Guide and list of topics for the final presentations of the Insect Ecology students 2014-2015

Each student should develop the topic according to what was discussed during the course and the additional material which will be searched together during the session on Wed 26 November 9-11 room 22P.

The presentation should consist of 10 to 15 slides. Keep in mind the rule of 6 (no more than 6 lines of text in each slide, no more than 6 words in each line).

A possible structure of the presentation could be:

General introduction (1 or 2 slides)

Synthesis of a paper(s)

Slide 1: Starting point and objectives

Slide 2: Methods

Slide 3: Results

Slide 4: Conclusions

General conclusions (1 or 2 slides)

The presentations should be delivered at the end of the course on dates to be agreed with the teacher. On each occasion there should be at least 4 students and the others are kindly invited to attend. There could be more than one occasion before the official dates for discussion and registration, which are on January 28 and February 25.

Days on which the teacher is available (as for now):

December 1, 5, 12, 22

January 7-9, 19-23, 26-27

Topics

Population dynamics in relation to climate change

* Larch bud moth Zeiraphera griseana (= diniana)
* Winter moth Operophtera brumata
* Pine processionary moth Thaumetopoea pityocampa
* Mountain pine beetle Dendroctonus ponderosae
* Southern pine beetle Dendroctonus frontalis
* Spruce bark beetle Ips typographus
* Hemlock woolly adelgid Adelges tsugae
* Eastern tent caterpillar Malacosoma disstria
* Gypsy moth Lymantria dispar (in N America)
* Spruce budworm Choristoneura fumiferana
* Population dynamics in tropical forest entomology

Invasive alien species

* Emerald ash borer Agrilus planipennis (resistance mechanism)
* Asian longhorn beetle Anoplophora glabripennis (eradication methods)
* Cameraria ohridella (voltinism and range expansion)

Range expansion

* Range definition and range dynamics
* Pine bark beetles Tomicus spp. (range overlapping and modelling)
* Pine processionary moth Thaumetopoea pityocampa
* Mountain pine beetle Dendroctonus ponderosae
* Forest encroaching and dynamics of endangered species

Diapause

* Phenology regulation and life history traits (also in relation to climate change)
* Ecological meaning of extended diapause

Tree defence system

* Pathways of induced defence activation in Norway spruce
* Induced systemic resistance in pines against fungi and insects
* Theory of tree defence in conifers
* Priming in plants
* Water stress and tree susceptibility to herbivores
* Association bark beetles and fungi

Biological control

* Review of biological control attempts in forestry for native species
* Review of biological control attempts in forestry for non-native species
* The case of winter moth biocontrol in Canada

Integrated pest management

* Utilisation of semiochemicals in pest management
* Surveillance methods
* Use of microbial pesticides