

Protecting small and vulnerable populations – *Osmoderma eremita* in Norway

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Osmoderma eremita (Scopoli, 1763) re-discovered in Norway!

- In 2008, living hermit beetles (*O. eremita*) was found in Norway for the first time in >100 years¹
- The hermit beetle is threatened in all of Europe and was redlisted as extinct (RE) in Norway
- The location: hollow ash-trees on a churchyard in Southern Norway
- Nearest known location is >80 km away, in Sweden

A small and vulnerable population...

- Careful inventories in 2009 revealed 3 inhabited trees in the churchyard²
- A search in the surrounding landscape (neighboring municipalities) in 2009 found no more hollow trees inhabited by the beetle²
- Also, ca 100 hollow oaks in southern Norway have been sampled for beetles the past 6 years, with no occurrences of the hermit beetle – although its predator *Elater ferrugineus* has been found in one other location³

→ The 3 trees could possibly be today's only hermit beetle trees in all of Norway...



Fig.1: Hermit beetle (*O. eremita*) imago, larvae, fragments and cocoon.

Why is the hermit beetle only found here?

- Earlier records from the 1800s indicate a wider distribution of the hermit beetle in Norway, although the specimens are few
- What we see today is probably the fragmented remains of a landscape with higher and more continuous distribution of old and hollow trees.
- The known population is probably a relict from a larger population some hundred years ago

How to protect such a rare species?

The Action Plan⁴ suggests two strategies:

- Increasing the amount of suitable habitat nearby today's known occurrence, by inducing cavities in old trees and possibly also making "artificial" hollow trees
- Transferring individuals to new locations – but from where? Will it harm the original population if individuals are removed from it? Will e.g. Swedish populations be too different genetically?

A new method for inspecting hollow trees



- Often, hollows in trees are deep or the entrance holes are small. Pitfall traps or hands-on inspection of the wood mould is then difficult
- Instead, in the 2009 search² we used a "service camera" intended for inspections of water pipes and other small, hollow spaces. This equipment has a camera mounted on a long, flexible rod, which could be entered through small openings otherwise inaccessible.
- With this instrument, we could watch the hermit beetle walking on the surface of the wood mould in the inhabited trees.



References

- ¹ Flåten, M., & Fjellberg, A. (2008). Rediscovery of *Osmoderma eremita* (Scopoli, 1763) (Coleoptera, Scarabaeidae) in Norway. *Norwegian Journal of Entomology*, 55(2).
- ² Hanssen, O., & Sverdrup-Thygeson, A. (2009). Inventories of *Osmoderma eremita* in Norway 2009, unpublished. In Norwegian.
- ³ Ødegaard, F., Sverdrup-Thygeson, A., Hansen, L.O., Hanssen, O. & Öberg, S. 2009. Survey of invertebrates in five hot-spot habitat types. Red-listed species and new species for Norway. 2004-2008. - NINA Report 500. In Norwegian with English abstract. 102 pp.
- ⁴ DN (In press). Action Plan for *Osmoderma eremita*, in hearing. Final version will be in Norwegian with English abstract. DN Report.

Photos: Magne Flåten, Oddvar Hanssen and Anne Sverdrup-Thygeson

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Fig.2: The Norwegian hermit beetle location in Tønsberg, Norway.