

## Preliminary Report On Purple Emperor Butterfly Surveys, Knepp Castle Estate, July 2013

In 2012 the number and coverage of butterfly surveys on the Knepp Castle Estate was increased. In addition to the more formalised UKBMS Transect method and Timed Count techniques now employed, surveys are also being conducted which focus on single species, such as the Purple Emperor and Brown Hairstreak. Due to their arboreal lifestyles and/or elusive habits, species such as these are invariably under-recorded by most standardised survey methods.

Surveys conducted by Purple Emperor expert Matthew Oates at Knepp in 2009 found that this species was just starting to breed in the extensive willow scrub developing over former arable land. Prior to then, it probably occurred only intermittently on the estate, wandering in from woods to the north and south east during good summers and dying out during poor summers. In 2012, a very poor year for almost all butterflies, the Purple Emperor surprisingly appeared during Neil Hulme's Timed Count survey of the Southern Block.

On 20<sup>th</sup> and 21<sup>st</sup> July 2013 MO and NH surveyed the Southern Block, specifically to determine to what extent the Purple Emperor has colonised the Wildland Project area. Results were somewhat surprising, with 84 and 72 individuals being recorded on consecutive days over different areas. Due to the almost linear habitat (most males collecting on the medium to large oaks along field margins), and speed of survey, it is considered that significant 'double counting' is highly unlikely and these totals probably provide a rather conservative reflection of the total population size. To place these figures in context, the woodlands to the north of the A272 ('Southwater Woods') are considered to be the species' stronghold in Sussex, providing sightings of c.20 individuals per day in the very best seasons.

The Knepp Estate now appears to hold the UK's second strongest population of this rare and elusive species. This is especially significant as this butterfly almost invariably occurs at low population level and very few really sizeable populations are known. Only the famous Fermyn Woods complex in Northants can better these statistics. Also, this very strong population has developed remarkably quickly.

As the areas of willow scrub develop further over the estate, it is considered likely that the population of Purple Emperor will continue to increase.

Neil Hulme & Matthew Oates (2.9.2013)

