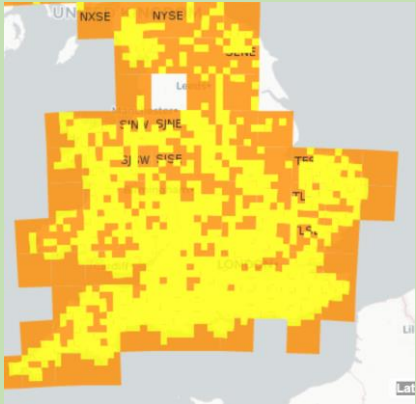


A GLOWING REPORT FOR SCOTLAND?

Lampyris noctiluca. Surveying, recording and studying the species in Scotland – One student's crusade.



Lampyris noctiluca (Glow-worm) is a beetle of the Firefly family relatively well recorded in England, these records have provided data that shows the species is thought to be in decline as a result of various factors such as habitat loss, artificial lighting and pesticide use.

Records are regularly submitted throughout the glowing season by people dedicated to surveying their local site as well as casual records.

Scotland does have records but these are sparse in comparison. Why?

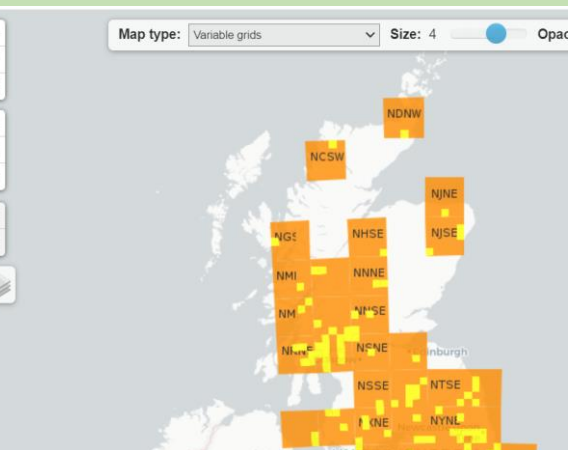
- Is *Lampyris noctiluca* just not here?

Or, as I suspect because:-

- Vast areas of potentially suitable habitat still to be looked at.
- Lack of people even knowing they exist or willing to survey or search for them as it entails a night survey with little or no torchlight, let's face it not many people fancy the idea of trudging about in a remote area in the dark!
- In the last three years I have received many anecdotal accounts, mostly from farmers, gamekeepers and foresters. These accounts are never recorded onto a database.



A female displaying from one of this year's surveys.





Why does it matter?

- Without a more extensive data set of records and research it is impossible to say how they are doing in Scotland. Are they declining or are they in fact thriving? Could Scotland have a potential reservoir of the species? How can sites be managed to ensure their survival? We know very little about them in Scotland. Recording helps to widen understanding about their ecology.
- Shared knowledge will only help the species.
- Glow-worms, a species very susceptible to environmental changes are good indicators of land use changes and current status.
- During my career as a shepherd and farmhand I was privileged to see some of Scotland's top wildlife spectacles such as Golden eagles soaring, Red deer stags rutting and Salmon spawning. The sight of a glowing female on a mild(ish!) night in the summer is every bit as magical. Every person I have taken with me on surveys is mesmerized by this small creature emitting bioluminescence followed by a willingness to take on board the importance of the invertebrate world. A superb opportunity to stress the importance of looking after them and an addition to the arsenal along with the Bees and Butterflies for good insect PR!

My research so far

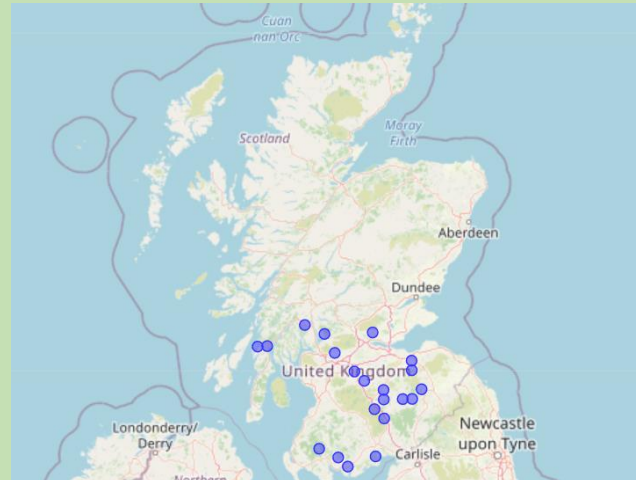
Records do come in via iRecord sporadically. Either from casual observations or by the one of the more dedicated recorders.

I spend about 6 weeks throughout the summer camping out either surveying sites, assessing potential sites, or conducting a little PR by reaching out to local wildlife groups to mobilise a small surveying party.

I try to revisit historical or old parish records to establish if the species is still present, if not, why?

The rest of the year is spent liaising with landowners/managers, conducting desk research, pouring over old maps, giving presentations or putting my case to Professors, lecturers and industry experts.

Some may say I am obsessed!



Record of *Lampyris noctiluca* - zero abundance found (*Lampyris noctiluca*)

Record Details

Record ID	20781522
Recommended name	<i>Lampyris noctiluca</i> (Linnaeus, 1758)
Common name	Glow-worm
Name as entered	<i>Lampyris noctiluca</i> - zero abundance found
Taxonomy	Animalia - Coleoptera - Lampyridae
Survey	Record Glow-worms
Recorder	martin, charlotte
Record status	Accepted as considered correct
Verified by	Alder, Jim
Date	26/06/2021
Grid ref	NT0491736958
Site name	biggar
Sample comment	Lures placed out. Last grid ref for lures NT06437 36836
Submission date	Entered on 27th June 2021 at 02:11 and last updated on 27th June 2021 at 02:32
Sample Time	11:40
Temperature (Celsius)	9
Glow-worm: access	Yes
Glow-worm: site type	Grassland
Glow-worm: chemicals	Definitely not
Glow-worm: lighting	Distant lights: over 200m
Certainty	Certain
Glow-worm: site type	Other
Glow-worm: site type	Railway: used or dismantled, within 100 metres
Glow-worm: grazing	No
Glow-worms: condition	Dry
Glow-worm: live locality	1
Recorder Name	martin, charlotte

Explore records of *Lampyris noctiluca*

Lampyris noctiluca details page

Photos and media

A satellite map showing a rural landscape with fields, roads, and a railway line. A red location pin is placed on the map, corresponding to the grid reference NT0491736958 mentioned in the record details.

Having to take the lows with the highs.
Nil return records every bit as important.

In 2 and ½ seasons of groundwork (Covid got in the way last year) you can see I have only managed to cover a small area.

Successes

- Reinstating a record where the landowner thought they had lost the population
- Finding a population where the hill farmer had seen them when he was younger but thought lost now due to inconsiderate parking by tourists.

Both landowners now making efforts to look after them.

- Expanding a site to establish range of metapopulation, some 3 miles away from original record..this one is giving me headaches!
- Being able to train a ranger in survey techniques and finding them onsite.

Going forward

With the support and advice from SRUC, Caledonian Conservation, NGO's, Landowners/Managers and other interested parties I am continuing the research and survey work. Each year I plan to get to more sites.



What's not to love about surveying in the dark with the sounds of the Owls, Deer and Foxes to accompany you.



Using special lures to attract males



Larva predating a snail

Future/Current plans and goals

- **Increase awareness of the species and encourage people to look for and record them.** Nothing makes me happier than to see a new accurate record appear on a recording database
- Continue liaising with land managers and owners, **who in every instance of being approached have been helpful and supportive.**
- Deepen the understanding of the adaptations of the Scottish populations. My initial informal research suggests our **females glow at lower temperatures but at lower levels of vegetation.**
- Continue to be proactive and approach corporations for sponsorship, I am mostly self funded with a little help from SRUC and a small sponsorship in 2019. **Crowd Funding raising for field equipment is a priority this year to further the above research. Already raised enough for a drone (orthomosaic mapping)**
- To run parallel with my academic progression I am in the very first steps of planning and preparing for a **population genetics study.** This one is a very long term goal that I may have to pass on!

Thankyou for listening

Thankyou to NBN Atlas for selecting me to speak at this conference and to the following for supporting me and giving advice.

- SRUC especially lecturers Mr John McGregor and Mr Simon Gibson-Poole
- Caledonian Conservation
- UK Glow worm survey especially Mr Jim Alder and Robin Scagell

If you have any queries or would like to know more you can contact me at

charlotte.martin2791@gmail.com

- And please if you get a chance have a look in your area for them and record.