

## **Keeping Track of Scaled Jewels: The Maine Butterfly Survey**

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Good morning everyone. Thank you for inviting me to discuss the initial stages of a statewide butterfly atlas effort in Maine. Modeled largely after the nearly completed Maine Damselfly and Dragonfly Survey (MDDS), the Maine Butterfly Survey is intended to be a 5-year, state-sponsored, volunteer atlas initiative. I want to stress that we are at the early planning stages of the project and certainly hope to benefit from the advice of other New England states, such as Connecticut and Vermont, that have experience with volunteer-driven butterfly surveys. Please also note that I am speaking today on behalf of a third collaborator in this effort, Dr. Ronald Butler from the University of Maine at Farmington.

The information conveyed in Figure 1 is likely something that many of you have been exposed to in previous form but it is worth revisiting. Indeed, I occasionally need to remind some of my

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vertebrate-oriented colleagues of the fact that a majority (~68%) of the approximately 1.5 million known species on earth are invertebrates, and more specifically, of the described animal life, fully three-quarters are insects. Furthermore, you can be sure that of the millions of species that have yet to be described, mainly from the tropics, the vast majority will be of the six-legged form. So if you care about conserving earth's biodiversity, by definition you have to care about insects -- the little things that run the earth, as Dr. Edward O. Wilson refers to them. Among the more diverse and better-studied groups of insects in the Northeast are the moths and butterflies (Order: Lepidoptera). Hence, here we are today.

The overwhelming diversity of insects can be daunting, if not paralyzing, for federal and state agencies that are charged with regulating and protecting all "wildlife" (defined by my agency as "any species of the animal kingdom"). One of the strategies wildlife agencies use to address this awesome responsibility is that of crisis management, focusing primarily on those insect species that are most threatened, the rarest of the rare. To this end, nearly all of the states in the Northeast now have invertebrates on their official lists of endangered, threatened, and special concern species, which is encouraging (Figure 2). However, in most cases, states have been extremely conservative about including invertebrates when you consider their proportional representation on such lists (0.4% in Maine) compared to better-known vertebrate groups such as birds (18% in Maine) and mammals (28% in Maine). Of course some states are better represented than others, with Massachusetts probably leading the pack in terms of the breadth and volume of invertebrates protected by state listing. I guess there are two ways to view the data in Figure 2 depending on whether you tend to perceive the glass as half full or half empty. The bad news is that there are clearly a large number of butterflies in biological trouble in the Northeast, with some species on the

brink of extirpation and others already lost from significant portions of their former range (e.g. Karner Blue, Regal Fritillary, Tawny Crescent, Persius Duskywing, Frosted Elfin). The good news is that butterflies (and moths) are at least getting listing and recovery attention in this region. Indeed, along with freshwater mussels and damselflies and dragonflies, lepidoptera can be considered members of the privileged “charismatic microfauna” that comprise nearly 80% of state invertebrate listings in the Northeast.

One of the primary motivations for Maine’s wildlife agency in sponsoring a butterfly survey is to improve understanding of the status and distribution of it’s butterfly fauna, with a particular focus on assessing rare and vulnerable species for potential listing status (McCollough et al. 2003). To this end, we are planning a three-pronged approach to the Maine Butterfly Survey: 1) a baseline assessment of previously published literature records and public (museum) and private specimen collections, 2) a participatory survey by volunteer citizen-scientists, and 3) professional surveys for rare target species. Again, this methodology is modeled largely after the approach we took during the Maine Damselfly and Dragonfly Survey (<http://mdds.umf.maine.edu/>). Unfortunately, the first step, that of comprehensively assembling what is already known about a jurisdiction, is one that’s often overlooked during wildlife atlasing efforts. Let’s face it, it’s not as sexy to wade through dusty Cornell drawers and out-of-print manuscripts as it is to launch a highly visible, volunteer survey. However, by reviewing data from published accounts as early as 1880, specimens from most major northeastern museums and numerous private collections, and data compiled from years of previous invertebrate field surveys (Maine Department of Fish and Wildlife and Maine Natural Areas Program), we amassed a database of nearly 9,000 records, without

swinging a net or recruiting any new volunteers. The research needed to complete this first step is now considered nearly complete with the publication of “A Baseline Atlas and Conservation Assessment of the Butterflies of Maine” (Webster and deMaynadier 2005; available as a pdf at: [www.state.me.us/ifw/wildlife/wildlife.htm](http://www.state.me.us/ifw/wildlife/wildlife.htm) .

Our intention for the second step, pending outside funding support, is to kick off a participatory, citizen science approach to the project starting in 2006. During this multi-year, volunteer atlas phase we hope to address outstanding information gaps identified in the baseline atlas (above) with regard to issues such as incomplete species distributions, poorly-documented flight windows, and limited information on habitat and nectar plant preferences. To be successful, this phase will require significant investment on the part of the coordinators in terms of organizing training workshops, designing site and voucher forms and a website presence, developing protocols for confirming observations (specimens or photos), data entry procedures, and specimen curation and storage. Experience accumulated during the MDDS suggests that the initial investment in a well-planned wildlife atlas can pay dividends in terms of the extent and quality of data accumulated over a relatively short period of time.

The third prong of the Maine Butterfly Survey project is a component that is already underway in ours and most agencies that actively monitor and manage a specific suite of rare or state-listed butterflies – targeted species surveys. These species-specific efforts, usually conducted by agency staff or contracted professionals, provide a more intensive assessment of the status and biology of species of conservation concern. Funding is limited for this work and is generally driven by small internal or grant-driven sources of state nongame and endangered species funds.

While these rare species surveys are by definition directed at relatively few butterflies (generally less than 10 in Maine), they inevitably generate a wealth of incidental data on other, more common, flight- and habitat-associated species, useful for the larger butterfly atlas project. In summary, these are the three complementary approaches that we envision contributing to the Maine Butterfly Survey over the course of the project.

Returning to the first phase of the project for a moment, I want to share a few of the results from the 2005 baseline butterfly atlas, including a revised checklist of the butterflies of Maine (Appendix 1). Dr. Auburn Brower listed 103 species of butterflies for Maine in the last formal assessment of the state's lepidoptera over 30 years ago (Brower 1974). Following a review of the literature and voucher sources described previously, we have added 11 new butterfly species bringing the state's total list to 114 species. A few of the additions are the result of taxonomic changes that split formerly one species into two, but most result from new species discoveries. Of special note is the relatively high proportion (13%) of Maine butterflies that are extirpated (5 species) or currently state-listed as endangered or special concern (10 species), a result unfortunately consistent with global trends elsewhere for the group (Stein et al. 2000, Thomas et al. 2004). Much has been learned regarding butterfly rarity and threat in Maine since the previous state-listing process in 1997, with several additions to the endangered and special concern list recommended as a result of the data summarized in the baseline atlas. For example, when employing a fairly conservative (and unofficial) three-tiered vulnerability criteria of either: 1) global rarity (NatureServe status of G1-G3<sup>1</sup>), 2) extreme state rarity (fewer than 5 modern locales),

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<sup>1</sup> The Natural Heritage system (and its parent organization "NatureServe" – [www.natureserve.org](http://www.natureserve.org)) is an international network with a mission of organizing

or 3) moderate state rarity (fewer than 10 modern locales) combined with high habitat risk (e.g. barrens and xeric fields in southern Maine), one finds that the current list of 10 state-listed butterfly species is increased to potentially 21 species, or approximately 19% of Maine's extant butterfly fauna (Table 1).

An analysis of habitat associations of the 27 species of conservation concern listed in Table 1 provides an overview of the breadth of habitats currently hosting Maine's rarest butterflies (Figure 3). Clearly, any comprehensive conservation strategy for this group needs to include protections for a diversity of upland and wetland systems. Unlike the rivers, lakes, and larger wetland complexes that host the majority of Maine's other listed invertebrates (mainly mussels, mayflies and dragonflies), many of the state's rarest butterflies occupy habitats at direct risk of conversion from development. Of special note, is the large number of species associated with barrens (often pitch pine-scrub oak dominated), special forests (mature beech ridges, mesic hardwoods, Atlantic white cedar, black spruce woodland, and others), and dry scrubby fields – habitats that are often accessible, imminently developable, and threatened by high rates of population growth and development in southern Maine. Ecological succession is an additional “natural threat” to many old field and barren habitats because former disturbance factors (e.g. farming, fire) are often no longer functioning (Wagner et al. 2003).

It's important to recognize that the habitat protections afforded rare butterflies through most state endangered species acts are extremely limited in scale and often contentious. Successful approaches to conserving large blocks of habitat for viable populations of butterflies and other species, will require landscape-

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and distributing information on biodiversity. See Table 1 for an explanation of global rarity ranks (G-ranks).

scale planning and close partnerships among state agencies, municipalities, local land trusts, and environmental organizations such as The Nature Conservancy. I am aware of two such initiatives currently underway in New England including the “BioMap” project in Massachusetts ([www.mass.gov/dfwele/dfw/nhosp/nhbiomap.htm](http://www.mass.gov/dfwele/dfw/nhosp/nhbiomap.htm)) and the “Beginning With Habitat” project in Maine ([www.beginningwithhabitat.org/](http://www.beginningwithhabitat.org/)).

In the hopes of enticing some of you to venture north and participate in Maine’s future atlas efforts I want to spotlight a few of the state’s unique butterflies -- species that are found in few, if any, other places in the northeastern United States (though most are represented in Canada). Perhaps considered Maine’s claim to butterfly fame, these include such northern specialties as the Common Branded Skipper (ME, northern NH & VT), Clayton’s Copper (ME), Western Pine Elfin (ME, northern NH), Western-tailed Blue (ME), Greenish Blue (ME), Crowberry Blue (ME), Bog Fritillary (ME, northern NH), Frigga Fritillary (ME), Arctic Fritillary (also known as Purple Lesser Fritillary; ME), Satyr Comma (ME, northern NH), Jutta Arctic (ME, NH), and Katahdin Arctic (ME), a unique subspecies found only on the summit of Mount Katahdin in Baxter State Park. As with the recent exciting discovery of Frigga Fritillary, far outside of its previously documented range in northern Quebec, it’s our expectation that other important surprises await Maine during the volunteer butterfly atlas. Specifically, we estimate the potential for hundreds of new county records and as many as 5-10 new state records -- a significant contribution for an insect group that has attracted considerable study over the previous century.

So far I have focused largely on the *scientific* benefits of a Maine Butterfly Survey, mainly for it’s contributions toward improving

species status information for listing considerations, and for honing our statewide habitat planning and protection efforts. Another significant benefit of this and other citizen science-based wildlife projects (e.g. Maine Breeding Bird Atlas 1978, Maine Amphibian and Reptile Atlas Project 1998, Maine Damselfly and Dragonfly Survey 2005) is their ability to stimulate public awareness and concern for biodiversity. Colorful and conspicuous, butterflies and dragonflies are excellent ambassadors to the larger world of insect conservation for members of the public who may lack formal training in invertebrate ecology. Furthermore, engaging the public in participatory science contributes toward an informed constituency that state agencies and other conservation partners can rely on to help support future policy and protection initiatives for threatened invertebrates and other nongame wildlife.

In closing, I would like to recognize the primary sources of financial support for this project to date including Maine's conservation license plate ("Loon Plates"), the state income tax form's "Chickadee Check-off", and the Maine Outdoor Heritage Fund, a grant program dedicated to wildlife conservation and supported by sales of conservation lottery tickets. I think it's fair to assume that every northeastern state has one or more similar mechanisms in place for supporting nongame and endangered wildlife projects. Thank you for participating in these and other voluntary conservation funding programs.

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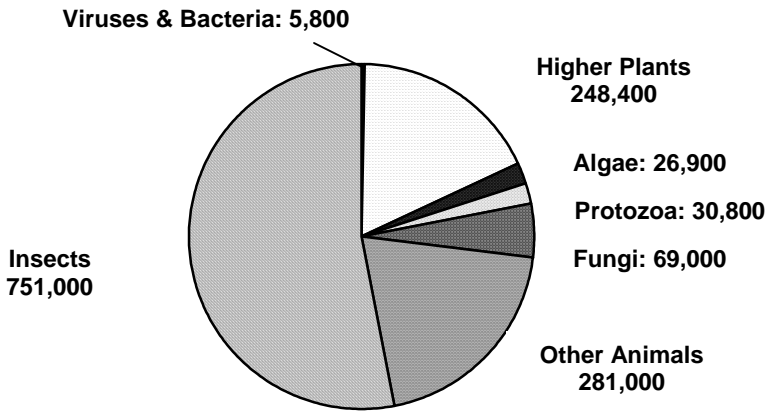


Figure 1. Total Number of Living Species by Major Taxonomic Group  
(Source: Wilson 1992)

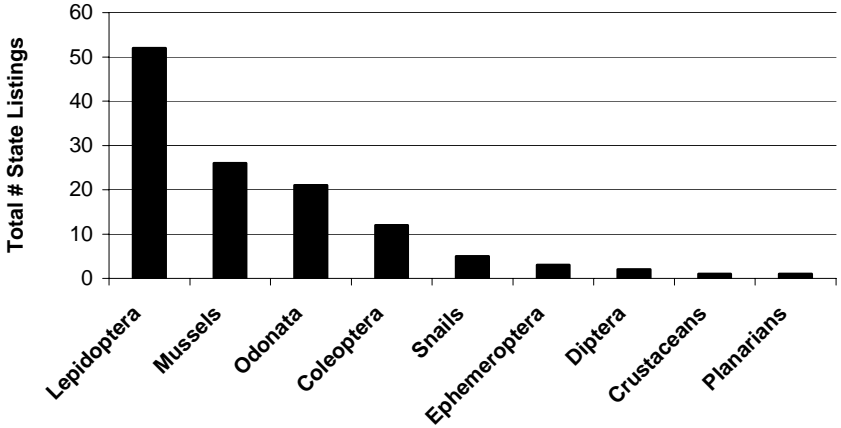


Figure 2. State-listed Invertebrates in the Northeastern United States: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, and New York. (Source: French and Pence 2000)

Table 1. Current and Proposed Listing Status for Butterflies in Maine.

Species	G-Rank <sup>1</sup>	# Modern Occurrences <sup>2</sup>	State Status <sup>3</sup>
<b>SKIPPERS</b>			
Sleepy Duskywing	G5T5	6	PSC
Persius Duskywing	G5T2T3	0	EX
Leonard's Skipper	G4	2	PSC
Cobweb Skipper	G4G5	0	PSC
Little Glassywing	G5	2	PSC
<b>SWALLOWTAILS</b>			
Spicebush Swallowtail	G5	0	SC
<b>GOSSAMER WINGS</b>			
Clayton's Copper	G5T1	11	E
Hessel's Hairstreak	G3G4	4	E
Juniper Hairstreak	G5	2	(SC), PE/T
Frosted Elfin	G3	0	EX
Bog Elfin	G3G4	30	SC
Western Pine Elfin	G5	7	SC
Coral Hairstreak	G5	2	PSC
Edward's Hairstreak	G4	5	E
Early Hairstreak	G3G4	0	PSC
Western Tailed Blue	G5T3T4	5	PSC
Crowberry Blue	G5T3T4	16	SC
Karner Blue	G5T2	0	EX
Greenish Blue	G5	0	PSC
<b>BRUSHFOOTS</b>			
Regal Fritillary	G3	0	EX
Bog Fritillary	G5T4	12	(SC)
Frigga Fritillary	G5	1	PE/T
Arctic Fritillary	G5	1	PE/T
Tawny Crescent	G4T1	0	EX
Satyr Comma	G5	2	PSC
Appalachian Brown	G4	2	PSC
Katahdin Arctic	G5T1	1	E

1: “G-ranks” are global rarity ranks employed by the Natural Heritage system ([www.natureserve.org](http://www.natureserve.org)) and are summarized as follows: G1 (critically imperiled; generally 1-5 populations globally), G2 (imperiled; generally 6-20 populations globally), G3 (vulnerable; generally 21-100 populations globally), G4 (apparently secure), or G5 (secure). “T” values combined with G-ranks are taxonomic rarity ranks assigned to subspecies.

2: Includes both confirmable and unconfirmable (literature and sight records lacking vouchers) records after 1974, the date of the most recent annotated checklist of the butterflies of Maine by A.E. Brower.

3: State Status abbreviations as follows: EX - Extirpated; E – Endangered; SC – Special Concern; PE/T – Proposed Endangered or Threatened; PSC – Proposed Special Concern; (SC) – Proposed removal of Special Concern status.

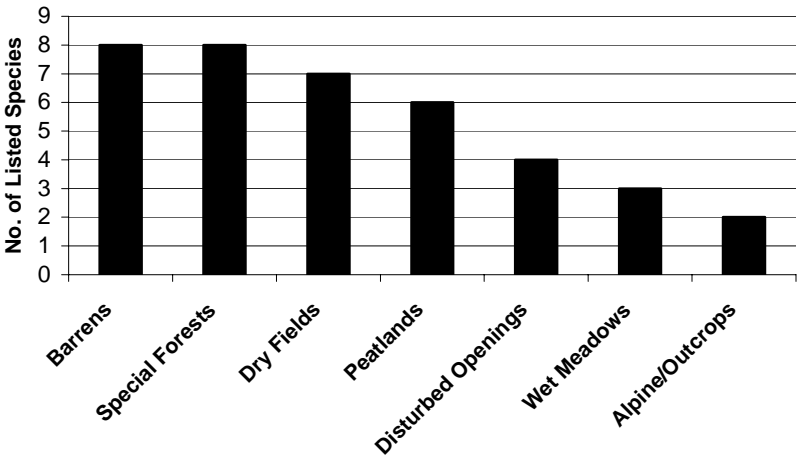


Figure 3. Habitat Associations of 27 Rare and Extirpated Butterfly Species in Maine. (Note: Several species are assigned to more than one habitat-type; see Table 1 for list of included species.)

## Appendix 1. A Revised Checklist of the Butterflies of Maine

(Adapted from: Webster and deMaynadier 2005)

The following is a complete checklist of the butterfly species currently known from Maine. Accompanying the scientific and common names of each species is its breeding status and state conservation status. Information on the occurrence of these species comes from a variety of sources, including Brower (1974) and other publications, specimens contained in all major northeastern museums and many private collections, the Maine Department of Inland Fisheries and Wildlife (MDIFW) ecoregional survey project, and MDIFW's rare species tracking database.

The nomenclature followed in this list follows Opler and Warren (2003) and includes all recent changes in nomenclature since the Miller and Brown (1981) Catalogue/Checklist of the Butterflies of America North of Mexico and the supplement by Ferris (1989).

Scientific Name	Common Name	Status <sup>1</sup>
<b>Family Hesperidae</b>	<b>Skippers</b>	
<i>Epargyreus clarus</i> (Cramer)	Silver-spotted Skipper	BR
<i>Thorybes pylades</i> (Scudder)	Northern Cloudywing	BR
<i>Thorybes bathyllus</i> (J. E. Smith)	Southern Cloudywing	BR or RS
<i>Erynnis icelus</i> (Scudder & Burgess)	Dreamy Duskywing	BR
<i>Erynnis brizo</i> (Boisduval & LeConte)	Sleepy Duskywing	BR
<i>Erynnis juvenalis</i> (Fabricius)	Juvenal's Duskywing	BR
<i>Erynnis persius</i> (Scudder)	Persius Duskywing	EX
<i>Pholisora catullus</i> (Fabricius)	Common Sootywing	BR or RS
<i>Carterocephalus palaemon</i> (Pallas) subsp: <i>mandon</i> (W. H. Edwards)	Arctic Skipper	BR
<i>Ancyloxypha numitor</i> (Fabricius)	Least Skipper	BR
<i>Thymelicus lineola</i> (Ochsenheimer)	European Skipper	BR
<i>Hesperia comma</i> (Linnaeus) subsp: <i>laurentina</i> (Lyman)	Laurentian Skipper	BR
<i>Hesperia leonardus</i> Harris	Leonard's Skipper	BR
<i>Hesperia metea</i> Scudder	Cobweb Skipper	BR
<i>Hesperia sassacus</i> Harris	Indian Skipper	BR
<i>Polites peckius</i> (W. Kirby)	Peck's Skipper	BR
<i>Polites themistocles</i> (Latreille)	Tawny-edged Skipper	BR
<i>Polites origines</i> (Fabricius)	Crossline Skipper	BR
<i>Polites mystic</i> (W. H. Edwards)	Long Dash Skipper	BR

<i>Wallengrenia egeremet</i> (Scudder)	Northern Broken Dash	BR
<i>Pompeius verna</i> (W. H. Edwards)	Little Glassywing Skipper	BR
<i>Anatrytone logan</i> (W. H. Edwards)	Delaware Skipper	BR
<i>Poanes hobomok</i> (Harris)	Hobomok Skipper	BR
<i>Poanes viator</i> (W. H. Edwards) subsp: <i>zizaniae</i> (Shapiro)	Broadwinged Skipper	BR
<i>Euphyes bimacula</i> (Grote & Robinson)	Two-spotted Skipper	BR
<i>Euphyes vestris</i> (Boisduval) subsp: <i>metacomet</i> (Harris)	Dun Skipper	BR
<i>Amblyscirtes hegon</i> (Scudder)	Pepper & Salt Skipper	BR
<i>Amblyscirtes vialis</i> (W. H. Edwards)	Common Roadside Skipper	BR
<b>Family Papilionidae</b>	<b>Swallowtails</b>	
<i>Battus philenor</i> (Linnaeus)	Pipevine Swallowtail	RS
<i>Papilio polyxenes</i> Fabricius subsp: <i>asterius</i> (Stoll)	Black Swallowtail	BR
<i>Papilio glaucus</i> Linnaeus	Eastern Tiger Swallowtail	RS
<i>Papilio canadensis</i> Rothschild & Jordan	Canadian Tiger Swallowtail	BR
<i>Papilio troilus</i> Linnaeus	Spicebush Swallowtail	RS or RC; SC
<i>Papilio cressphontes</i> Cramer	Giant Swallowtail	RS
<b>Family Pieridae</b>	<b>Sulphurs and Whites</b>	
<i>Pontia protodice</i> (Boisduval & LeConte)	Checkered White	RC
<i>Pieris rapae</i> (Linnaeus)	Cabbage Butterfly	BR
<i>Pieris oleracea</i> Harris	Mustard White	BR
<i>Colias philodice</i> Godart	Clouded Sulphur	BR
<i>Colias eurytheme</i> (Boisduval)	Alfalfa Butterfly	BR
<i>Colias interior</i> Scudder	Pink-edged Sulphur	BR
<i>Phoebis sennae</i> (Linnaeus)	Cloudless Sulphur	RS
<i>Phoebis philea</i> (Linnaeus)	Orange-barred Sulphur	RS
<i>Phoebis agarithe</i> Boisduval	Large Sulphur	RS
<i>Pyrisitia lisa</i> (Boisduval & LeConte)	Little Sulphur	FS
<b>Family Lycaenidae</b>	<b>Hairstreaks, Blues, Coppers, and Harvesters</b>	
<b>Subfamily Miletinae</b>	<b>Harvesters</b>	
<i>Feniseca tarquinius</i> (Fabricius)	Harvester	BR
<b>Subfamily Lycaeninae</b>	<b>Hairstreaks, Blues, and Coppers</b>	

<i>Lycaena phlaeas</i> (Linnaeus) subsp: <i>hypophlaeas</i> Boisduval; not <i>americana</i> Harris (See Emmel & Pratt 1998)	American Copper	BR
<i>Lycaena hyllus</i> (Cramer)	Bronze Copper	BR
<i>Lycaena epixanthe</i> (Boisduval & LeConte)	Bog Copper	BR
<i>Lycaena dorcas</i> (W. Kirby) subsp: <i>claytoni</i> Brower	Clayton's Copper	BR; EN
<i>Callophrys hesseli</i> (Rawson & Ziegler)	Hessel's Hairstreak	BR; EN
<i>Callophrys gryneus</i> (Hübner)	Olive Hairstreak	BR; SC
<i>Callophrys augustinus</i> (Westwood)	Brown Elfin	BR
<i>Callophrys polios</i> (Cook & Watson)	Hoary Elfin	BR
<i>Callophrys irus</i> (Godart)	Frosted Elfin	EX
<i>Callophrys henrici</i> (Grote & Robinson)	Henry's Elfin	BR
<i>Callophrys lanoraieensis</i> (Sheppard)	Bog Elfin	BR; SC
<i>Callophrys niphon</i> (Hübner) subsp: <i>clarki</i> (T.N. Freeman)	Eastern Pine Elfin	BR
<i>Callophrys eryphon</i> (Boisduval)	Western Pine Elfin	BR; SC
<i>Satyrium titus</i> (Fabricius)	Coral Hairstreak	BR
<i>Satyrium acadica</i> (W. H. Edwards)	Acadian Hairstreak	BR
<i>Satyrium edwardsii</i> (Grote & Robinson)	Edwards' Hairstreak	BR; EN
<i>Satyrium calanus</i> (Hübner) subsp: <i>falacer</i> (Godart)	Banded Hairstreak	BR
<i>Satyrium liparops</i> (LeConte) subsp: <i>strigosum</i> (Harris)	Striped Hairstreak	BR
<i>Strymon melinus</i> (Hübner)	Grey Hairstreak	BR
<i>Erora laeta</i> (W. H. Edwards)	Early Hairstreak	BR
<i>Cupido comyntas</i> (Godart)	Eastern Tailed Blue	BR
<i>Cupido amyntula</i> (Boisduval) subsp: <i>maritima</i> (LeBlanc)	Western Tailed Blue	BR
<i>Celastrina lucia</i> (W. Kirby) Populations from northern black spruce bogs may represent another species. <i>C. ladon</i> (Cramer) applies to another species that has not yet been found in Maine but could occur in southern parts of the state.	Spring Azure (and what is often referred to as the Cherry Gall Azure)	BR
<i>Celastrina neglecta</i> (W. H. Edwards)	Summer Azure	BR
<i>Glaucopsyche lygdamus</i> (Doubleday) subsp: <i>couperi</i> Grote	Silvery Blue	BR
<i>Plebejus idas</i> (Linnaeus) subsp: <i>empetri</i> (T.N. Freeman)	Crowberry Blue	BR; SC
<i>Plebejus melissa</i> (W. H. Edwards) subsp: <i>samuelis</i> Nabokov	Karner Blue	EX <sup>2</sup>

<i>Plebejus saepiolus</i> (Boisduval) subsp: <i>amica</i> (W.H. Edwards)	Greenish Blue	BR
<b>Family Nymphalidae</b>	<b>Brushfoots, Monarchs, Satyrs</b>	
<b>Subfamily Libytheinae</b>	<b>Snouts</b>	
<i>Libytheana carinenta</i> (Cramer) subsp: <i>bachmanii</i> (Kirtland)	Eastern Snout	RS
<b>Subfamily Danainae</b>	<b>Monarchs or Milkweed Butterflies</b>	
<i>Danaus plexippus</i> (Linnaeus)	Monarch	TC
<b>Subfamily Heliconiinae</b>	<b>Fritillaries</b>	
<i>Euptoieta claudia</i> (Cramer)	Variegated Fritillary	RC
<i>Speyeria cybele</i> (Fabricius)	Great Spangled Fritillary	BR
<i>Speyeria aphrodite</i> (Fabricius)	Aphrodite Fritillary	BR
<i>Speyeria idalia</i> (Drury)	Regal Fritillary	EX
<i>Speyeria atlantis</i> (W. H. Edwards)	Atlantis Fritillary	BR
<i>Boloria eunomia</i> (Esper) subsp: <i>dawsoni</i> (Barnes & McDunnough)	Bog Fritillary	BR; SC
<i>Boloria selene</i> (Denis & Schiffermüller) Two poorly differentiated subspecies occur in Maine; <i>myrina</i> (Cramer) in the southwest, and <i>atrocotalis</i> (Huard) in the north. A broad blend zone occurs across central Maine.	Silver-bordered Fritillary	BR
<i>Boloria bellona</i> (Fabricius)	Meadow Fritillary	BR
<i>Boloria frigga</i> (Thunberg) subsp: <i>saga</i> (Staudinger)	Frigga Fritillary	BR
<i>Boloria chariclea</i> (Schneider) subsp: <i>grandis</i> (Barnes & McDunnough)	Purple Lesser Fritillary	BR
<b>Subfamily Nymphalinae</b>	<b>Checkerspots, Tortoiseshells, Commas, and Ladies</b>	
<i>Chlosyne nycteis</i> (Doubleday)	Silvery Checkerspot	BR
<i>Chlosyne harrisii</i> (Scudder)	Harris's Checkerspot	BR
<i>Phyciodes tharos</i> (Drury)	Pearl Crescent	BR
<i>Phyciodes cocyta</i> (Cramer)	Northern Pearl Crescent	BR
<i>Phyciodes batesii</i> (Reakirt)	Tawny Crescent	EX
<i>Euphydryas phaeton</i> (Drury)	Baltimore Checkerspot	BR
<i>Junonia coenia</i> Hübner	Common Buckeye	RS

<i>Polygonia interrogationis</i> (Fabricius)	Question Mark	TC
<i>Polygonia comma</i> (Harris)	Eastern Comma	BR
<i>Polygonia satyrus</i> (W. H. Edwards)	Satyr Comma	BR
<i>Polygonia faunus</i> (W. H. Edwards)	Green Comma	BR
<i>Polygonia gracilis</i> (Grote & Robinson)	Hoary Comma	BR
<i>Polygonia progne</i> (Cramer)	Grey Comma	BR
<i>Roddia vaualbum</i> (Dennis & Schiffermüller)	Compton Tortoiseshell	BR
<i>Aglais milberti</i> (Godart)	Milbert's Tortoiseshell	BR
<i>Nymphalis antiopa</i> (Linnaeus)	Mourning Cloak	BR
<i>Vanessa atalanta</i> (Linnaeus)	Red Admiral	BR
<i>Vanessa cardui</i> (Linnaeus)	Painted Lady	TC
<i>Vanessa virginiensis</i> (Drury)	American Lady	BR
<i>Limenitis arthemis</i> (Drury) The northern limit of the blend zone between the subspecies <i>L. astyanax</i> (Fabricius) (Red Spotted Purple) and <i>L. arthemis</i> occurs in southwestern Maine where some individuals may show reduced white banding on the wings and rare individuals may closely resemble the Red Spotted Purple phenotype.	White Admiral	BR
<i>Limenitis archippus</i> (Cramer)	Viceroy	BR
<b>Subfamily Satyrinae</b>	<b>Satyrs and Arctics</b>	
<i>Enodia anthedon</i> A. H. Clark	Northern Pearly-Eye	BR
<i>Satyroides eurydice</i> (Linnaeus)	Eyed Brown	BR
<i>Satyroides appalachia</i> (R. L. Chermock)	Appalachian Brown	BR
<i>Megisto cymela</i> (Cramer)	Little Wood Satyr	BR
<i>Coenonympha tullia</i> (Hübner) subsp: <i>inornata</i> W. H. Edwards	Inornate Ringlet	BR
<i>Cercyonis pegala</i> (Fabricius) In southwestern Maine is subspecies <i>alope</i> (Fabricius), which has a well-developed yellowish to orange patch on the forewing. In northern Maine is subspecies <i>nephele</i> (Kirby), which lacks the forewing patch. A broad blend zone occurs between these two subspecies in southern and coastal Maine producing phenotypes of intermediate appearance.	Common Wood Nymph	BR
<i>Oeneis jutta</i> (Hübner) subsp: <i>ascerta</i> (Masters & Sorensen)	Jutta Arctic	BR
<i>Oeneis polixenes</i> (Fabricius) subsp: <i>katahdin</i> (Newcomb)	Katahdin Arctic	BR; EN

1: BR = Breeding resident; TC = Frequent to common temporary colonist; RC = Rare temporary colonist; FS = Frequent stray; RS = Rare Stray; EX = Extirpated; EN = State Endangered; SC = State Special Concern

2: *Plebejus melissa samuelis* (Karner Blue) is the only federally endangered butterfly in Maine; It is now extirpated.

