Ardal Gadwraeth Gwirfoddol / Voluntary Conservation Area

A statement to beekeepers in Wales about Voluntary Conservation Areas for our native honey bee

Llŷn & Eifionydd Beekeepers' Association (LLEBKA) wish to announce the formation of a Voluntary Conservation Area (VCA) for native Welsh honey bees in the area of our association members.

We wish to credit beekeepers in Ireland for this concept where 16 beekeeping associations have declared VCAs for the native Irish honey bee, *Apis mellifera mellifera (Amm)*. Information on their experience can be found on the website of the Native Irish Honey Bee Society: http://nihbs.org/

In Wales many beekeepers believe from their own observations that our locally adapted dark bees are descendents of our native bees. Recent genetic research at Bangor University has shown in a preliminary study that we have honey bees throughout Wales with high *Amm* purity, and that is particularly so in our area (pers. comm. Dylan Elen Bangor University). On the evidence available it is logical to conclude that in Wales we still have indigenous honey bees that moved in concert with the first forests after the last Ice Age. At that time the sea level was substantially lower and we were physically connected to the European landmass. The bees that many of us have in our hives are the same as bees that still live wild in our area; the local variety of the subspecies of the Northern European Dark Honey Bee. If this opinion is valid, it can be said that we have a duty to conserve this subspecies of honey bee that is now seriously threatened across its natural range. This duty is "in accordance with the internationally respected Convention on Biodiversity (1992)", and is explained in an introductory statement of the aims and objectives of the International Association for the Protection of the European Dark Bee (SICAMM) www.sicamm.org/Objectives.html. The key threat to populations of locally adapted native bees is from the transporting of alien bees into their area with the potential for the importation of pests and diseases and the real threat to the evolved genetic traits of the local bees. Beyond disrupting the stable genetics of locally adapted bees, what are the practical problems of non-local bees? In summary the problems are twofold. Firstly, although colonies headed by an imported queen may do well over a good summer, many do not survive a cold wet winter. Secondly, queens that initially breed calm and docile bees can on their next and subsequent generations propagate very, very nasty bees after mating with local drones from a different subspecies. This is a brief summary of the practical problems that can be associated with non-local bees. We wish to administer this antidote to starter-beekeepers to try and balance the very persuasive advertising of alien and hybrid-bred queens. Some beekeepers have had to learn this lesson the hard way! Once you have bred these vicious bees it may take a few generations

and a number of years for this undesirable trait to breed itself out; and that can only happen if your area has a surrounding population of locally adapted bees.

SICAMM supports the establishment of legal protection areas for threatened populations of *Amm*. This level of protection for our native bees is not currently available in Wales and the protection of our local bees is "really in our own hands" – this is the view expressed in a statement by Wally Shaw, Technical Officer of the Welsh Beekeepers'Association (WBKA), in the forward to his presentation, 'Self-sufficiency, locally adapted bees and apicentric beekeeping', at the WBKA 75th Anniversary Conference in July 2018. The establishment of a VCA for our association area is a step in that direction.

If our local bees have the accolade of being high purity *Amm*, that, in terms of biodiversity, is a fact to be celebrated. Beyond that label, is the associated and very important characteristic of 'local adaption'. The support for keeping locally adapted bees is overwhelming and virtually a ubiquitous view of experienced beekeepers and their publications; LLEBKA members, professors of bee research in the USA, the UK, and Europe can all be quoted with this view. The WBKA made its support clear with the statement on the front cover of its Welsh Beekeeper magazine in the Summer of 2019 (Issue 204), "WBKA recommend sourcing locally adapted bees…", and the British Beekeepers' Association (BBKA) News printed this advice in July 2020 (No. 227): "Readers are reminded of the BBKA's position of discouraging the importation of queen bees and colonies from outside the UK."

Our local bees

For over 150 years, different subspecies of honey bees have been imported into the UK. As all subspecies of *Apis mellifera* can interbreed, this has gradually led to varying levels of hybridization of our native bee and to the consequential eroding of its local adaptation. Slovenia, a country of similar size to Wales, has recognised the value of its native honey bee, *Apis mellifera carnica*, where it is protected by law and the importation or breeding of other subspecies is forbidden. In the UK the situation is different and the importation of honey bees from overseas is increasing steadily year by year, being fuelled by online advertising that can be attractive to beginner beekeepers. In 2020 there were 21,405 queen bees imported into Wales, England and Scotland from 18 different EU countries (plus 210 nucs, 1882 packages, and 363 colonies). The number of queen bees imported from EU countries has increased consistently for the last ten years from 4,163 in 2011. Source: National Bee Unit's BeeBase https://www.nationalbeeunit.com/diseases-and-pests/reports-charts-and-maps/imports-and-exotics/live-third-country-import-report/?year=2021

The history of moving non-native bees into the UK is fascinating but too long to be given in detail here. Given that history, it can easily be thought astonishing that populations of native or near native, honey bees survive in certain areas of the UK; our area is one example. The ever increasing movement of non-native bees into

the UK increases the relevance of establishing VCAs to protect what remains of this native insect.

The British Improvement and Bee Breeders Association (BIBBA) campaigns for the conservation of our native honeybee and we trust will support our VCA initiative. BIBBA summarises a substantial research experiment that demonstrates locally adapted strains of honey bee consistently performed better than the non-local strains; the summary of this important research is as follows (also available here: https://bibba.com/local-bees-better/).

"**Honey bee genotypes and the environment**

In recent years, much attention has been focused on the global problem of honey bee colony losses. Among the many explanations for these losses, variability in the genetic makeup and vitality of honey bee populations might help to explain some of the variability in honey bee colony losses experienced in different regions. This has led to the innovative honey bee Genotype-Environment Interactions (GEI) experiment carried out by members of the international honey bee research association COLOSS. The results are published today in a Special Issue of the Journal of Apicultural Research.

A total of 621 colonies of 16 different genetic origins were set up in 21 apiaries in 11 different European countries managed by 15 research partners. Each location housed the local strain of bee together with two of "foreign" origins. The colonies were set up in the summer of 2009 and were managed and evaluated according to a standard protocol used by all participants until 2012.

IBRA [International Bee Research Association] Science Director Norman Carreck says: "The results of these experiments show that the locally adapted strains of honey bee consistently performed better than the "foreign" strains. This may seem logical to many bee scientists, but may come as something as a shock for many beekeepers who believe that purchased queens are likely to be in some way "better" than the bees that they already have in their own hives. There is growing evidence of the adverse effects of the global trade in honey bees, which has led to the spread of novel pests and diseases. These papers which provide evidence that locally-adapted honey bee strains consistently perform better than imported strains may thus strengthen local bee breeding programmes, and encourage the use of locally bred queens over those imported from elsewhere

Norman Carreck

Original article, Journal of Apicultural Research: JAR 53 2 01"

If further background information on the importance of locally adapted native bees is of interest, there is a really excellent lecture by John Chambers, delivered at the National Honey Show in 2018, and available on YouTube. Titled 'Basic honey bee genetics for beekeepers', it is highly recommended: https://youtu.be/w-pAQt6pFhM

Our case for announcing a VCA leans heavily on the importance of protecting the native and locally adapted honey bees of our association area; there is another imperative – we are in an area of natural varroa-resistant honey bees. In our area beekeeping is successfully carried out treatment-free, and members of LLEBKA do not use miticides to control varroa. This is documented in a recent booklet about the research carried out by Prof Stephen Martin and team at Salford University with the title 'Natural Varroa-Resistant Honey Bees', and published by the BBKA https://www.bbka.org.uk/shop/bbka-special-edition-natural-varroa-resistant-honey-bees
On page 9 of the booklet is a map showing 15 areas in Wales and England where bees have developed a natural resistance to varroa and where beekeepers have no need to use chemical treatments to control varroa. A large area of north-west Wales, encompassing our association area, is shown on this map. It must surely be a key goal for beekeepers to strive to keep bees treatment-free, and to this end Prof Martin advises the propagation of stock from proven natural varroa-resistant populations, and to allow a 'halo' effect from these populations to naturally benefit adjoining areas. The importance of the link between locally adapted bees and natural varroa-resistant bees is not fully understood, but it seems likely that thriving honey bee populations that have evolved a stable strain suited to their environment will be best able to cope with varroa. A member of LLEBKA has recently had a book published by Northern Bee Books titled, *Treatment-Free Beekeeping*, and includes a chapter on 'The Gwynedd experience'.

In a VCA, the key request to beekeepers is to keep and breed from local bees. LLEBKA is in Gwynedd where there has been no reported incidence of either American or European foulbrood for the last three years. If beekeepers support the VCA it will also be a great help to keep these unpleasant diseases from affecting the bees in our hives.

Perhaps we can finish by stating some clarifying points provided by the Native Irish Honey Bee Society from their experience. A VCA is decided on by individual beekeeping associations and there is no official format. It is voluntary and quite an informal process and it just means that beekeepers are encouraged to keep only local honey bees.

We hope this statement will provide justification for the Voluntary Conservation Area for our native honey bees which is supported by members of Llŷn & Eifionydd Beekeepers' Association.

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https://view.publitas.com/welsh-beekeeper/211spring2021/page/10-11

Click on the link below to view the VCA Card

VCA card - English Cerdyn VCA - Cymraeg