

## **Collection of Lepidoptera at Moose Lake Provincial Park in 2006**

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### **Description of Moose Lake Provincial Park**

Moose Lake Provincial Park is located approximately 15 km SW of Bonnyville, Alberta, Canada in the northern boreal forest at coordinates 54.16, 110.54. The park consists of numerous inter-mixed habitats, including jack pine, paper birch, poplar, white spruce, black spruce bog, sand dune, flowering shrubs and other trees, and beach areas with forbs and sedge growth.



Dead Man's Point is a very densely forested area of Moose Lake Provincial Park. Cattails, forbs and sedges and shrubs lead up to the forested areas from the lake.

### **Selection of Location and Sites**

Moose Lake is within 50 km of the Alberta-Saskatchewan border, which increases the probability of finding new species for Alberta. The park is reasonably level throughout with numerous well-groomed trails for easy access (all sites accessible by walking or road vehicle). This reduces the cost of accessing the sites. Each trap site was selected to maximize the diversity of habitats in an attempt to collect the largest variety of lepidopteran species.



Moose Lake Provincial Park is located west of Bonnyville in Alberta, Canada

### **Collection Purpose**

The purpose of this study was to collect and identify a cross-section of the lepidopteran species indigenous to the Moose Lake area and to mount one or more specimens of each species for archival purposes in the Strickland Museum, University of Alberta.

### **Collection Techniques**

Several collection techniques were used to obtain a more complete profile of the species of the area. Diurnal species were collected using netting and sugaring. Nocturnal species were captured using a mercury vapour (MV) light and sheet method, an ultraviolet (UV) light trap and sugaring. Sampling was done at approximately three-week intervals in order to collect the adult stage of most lepidopteran species that exist in, or fly into the area. Sunny days and non-rainy days were chosen to avoid accumulation of water in the moth traps and to avoid damaging light equipment.

### **Results and Discussion**

The Lepidoptera collected in 2006 are listed in Table 1. Overall, the 2006 season was a much drier season than the 2005 season. All trips, except one, were rained out in 2005. There was a visible difference, in the number of Lepidoptera which could be seen in the park, between the two years, on all trips from May to September. Lepidoptera previously collected in 2005, were observed but not recollected in 2006. Still, 207 more species were collected in 2006 compared to 2005. Lepidopteran species were collected on 41 UV trap nights, 2 MV trap nights and 6 netting days. No Lepidoptera with distorted wings were observed in 2006.

**Table 1. Lepidoptera collected at Moose Lake Provincial Park in 2006.**

The numbers and nomenclature follow Hodges et al. (1983). In cases where a newer name is used, that of Hodges et al. (1983) is in brackets.

**HEPIALIDAE**

**19. *Sthenopsis purpurascens* (Pack.) -11-VII-2006.**

**TINEIDAE**

**412. *Niditinea orleansella* (Chambers) -26-VI-2006.**

**421. *Monopis spilotella* Tengström -28-VI-2006.**

**GRACILLARIIDAE**

**669. *Parornix conspicuella* (Dietz) -11-VII-2006.**

**615. *Caloptilia negundella* (Chambers) -16-V-2006.**

**ELACHISTIDAE**

**876. *Agonopterix rosaciliella* (Busck) -8-VIII-2006.**

**878. *Agonopterix canadensis* (Bsk.) -12-VII-2006.**

**908. *Depressariodes ciniflonella* (Lienig & Zeller) -5-IX-2006.**

**GELECHIIDAE**

**2090. *Chionodes lugubrella* (Fabricius) -28-VI-2006.**

**2127. *Filatima abactella* (Clarke) -16-V-2006.**

**2243. *Anacamptis niveopulvella* (Chambers) -8-VIII-2006.**

**2302. *Dichomeris setosella* (Clemens) -11-VII-2006.**

**YPONOMEUTIDAE**

**2365. *Plutella vanilla* Walsingham -11-VII-2006.**

**2467. *Argyresthia oreasella* Clemens -28-VI-2006.**

**TORTRICIDAE**

**2755. *Apotomis funerea* (Meyrick) -11-VII-2006 and -12-VII-2006.**

2765. *Apotomis deceptana* (Kearfott) -12-VII-2006.  
 2766. *Apotomis dextana* (McD.) -9-VIII-2006.  
 2767. *Apotomis infida* (Heinrich) -28-VI-2006.  
 2768. *Apotomis removana* (Kearfott) -11-VII-2006.  
 2770. *Orthotaenia undulana* (Denis & Schiffermüller) -28-VI-2006.  
 2794. *Olethreutes quadrifidum* (Zeller) -27-VI-2006.  
 2847. *Olethreutes glaciana* (Möschler) -26-VI-2006.  
 2850. *Olethreutes schulziana* (Fabricius) -26-VI-2006 and -28-VI-2006.  
 2900. *Retinia burkeana* (Kearfott) -12-VII-2006.  
 2911. *Phaneta awemeana* (Kearfott) -15-V-2006.  
 2926. *Phaneta verna* Miller -4-VI-2006.  
 2952. *Phaneta elongana* (Walsingham) -16-V-2006.  
 2956. *Phaneta tarandana* (Möschler) -23-VII-2006, -9-VIII-2006 -22-VIII-2006 and -23-VIII-2006.  
 2977. *Phaneta modicellana* (Heinrich) -28-VI-2006.  
 3015. *Eucosma fernaldana* (Grote) -11-VII-2006, -12-VII-2006 and -9-VIII-2006.  
 3035. *Eucosma morrisoni* (Walsingham) -26-VI-2006, -11-VII-2006 and -9-VIII-2006.  
 3211. *Notocelia culminana* (Walsingham) -8-VIII-2006.  
 3223. *Gypsonoma fasciolana* (Clemens) -5-VI-2006.  
 3283. *Epinotia solandriana* (Linnaeus) -8-VIII-2006 and -9-VIII-2006.  
 3306. *Epinotia nisella* (Clerck) -6-VIII-2006, -8-VIII-2006 -22-VIII-2006, -23-VIII-2006 and -9-VIII-2006.  
 3351. *Epinotia lindana* (Fernald) -23-VIII-2006.  
 3384. *Ancyli mediofasciana* (Clemens) -16-V-2006.  
 3463. *Cydia populana* (Busck) -11-VII-2006.  
 3480. *Cydia lautiuscula* (Heinrich) -16-V-2006.  
 3525. *Acleris forbesana* (McDunnough) -15-V-2006 and -5-IX-2006.  
 3536. *Acleris robinsoniana* (Forbes) -8-VIII-2006 and -22-VIII-2006.  
 3548. *Acleris variana* (Fernald) -9-VIII-2006, -22-VIII-2006 and -23-VIII-2006.  
 3559. *Acleris emargana* (F.) -8-VIII-2006.  
 3635. *Choristoneura rosaceana* (Harris) -12-VII-2006.  
 3637. *Choristoneura conflictana* (Walker) -28-VI-2006.  
 3664. *Archips striana* Fernald -26-VI-2006.  
 3672. *Syndemis afflictana* (Walker) -12-VII-2006.  
 3688. *Clepsis peritana* (Clemens) -11-VII-2006.

#### PAPILIONIDAE

4176. *Papilio Canadensis* Rothschild & Jordan -5-VI-2006.

#### LYCAENIDAE

4372. *Glaucopsyche lygdamus* (Doubleday) -5-VI-2006.

**NYMPHALIDAE**

4430. *Nymphalis vaualbum* (Denis & Schiffermüller) -11-VII-2006.  
 4433. *Nymphalis milberti* (Godart) -4-IX-2006.  
 4568.1. *Enodia anthedon* Clark -27-VI-2006.

**PYRALIDAE**

6038. *Anerastia lotella* (Hübner) -22-VIII-2006.  
 5718. *Myelopsis subtetricella* (Ragonot) -9-VIII-2006.  
 5721. *Apomyelois bistratella* (Hulst) -22-VIII-2006.  
 5787. *Meroptera pravella* (Grote) -5-VI-2006.  
 5946.01 *Phycitodes mucidella* (Ragonot) -5-IX-2006.  
 5999. *Eulogia ochrifrontella* (Zeller) -26-VI-2006.  
 5413. *Pediasia trisecta* (Walker) -9-VIII-2006 and -22-VIII-2006.  
 5529. *Dolichomia thymetusalis* (Walker) -8-VIII-2006.  
 5655. *Acrobasis tricolorella* Grote -12-VII-2006.

**CRAMBIDAE**

4716. *Scoparia biplagialis* Walker-9-VIII-2006 and -22-VIII-2006.  
 4737. *Eudonia lugubralis* (Walker) -11-VII-2006.  
 4773. *Petrophila kearfottalis* (Barnes & McDunnough) -11-VII-2006.  
 4958. *Anania funebris* (Ström) -5-VI-2006.  
 5032. *Pyrausta nicalis* (Grote) -26-VI-2006.  
 5099. *Udea itysalis* (Walker) -9-VIII-2006.  
 5128. *Choristostigma plumbosignalis* (Fernald) -11-VII-2006.  
 5354. *Crambus ainliellus* Klots -8-VIII-2006, -8-VIII-2006, -23-VIII-2006, -4-IX-2006 and -5-IX-2006.

**THYATIRIDAE**

6235. *Habrosyne scripta* (Gosse) -26-VI-2006.

**DREPANIDAE**

6240. *Euthyatira pudens* (Guenée) -15-V-2006.  
 6251. *Drepana arcuata* Walker -26-VI-2006.  
 6252. *Drepana bilineata* (Packard) -27VI-2006.

**GEOMETRIDAE**

6330. *Macaria ulsterata* (Pearsall) -4-VI-2006.  
 6597. *Ectropis crepuscularia* ([Denis & Schiff.]) -15-V-2006 and -16-V-2006.  
 6639. *Eufidonia discospilata* (Walker) -5-VI-2006.  
 6656. *Hypagyrtis piniata* (Packard) -11-VII-2006.  
 6677. *Cabera erythemaria* Guenée -4-VI-2006 and -5-VI-2006.  
 6678. *Cabera variolaria* Guenée -4-VI-2006.  
 6729. *Euchlaena johnsonaria* (Fitch) -28-VI-2006 and -11-VII-2006.  
 6743. *Xanthotype sospeta* (Drury) -28-VI-2006.  
 6755. *Pero morrisonaria* (Edwards) -26-VI-2006.  
 6799. *Spodolepis substriataria* Hulst -15-V-2006 and -16-V-2006.  
 6822. *Metarranthis duaria* (Guenée) -15-V-2006, -16-V-2006 and -4-VI-2006.  
 6836.01. *Plagodis pulveraria* (Linnaeus) -4-VI-2006.  
 6838. *Probole amicaria* (Herrich-Schäffer) -26-VI-2006.  
 6842. *Plagodis phlogosaria* (Guenée) -16-V-2006.  
 6863. *Caripeta divisata* Walker -4-VI-2006.  
 6888. *Lambdina fiscellaria* (Guenée) -23-VIII-2006.  
 6912. *Sicya macularia* (Harris) -11-VII-2006.  
 7058. *Synchlora aerate* (Fabricius) -5-VI-2006 and -11-VII-2006.  
 7164. *Scopula junctaria* (Walker) -11-VII-2006.  
 7169. *Scopula inductata* (Guenée) -12-VII-2006.  
 7182. *Dysstroma citrata* (Linnaeus) -8-VIII-2006 and -9-VIII-2006.  
 7206. *Eulithis explanata* (Walker) -11-VII-2006.  
 7213. *Ecliptopera silaceata* ([Denis & Schiff.]) -6-VII-2006 -8-VII-2006 and -9-VII-2006.  
 7216. *Plemyria georgii* Hulst -9-VIII-2006.  
 7307. *Mesoleuca ruficillata* (Guenée) -4-VI-2006 and -28-VI-2006.  
 7329. *Anticlea vasiliata* Guenée -16-V-2006.  
 7370. *Xanthorhoe abrasaria* (Herrich-Schäffer) -28-VI-2006.  
 7388. *Xanthorhoe ferrugata* (Clerck) -5-VI-2006 -28-VI-2006 and -11-VII-2006.  
 7637. *Cladara limitaria* (Walker) -15-V-2006 and -16-V-2006.

#### LASIOCAMPIDAE

7698. *Malacosoma disstria* Hübner -28-VI-2006.

#### SATURNIIDAE

7768. *Hyalophora Columbia* (Smith) -15-V-2006.  
 7757. *Antheraea polyphemus* (Cramer) -5-VI-2006.

#### SPHINGIDAE

- 7810.11. *Sphinx poecila* Stephens -5-VI-2006.

7824. *Paonias excaecata* (Smith) -5-VI-2006.  
7828. *Pachysphinx modesta* (Harris) -28-VI-2006.

#### NOTODONTIDAE

7895. *Clostera albosigma* Fitch -15-V-2006 and -11-VII-2006.  
7901. *Clostera apicalis* (Walker) -5-VI-2006.  
7915. *Nadata gibbosa* (Smith) -5-VI-2006.  
7928. *Notodonta simplaria* Graef -16-V-2006.  
7934. *Gluphisia lintneri* (Grote) -16-V-2006.  
8012. *Oligocentria semirufescens* (Walker) -26-VI-2006.

#### ARCTIIDAE

8043. *Eilema bicolor* (Grote) -8-VIII-2006.  
8051. *Crambidia casta* (Packard) -22-VIII-2006.  
8098. *Clemensia albata* Packard-11-VII-2006 and -28-VI-2006.  
8123. *Holomelina ferruginosa* (Walker) 28-VI-2006 and 11-VII-2006 and 12-VII-2006.  
8134. *Spilosoma congrua* Walker -4-VI-2006.  
8158. *Phragmatobia assimilans* Walker -15-V-2006.  
8162. *Platarctia parthenos* (Harris) -26-VI-2006 and -4-VI-2006.  
8166. *Arctia caja* (Linnaeus) -11-VII-2006 and -8-VIII-2006.  
8214. *Lophocampa maculate* Harris -4-VI-2006.

#### HERMENIIDAE

8322. *Idia americalis* (Guenée) -8-VIII-2006.  
8354. *Zanclognatha lotalba* (Smith) -11-VII-2006 and -12-VII-2006.  
8370. *Bleptina caradrinalis* Guenée -28-VI-2006.

#### CATOCALIDAE

8428. *Hypenodes caducus* (Dyar) -11-VII-2006.  
8452. *Hypena edictalis* (Walker) -12-VII-2006.  
8461. *Hypena humuli* Harris -12-VII-2006.  
8479. *Spargaloma sexpunctata* Grote -28-VI-2006.  
8490. *Pangrapta decoralis* Hübner-28-VI-2006 and -12-VII-2006.  
8555. *Scoliopteryx libatrix* (Linnaeus) -10-VIII-2006.  
8697. *Zale minerea* (Guenée) -15-V-2006 and -16-V-2006.  
8703. *Zale duplicate* (Bethune) -15-V-2006 and -16-V-2006 and -5-VI-2006.  
8821. *Catocala semirelictica* Grote-5-IX-2006.  
8867. *Catocala blandula* Hulst-22-VIII-2006.

## NOCTUIDAE

8896. *Diachrysia aereoides* (Grote) -26-VI-2006 and -11-VII-2006.  
8904. *Chrysanympa Formosa* (Grote) -11-VII-2006.  
8909. *Autographa rubidus* Ottolengui -5-VI-2006.  
8914. *Autographa californica* (Speyer) -29-VIII-2006.  
8970. *Baileya ophthalmica* (Guenée) -16-V-2006 and -5-VI-2006.  
8990. *Nola cilicoides* (Grote) -12-VII-2006.  
9048. *Lithacodia albidula* (Guenée) -28-VI-2006.  
9085. *Tarachidia semiflava* (Guenée) -26-VI-2006 and -12-VII-2006.  
9193. *Raphia frater* Grote -26-VI-2006 and -22-VIII-2006.  
9206.01. *Acronicta vulpine* Guenée -26-VI-2006.  
9207. *Acronicta innotata* Guenée -28-VI-2006.  
9212. *Acronicta grisea* Walker -4-VI-2006, -26-VI-2006 and -27-VI-2006.  
9241. *Acronicta fragilis* (Guenée) -16-V-2006 and -4-VI-2006.  
9257. *Acronicta impleta* Walker -15-V-2006, -16-V-2006 and -5-VI-2006.  
9419. *Oligia mactata* (Guenée) -22-VIII-2006.  
9420. *Oligia illocata* (Walker) -26-VI-2006 and -22-VIII-2006.  
9431. *Parastichtis suspecta* (Hubner) -11-VII-2006 and -22-VIII-2006.  
9434. *Spartiniphaga includens* (Walker) -11-VII-2006 -8-VIII-2006.  
9450. *Archanara subflava* (Grote) -8-VIII-2006 and -5-IX-2006.  
9457. *Amphipoea Americana* (Speyer) -9-VIII-2006.  
9472. *Papaipema harrisii* (Grote) -22-VIII-2006.  
9556. *Chytonix palliatricula* (Guenée) -26-VI-2006 and -28-VI-2006.  
9649. *Proxenus mendosa* McDunnough -4-IX-2006.  
9657.31 *Platyperigea Montana* (Bremer) -22-VIII-2006, -23-VIII-2006 and -5-IX-2006.  
9874. *Xylena curvimacula* (Morrison) -15-V-2006 and -4-IX-2006.  
9875. *Xylena thoracica* (Putnam-Cramer) -15-V-2006 and -4-IX-2006.  
9878.01 *Lithomoia germana* (Morrison) -22-VIII-2006.  
9884. *Litholomia napaea* (Morrison) -5-IX-2006.  
9917. *Lithophane fagina* Morrison -15-V-2006.  
9928. *Lithophane thaxteri* Grote -16-V-2006.  
9940.01 *Abagrotis brunneipennis* (Grote) -22-VIII-2006.  
9952. *Eucirroedia pampina* (Guenée) -23-VIII-2006.  
9962. *Anathix puta* (Grote & Robinson) -22-VIII-2006.  
9967. *Hillia iris* (Zetterstedt) -22-VIII-2006.  
9976. *Platypolia anceps* (Stephens) -5-IX-2006.  
9998. *Brachyloimia algens* (Grote) -22-VIII-2006 and -23-VIII-2006.  
10004.51. *Xanthia tatago* Lafontaine & Mikkola -22-VIII-2006.  
10055. *Apharetra dentate* (Grote) -9-VIII-2006, -22-VIII-2006 and -5-IX-2006.  
10065. *Homohadena infixata* (Walker) -11-VII-2006.  
10275. *Polia nimbose* (Guenée) -26-VI-2006 and -28-VI-2006.  
10276. *Polia imbrifera* (Guenée) -26-VI-2006 and -27-VI-2006.  
10288. *Polia detracta* (Walker) -26-VI-2006 and -28-VI-2006.



10298. *Lacanobia radix* (Walker) -16-V-2006 and -4-VI-2006.  
 10307. *Trichordestra lilacina* (Harvey) -11-VII-2006.  
 10310. *Papestra quadrata* (Smith) -15-V-2006 and -16-V-2006.  
 10368. *Lacinipolia meditata* (Grote) -11-VII-2006.  
 10370. *Lacinipolia lustralis* (Grote) -26-VI-2006.  
 10372. *Lacinipolia anguina* (Grote) -15-V-2006 and -4-VI-2006.  
 10394. *Lacinipolia vicina* (Grote) -26-VI-2006.  
 10447. *Leucania commoides* Guenée -12-VII-2006.  
 10490. *Orthosia revicta* (Morrison) -15-V-2006 and -16-V-2006.  
 10524. *Nephelodes minians* Guenée -9-VIII-2006.  
 10563. *Protorthodes oviduca* (Guenée) -15-V-2006, -4-VI-2006 and -5-VI-2006.  
 10644. *Feltia mollis* (Walker) -26-VI-2006 and -11-VII-2006.  
 10670. *Feltia jaculifera* (Guenée) -09-VIII-2006.  
 10728. *Euxoa pestula* Smith -11-VII-2006.  
 10738. *Euxoa mimallonis* (Grote) -8-VII-2006 and -22-VII-2006.  
 10755. *Euxoa declarata* (Walker) -22-VIII-2006 and -23-VIII-2006.  
 10807. *Euxoa albipennis* (Grote) -22-VIII-2006.  
 10838. *Euxoa detersa* (Walker) -22-VIII-2006 -23-VIII-2006 and -5-IX-2006.  
 10865. *Euxoa perpolita* (Morrison) -22-VIII-2006 and -23-VIII-2006.  
 10917. *Diarsia rubifera* (Grote) -8-VIII-2006.  
 10926. *Spaelotis clandestina* (Harris) -22-VIII-2006.  
 10928.01 *Graphiphora augur* (Fabricius) -26-VI-2006 and -11-VII-2006.  
 10929 *Eurois occulta* (Linnaeus) -22-VIII-2006.  
 10944. *Xestia smithii* (Snellen) -8-VIII-2006.  
 10962. *Xestia perquiritata* (Morrison) -22-VIII-2006.  
 10999. *Aplectoides condita* (Guenée) -4-VI-2006.  
 11008. *Eueretagrotis perattentus* (Grote) -26-VI-2006 and -27-VI-2006.  
 11011.43 *Xestia praevia* Lafontaine -9-VIII-2006, -22-VIII-2006 and -23-VIII-2006.  
 11041. *Abagrotis placida* (Grote) -22-VIII-2006.

### Summary

Three factors were considered in selecting Moose Lake Provincial Park as a study area for collecting Lepidoptera in 2005. There is a wide diversity of habitats within the park. There was a lack of literature on Lepidoptera for the park. And the park is close to the Saskatchewan border. These three factors show clearly why there was a need to study Lepidoptera in the park, and why the odds of finding new species for the Province of Alberta would be likely. In 2006, the same factors were in play and results were much better. In 2005 many common species were collected that were also observed in 2006. Efforts were made to avoid collecting these same species. In 2006, 5 butterflies and 202 moth species were collected. Of the Lepidoptera collected, approximately ten need further analysis for complete identification. It is highly likely that two or more of these specimens will be identified as new species for the Province of Alberta. I would be very interested in seeing someone continue the Lepidoptera research at Moose Lake Provincial

Park. And, in my opinion, two years of study has barely scratched the surface, as far the number of species of Lepidoptera.

### **Lepidoptera Reference Availability**

A specimen list, of all species collected, is available online at the Virtual Museum of the Strickland Museum (University of Alberta) at <http://www.entomology.ualberta.ca/searching.php> Select **Moose Lake Provincial Park, 2005 or 2006**, then select the Locality and Date.

### **Acknowledgements**

I would like to sincerely thank fellow members of the Alberta Lepidopterist's Guild for consultation and comments. Special thanks for verifications and identifications to Greg Pohl on micromoths, Charles Bird on micro and macromoths, Chris Schmidt with Geometridae and butterflies, Gary Anweiler with Noctuidae and other macromoths. Danny Shpeley is thanked for helping with data entry and data-basing. Lepidoptera identifications were determined using the insect collections at the Northern Forest Research Centre in Edmonton, the Strickland Museum at the University of Alberta, and the personal collection of Charles Bird, Erskine, Alberta. These collections provided invaluable hands-on reference material. I would also like to sincerely thank other members of the Alberta Lepidopterist's Guild who contributed their time and expertise in identification and verification. Rob Hughes and George Turnbull are thanked for assistance in formatting and proof reading. Another special culinary thank you to Ann Bird for her hospitality and fine home-cooked meals.

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