

# Agenda – Y Pwyllgor Newid Hinsawdd, Amgylchedd a Materion Gwledig

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Lleoliad:	I gael rhagor o wybodaeth cysylltwch a:
Ystafell Bwyllgora 3 – y Senedd	Marc Wyn Jones
Dyddiad: Dydd Iau, 30 Mawrth 2017	Clerc y Pwyllgor
Amser: 09.45	0300 200 6363
	<a href="mailto:SeneddNHAMG@cynulliad.cymru">SeneddNHAMG@cynulliad.cymru</a>

## Rhag-gyfarfod preifat

(09.45–10.00)

### 1 Cyflwyniad, ymddiheuriadau, dirprwyon a datgan buddiannau

### 2 Ymchwiliad i Ardaloedd Morol Gwarchodedig yng Nghymru – tystiolaeth lafar gan sefydliadau anllywodraethol

(10.00–10.45)

(Tudalennau 1 – 11)

Alec Taylor, Gweithgor Morol Cyswllt Amgylchedd Cymru  
Gill Bell, Cymdeithas Cadwraeth Forol

## Egwyl

(10.45–11.00)

### 3 Ymchwiliad i Ardaloedd Morol Gwarchodedig yng Nghymru – tystiolaeth lafar gan swyddogion Ardaloedd Cadwraeth Arbennig (ACA)

(11.00–11.45)

Sue Burton, Swyddog ACA Forol Sir Benfro  
Alison Palmer Hargrave, Swyddog ACA Pen Llŷn a'r Sarnau.



**4 Ymchwiliad i Ardaloedd Morol Gwarchodedig yng Nghymru –  
tystiolaeth lafar gan y diwydiant**

(11.45–12.30)

Jim Evans, Cymdeithas Pysgotwyr Cymru

**5 Papurau i'w nodi**

**Llythyr gan Gyngor Bwrdeistref Sirol Caerffili ynghylch ansawdd yr aer yng  
Nghymru – Saesneg yn unig**

(Tudalennau 12 – 20)

**Llythyr gan y Llywodraeth Cymru ar TB Buchol**

(Tudalennau 21 – 27)

**6 Cynnig o dan Reol Sefydlog 17.42 i benderfynu gwahardd y  
cyhoedd o weddill y cyfarfod**

**Cinio**

(12.30–13.00)

**7 Ymchwiliad i Ardaloedd Morol Gwarchodedig yng Nghymru –  
trafod y dystiolaeth lafar ac ysgrifenedig**

(13.00–13.30)

(Tudalennau 28 – 56)

**8 TB Buchol yng Nghymru – y prif faterion**

(13.30–15.00)

(Tudalennau 57 – 79)

Mae cyfyngiadau ar y ddogfen hon

**Penallta House,**  
**Eitem 5.1**  
Tredomen Park,  
Ystrad Mynach,  
Hengoed CF82 7PG

**Tŷ Penallta,**  
Parc Tredomen,  
Ystrad Mynach,  
Hengoed CF82 7PG



Corporate Director / Cyfarwyddwr Corfforaethol  
**Dave Street**

[www.caerphilly.gov.uk](http://www.caerphilly.gov.uk)  
[www.caerffili.gov.uk](http://www.caerffili.gov.uk)

Mr Mark Reckless  
Chair of the Climate Change,  
Environment and Rural Affairs  
Committee  
National Assembly for Wales  
Cardiff Bay  
CARDIFF CF99 1NA

**Pennaeth Diogelwch  
y Cyhoedd**  
**Rob Hartshorn**

**Head of Public  
Protection**  
**Rob Hartshorn**

Eich Cyf/Your Ref:

Ein Cyf/Our Ref:

Cysylltwch â/Contact:

Rhif Ffôn/Telephone:

Ebost/Email:

Dyddiad/Date:

RH/GET

Mr R Hartshorn

01443 811301

[hartsr@caerphilly.gov.uk](mailto:hartsr@caerphilly.gov.uk)

20<sup>th</sup> March 2017

Dear Mr Reckless,

**Re: Air Quality in Wales**

I write in response to your letter dated 31st January 2017 in which you request information on the steps that we are taking to address air quality issues within the Hafod-yr-Ynys area.

Hafod-yr-Ynys Road Air Quality Management Area (AQMA) is situated on the A472 which is a main strategic route connecting Pontypool to the A467. The A472 is heavily trafficked with approximately 21,400 vehicles per day. The fleet is mainly dominated by cars and light goods vehicles (LGVs), however a number of heavy goods vehicles (HGVs) also use this strategic route.

The A472 passes through the residential area of Woodside Terrace as it approaches the A467 junction near Newbridge. In October 2015 the Council completed £1.3m improvements works at this junction to address peak time congestion and improve journey time reliability for public transport bus services.

The A472 section at Woodside Terrace is set in a valley with a downward gradient. The road is set in a semi-canyon environment with terraced residential houses bordering the road along the southern boundary of the AQMA and an upward sloping valley wall to the northern boundary of the road. The A472 passes directly in front of and within 2-5m of many of the residential properties to the south of the road.

**A greener place Man gwyrdach**

Correspondence may be in any language or format | Tudalen y pecyn 12  
Corresponding in Welsh will not lead to any delay | Ni fydd gohebu mewn unrhyw iaith neu fformat  
Ni fydd gohebu yn Gymraeg yn creu unrhyw oedi

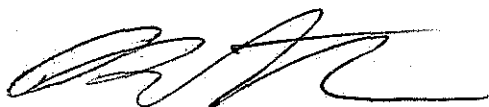
Caerphilly Council is currently in the process of producing an Air Quality Action Plan for submission to Welsh Government and has established an Air Quality Steering Group to produce the Action Plan. The Steering Group last met on 9th March 2017 and comprises of local residents, ward members, external stakeholders such as Public Health Wales and officers from the neighbouring boroughs of Blaenau Gwent and Torfaen along with appropriate representatives from across the Council.

A number of options have been considered for the area, some of which will be taken forward within the Action Plan. I have attached an excerpt from the Plan which lists those actions being considered. As you will see from the list, some of the measures aim to educate and encourage changes in behaviour and are not easily quantifiable in terms of air quality. Some options relate to the local infrastructure such as demolition of the properties on the southern side of the AQMA (Woodside Terrace) and the construction of a bypass route which will resolve the air quality issues for those receptors currently exposed. The infrastructure options will attract huge costs and without external funding cannot be realised by the Council.

A number of traffic management options such as gating the traffic outside of the AQMA and removing / redirecting HGVs out of the area have also been considered but discounted as actions to take forward due to the fact that the problem will be moved to elsewhere within the Borough.

Should you have any questions regarding the content of this letter or wish to discuss any of the actions further, please do not hesitate to contact either myself or Mrs Maria Godfrey on [godfrm@caerphilly.gov.uk](mailto:godfrm@caerphilly.gov.uk) who will be pleased to advise you.

Yours Sincerely,



**Rob Hartshorn**  
**Head of Public Protection**

## 5.2 Development of Proposed Measures

### 5.2.1 Strategic Measures

Integrating with local policies to compliment air quality measures, including the local transport plan, procurement plans and the Local Development Plan. This will ensure that future transportation and development decisions consider the impact on local air quality within the Borough.

#### 5.2.1.1 Develop Local Policies in line with air quality

Measure	Title
<b>M 1.</b>	Integrate with local policies in line with air quality
Definition	Key Intervention
a. Local Development Plan b. Local Transport Plan c. AQ & Equipment contracts in place with Procurement	Development of policies that will work towards reducing pollutant levels and ensure future decisions within the area do not have an adverse effect on air quality
Responsible authority and other partners	Powers to be used
Caerphilly County Borough Council	Voluntary

#### 5.2.1.2 Integrate with local well-being plans

Measure	Title
<b>M 2.</b>	5.2.1.3 Integrate with local well-being plans
Definition	Key Intervention
a. Integrate and raise awareness of air quality and the health issues attributable to poor air quality within the Caerphilly Assessment of Local Well being so that air quality is recognised and forms part of the Public Services Board decision making process.	Local well-being plans to reference air quality and link air quality and well-being.
Responsible authority and other partners	Powers to be used
Caerphilly County Borough Council	Voluntary

#### 1.1.1.3 Provision of a local air quality strategy

Measure	Title
<b>M 3.</b>	Provision of local air quality strategy
Definition	Key Intervention
a. Link Caerphilly and Hafod-yr-ynys AQAPs to produce an integrated AQ strategy for Caerphilly CBC..	Revise Caerphilly AQAP and consider other areas within the Borough which are likely to exceed the air quality objectives
Responsible authority and other partners	Powers to be used
Caerphilly County Borough Council	Voluntary

## 5.2.2 Long Term Infrastructure

### 5.2.2.1 Investigate the feasibility of a bypass for traffic to remove from AQMA

Measure	Title	
<b>M 4.</b>	Investigate the feasibility of a bypass for traffic	
Definition		Key Intervention
a. One-way rerouting for south-bound vehicles (A472 traffic toward A467(south)).		Building a by-pass which diverts 12.5% traffic
b. Two-way re-routing for southbound (A472 traffic) and east-bound (A467 traffic coming from south)		Building a by-pass which diverts 25% traffic.
Responsible authority and other partners		Powers to be used
Caerphilly County Borough Council		Voluntary

### 5.2.2.2 Speed and Flow Management

Implement speed management to encourage the smoothing of traffic flow to reduce excessive acceleration and deceleration of vehicles through the AQMA. The existing gradient and change from dual to single carriageways (to East) – These may have added safety and noise benefit.

Measure	Title	
<b>M 5.</b>	Speed and Flow Management	
Definition		Key Intervention
a. Lower speed limit - zoning		To encourage smooth flow of traffic and discourage harsh breaking/accelerating within the AQMA.
b. Safety camera		
Responsible authority and other partners		Powers to be used
Caerphilly County Borough Council		Voluntary

### 5.2.2.3 Investigate the feasibility of the demolition of Woodside Terrace Housing

Measure	Title	
<b>M 6.</b>	Investigate the feasibility of the demolition of Woodside Terrace Housing	
Definition		Key Intervention
a. Remove all affected properties		Remove receptors and reduce canyon effect of air pollutants by allowing greater dispersion.
Responsible authority and other partners		Powers to be used
Caerphilly County Borough Council		Voluntary /compulsory purchase

### 5.2.3 Smarter Choices

Smarter choices are measures which encourage smarter travelling choices for local businesses schools and CCBC whose daily journey involves traveling through the AQMA.

### 5.2.3.1 Encourage Green Travel Plans for businesses, Schools and CCBC

Measure	Title
<b>M 7.</b>	Encourage Green Travel Plans for businesses, Schools and CCBC
Definition	Key Intervention
a. To encourage more efficient travel within the AQMA	Working with businesses, schools and CCBC within wider strategic AQAP.
Responsible authority and other partners	Powers to be used
Caerphilly County Borough Council	Voluntary

## 5.2.4 Development Control

### 5.2.4.1 Use of planning system, to secure air quality improvements

Measure	Title
<b>M 8.</b>	Use of planning system, to secure air quality improvements
Definition	Key Intervention
a. Planning system to contribute to improved air quality by not permitting developments which have a detrimental effect on air quality.	To use planning as a control on developments which could have an adverse impact on air quality.
Responsible authority and other partners	Powers to be used
Caerphilly County Borough Council	Voluntary

### 5.2.4.2 Require an air quality impact assessment for any proposed development likely to increase local traffic

Measure	Title
<b>M 9.</b>	Require an air quality impact assessment for any proposed development likely to increase local traffic
Definition	Key Intervention
a. Air Quality impact Assessment for any development likely to increase local traffic to demonstrate that air pollution concentrations will not increase.	To ensure that there is no adverse impact of air quality from proposed developments.
Responsible authority and other partners	Powers to be used
Caerphilly County Borough Council	Voluntary

## 5.2.5 Awareness

### 5.2.5.1 Publicise alternative transport available locally

Measure	Title
<b>M 10.</b>	Publicise alternative transport available locally
Definition	Key Intervention
a. Publicise alternative transport available locally through promotion of travel information	To encourage use of alternative transport to reduce traffic and congestion
Responsible authority and other partners	Powers to be used
Caerphilly County Borough Council	Voluntary



5.2.5.2 Work with the Policy team / Education to add air quality awareness to promotional and educational packages

Measure	Title
<b>M 11.</b>	Work with health improvement team / Eco schools to add air quality awareness to promotional and educational packages
Definition	Key Intervention
a. Work with health improvement team and Eco schools to add air quality awareness to promotional and educational packages	Work with Healthy Schools / Eco schools to raise awareness of the harmful effects of Air pollution and the ways in which the public can make smarter choices to reduce the burden of air pollution.
Responsible authority and other partners	Powers to be used
Caerphilly County Borough Council	Voluntary

5.2.5.3 Electronic pollutant signage within AQMA and local area

Measure	Title
<b>M 12.</b>	Electronic pollutant signage within AQMA and local area
Definition	Key Intervention
a. Electronic “pollutant signage within AQMA and local area”	Signage encourages drivers to switch off their engines in standing traffic queues, linked to signalling.
Responsible authority and other partners	Powers to be used
Caerphilly County Borough Council	Voluntary

5.2.5.4 Signs and banners for engine idling

Measure	Title
<b>M 13.</b>	Signs and banners for engine idling
Definition	Key Intervention
a. Signs and banners for approved variable message signs b. Switch-off stickers on taxis / public transport	Signage at key intersections, near junctions and on public transport / taxis encouraging people to switch off engines when traffic comes to a stop.
Responsible authority and other partners	Powers to be used
Caerphilly County Borough Council	Voluntary

5.2.6 Fleet Operators

### 5.2.6.1 Travel Plans for local HGV fleet operators

Measure	Title
<b>M 14.</b>	Travel Plans for local HGV fleet operators
Definition	Key Intervention
a. Travel Plans for Local HGV operators b. Identify alternative routes for local HGV traffic c. ECOstars programme	To reroute HGV traffic away from AQMA as far as practicable to reduce HGV traffic. Implement ECOstars programme to support local hauliers to save fuel, costs and emissions through training and education.
Responsible authority and other partners	Powers to be used
Caerphilly County Borough Council	Voluntary

## 5.2.7 Bus Emissions

### 5.2.7.1 Low emission buses within AQMA

Measure	Title
<b>M 15.</b>	Low emission buses within AQMA
Definition	Key Intervention
a. Work with local fleet operators to introduce low emission buses within AQMA route.	To reduce emissions from bus services traveling within the AQMA
Responsible authority and other partners	Powers to be used
Caerphilly County Borough Council	Voluntary

## 5.2.8 Cycling/Walking

### 5.2.8.1 Improve walking routes to and from school

Measure	Title
<b>M 16.</b>	Improve walking routes to and from school
Definition	Key Intervention
a. Improve walking routes to and from school	To encourage local residents to uptake active forms of transport
Responsible authority and other partners	Powers to be used
Caerphilly County Borough Council	Voluntary

### 5.2.8.2 Improvements in cycling network and routes

Measure	Title
<b>M 17.</b>	Improvements in cycling network and routes
Definition	Key Intervention
a. Improvements in cycling network and routes b. Signage/publicity of cycling network	To encourage use of existing network and improve and expand on network
Responsible authority and other partners	Powers to be used
Caerphilly County Borough Council	Voluntary

### 5.2.8.3 Green Travel Plans for schools and local businesses

Measure	Title
<b>M 18.</b>	Green Travel Plans for schools and local businesses
Definition	Key Intervention
a. Green Travel Plans for schools and local businesses	To encourage change in behaviour for traveling to and from school and work, encourage use of active travel for those living locally
Responsible authority and other partners	Powers to be used
Caerphilly County Borough Council	Voluntary

## 5.2.9 Caerphilly County Borough Council Emissions

### 5.2.9.1 Improvements CCBC Fleet

Measure	Title
<b>M 19.</b>	Improvements CCBC Fleet
Definition	Key Intervention
a. Improvements CCBC Fleet b. Newer and more fuel efficient fleet	Integrate air quality work with fleet management contracts.  Trial electric vehicles within the Public Protection Department – lead the way.
Responsible authority and other partners	Powers to be used
Caerphilly County Borough Council	Voluntary

### 5.2.9.2 Encourage Car sharing for CCBC Staff

Measure	Title
<b>M 20.</b>	Encourage Car sharing for CCBC Staff
Definition	Key Intervention
a. Encourage Car sharing for CCBC Staff	Raise awareness of the problems of poor air quality among CCBC staff.  Incentives for car share – designated parking areas within Council buildings, financial incentives for staff (extra mileage allowance for car share).
Responsible authority and other partners	Powers to be used
Caerphilly County Borough Council	Voluntary

## 5.2.10 Monitoring

### 5.2.10.1 Continue Monitoring NO<sub>2</sub> and increase monitoring network

Measure	Title
<b>M 21.</b>	Continue Monitoring NO <sub>2</sub> and increase monitoring network
Definition	Key Intervention

a. Increase diffusion tube network to widen evidence base for measuring impact	To increase monitoring network to gather greater understanding of concentrations within AQMA
b. Installation of additional automatic monitoring station at façade of houses (true exposure location)	
Responsible authority and other partners	Powers to be used
Caerphilly County Borough Council	Voluntary

## 5.2.11 Traffic and Emissions Monitoring

### 5.2.11.1 Traffic monitoring

Measure	Title
<b>M 22.</b>	Install traffic monitoring
Definition	Key Intervention
a. Install traffic monitoring (inductive loops) to identify real-time traffic volumes, speeds and classification b. ANPR traffic information additionally provides age, Euro class and queuing information.	To increase traffic information: detailed traffic data to identify and correlate to 15minute/hourly pollution spikes for future analysis and modelling.
Responsible authority and other partners	Powers to be used
Caerphilly County Borough Council	Voluntary

### 5.2.11.2 Emissions monitoring

Measure	Title
<b>M 23.</b>	Investigate the feasibility of roadside remote emissions monitoring
Definition	Key Intervention
a. Investigate the feasibility of undertaking roadside remote emissions trials to identify specific gross polluter vehicles, provide vehicle classification, age and loading on vehicles through cross-road measurements and ANPR cameras.	To identify specific vehicles which emit the most pollutants to target intervention measures.
Responsible authority and other partners	Powers to be used
Caerphilly County Borough Council	Voluntary



Mark Reckless AC  
Cadeirydd  
Y Pwyllgor Newid Hinsawdd, Amgylchedd  
a Materion Gwledig

23 Mawrth 2017

Annwyl Mark

**Y Pwyllgor Newid Hinsawdd, Amgylchedd a Materion Gwledig, camau gweithredu a gododd o'r drafodaeth ar TB buchol**

Yn dilyn y sesiwn dystiolaeth ar TB buchol ddydd Mercher, 14 Rhagfyr 2016, amgaeaf yr wybodaeth ychwanegol y gofynnodd y pwyllgor amdani ynghylch –

- Cyfanswm y cyllid ar gyfer y rhaglen i ddileu TB Buchol, gan gynnwys dadansoddiad o'r swm a wariwyd ar brofion, ar ddileu'r clefyd ac ar iawndal, a dangos faint ohono oedd yn gyllid a gafwyd oddi wrth yr UE (Amgaeir yn Nogfen 1).
- Trafodaethau gyda DEFRA am y llain glustogi o 2 gilomedr o amgylch rhaglenni difa ger y ffin â Chymru (Gweler y ddolen isod: canllawiau i Natural England oddi wrth Defra).

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/489845/badger-culling-guidance-ne.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/489845/badger-culling-guidance-ne.pdf)

- Tystiolaeth am yr effaith o ran aflonyddu a gwasgaru ar ôl difa moch daear, sut mae Defra a Llywodraeth Cymru wedi dadansoddi'r dystiolaeth honno a sut y mae hynny wedi dylanwadu ar sut y mae'r naill a'r llall yn mynd ati i ddileu TB buchol (Amgaeir yn Nogfen 2).

Mae Prif swyddog Milfeddygol Cymru yn ymddiheuro am yr oedi wrth ddarparu'r wybodaeth hon. Roedd yr oedi hwnnw'n ganlyniad i fater gweinyddu mewnol.

Rwyf yn edrych ymlaen at gydweithio â'r Pwyllgor yn y dyfodol ar y mater hynod bwysig hwn.

**Lesley Griffiths AC/AM**

Ysgrifennydd y Cabinet dros yr Amgylchedd a Materion Gwledig  
Cabinet Secretary for Environment and Rural Affairs

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CF99 1NA

Canolfan Cyswllt Cyntaf / First Point of Contact Centre:  
0300 0604400

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[Correspondence.Lesley.Griffiths@gov.wales](mailto:Correspondence.Lesley.Griffiths@gov.wales)

Rydym yn croesawu derbyn gohebiaeth yn Gymraeg. Byddwn yn ateb gohebiaeth a dderbynnir yn Gymraeg yn Gymraeg ac ni fydd gohebu yn Gymraeg yn arwain at oedi.

We welcome receiving correspondence in Welsh. Any correspondence received in Welsh will be answered in Welsh and corresponding in Welsh will not lead to a delay in responding.

Summary of expenditure and receipts (receipts indicated as a negative figure) to show the EU income as a percentage of expenditure:

Year	TB Programme Delivery (includes TB testing and general TB Eradication Programme policy development and delivery)	Valuation Haulage Slaughter Disposal	Salvage received	Compensation paid	Total Expenditure	EU Income received	EU Income as % of Total Expenditure
2011/12	£16,761,000	£826,000	-£1,540,000	£13,284,000	£29,331,000	-£3,220,000	10.98%
2012/13	£16,944,000	£835,000	-£2,020,000	£17,024,000	£32,783,000	-£3,910,000	11.93%
2013/14	£12,844,000	£619,000	-£1,462,000	£11,761,000	£23,762,000	-£3,190,000	13.42%
2014/15	£12,411,000	£712,000	-£2,521,000	£10,905,000	£21,507,000	-£2,610,000	12.14%
2015/16	£13,929,000	£850,000	-£2,846,000	£14,480,000	£26,413,000	-£3,990,000	15.11%

Tudalen y pecyn 29

## **CCERA Evidence of the perturbation effect following culling of badgers**

*The CVO agreed to provide a note to the committee on the evidence of the perturbation effect following culling of badgers, how it has been interpreted by Defra and the Welsh Government and how this has influenced their respective approaches to bovine TB eradication.*

### **Perturbation**

Perturbation has been defined as the disruption of the social organisation or structure of badger populations such as that which is caused where trapping/culling has taken place.

The hypothesis is that perturbation following badger culling may result in increased TB risk to spatially associated cattle herds due to increased contact and transmission of infection between badgers and increased contact between cattle and the socially disrupted badger population. Consequently perturbation has the potential to undermine any beneficial effects of badger culling on the incidence of cattle herd breakdowns.

### **The Randomised Badger Culling Trial (RBCT)**

The RBCT was a badger culling trial conducted in England between 1998 and 2005 which was overseen by the Independent Scientific Group (ISG). The RBCT was conducted in 30 areas of England, each located in a high-risk area for cattle TB and measuring approximately 100km<sup>2</sup>. The 30 areas were grouped into 10 sets of three, each called a 'triplet'. Within each triplet, one area was subjected to approximately annual culling across all accessible land ('proactive culling'), and in one area the badgers were culled locally on and near farmland where recent outbreaks of TB had occurred in cattle ('reactive culling'). The remaining area received no culling ('survey only') and acted as an experimental control with which the culling treatments could be compared. Treatments were assigned to trial areas at random.

The design of the RBCT followed closely general principles well established in numerous fields, the use of triplets achieving comparisons that were between geographically fairly closely related areas and the replication enhancing precision. Randomisation, rigorously enforced (except in Triplet I due to security concerns), was judged essential to avoid bias and, in particular, accusations of prejudiced allocation.

However, the validity of the trial design and interpretation of its findings have been subject to much discussion since the ISG published its Final Report. The fact that the trial was undertaken in areas within which varying degrees of badger culling had previously taken place has led to the question about what impact this might have had on the results and would different results be expected in areas without prior disturbance. In addition, co-operation with culling was variable across the triplets.

The trial was interrupted due to the 2001 Foot and Mouth Epidemic and as indicated above the delivery was at least in part influenced by security concerns. Furthermore, the ISG reported in October 2003 that reactive culling was associated with an

estimated 27% increase in the incidence of confirmed cattle herd breakdowns. Although the ISG recommended that the culling operation be allowed to continue until the start of the next closed season (1 February 2004) to allow further analysis to be undertaken in advance of the end of the next closed season. Ministers took the decision to suspend reactive culling from November 2003 due to this increase in incidence.

The question has been asked (More and McGrath 2015) as to the degree to which the RBCT results can be extrapolated to other areas of England and Wales, with differences between similar studies undertaken in the Republic of Ireland and the RBCT suggesting that geographical differences exist, at least at a larger (island level) scale.

**Table 2.1: Dates of key operations in establishing and implementing triplets.**

Triplet	Dates				
	Initial mapping of trial areas	Beginning of surveying	Treatment allocation	Completion of the initial proactive cull	Completion of the first reactive cull
<b>A Gloucs/Hereford</b>	11-Jun-98	08-Aug-98	20-Apr-99	28-Jan-00	Jul-00
<b>B Cornwall/Devon</b>	11-Jun-98	28-Aug-98	11-Nov-98	13-Dec-98	Jun-99
<b>C East Cornwall</b>	10-Mar-99	30-Mar-99	13-Sep-99	29-Oct-99	May-00
<b>D Hereford</b>	19-Mar-99	04-May-99	11-Nov-02	18-Dec-02	Sep-03
<b>E North Wiltshire</b>	05-Oct-99	08-Nov-99	27-Mar-00	26-May-00	Jun-02
<b>F West Cornwall</b>	04-Nov-99	05-Jan-00	24-May-00	18-Jul-00	Aug-02
<b>G Derbys/Staffs</b>	15-Mar-00	06-Jun-00	03-Oct-00	10-Nov-00	Aug-02
<b>H Devon/Somerset</b>	15-Mar-00	10-May-00	20-Oct-00	15-Dec-00	Jan-03
<b>I Gloucestershire</b>	10-Nov-00	05-Dec-00	13-Sep-02	08-Oct-02	May-03
<b>J Devon</b>	10-Nov-00	29-Nov-00	06-Sep-02	18-Oct-02	–

Note: no reactive culling took place in triplet J.

It should be noted that no reactive culling took place in Triplet J due to the premature cessation of this component of the trial and the number of years in which reactive culling took place within each triplet also varied. Triplet B was the only triplet that had four years in which reactive culling was delivered. Two triplets had three years, four had two years and two had just one year of reactive culling. The table below summarises this.



**Table 2.5:** Approximate dates of reactive culling, by triplet and culling year (defined to run from 1 May – 31 January). Reactive culling operations occurred between the dates indicated. Triplet J was eligible for reactive culling in 2003 but no culls had been performed when the reactive treatment was suspended in November 2003.

Triplet	1999	2000	2002	2003
A		Jul-Nov 2000	Jan 2003	May 2003
B	May–Dec 1999	Aug–Sep 2000	Sep 2002–Jan 2003	May–Jul 2003
C		May–Aug 2000	Jul 2002–Jan 2003	May 2003
D				Aug–Sep 2003
E			Jun 2002–Jan 2003	Jul–Oct 2003
F			Jul 2002–Jan 2003	Jun–Sep 2003
G			Aug 2002–Jan 2003	Sep–Oct 2003
H			Jan 2003	Sep–Oct 2003
I				May–Sep 2003
J				

The RBCT showed that culling caused disruption to the social structure of badger groups:

- their foraging ranges expanded and there was more overlap of social group territories.
- there was more frequent immigration to fill the void left from culling
- a higher prevalence of TB was found in the remaining badger population
- lower genetic relatedness.

The hypotheses based on these findings was that the increased prevalence of disease in the remaining badger population and the greater ranging could increase the opportunity for transmission and so cause the observed increase number of cattle breakdowns as seen in the 2km buffers around proactive culling areas and in the reactive culling areas.

The conclusion from the RBCT was that localised badger culling not only fails to control TB in cattle but can actually increase the incidence.

### **Proactive culling**

In the post-trial period to 28 March 2013 (report to Defra, Christl Donnelly Imperial College London, 16/10/13) the incidence of confirmed breakdowns inside the proactive trial areas on average was 25.9% lower than that inside survey-only trial areas (there was significant variations between triplets however). Analyses stratified by 6-month periods indicate that beneficial effects within trial areas remain in the latest 6-month period analysed (73 to 78 months post-trial). These latest results are consistent with an ongoing, but diminishing, benefit of proactive culling continuing through this latest period.

## Reactive Culling

Reactive (localised) culling was designed to target badger social groups which could have caused specific TB breakdowns in cattle. Since it entailed removal of only moderate numbers of badgers, it was expected to be both cheaper and more publicly acceptable than more widespread culling.

In the reactive areas badger culling was to be undertaken only once over eight consecutive nights on the occurrence of a new confirmed herd breakdown and with the aim of removing all social groups of badgers having access to the breakdown farm. No specific consideration was given to whether or not badgers were implicated in the breakdown.

In the recommendations and conclusions section of its final report (published in 2007) the ISG stated that:

*It is highly unlikely that reactive culling – as practised in the RBCT – could contribute other than negatively to future TB control strategies (10.3-10.4).*

Subsequent analysis showed that in the time period from one year after the last proactive cull to 28 March 2013 (the post-trial period), well after the final reactive culling was undertaken in 2003, the incidence of confirmed breakdowns **in the reactive culling** areas was 8.2% lower (95% CI: 26.4% lower to 14.5% higher) than in survey-only areas.

## Proposals for badger removal operations in Wales

In Wales, where it is believed that badgers are contributing to the persistence of TB in chronic breakdown herds, measures need to be implemented to break the badger to cattle route of transmission.

The delivery model we are proposing for the removal of badgers is not a repeat of the reactive cull element of the RBCT. The trap, test and removal operations being planned will be restricted to TB affected premises where veterinary epidemiological investigation indicates that infection of badgers on breakdown premises is the likely reason for a failure to eliminate infection from an associated cattle herd. There was no such consideration given in the RBCT. The removal of badgers will only take place once a TB test positive badger has been disclosed. Again, this differs from the RBCT where no attempt was taken to establish the infection status of badgers within the reactive culling triplets prior to their removal.

In the RBCT reactive culling operations were undertaken just once at the farm level over eight consecutive nights. Our intention is to repeat the operation and not to be restricted by eight nights of cage trapping where indications are that trapping efficiency can be improved by extending this period.

Evidence emerging from the recent All Wales Badger Found Dead Survey is that the TB prevalence in badgers in the areas where we intend to operate is not expected to be as high as that seen in the RBCT areas. The proportion of badgers found dead

identified as having TB has fallen in Wales since a previous survey was conducted in 2005/06. We have been testing all cattle herds in Wales at least once a year since 2010 and have built up a much clearer picture of the disease across Wales. There is significant spatial heterogeneity with disease clustered in some areas and almost absent in others. As such a more widespread proactive cull of badgers in Wales seems difficult to justify. We will be applying the badger removal operations alongside a suite of enhanced cattle and biosecurity measures to clear disease from the herd. Because the badger intervention we propose to make differs from previous badger interventions in Wales, close monitoring and reviewing of the outcomes for the co-located herds will be an important part of the work and inform future policy development.

### **Evidence to measure effect**

We have good evidence that social perturbation in badger populations happens in the wake of culling operations and it is a plausible explanation for the observed outcomes of the RBCT. However, we have little information on what perturbation looks like at the local scale or how changes in the number of badgers removed affects the level of perturbation and exactly how it relates to epidemiological outcomes.

As part of our badger removal operation we will gather data to:

- examine the effect on the status of the chronic breakdown herd (though this will can only be measured as a result of the combined measures applied)
- examine the effect on incidence in the surrounding cattle herds
- better understand the effect on the social structure of badgers
- measure the prevalence of TB in the remaining badger population
- using the panel of results, continue to evaluate the performance of the Dual Path Platform (DPP) trap side test, and review and adapt our removal policy if the resulting evidence deems it necessary.

We will work with colleagues in the Animal and Plant Health Agency (APHA) to develop processes to gather data and develop systems to analyse the results to achieve this.

### **Culling in England**

In 2011 the then Government in England announced its decision to proceed with a policy of enabling farmers and landowners to cull badgers under licence in areas of high incidence of TB in cattle. The Government would bear the cost of licencing and monitoring the culls but the industry would bear the costs of undertaking the culls.

*Dr Malla Hovi from Defra gave evidence at the committee meeting on 08/12/16.*

# Eitem 7

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