

Can sniffer dogs become a new tool for glow-worm monitoring?

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detection dog Conference
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The stars of the story

Smokey
Belgian Malinois



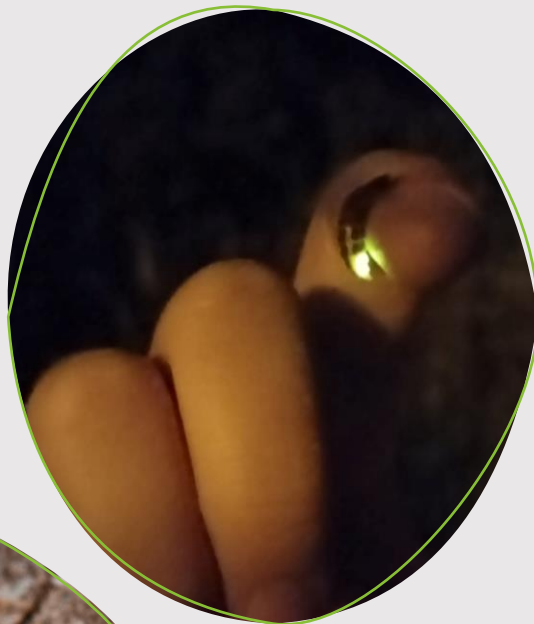
But **why**
glow-worm
larvae?

European common
glow-worm (*Lampyris noctiluca*) larvae

Rafale
Pyrenean shepherd



European common glow-worm (*Lampyris noctiluca*)



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Larva

But why glow-worm larvae?

- ❦ Nocturnal → daytime monitoring?
- ❦ Adult season very short (± 2 months/year, 3 hours/night)
→ Larvae longer season = gives more time

Why monitor the species?

- ❦ Declining species → Local conservation measures

Why should we save them?

- ❦ Ambassador species for light pollution awareness





Disclaimer: this is a
hobby side project,
not professional!

How did we do it ?

- 1) Glass pots
- 2) Moss



How did we do it ?

3) Dried leaves

4) Piece of grass indoor



Test the discrimination ability

Sessions	Correct positive	Correct negative	False positive	False negative
6	37	145	3	6

- ❗ Carrousel set-up
- ❗ Blinded set-up



How did we do it ?

5) Lawn (1m²)

- Dog 12/12
- Handler 3/12



How did we do it ?

6) Forest litter during the day (1m²)

- ❗ What goes wrong?
 - ❗ Leash throws larva further away
 - ❗ Foot or nose pushes larva deeper in leaves
- ❗ → monitoring during the day not feasible



Practical test in the field

- ❗ At night, forest litter (1m²)
- ❗ Helping with larvae collection



Difficulties

❦ At night, forest litter (1m²)

→ Difficulties

- ❦ Checking if correct (they are small)
- ❦ Lot of false positives (?)
- ❦ Wind blows scent away
→ exact spot needed

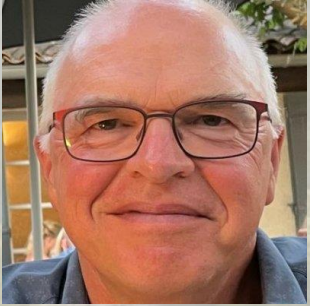


Conclusions

- ❗ In general : larvae emit little scent?
 - ❗ Indoors & grassy substrate : very accurate
 - ❗ Forest litter : more difficult → More training needed
-
- ❗ Is daytime monitoring possible?
→ We don't know yet, more training is needed



THANK YOU!



Erik Matthysen



Raphaël De Cock



Ellen Van Krunkelsven
and Smoke



Carina De Pape



Hilde Vervaecke
and Rafale



What we see



What the glow-worm sees

