Increased damage by insect pests in Icelandic forests

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Change in annual average temperature in Stykkishólmur in West Iceland
Since 1990 a few new pests have arrived. This insect was first noted in South Iceland in 2003 in the village Hveragerði, but its distribution seems slow and it has not yet spread to natural birch forests.

Eriocrania unimaculella
Another new pest, the leaf beetle, *Phratora vitellinae*, on willows, aspen and poplars, has been slowly spreading in the Reykjavík area.

This insect causes severe damage on *Populus tremula*, *Salix myrsinifolia* ssp. *borealis* and some clones of *S. phyllicifolia*.

It also damages *Populus trichocarpa*, but has not yet been found in poplar forest plantations.

*Phratora vitellinae* is new in Iceland

This beetle was first seen in 2005 in Southwest Iceland and is slowly spreading out.
*Melanchra pisi* has been known in South Iceland for a long time, but is now spreading northwards.

This species can damage young forest plants.

These larvae are grazing in late summer and overwintering in soil as larvae.

Defoliated black cottonwood.
Melanchra pisi is even grazing on the hostile needles of sitka spruce!
Melanchra pisi - distribution

Increased distribution area in 2009
Looking for larvae in the East – no larva found here yet

The distribution area ends south of these mountains
New food resources – lupine and forest plants

It is a matter of discussion whether the increased distribution is a result of warmer climate or new food supplies.

But there is now doubt that enormous growth in population size is caused by new food resources.

The main grazing plant species is the alaskan lupine, *Lupinus nootkatensis*. It has been widely sown as a soil improving plant.
The big news from this summer is the explosion like distribution and population increase of the larch tortrix in Iceland.

This species attacks many conifer species, and has been most severe on pines in the south and larch and fir in the eastern part of the country this summer.

This species was first caught in light traps in South Iceland in the nineties but has been very rare until now.

World wide distribution is the temperate climate zone.

Larch tortrix, lärkträdsvvecklare
Zeiraphera griseana
Zeiraphera griseana, adult moth and larva

Distribution in Sweden
In the summer 2009 damages were on *Pinus contorta* in South- and Southwest Iceland, but mainly on *Larix sibirica* and *Abies lasiocarpa* in East Iceland
Distribution of Zeiraphera griseana in Iceland in 2009
Is the introduction and sudden population increase in certain insect species in Icelandic forests a result of warmer climate or because of other factors?

Which other factors could be the reason?

New food plants? (*Melanchra pisi*)

More developed forests? (the new insects)

Coincidence?
Thank you for listening!