

Læsø, a case study in the conservation of a honey bee population

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Læsø beekeepers in the 1980ies decided to conserve their local population of dark bees (*Apis mellifera mellifera*). In 1993 the law on beekeeping was amended, and the whole Island of 114 km² became a conservation area for dark bees. Yet, not all beekeepers on Læsø wanted to give up their productive hybrid bees. One beekeeper claimed that the rules would impair on his right of free trade. In 2001, a ruling from EU court stated that the purpose of conservation does stand over the general rule of free trade.

Pending the Court decision, proper conservation measures lacked. It remained difficult to implement the rules without local consent. The Ministry of Agriculture tried to mediate, with the aim to reach an agreement to assure both the interest of conservation and of commercial beekeepers. As a result the eastern end of Læsø was set aside for the dark bee, while the remaining part of the Island was given free for commercial beekeeping without restrictions on the subspecies of bees.

The long period without secure mating areas, resulted in introgression of the dark bees from commercial hybrid stock. Some beekeepers doubted the statement that the population was indeed *Apis mellifera mellifera* bees. In order to justify the conservation effort, a clarification was needed.

More than 8000 bees were sampled from Læsø and analysed with 24 DNA microsatellite loci. The results were analysed to determine which colonies showed most potential for breeding bees with minimal introgression. Most of the 583 bee colonies on Læsø in 2005 were relative hybridised, only 50 colonies contained less than 10 % non-mellifera genes. However, by 2007 a population of 123 colonies with less than 1% introgression had emerged, and 273 colonies were below 10 %.