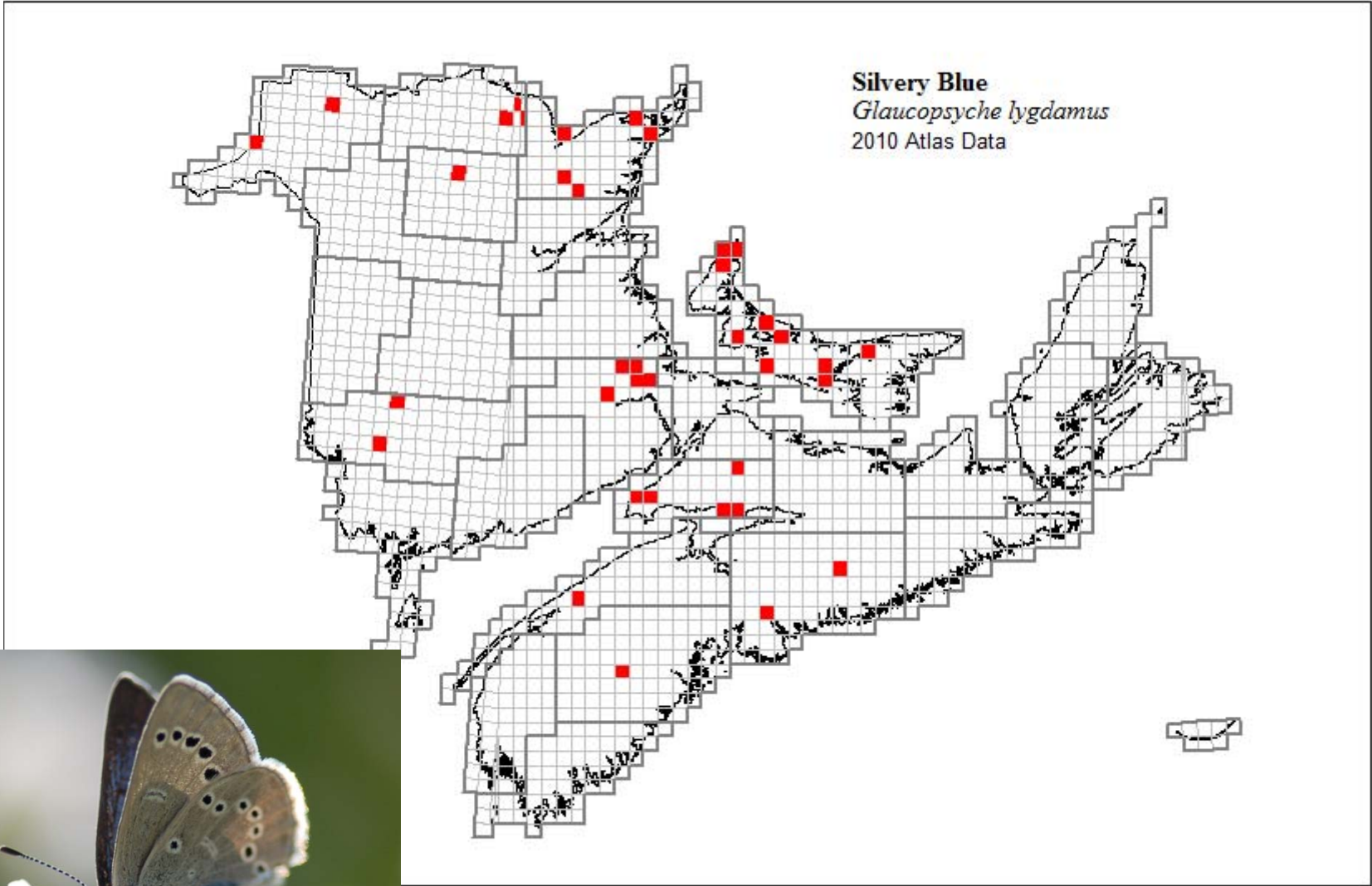
Limitations

- Sparsely populated areas undersurveyed
- Trade-off between quality and quantity
 - > voucher requirements = < records
 - > data complexity = < records

Limitations

- Sparsely populated areas undersurveyed
- Trade-off between quality and quantity
- Limited species coverage – difficult to access and difficult to collect species are under sampled





Jeffie McNeil

Citizen Science and the Biological Survey of Canada



Acknowledgements

- Environment Canada's EcoAction Community Funding Program
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- Steering Committee
 - Donald McAlpine, Rosemary Curley, Martin Raillard, Mark Elderkin, Reginald Webster



Questions?

