### THE EXOSEX CLOTHES MOTH SYSTEM AND ENGLISH HERITAGE

English Heritage is responsible for a vast range of collections ranging from fine art to archaeology which have a direct link to over 400 sites in their care. This includes approximately 115 sites housing collections throughout England including large and small historic properties, purpose built museums and stores.

## WHAT IS THE EXOSEX CLOTHES MOTH SYSTEM?

Exosex is a non-chemical & non-toxic 'pest confusion' treatment designed specifically to control the highly destructive larvae of the Webbing clothes moth. It uses a synthetic female pheromone to attract male clothes moths into a dispenser where the Exosex 'Entostat' powder combined with the pheromone is situated. Males are 'lured' to the dispensers and upon entering the powder coats their bodies. The senses of the coated moths are overwhelmed and they cannot detect females as a result. As they leave the dispenser, they then attract other male clothes moths and so spread the confusion effect. This means that the females do not mate and lay non-viable eggs resulting in far fewer larvae.



Exosex CL dispenser with pheromone lure

#### WHERE DID WE IMPLEMENT THE SYSTEM?

We implemented the system at Marble Hill House, London as an increase in webbing clothes moth numbers was recorded in 2004 and 2006. This caused concern so we took the decision to start a trial of the Exosex moth confusion technique in July 2007.



Marble Hill House, London

#### SETTING UP THE EXOSEX SYSTEM

We had to show discretion as to where we placed the Exosex dispensers as the house is open to the public at weekends and is also used for private functions. The new CL hanging dispensers are much smaller than the previous CLM designs and as a result we have found them to be easier to site under items of furniture, against walls, behind screens, on top of four poster beds, in fireplaces and on stairwells. We currently deploy 24 of these throughout the house in various locations.











#### ENGLISH HERITAGE

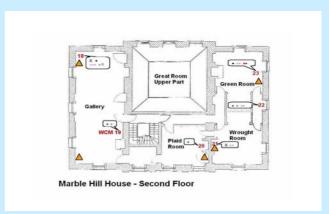
#### MONITORING AND ANALYSIS

We negotiated to keep the monitoring and recording of this system 'in-house' by our own staff as they are trained and experienced in insect pest ID, trapping techniques and basic treatment methods. We received initial 1:1 training from the external pest control technicians so that we would be responsible thereafter for replacing the Exosex CL lures every six weeks.

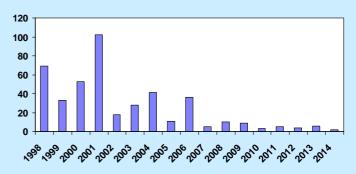
This allowed us to see from our quarterly monitoring trapping counts whether the system remains effective each year in decreasing and then stabilising the number of clothes moths being caught. Results eight years later have shown that the system has been very effective and the moth counts continue to remain low compared to the high numbers caught on traps in 2004 and 2006.

This result is very encouraging and we are continuing to use the lures with positive results.

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#### WEBBING CLOTHES MOTH COUNTS FROM 1998 - 2014



# BENEFITS OF THE EXOSEX SYSTEM & IN-HOUSE DEPLOYMENT

- 1) A significant decrease and stabilising of the numbers of webbing clothes moths caught on traps without using pesticides or other treatments.
- 2) Less threat to the collections from webbing clothes moth larvae.
- 3) EH staff undertake and continue the dispenser changes running alongside the tried and tested EH in-house IPM monitoring system.
- 4) A saving in costs as we do not pay for external technician fees
- 5) For security reasons a member of the in-house staff would have to accompany a technician if they replaced them. By doing this ourselves, we do not have this problem.
- 6) EH having control of the data for writing up a yearly report and publication.