



European Stag Beetle Monitoring Network

A CITIZENS SCIENCE PROJECT

Stag Beetle News

In this 5th newsletter, you can expect our overview of the 2022 transect walks and we have some nice research news for you. We also report on a stag beetle who went on vacation in Norway. If you missed the previous newsletters, find them [here](#).

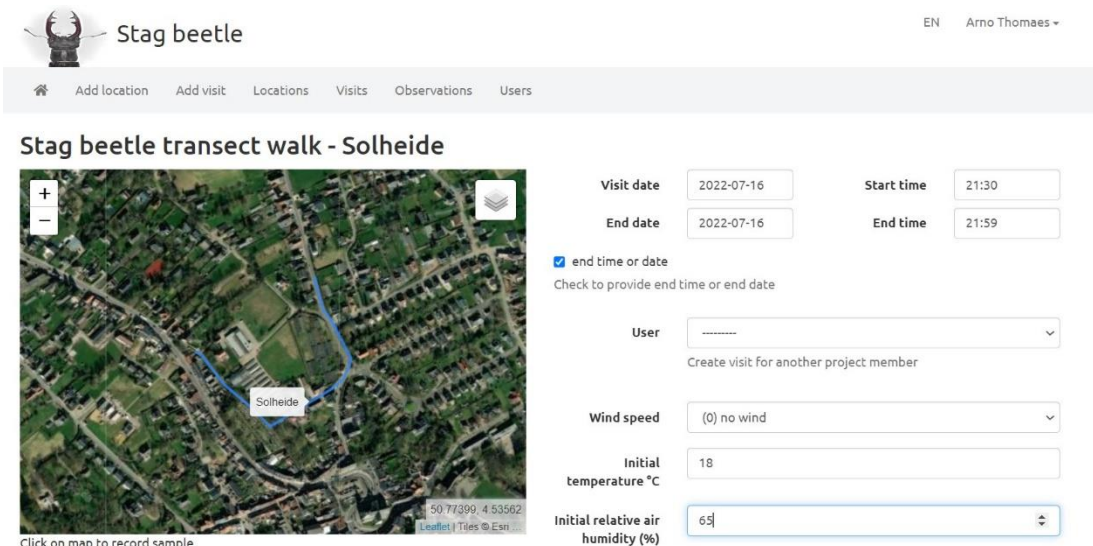
Transect walk results

In 2022, 202 transect walks have been registered, meaning an increase of 7%. This is due to an increase in most countries except Spain and Portugal. Also more and more transects are walked frequently and have been reported multiple years so we can start looking at trends soon. For 2022, the transect Drogenberg in Belgium is the record holder with 24 stag beetles observed on the 17th of June. In total, more than 198 European stag beetles (*Lucanus cervus*) were observed during all these walks and furthermore 11 stag beetles (*Lucanus* species) and 2 Lesser stag beetles (*Dorcus parallelipedus*). In Portugal and Spain, the occurrence of *Lucanus barbarossa* in the south and *Lucanus pontbriantii* and even *Lucanus tetraodon* in the northeast make it sometimes difficult to be sure about the species, hence *Lucanus* sp. is sometimes used when the species is uncertain. The number of beetles seen is actually higher as some were wrongly submitted (see the article below) and we still need to sort these out.

Country	No. transects	No. transects with >5 transect walks for 2022	No. transect walks
Belgium	13	4	65
Croatia	1	1	6
Netherlands	29	27	322
Poland	3	1	16
Portugal	4	1	21
Spain	4	3	21
United Kingdom	17	7	69

Online form for transect walks

Since 2 years, we have a new system to fill in your transect walks and we notice that some people still make mistakes so we will explain the method in short here. When you are logged in at <https://stagbeetle.observation.org/>, click on 'add visit' and select 'stag beetle transect walk'. Fill in the main items of the form (Fig. 1) and click on the map on the location of your first observation.



The screenshot shows the 'Stag beetle' website interface. At the top, there is a navigation menu with options: 'Add location', 'Add visit', 'Locations', 'Visits', 'Observations', and 'Users'. The main heading is 'Stag beetle transect walk - Solheide'. On the left, there is a satellite map of a residential area with a blue line indicating a transect path. A label 'Solheide' is placed on the map. Below the map, there is a text prompt: 'Click on map to record sample'. On the right, there is a form with the following fields:

- Visit date:** 2022-07-16
- End date:** 2022-07-16
- Start time:** 21:30
- End time:** 21:59
- end time or date** (checked)
- User:** A dropdown menu with a user name (partially obscured) and a link 'Create visit for another project member'.
- Wind speed:** (0) no wind
- Initial temperature °C:** 18
- Initial relative air humidity (%):** 65

Fig. 1: Online form for transect walk

In the popup (Fig. 2), you can add all the detail regarding time, number, species, sex etcetera and finalise by clicking save in the popup. You can add multiple

locations with each one or more observations (e.g. per minute). When you have entered all observations you can doublecheck them at the bottom of the page (Fig. 3) and save the transect walk. So don't record your observations as notes.

Sample for sample 1 Fix location

Attributes

Time

Beetles (Coleoptera)	present (M)	present (F)	flying (M)	flying (F)	flying (U)	copula (M+F)	dead (M)	dead (F)	dead (U)	unknown (M)	unknown (F)	unknown (u)
<input type="text" value="Type the first 4 letter..."/>												

Wind speed: (0) no wind

Initial temperature °C: 18

Initial relative air humidity (%): 65

Click on map to record sample

Fig. 2: popup field for observations

Observations

location	species	present (M)	present (F)	flying (M)	flying (F)	flying (U)	copula (M+F)	dead (M)	dead (F)	dead (U)	unknown (M)	unknown (F)	unknown (u)
1	Stag Beetle	1											
2	Stag Beetle							1					
3	Stag Beetle					1							

Fig. 3: Overview of the submitted observations along the etransect walk.

A stag beetle transect walk is this easy

In UK, Peoples Trust for Endangered Species is the main organisation involved in finding volunteers for the stag beetle monitoring. To explain how easy it is to walk a transect and register the results, they made a video. So are you still doubtful on starting up a transect or do you want to convince others to start up a transects, you can now use this video to see how simple it is:



Science news

Stag beetle can cope with shady conditions

Based on: Thomaes, A., Hendriks, P. & Fremlin, M. 2022. Thermal effect on larval development of the European stag beetle, *Lucanus cervus*. Belgian Journal of Zoology, 152, 1–12, <https://doi.org/10.26496/bjz.2022.95>

In The Netherlands, a small experiment was conducted to raise stag beetle larvae on a cold shaded location and a warm sunny location (Fig. 1). Larval weights were lower in the cold compared to the warm microclimate when comparing the same age. Consequently, part of the cold treatment larvae needed an additional year to complete their development which then led to higher final larval weights (before molting, Fig. 1). The minimal temperature for

larval growth is situated somewhere between 10 and 15°C. Despite many studies find that stag beetles are related to warm microhabitats, it seems they can cope with shady, colder microclimates. Larval development time in general takes two to three years and depends on temperature.



Fig. 1: Stag beetle larvae were placed in boxes and set on underground and shaded conditions (© Paul Hendriks)

It seems three is the minimum

Based on: Fremlin, M. 2022. The life cycle of the European stag beetle *Lucanus cervus* is three years minimum in the field (Coleoptera: Lucanidae).

Entomologische Berichten, 82 (4), 138-

144, http://maria.fremlin.org/Fremlin_EB_2022.pdf

Another stag beetle study was carried out in the UK in order to pinpoint the length of the life cycle as a result of spontaneous colonisation; and at the same time to study the larval stage development. In 2010, a stump was buried on a bed of wood chips in March and at the end of June two piles of fresh wood chips were set up in the urban hotspot Colchester. The wood chips were

monitored for the first time in February 2012 when 191 stag beetle larvae were found at various stages of development strongly suggesting two generations (Fig. 1). The first generation larvae pupated after overwintering twice, confirmed by the presence of teneral imagos in September 2012. The larvae of the second generation mainly reached the third instar by the end of July 2012. A few immature larvae found at the end of September, proved that there was a third oviposition. In 2013 the first emergence holes appeared near the stump. Thus, females responded promptly to both habitats and a minimum three-year life cycle was obtained in both habitats.



Fig. 1: Part of the 191 stag beetle larvae found on February 2012 in the wood chips experiment (© Maria Fremlin)

Improved distribution map of stag beetle in Romania

Based on: Stancă Moise, C., Chimişliu, C., Arinton, M., Brereton, T. & Moise, G. 2022. Distribution of the Stag Beetle *Lucanus cervus* (Linnaeus, 1758)(Coleoptera, Scarabaeoidea, Lucanidae) within Romania, Europe. Pakistan Journal of Zoology, 55(2), 625-640, <https://dx.doi.org/10.17582/journal.pjz/20210805120809>

The distribution of the stag beetle still remains poorly documented for some

regions and countries, especially in the southeast of its range. In Romania, painstaking work was done to compile all distribution data from literature, previous distribution maps, collection materials and field observations. This led to an updated and wider-ranging description and distribution map (Fig. 1) of the past and current distribution of *L. cervus* in Romania. In total 225 locations where *L. cervus* has been collected in Romania from 1891 to 2020 were gathered. The authors conclude that the insect is widespread in all nine regions of Romania.



Fig. 1: Distribution map of *Lucanus cervus* in the nine Romanian historical regions during the collecting periods (a) 1891-1950 (■), (b) 1951-2000 (●), (c) after 2000 (◆) and (d) Natura 2000 sites (▲) (Stancă Moise et al. 2022).

The saprun tree: drinks and food for all

Based on: Mark Zekhuis & John Smit 2022. Vliegend hert op het menu. <https://www.naturetoday.com/intl/nl/nature-reports/message/?msg=29953>

Saprun trees are known to be an important food source for stag beetles, especially during dry summers like last year. Also many butterflies, moths, wasps and flies like the sugary liquid and come for a drink. But when Mark Zekhuis and Gerard Oonk find prey rests of eaten stag beetles under a sap run tree in the Netherlands, they went for an investigation to find out who had been coming for the snacks. And what their camera traps were able to film, speaks to imagination. It was not the wood pecker, the main suspect but a pine marten that cautiously avoided the stag beetles mandibles to go for the treat. Watch their nice video:



<https://youtu.be/DPPaqT9gUns>

Stag beetle take cruise to Norway

Last summer we received a weird vacation card from a stag beetle on the cruise ship Silver Wind in Norway. He had his own cabin and al. Sailor Dmitrii Kiselev explained 'On the 17th of July, i.e. five days after our departure from Tromsø, Norway and about a month since the ship's visit to France and Britain, I found on upper deck a 5cm long male European stag beetle. At that moment, the ship was at 73°08.046'N 3°32.026'W, on approach to Jan Mayen Island.' Dmitrii had accommodated the beetle in a shoe box 'microhabitat' and fed him sugar water and honey which finally brought him all the way to Upernaviq, Greenland.



© Dmitrii Kiselev

The biggest mystery, of course, is how the beetle ended up on a ship in the middle of the North Atlantic, probably the most northern stag beetle ever recorded? Stag beetles aren't good flyers and obviously too heavy to be brought so far even by a strong wind. Stag beetles aren't present in Norway so it must have survived, hiding on board since the visit to France (Saint Malo and Honfleur) and Britain (London, Cornwall and Pembroke). Due to the cold, the beetle could survive for a longer time in a form of hibernation.

Strangely enough, this is not the first reported stag beetle on a ship. Another stag beetle was found on a sailing ship after a stop in London, where a population is known to occur. It seems most likely that the beetle embarked in the harbour of London or in the forest rich Honfleur.

We are looking for stag beetle pictures

For our website, newsletter and other outreach, it is always nice to select from nice pictures instead of using the same over and over again. Therefore, we are always looking for qualitative stag beetle pictures. Especially, if they tell a story in a single image. So if you have pictures of predation, size variation, fighting

males, the life cycle or other qualitative images, send them to us for our next newsletters.

[Register Here](#)

Do you have any questions for us, any ideas for our Newsletter next year or would you like to share your story? Let us know.

Have you published a scientific study on stag beetles? We would love to share a short overview of it here.



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www.stagbeetlemonitoring.org

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