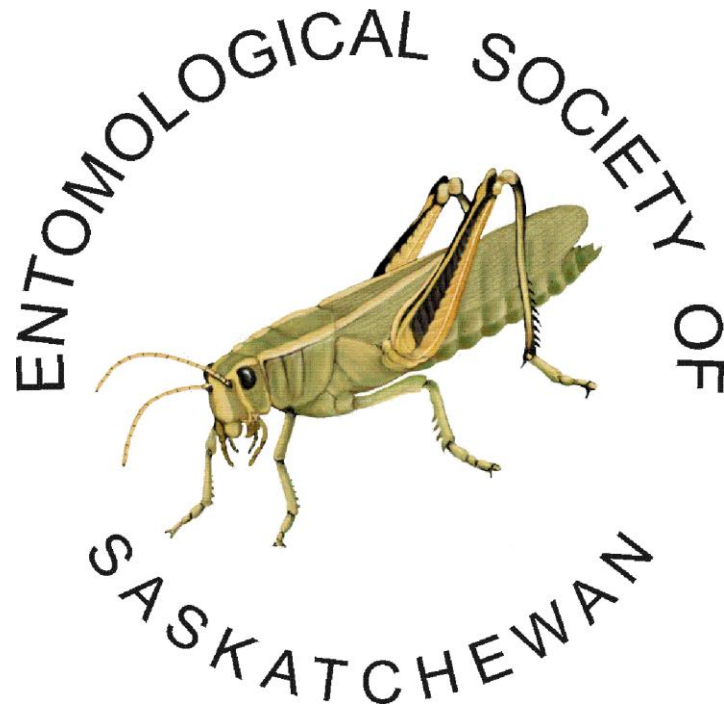


Proceedings of the



Volume 64
2016

**Contents of these Proceedings may not be reproduced in any form
without the expressed written consent of the Executive of the
Entomological Society of Saskatchewan.**

Proceedings of the Entomological Society of Saskatchewan

Volume 64

Editor: Iain Phillips

Contents

	Page
Editor's comments	iii
Executive, Officers and Committee Members 2016.....	iii
Minutes of the 2016 Spring Meeting	1
SCIENTIFIC PROGRAM	1
Guest Presentation – Boyd Mori.....	1
Business Arising from the Minutes	2
Request for update on the progress of the Laurent Guiguet collection	2
Treasurer's Report	2
Secretary's Report	3
Newsletter Editor's Report	3
Regional Director's Report.....	3
Committee Reports	3
Amateur Encouragement – Tyler Wist (Appendix B).....	3
Archives/Heritage – Martin Erlandson.....	4
ESS website – Jeff Boone.....	4
Microscope – Iain	4
Newsletter - Nicole Pillipow	4
Honours and Awards – Doug Baldwin.....	4
Nominations committee – Jeff Boone	4
New Business.....	4
Nature City Festival.....	4
Birkmaier Park Biobliz.....	4

Proceedings update	4
Appendix A: Treasurer’s Report.....	6
Appendix B: Youth and Amateur Encouragement Report	8
Minutes of the 2016 Fall General Meeting	11
SCIENTIFIC PROGRAM	11
Guest Presentation - Branimir Gjetvaj.....	11
Student Presentations	11
Business arising from the minutes.....	13
Treasurer’s Report – Dwayne Hegedus (Appendix B).....	13
Secretary’s Report – Iain Phillips (Appendix C).....	13
Newsletter Editor’s Report – (Dave Halstead on Nichole Pillipow’s behalf).....	13
Regional Director’s Report – Tyler Wist delivers report for Jeff Boone (Appendix D).....	14
Committee Reports	14
Youth and Amateur Encouragement	14
Archives and Heritage	15
ESS Website	15
Microscope	15
Honours and awards	15
Nomination Committee	15
New Business.....	15
Appendix A – Scientific Abstracts:	17
Appendix B: Membership and Year End Financial Report	22
Appendix C: Secretary’s Report	24
Appendix D: Regional Director’s Report	25
Appendix E: Youth and Amateur Encouragement Report	31
ESS Membership	33

Editor's comments

The Society had 85 members (53 full members and 32 students) including 18 Life Members in 2016. A copy of the Proceedings of the Entomological Society of Saskatchewan for 2015 was given to the Saskatchewan Archives.

Executive, Officers and Committee Members 2016

Executive:

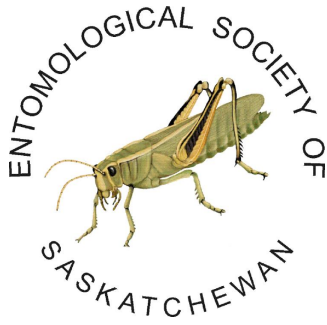
President	Tyler Wist
Vice-President	Corie Sheffield
Past President	Dave Halstead
Secretary	Iain Phillips
Treasurer	Dwayne Hegedus

Committee Chairs:

Youth and Amateur Encouragement	Chrystel Olivier
Newsletter Editor	David Halstead
Proceedings Editor	Iain Phillips
Honours and Awards	Doug Baldwin
Microscope	Iain Phillips
ESS Website	Jeff Boone
Archives and Heritage.....	Martin Erlandson
Nominations.....	Jeff Boone

Regional Director to the ESC Jeff Boone

Auditors: Wayne Goerzen and Owen Olfert



Minutes of the 2016 Spring Meeting of
the Entomological Society of Saskatchewan
Agriculture Canada Research Station, Saskatoon
2nd Floor Conference Room
13:30, April 29, 2016

PRESENT: Tyler Wist, Dwayne Hegedus, Doug Baldwin, Jeff Boone, Stephen Srayko, Dave Halstead, Aaron Bell, Nicole Phillipow, Julie Soroka, Lorraine Braun, Owen Olfert, Boyd A. Mori, Ruwandi Andrahennadi, Mozghan Mousavi, Marianna Horn, Karen Hunter, Edyta Sieminska, Martin Erlandson, Cedric Gillott,

SCIENTIFIC PROGRAM

Guest Presentation – Boyd Mori

1:30-2:15 Boyd Mori, PhD, Agriculture Canada

Presentation by Dr. Boyd Mori on the unseen pheromone world of the red clover casebearer and his post doc work on the chemical ecology of spotted wing *Drosophila* and upcoming project on host-plant resistance to swede midge attack.

COFFEE BREAK

BUSINESS MEETING

2:30 Call to Order – Dave Halstead

- 1) Introduction of the members and distribution of sign in sheet
- 2) Approval of Agenda
 - a. List of regrets: Cory Sheffield, Scott Hartley, Art Davis and Brian Ulmer

MOTION: Dave Halstead/Owen Olfert. THAT the proposed agenda be adopted.

CARRIED.

- 3) Minutes of the Fall Meeting –December 4th, 2015
 - a. Minutes circulated to membership

- b. Cedric Gillott suggests that the full award title (C. Gordon Hewitt Award) given to Cory Sheffield at the Entomological Society of Canada (ESC) meeting be noted in the minutes.

MOTION: Julie Soroka/Marianna Horn. THAT the minutes of the fall meeting December 4th, 2015, be adopted.

CARRIED.

4) Business Arising from the Minutes

a. Request for update on the progress of the Laurent Guiguet collection

Iain Phillips brought back to Saskatchewan from Victoria in the fall 2015.

- i. Iain Phillips reports that it is being identified by himself and students from TRoutreach Saskatchewan, but that they could use assistance in identifying the Lepidoptera. Once identification is complete the collection will be sent to the Royal Saskatchewan Museum.
- ii. Karen Hunter volunteers to assist in the identification of the Lepidoptera.

5) Treasurer's Report – Dwayne Hegedus (Appendix A)

- i. 2015-2016 interim report
- ii. Society membership is strong
- iii. Ruwandi Andrahennadi, Nichole Pillipow and Stephanie Harris are all new life members.
- iv. Main source of revenue is membership dues.
- v. Society finances are strong.
- vi. Julie Soroka asks if the ESC grant for Youth and Amateur Encouragement grant (\$200) has been approved
 - Tyler Wist asks if there is a form or if he is simply expected to write a letter. Julie Soroka says just write a letter
 - Jeff Boone clarifies that Pat Bouchard is the chair of the ESC Youth an Armature Encouragement committee.
 - These are the funds used to update our outreach collections.
 - Tyler Wist will make an application to the ESC for a Youth and Amateur Encouragement grant.

MOTION: Dwayne Hegedus/ Wayne Goerzen. THAT the ESS accept the Treasurer's Report.

CARRIED.

6) Secretary's Report – Iain Phillips

- Agendas and minutes prepared for meetings

MOTION: Iain Phillips/ Cedric Gillott. THAT the ESS accept the Secretary's Report.

CARRIED

7) Newsletter Editor's Report – David Halstead

- a. Moved to committee reports below.

8) Regional Director's Report – Jeff Boone.

- i. ESC GST – confusion of whether or not conferences should collect GST. Revenue Canada has asked all societies to provide financial reports going back decades and are in the process of collecting fees retroactively. ESC has reassured the regional societies that the regional societies will not be expected to fill this liability.
- ii. Jeff Boone cannot attend the ICE meeting in September, and asks if someone else can attend the Regional Director's meeting there.
- iii. Jeff Boone will be stepping down as Regional Director. A replacement is necessary.
- iv. Tyler Wist asks if the charitable status can be used to protect the society from liability.
 - o Dwayne says that the ESC is working through this.

MOTION: Jeff Boone/Martin Erlandson. THAT the ESS accept the Regional Director's report.

CARRIED.

9) Committee Reports

- a. Amateur Encouragement – Tyler Wist (Appendix B)
 - i. Any groups that take the collection to schools should bring this to the attention of Tyler to include in the report
 - ii. Collection was taken to Gardenscape this year.
 - iii. Good bugs bad bugs presentations went well too at Gardenscape
 - o Thank you to the volunteers
 - iv. Julie Soroka mentions that there is a common question at Gardenscape asking what ticks look like, and asks if we can have a magnification device at the event to show off some of the more interesting features of ticks and other insects.

- b. Archives/Heritage – Martin Erlandson
 - i. Nothing to report
- c. ESS website – Jeff Boone
 - i. Requires a picture of Edyta Sieminska accepting award
- d. Microscope – Iain
 - i. In good shape.
 - ii. Tyler Wist suggests that Dayna Guertin submit a note for the newsletter for use of the microscope.
 - iii. Iain Phillips will request a note from Dayna Guertin on her project for the newsletter.
- e. Newsletter - Nicole Pillipow
 - i. Dave Halstead and Nicole Pillipow will produce the next newsletter on May 31st, and request submissions.
- f. Honours and Awards – Doug Baldwin
 - i. Entomological activities award submissions requested.
- g. Nominations committee – Jeff Boone
 - i. Cory Sheffield is now the Vice President and a nomination is required for new vice president and regional director position.

MOTION: Martin Erlandson/Jeff Boone. THAT the Committee Reports be adopted.

CARRIED.

10) New Business

- a. Nature City Festival
 - i. Jeff Boone is doing a presentation on the 25th of May
 - ii. Iain Phillips will circulate the requests he has received for entomology presentations
 - iii. Jeff Boone mentions the Master Naturalist program in the City.
 - iv. Jeff Boone asks for participation in the Bioblitz at the Swale as part of the Nature City Festival
- b. Birkmaier Park Bioblitz - Jeff Boone asks for ESS participation in the City of Saskatoon Bioblitz in Birkmaier Park
 - i. Two new parks in the city and the City of Saskatoon would like to know more about the biodiversity at the parks. Jeff Boone suggested conducting a bioblitz at the park. Maybe in June, and Jeff Boone will circulate a date soon.
- c. Proceedings update – Julie Soroka asks on the progress of the Proceedings.

- i. Jeff Boone informs that he is working on them but not his responsibility.

11) Next Meeting

- a. To be held December 9th, 2016.

12) Adjournment

MOTION: Cedric Gillott. THAT the meeting be adjourned.

CARRIED

Appendix A: Treasurer's Report

ENTOMOLOGICAL SOCIETY OF SASKATCHEWAN MEMBERSHIP AND INTERIM FINANCIAL REPORT

01 September 2015 – 31 March 2016

MEMBERSHIP

- To this point in 2015-2016 the ESS has 84 members (53 Full and 31 Students – 18 are Life Members) of which 45 are in good standing. Ruwandi Andrahennadi, Stephanie Harris and Nicole Pillipow are new Life Members of the Society.

ESS GENERAL ACTIVITIES

- The main sources of income to date were from membership dues with \$970.00 collected and interest income of \$0.19.

FINANCE

- The ESS total assets are as follows:

Term Deposits (balance plus accrued interest)

#007 12,104.38

#009 16,379.24

#011 12,132.03

#012 10,434.62

Checking 3691.71

Outstanding deposits 775.00

Outstanding liabilities (0.00)

Total 55,516.98 (55,096.04 in 2015)

- Registered Charity and Non-Profit Corporations status was renewed.
- Registered Charity Tax Return was filed in December.

Please refer to the enclosed financial statement for further details.

Financial Statement – Entomological Society of Saskatchewan
01 September 2015 – 31 March 2016

MAXIMIZER ACCOUNT (ESS)

Receipts:

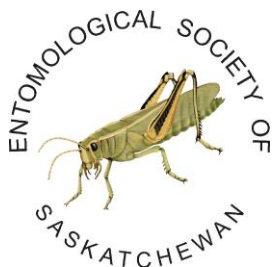
Memberships	\$ 195.00
Outstanding deposits	775.00 (memberships)
<u>Interest (CU Maximizer and Term Deposit)</u>	<u>0.19</u>
 TOTAL	 950.19

Expenditures:

Printing	0.00
Minister of Finance	10.39
Brooks Award	500.00 (E. Sieminska)
Travel Award	250.00 (A. Bell)
Travel Award	250.00 (I. Phillips)
Student Award	100.00 (A. Bell)
Meeting Expenses	100.00
Postage	0
Bank Charges	0
<u>Misc. (PayPal Fees)</u>	<u>31.27</u>
 TOTAL	 1241.66

Excess of Receipts over Expenditures \$ **(291.47)**

Appendix B: Youth and Amateur Encouragement Report



Entomological Society of Saskatchewan Inc.

Saskatoon Research Centre

107 Science Place

Saskatoon, Saskatchewan S7N 0X2

April 29th 2016 ESS Spring Meeting

Youth and Amateur Encouragement Report

Gardenscape 2016 (April 8th- 10th)

Thanks to our ESS volunteers who manned the booth over the Gardenscape weekend!

Our booth volunteers were: Nancy Tyler, Jessica Archer, Cedric Gillott, Owen Olfert, Lars Andreassen, Leila Benmerrouche, Martin Erlandson, Stephen Srayco, Art Davis and Tyler Wist. Thanks to Ruwandi Andrahennadi, Dana Nordin and Tyler Wist for providing live insects.

The question sheet at the table was a good idea and we can discuss answers at the meeting. I have had several follow ups where I identified (only to Order!) a lime-green Dipteran that was infesting the fish tank belonging to the Stantons, a cat-faced spider from a picture for Robin and a request for an entomologist to talk to an elementary class in Martensville (no response from the teacher) .

Good bugs/Bad Bugs (in the Garden Experience school tours event: formerly “Little Green Thumbs”)

Wed April 6th to Friday April 8th 2016

This event is run by the Agriculture in the Classroom provincial program and ties into the Grade three curriculum. Each session, and there are three per day, includes five 15 minute presentations to one grade three classroom at a time = a total of 45 grade three classrooms that get to hear our Good Bugs/Bad Bugs presentation. We do about seven minutes of talking per session (depending upon who’s talking!) followed by eight

minutes of showing the insect display and answering questions. We included the pinned exotic beetle collection box that has been destroyed by dermestids and I frequently used to answer the question of “why are those bugs in water” (referring of course to the spiders etc. floating in ethanol). There were several students with an impressive knowledge of natural history. One however, insisted that honeybees were going extinct but I let her know that Geoff Wilson assures me that Canadian honeybees are doing well. On a related note, I may have single handily ruined the honey industry in Saskatchewan (apologies to bee keepers everywhere) by getting the students to ask for “dehydrated bee vomit” on their toast the next morning.

This event allows us free entrance into Gardenscape (a \$700 value).

Thank you to our ESS members for volunteering and making this event a success: Umut Toprak, Stephanie Harris, Dwayne Hegedus, Owen Olfert, Julie Soroka, Lars Andreassen, Boyd Mori and Tyler Wist.

Best student feedback: “I want to be just like you!...followed by “It was a real pleasure to have met you” Again this year, no one cried this when their teacher moved them on from the insect display like in 2013.

Most common question was “Is it real?” meaning, I think, “Is it alive?” which gives us a glimpse into the mind of an eight year old and their association of “Real” with “Alive”. Also heard, in reference to artificial insect diet, “It looks like chewed up McDonald’s!” and in reference to pinned butterflies “Is it a painting”?

Ag in the City: Saturday April 9th at Lawson Heights Mall 9:30-4:00 PM

This event unfortunately coincided with Gardenscape because Gardenscape changed its weekend in 2016 and so did Ag in the City. We were spread thin between the two! The Ag in the City organizers have already made sure that it won’t happen like that again next year.

The ESS was again part of Ag in the City but was in the Science section. We used the items that Communications purchased last year for the event: a microscope, a briefcase with acrylic encased insects, arachnids and others (www.realcoolbug.com) and some of the “lesser used” pinned trays from our Gardenscape display. We are able to borrow these items for our society use as well (because I now know where the key is!).

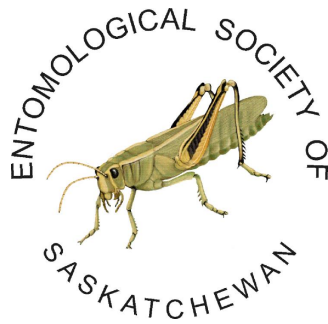
Thanks to Owen Olfert, Stephen Srayco, Serina Wall and Tyler Wist for manning the booth this year and to Ruwandi Andrahennadi and Dana Nordin for providing live insects for the display.

Volunteers opportunities still available this summer! Let Tyler know if you want a weekend at a Provincial park.



Respectfully submitted,

Tyler Wist ESS Youth and Amateur Encouragement Committee Chair



Minutes of the 2016 Fall General Meeting of
the Entomological Society of Saskatchewan
Agriculture Canada Research Station, Saskatoon
2nd Floor Conference Room
13:30, December 9, 2016

PRESENT: Jady Helfrick, Branden Henry, Brianne Blenkin, David Halstead, Dan Wiens, Danielle Stephens, Cory Sheffield, Marianna Horn, Stephen Srayko, Joel Houston, Scott Thorn, Edyta Sieminska, Lorraine Braun, Julie Soroka, Wayne Goerzen, Keith Moore, Bryan Ulmer, Martin Erlandson, Cedric Gillott, Boyd Mori, Meghan Varkowsky, Jeff Boone, Doug Baldwin, Aaron Bell, Dwayne Hegedus, Iain Phillips.

SCIENTIFIC PROGRAM

Guest Presentation - Branimir Gjetvaj

1:30-1:45 **Branimir Gjetvaj**, Nature Saskatchewan

Introduction and presentation on Blue Jay submissions to Nature Saskatchewan.

Student Presentations (for abstracts see Appendix A)

1:45-2:00 **Branden Henry**, David Halstead

Conservation status of the elusive clubtail (*Stylurus notatus*) in the North Saskatchewan River at Prince Albert.

2:00-2:15 **Edyta A. Sieminska**, Martin Erlandson, Dwayne Hegedus, and John R. Gray

Characterization of the pheromone communication channel in bertha armyworm, *Mamestra configurata*.

2:15-2:30 **Rachel Parkinson**, Jacelyn Little, and John R. Gray

A neonicotinoid pesticide impairs visually-based collision avoidance in *Locusta migratoria*

2:30-2:45 **Maloney, Erin**, Christey Morrissey, John Headley, Kerry Peru, and Karsten Liber

Characterizing the Effects of Neonicotinoid Insecticide Mixtures to Larval
Chironomus dilutus under Acute and Chronic Exposure Scenarios

3:00-3:15 **Stephen Srayko**, Tim Jardine, Iain D. Phillips, and Doug Chivers

Seasonal migration of corixids (Hemiptera: Corixidae) and implications for
riverine foodwebs

COFFEE BREAK

3:30 Presentation of Awards

- 1) Brooks Award
 - a. Stephen Srayko (\$500)
- 2) Entomological Activities Award
 - a. Charlie Bailey (\$500)
- 3) Student Presentation Award
 - a. Rachel Parkinson (\$100)
- 4) John H. Borden Award (on behalf of the ESC)
 - a. Edyta Sieminska
- 5) Honourary Member of ESC (on behalf of the ESC)
 - a. Cedric Gillott

BUSINESS MEETING

3:45 Call to order,

- 1) Introduction of members and circulation of member sign in sheet.
- 2) Approval of agenda

MOTION: Cedric Gillott/David Halstead. THAT the proposed agenda be adopted.

CARRIED.

- 3) Minutes of the spring meeting—April 29, 2016
 - Cedric Gillott and Tyler Wist to submit edits after meeting to Iain Phillips

MOTION: Wayne Goerzen/Jeff Boone. THAT the minutes of the spring meeting April 29th, 2016, be adopted.

CARRIED.

- 4) Business arising from the minutes
- Bioblitzes did not happen in 2016
 - Will submit information on upcoming bioblitzes for the next meeting
 - Picture of Edyta Sieminska receiving Brooks Award for the website
 - Jeff Boone – this has been done and her picture is up.
 - Update on microscope and addition to newsletter
- 5) Treasurer's Report – Dwayne Hegedus (Appendix B)
- 18th time Dwayne has given the report to the society
 - The society is in good financial shape
 - Three new life members – Ruwandi Andrahennadi, Stephanie Harris, Tyler Wist, and Nicole Pillipow
 - 88 members last year because of the discount provided
 - Current membership at 55
 - Main sources of income in the form of membership dues
 - Accounts audited by Martin Erlandson and Wayne Goerzen
 - Charitable status renewed
 - Entomological Activities Award expenditures up
 - Request that each award winner put a story in the newsletter

MOTION: Dwayne Hegedus/ Marianna Horn. THAT the ESS accept the Treasurer's Report.

CARRIED.

- 6) Secretary's Report – Iain Phillips (Appendix C)
- Agendas and minutes prepared for the Spring and Fall meetings of the ESS.
 - Solicitation of abstracts from the ESS student membership for the fall 2016 meeting.
 - Issued notifications of nominations to the ESS membership.
 - Received 79 requests for insect identification from the public and forwarded these on to membership who are experts in each taxa area.

MOTION: Iain Phillips/ Martin Erlandson. THAT the ESS accept the Secretary's Report.

CARRIED.

- 7) Newsletter Editor's Report – (Dave Halstead on Nichole Pillipow's behalf)
- Dave Halstead apologizes for late submission, and requests more content from the membership.
 - Newsletter came out a couple weeks ago.
 - Will continue in this role unless others are able to take it over.
 - Encourages membership to submit articles if they won a travel award.

MOTION: Dave Halstead/ Cory Sheffield. THAT the ESS accept the Newsletter Editor's Report.

CARRIED.

- 8) Regional Director's Report – Tyler Wist delivers report for Jeff Boone (Appendix D).
- Board meeting for the Entomological Society of Canada happened in Florida at the International Congress of Entomology.
 - The president of ESC was sick so could not be there – Neil Halliday took over the role.
 - Renewal of contract with Cambridge University Press.
 - Binding the complete edition of the Canadian Entomologist.
 - The ESC has split its scholarship off to be a separate entity
 - Now a scholarship board.
 - Has a lot of money in it.
 - ESC has gone to a contract service for offering meetings, emails, updating membership.
 - Contract up for renewal – 2018
 - Talk about the gold medals and silver coins that are awarded.
 - Running out of them, and there is talk about preparing new ones.
 - Unfortunately this will be challenging as the Entomological Society of Canada have lost the original cast of the coin.
 - Back taxes are going to be a hit to the Entomological Society of Canada
 - Talk about increasing cost of membership to Entomological Society of Canada
 - All email based reminder system for membership renewal.
 - Entomological Society of Canada Joint Annual Meeting in Winnipeg announced for 22nd of October, 2017
 - In conjunction with the ASC biological forum and another.

MOTION: Tyler Wist/Cedric Gillott. THAT the ESS accept the Regional Director's report.

CARRIED.

9) Committee Reports

- Youth and Amateur Encouragement – (Tyler Wist; see Appendix E)
 - Taking the committee bigger
 - Answer questions from the public
 - Identify whatever resources we have to help with public access and teaching.

- ESS hasn't requested money from the fund for some time.
- No word on if and when we will get support funds.
- Upcoming volunteer opportunities
 1. Good bugs bad bugs
 2. Gardenscape
 3. Ag in the City
 4. Provincial Park speaking engagements
- Cory Sheffield – For the 150 Canada anniversary there will be bioblitz events this coming summer:
 1. Bioblitz in Saskatoon and Cypress Hills
- Archives and Heritage – Cedric Gillott and Martin Erlandson
 - No report
- ESS Website – Jeff Boone Boone
 - No report
- Microscope – Iain Phillips
 - In Regina,
 - Maybe stay there for the bioblitz
- Honours and awards – David Halstead
 - Nothing to add
- Nomination Committee – Doug Baldwin
 - Two positions to fill: Vice President and Regional Director
 - Filled – Danielle Stephens and Boyd Mori

President	Cory Sheffield
Past-President	Tyler Wist
Vice-President	Danielle Stephens
Regional Director to ESC	Boyd Mori
Treasurer	Dwayne Hegedus
Secretary	Iain Phillips
Auditors	Owen Olfert
	Wayne Goerzen

MOTION: Keith Moore / Doug Baldwin. THAT the Committee Reports be adopted

CARRIED.

10) Other Business

- Location of the meeting
 - Maybe have the meeting in conjunction with the Alberta society or at other locations
 - Cedric Gillott – historically there used to be meetings in Regina
 - Maybe use the entomological activities award for hotel rooms.

11) Installation of the new executive

- Cory Sheffield installed as new ESS President

12) Date of the spring meeting

- April 21st, 2017

13) Adjournment

MOTION: Cedric Gillott/Jeff Boone. THAT the ESS adjourns the fall meeting 2016.

CARRIED.

Appendix A – Scientific Abstracts:

Henry, Branden¹, David Halstead¹

Title: Conservation status of the elusive clubtail (*Stylurus notatus*) in the North Saskatchewan River at Prince Albert.

¹ Saskpolytechnic, Prince Albert, Saskatchewan, Canada

Abstract:

The following study took place along the North Saskatchewan River centered around the Prince Albert area. The North Saskatchewan River is home to a stenotopic species of Odonata at the North-Western limit of its range. *Stylurus notatus*, commonly known as the elusive clubtail, is a species of environmental concern, and a study to better understand the species as a whole was conducted. Exuvia were collected at 3 different sites: Prince Albert Airport, Prince Albert Bridge, and Peter Pond. Furthermore, Cecil Ferry and Wyngard Ferry were sampled during what was assumed to be the peak time of emergence. This was done to better understand distribution and abundance. Larvae samples were conducted at the Prince Albert Airport. Five kick net sampling sites located ten meters apart were sampled. The results showed little to no relationship when comparing emergence of *Stylurus notatus* to pH, water temperature (°C), turbidity (NTU), air temperature (°C), stream discharge(m³/s), total hardness (mg/L), and total alkalinity (mg/L). There was, however; a direct correlation between daylength and emergence. Further studies are needed to better understand distribution and this species tolerances to water quality.

Maloney, Erin^{1,2}, Christey Morrissey^{3,4}, John Headley⁵, Kerry Peru⁵, and Karsten Liber^{1,4}

Title: Characterizing the Effects of Neonicotinoid Insecticide Mixtures to Larval *Chironomus dilutus* under Acute and Chronic Exposure Scenarios

¹ Toxicology Centre, University of Saskatchewan, Saskatoon, SK, Canada

² Toxicology Graduate Program, University of Saskatchewan, Saskatoon, SK, Canada

³ Department of Biology, University of Saskatchewan, Saskatoon, SK, Canada

⁴ School of Environment and Sustainability, University of Saskatchewan, Saskatoon, SK, Canada

⁵ Aquatic Contaminants Research Division, Water Science and Technology Directorate, Environment Canada, Saskatoon, SK Canada

Abstract:

Neonicotinoids are a popular class of systemic insecticides, commonly applied as a seed treatments to protect young crops against biting-sucking insects. Extensive use of these seed treatments in nearby agricultural regions has resulted in the detection of neonicotinoid mixtures in the Canadian Prairie Pothole Region. However, the impact of these mixtures on local insect communities is poorly understood. This research aims to address that knowledge gap by characterizing the cumulative toxicity of binary and tertiary mixtures of select neonicotinoids (imidacloprid (IMI), clothianidin (CLO), and thiamethoxam (TMX)) to the sensitive aquatic insect *Chironomus dilutus* under acute (96 h) exposure scenarios. The joint action of these compounds was modelled using the MIXTOX approach. Under acute exposure scenarios, all mixtures demonstrated deviation from direct additivity. Results obtained indicate that the toxicity of these neonicotinoid mixtures to sensitive aquatic insects cannot be adequately predicted by direct addition of single compound concentrations. These results will be compared to those garnered in concurrent chronic (28 d) mixture studies, allowing for an assessment of whether these insecticide mixtures display similar deviations from concentration addition under more environmentally realistic exposure paradigms, and what risk this may pose to the aquatic environment.

Parkinson, Rachel¹, Jacelyn Little¹, and John R. Gray¹

Title: A neonicotinoid pesticide impairs visually-based collision avoidance in *Locusta migratoria*.

¹ Department of Biology, University of Saskatchewan, Saskatoon, SK

Abstract:

Neonicotinoid insecticide (NI) use is widespread and preclusive, despite risk to pollinators and other invertebrates. We defined sublethal effects of imidacloprid (IMD), a NI, on a well described and tractable motion detection neuron in the locust, the Descending Contralateral Movement Detector (DCMD). The DCMD receives coded input from the compound eyes via its pre-synaptic partner, the Lobula Giant Movement Detector (LGMD), and has monosynaptic excitatory inputs on motoneurons for flight and jumping. The 48h injected LD50 for IMD was estimated to 2,500 ppb in male locusts. We show sublethal IMD doses (10 and 100 ppb) affect DCMD responses to looming stimuli, and that these effects are sustained 2 and 24 hours after an acute treatment. Observed effects on DCMD firing are translated to deficits in collision avoidance behaviours. We show that IMD causes significant and lasting damage to an important pathway involved with visual sensory coding and escape behaviours at doses well below the LD50.

Sieminska, Edyta A.,^{1,2} Martin A. Erlandson^{1,2} Dwayne D. Hegedus^{1,3} & John R. Gray¹.

Title: Characterization of the pheromone communication channel in bertha armyworm, *Mamestra configurata*.

¹ Department of Biology, University of Saskatchewan, Saskatoon, Saskatchewan, CANADA

² Agriculture and Agri-food Canada, Saskatoon, Saskatchewan, CANADA

³ Department of Agriculture and Bioresources, University of Saskatchewan, Saskatoon, Saskatchewan, CANADA

Abstract:

The bertha armyworm (*M. configurata*) is a major insect pest in Western Canada, but despite its economic importance little is known about its genetic diversity across its geographical range. To characterize the genetics and biology of the *M. configurata* pheromone communication channel, we established colonies from two distinct geographic locations in Western Canada in addition to a pre-existing colony. Total RNA samples from head and antennae for each *M. configurata* strain were sequenced using pair-end Illumina and the resulting data subjected to *de novo* transcriptome assembly and bioinformatics analysis. Data mining of the reference transcriptome resulted in identification of over 100 putative chemosensory proteins in *M. configurata* antennal tissue, including 33 olfactory receptors (ORs) and 3 pheromone binding proteins. Abundance estimation and real-time droplet PCR characterized expression profiles were used to determine sex-biased expression of the relevant genes. Expression studies combined with phylogenetic analysis identified 3 OR sequences predominantly expressed in male antennae as putative pheromone ORs. Furthermore, individual libraries from the 3 *M. configurata* populations were compared to the reference transcriptome to assess genetic differences for the 3 putative male expressed pheromone ORs. Although the majority of ORs are highly conserved among *M. configurata* populations, the sequence for OR6, identified as OR for the *M. configurata* minor pheromone component (Z)-9-tetradecenyl acetate had over 100 single nucleotide polymorphism (SNP). Detailed chemical analysis of female pheromone gland extracts performed with gas chromatography-coupled mass spectroscopy and electroantennographic detection indicated that there is no variation in the chemical composition of female pheromone glands nor for the male response to the pheromone gland extracts in the 2 populations studied to date. In addition to the 2 previously identified pheromone components of the *M. configurata* pheromone blend, 4 other compounds were identified as eliciting response in *M. configurata* males. This project combines the power of next generation sequencing with established physiological and behavioural bioassays to further our understanding of the lepidopteran pheromone communication channel. The knowledge gained during the course of this research will contribute to development of a more responsive and accurate pheromone trap monitoring system.

Srayko, Stephen¹, Tim Jardine², Iain Phillips¹ and Doug Chivers¹

Title: Seasonal migration of corixids (Hemiptera: Corixidae) and implications for riverine foodwebs

¹ Department of Biology, University of Saskatchewan, Saskatoon, SK

² School of Environment and Sustainability, University of Saskatchewan, Saskatoon, SK

Abstract:

Food web subsidies can be instrumental to fish production in lotic ecosystems. We have identified a potentially important subsidy in the form of migrating corixids (Hemiptera: Corixidae) that move from wetlands into the North and South Saskatchewan Rivers during the fall. Results from 2015 and 2016 indicate that corixid migration begins in late September, marked by tremendous increases in abundance in the rivers and decreased numbers in wetlands. Gut content analyses show that goldeye (*Hiodon alosoides*), mooneye (*Hiodon tergisus*), longnose sucker (*Catostomus catostomus*) and white sucker (*Catostomus commersoni*), make heavy use this forage subsidy. The stable isotope of sulphur, $\delta^{34}\text{S}$, a chemical tracer of corixid origin, will also be used to further characterize the strength of this subsidy and how different fish species may or may not exploit it. This study could underscore the need to conserve both wetland and river habitats by revealing a linkage between these spatially separated ecosystems.

Appendix B: Membership and Year End Financial Report

ENTOMOLOGICAL SOCIETY OF SASKATCHEWAN MEMBERSHIP AND YEAR END FINANCIAL REPORT

01 September 2015 – August 30, 2016

MEMBERSHIP

- In 2015-2016 the ESS had 85 members (53 full members and 32 students – 18 Life Members) of which 45 were in good standing. The ESS welcomed 3 new Life members (Ruwandi Andrahennadi, Stephanie Harris and Nicole Pillipow).
- The ESS had 88 members in 2014-2015. The increased number reflects individuals who became members to take advantage of the reduced fees for the ESC-ESS Joint Annual meeting. Members who have not been in good standing for 2+ consecutive years will be culled from the 2016-2017 membership list.

ESS GENERAL ACTIVITIES

- The main sources of income were from membership dues with \$1205.00 collected and interest income of \$932.41.

FINANCE

- The ESS total assets are as follows:

Term Deposits (balance plus accrued interest)

#007	12,019.33
#009	15,697.08
#011	12,190.40
#012	10,484.82

Checking	4,556.70
----------	----------

Outstanding deposits	50.00
----------------------	-------

Outstanding liabilities	(0.00)
-------------------------	--------

Total	54,998.33	(54,809.12 in 2015)
--------------	------------------	----------------------------

- The ESS accounts were audited by M. Erlandson and W. Goerzen.
- Registered Charity and Non-Profit Corporations status was renewed.
- Registered Charity Tax Return was filed in December.

Please refer to the enclosed financial statement for further details.

**Financial Statement – Entomological Society of Saskatchewan
01 September 2015 – August 30, 2016**

MAXIMIZER ACCOUNT (ESS)

Receipts:

Memberships	\$ 1205.00
Outstanding deposits	50.00 (memberships)
Interest (CU Maximizer and Term Deposit)	932.41
Misc. (Donation – J. Boone – Wild Birds)	85.00
	<hr/>
TOTAL	2272.41

Expenditures:

Printing	0.00
Minister of Finance	10.39
Brooks Award	500.00 (E. Sieminska)
Travel Award	250.00 (A. Bell)
Travel Award	250.00 (I. Phillips)
Travel Award	500.00 (E. Sieminska)
Student Award	100.00 (A. Bell)
Meeting Expenses	140.66
Postage	0
Bank Charges	0
Misc. (Insect Flour - Wist)	90.23
Misc. (PayPal Fees)	31.27
	<hr/>
TOTAL	1872.55

Excess of Receipts over Expenditures \$ 399.86

Appendix C: Secretary's Report – Iain Phillips

SECRETARY REPORT – ENTOMOLOGICAL SOCIETY OF SASKATCHEWAN December 9, 2016.

Preparation of agendas and minutes

Agendas were prepared for the Spring and Fall meetings of the Entomological Society of Saskatchewan in 2016.

Minutes were prepared for the Fall 2015, and Spring 2016 meetings of the Entomological Society of Saskatchewan.

Solicitation of abstracts for Fall ESS meeting from students

Request for abstracts extended to ESS student members and their supervisors in November, 2016 for the fall meeting of the ESS on December 9th, 2016. Five student abstracts received and organized in agenda for ESS meeting.

Notifications of nominations

Regional Director nomination - November 23, 2016

- Doug Baldwin notified Secretary of ESS that Boyd Mori has accepted nomination of Regional Director for the ESS.

-

Vice President nomination – November 23, 2016

- Doug Baldwin notified Secretary of ESS that Danielle Stephens has accepted nomination of Vice President for the ESS.

Public requests for identification

79 requests for help in invertebrate identification were received from the public, and requests were circulated to members with specialty in those areas.

Appendix D: Regional Director's Report – Tyler Wist

Entomological Society of Saskatchewan's Regional Director's report from the Entomological Society of Canada

Submitted by By Tyler Wist, Acting as Regional Director, Entomological Society of Saskatchewan, in place of Jeff Boone (who couldn't make it to Florida for the meeting)

Board of Directors Meeting was held at the Orange County Convention Center, Orlando, Florida on Tuesday, 27 September 2016 the day before the official commencement of the International Congress of Entomology (ICE).

Renewal of Cambridge University Press (CUP) Contract

Neil Holliday provided an update on issues to be considered in renewal of contract including the proportion of open access papers

Binding of TCE & Memoirs

The ESC possesses two full series of The Canadian Entomologist. One is bound and the other is not but both are stored in the same storage locker. They are looking into the feasibility of binding the second set into volumes.

Neil has requested information on costs from Peter Mason.

The Executive Council are appointed for a one year term expiring at the Annual Meeting in 2017. Consisting of Neil Holliday (President), Patrice Bouchard (First Vice-President), Fiona Hunter (Second Vice-President), and Terry Wheeler (Past President)

The following are appointed as **Officers** for a one year term expiring at the Annual Meeting in 2017: Christopher P. Dufault (Treasurer), Kevin Floate (Editor in Chief), Cedric Gillott (Bulletin Editor), Donna Giberson (Assistant Bulletin Editor), Anne-Sophie Caron and Miles Zhang (Student Representatives), Sean McCann and Morgan Jackson (Blog Administrators). Remaining positions will be filled by appointment by the President.

Committees and Representatives

The President will appoint remaining Committee Chairs.

Scholarship Fund Board of Trustees

Christopher Dufault, Jenny Cory, and Staffan Lindgren are appointed as Trustees of the Entomological Society of Canada Scholarship Fund.

The history here is that the administration of scholarships is now at arm's length from the ESC board with the recent creation of Scholarship Fund Board of Trustees.

Strauss contract

Christopher Dufault pointed out that we should begin to prepare our position for review of the Strauss contract, which expires on 30 June 2018. This is the management company that assist the society.

The next meeting of the Executive will be held on a date to be determined by the end of October, and will focus on website issues. The President proposed that three full Board meetings be held by teleconference, in December 2016 and March and June 2017.

Discussion about ordering Gold Medals and silver coin for the two ESC awards.

Other business that didn't make the minutes:

Regional societies will be getting a letter from Megan Wallace about the ESC back taxes (10 yrs) from the conference fees. ESC board agreed that the ESC would pay any back taxes owing, estimated at 90K plus 10k legal fees. Thanks to the five regional societies (including the ESS) who provides their conference details.

Long discussion on decreasing membership of the ESC and also on decreasing revenue. Memberships rate may increase by 5% to keep pace with inflation.

Discussion about automatic annual renewals keeping members "paid-up". Strauss doesn't want to touch that (credit card number storage liability). Since email reminders became the method of choice for renewal reminders, more people have not renewed their memberships compared to "snail-mail" years.

2017 ESC JAM in Winnipeg announced and promoted. 22-25 Oct 2017

In conjunction with the AAFC Biocontrol Working Group Oct 20 (?) and the Western Forum on Pest Management Oct 26-27 2017.

Scholarship fund update: 445K in fund mostly from two recent and large donations.

Discussion about gold and silver medals for Hewitt and ESC Gold medal recipients. The supply is running low. Options will be found that should be cheaper than the current awards.

ENTOMOLOGICAL SOCIETY OF CANADA

66th Annual General Meeting

Orange County Convention Center, Orlando, Florida

September 27 2016

Minutes

Commemoration of Deceased Members of the Entomological Community

The Heritage Committee reported the deaths since the previous Annual Meeting of Thelma Finlayson, George Gerber, Leonard Kelton, and Robin Leech. A moment of silence was observed in their memory.

Report from the Board of Directors

First Vice-President Neil Holliday reported on the Board's activities for the year.

Since last reporting to the membership, the Board of Directors has met three times and the Executive Council has met three times. All but two of the meetings were by the free teleconference service provided to the Society by Strauss Event and Association Management; this service is also available for meetings of Society committees. The second year of the contract for management services with Strauss has seen resolution of virtually all of the problems associated with the first year. Membership renewals for the 2016 year went much more smoothly than in the previous year. We still need to address problems associated with abandonment of paper-based membership renewal, as members ignore or forget email reminders to renew. In 2016, those who did not renew on line by mid-February received a mailed renewal form and follow-up; nevertheless there are still those who may think they have renewed but have not. The transfer of the Society's registered office to the Strauss office has been completed. A policy document has been approved by the Board that basically outlines who does what with respect to joint annual meetings in the new era in which on-line registration and paper submission, and registration fee processing are performed by Strauss. Efforts are ongoing to incorporate the ESC Scholarship fund; Treasurer Christopher Dufault has been searching back files on the scholarships and we hope soon to receive information from the Charities Directorate on the information they have on file. A substantial donation from Hugh and Thelma Danks has allowed for the establishment of new scholarships, the first two of which have just been awarded. The Committee on redesign of the Society's website has developed a plan for changes, and Executive Council will be meeting with all concerned parties within a month to move towards implementation

of the new design. For the last two years, Murray Isman and his committee have represented ESC in the ICE organization process, and during the last year, past-president Staffan Lindgren has very capably steered the local arrangements for ESC at ICE. We thank all involved for their efforts. Incoming first vice-president Patrice Bouchard is leading development of the team that will represent the ESC in the organizing of the joint meeting of the Entomological Societies of America, Canada and British Columbia (Vancouver, November 11-14, 2018). The Board is committed to ensuring that this meeting is truly joint and caters to our member's interests and needs. At its most recent meeting on 24 September, the Board highlighted two issues that are to receive special attention in 2016–17: reversing the slow decline in membership, and balancing the operating budget of the Society. Kevin Floate has indicated his intention to step down as Editor-in-Chief at the end of 2017, and a search has been initiated for his replacement. If anyone is interested in this position, please contact me. The Canadian Entomologist has flourished under Kevin's editorship and its impact factor has increased; we thank Kevin, and editorial assistant Andrew Smith for their excellent work. We also thank all other officers, committee chairs and committee members for their many services to ESC; without them, the Society could not function. Particular thanks go to Alec McClay, who has very capably served the Society as Secretary for five years, and is desirous of stepping down as soon as a replacement can be found. Again, if you are interested in this position, which has the perk of having expenses paid to ESC Annual Meetings, please let me know.

Standing Rule Changes

Achievement Awards Committee

Some changes to the Standing Rules for this Committee are needed to make the treatment of new Honorary Members equivalent to that of new Fellows, and to modify the standing rule that applies to the Achievement Awards Committee so that it conforms to current practice. The following changes were proposed by Neil Holliday and seconded by Bill Riel:

Standing rule 1 (e) Honorary Member. Add:

v. New Honorary Members shall be announced in the Bulletin as soon as possible after they are named

Modify Standing Rule X 4 (b) as shown below

X 4 (b) Achievement Awards Committee

The Committee shall consist of three to five Members, one of whom will be the First Vice-President of the Corporation who will normally function as Chair. Members of the

Committee shall not be eligible for re-appointment for a three-year period after serving on this committee.

The Committee shall invite Members of the Corporation to nominate worthy eligible persons for the Entomological Society of Canada Awards for Outstanding Achievements in Entomology: the Gold Medal Award, the C. Gordon Hewitt Award and Honorary Membership.

The Committee shall invite applications from individuals for the Bert and John Carr Award in support of research activities on the faunistics, natural history or taxonomy of Canada's insect fauna.

The Committee shall select worthy recipients for these Awards from among the nominees/applicants, but may not itself make nominations/applications. With the exception of Honorary Membership, the person chosen to receive each Award shall require the endorsement of the Governing Board. If a suitable recipient is not found, an award will not be made. Names of those selected by the Committee for Honorary Membership shall be forwarded to the Secretary for inclusion in a ballot of the Society's membership

The Committee shall select worthy Active Members as Fellows of the Corporation from among persons nominated. Each person chosen as a Fellow of the Corporation shall require the ratification of the Governing Board.

The Committee shall invite the affiliated society hosting the next Joint Annual meeting to choose a recipient for the Norman Criddle Award.

CARRIED.

Election of Directors

The following slate of Directors was proposed for election by Secretary Alec McClay and seconded by Pat MacKay:

Position	Candidate	Length of term	Ends at AGM
Societal Director (2 nd Vice-President)	Fiona Hunter	3 years	2019
Director at Large	Laura Timms	3 years	2019
Regional Director, ESAB	Haley Catton	3 years	2019

Regional Director, SEQ	Étienne Normandin	3 years	2019
Regional Director, AES	Suzanne Blatt	3 years	2019

CARRIED.

With this election Neil Holliday succeeded to the office of President and officially took over the chair of the meeting. Second Vice-President Fiona Hunter was escorted to the dais by First Vice-President Patrice Bouchard.

Presentation of Service Awards

President Neil Holliday presented Alec McClay with an award to mark his service as Secretary from 2011 to 2016.

Resolutions on behalf of the ESC

Resolution of thanks

The following vote of thanks was moved by Véronique Martel:

- The Society's Ad Hoc Committee for ICE, chaired by Prof. Murray Isman, and the Annual Meeting Committee, chaired by Dr. Chris MacQuarrie, for their efforts in planning the Society's events at the Congress, coordinating with the Entomological Society of America and the ICE 2016 Organizing Committee, and fund-raising for the Student and Early Professional Travel Awards
- Enterra Feed Corporation and Dow Agrosciences Canada for their generous financial support of the ICE Student and Early Professional Travel Awards.

CARRIED by a round of applause.

Notice of 67th Annual General Meeting

The 67th Annual Meeting of Members will take place in Winnipeg, Manitoba, on Tuesday, 24 October 2017.

Adjournment

The meeting was adjourned at 15:30 on a motion by Kevin Floate.

Appendix E: Youth and Amateur Encouragement Report – Tyler Wist

Tyler Wist (Tyler.Wist@agr.gc.ca)

Dec 9th, 2016

Youth and Amateur Encouragement Committee Report, Fall Meeting

Fiona Hunter is now the chair of the ESC's Public Education Committee and I am our ESS member. There was some discussion at the ESC's Board meeting about this committee with four of the members present (Patrice Bouchard, Chair and now *ex officio*, Tyler Wist of the ESS, Fiona Hunter incoming chair, and Sophie Cardinal of the ESO). Several motions pertaining to the committee were brought forward and passed.

1. The ESC will dedicate a section of the website for the public education committee to provide links to activities and resources to be shared with membership and made publicly available.
2. The Public Education Committee shall identify and organize all existing resources related to youth and public education resources in Canada, provide for inclusion on the website, and seek out additional opportunities to enhance youth encouragement initiatives.
3. Public Education Committee to finalize the template as proposed and includes the necessity to file a report on activities afterwards.
4. Alberta and Quebec societies have not sent any representatives to the committee. ESA has since volunteered Haley Catton as their representative.

The ESS has not asked for public education funds for the past 3 years so I requested public education funds from the ESC for 2014, 2015 and 2016 at \$200/year for a total of \$600 before the Dec 31 2016 deadline. I'd like to modernize our presentation abilities by adding the capacity to show fine detail of our pinned and live insects and pictures of insects from the field and lab on a viewing screen. We can do this with a cheap, handheld microscope and tablet set up. The Public funds will be used to buy a handheld microscope (AM2111 Dino-Lite Basic with MS21W Stand) (\$195 CAD with shipping) and a 10 inch tablet or netbook with USB capability (~\$300) to display magnified images and insect images on a slideshow. The remaining \$100 will go towards the purchase of several insect lifecycles embedded in plastic resin that can be easily handled by children, and magnified by the Dino-Lite scope (\$60 Monarch lifecycle, \$40 dragonfly lifecycle, www.realcoolbug.com).

The ESC now requires a short review of the events that the funds are requested for inclusion in the ESC Bulletin (motion 3 above) so I will be putting together a report following Good bugs/Bad bugs and Gardenscape. If anyone has anything to add please contact me.

Upcoming Volunteer Opportunities

I'll be putting out a call for volunteers closer to the date for these events.

Good Bugs/Bad Bugs presentation in the Little Green Thumbs school tours March 22-24 2017 Prairieland Park

Gardenscape March 24-27 2017 Prairieland Park.

Ag in the City, Saturday April 7 2017 Lawson Heights Mall

Other Opportunities during the Year

Kids Gone Wild for Wildlife run by the Wildlife Rescue Society (Last weekend in November) Cost \$50 for a not-for-profit booth. Free if someone gives a presentation on stage.

Provincial Park Speaking Engagements (if they ask) during the summer months.

Bioblitzes in Regina in conjunction with Canada's 150th birthday celebration.

Respectfully submitted,

Tyler Wist

Chair, Youth and Amateur Encouragement Committee

ESS Membership

Surname	First name	Surname	First name	Surname	First name
Altaf	Muhammad	Harris	Stephanie	Peschken	Diether
Anderson	Harvey	Hartley	Scott	Phillips	Iain
Andrahennadi	Ruwandi	Hegedus	Dwayne	Pillipow	Nicole
Andreassen	Lars	Helfrick	Jady	Pors	Inger
Archives	Saskatchewan	Henderson	Allison	Prestie	Chance
Armstrong	James	Henry	Branden	Prestie	Kate
Bahar	Md Habibullah	Hoemsen	Brittney	Prestie	Nichole
Baldwin	Douglas	Hooge	Erika	Roy	Charllotte
Bell	Aaron	Horn	Marianna	Sarauer	Bryan
Benmerrouche	Leila	Hunter	Karen	Schmidt	Alix
Berry	Owain	Jackson	Andrea	Schulz	Deanne
Berry	Kathryn	Kozial	John	Sheffield	Cory
Boone	Jeff	Kusters	Peter	Sieminska	Edyta
Braun	Lorraine	Larsen	Suzanne	Simpson	Christine
Braun	Murray	Larson	David	Soroka	Juliana
Bucki	Mehran Yazdani	Leighton	Anna	Srayko	Stephen
Burghardt	Rod	Lennox	Daily	Stephens	Danielle
Curry	Philip	Maduck	Adam	Stolar	Jessica
Davis	Art	Manz	Brian	Stuart	Taz
Doane	John	Matus	Alejandro	Ulmer	Bryan
Dunlop	Diana	McIntosh	Rory	Waldner	Brogan
Eirich	Russell	McKellar	Ryan	Wiens	Daniel
Elliott	Bob	Mohr	Nina	Willner	Kaitlin
Erlandson	Martin	Moore	Keith	Wilson	Geoff
Frier	Sandra	Morrow	Wade	Wist	Tyler
Gillott	Cedric	Mousavi	Mozghan	Yunik	Matthew
Giroux	Keith	Nichol	Helen		
Goerzen	Wayne	Noakes	Amy		
Grenkow	Larry	Olfert	Owen		
Gruber	Margie	Olivier	Chrystel		
Guertin	Dayna	Parker	Dale		
Hakeem	Abdul	Parkinson	Rachel		
Halstead	David	Parsons	Graham		
Harris	Lloyd	Pedersen	Gary		