



# Public Attitudes to Science 2014: Social Listening

Quarter 3: July – October 2013 report

PUBLIC

# Objectives

Ipsos MORI, on behalf of the Department for Business, Innovation and Skills, are conducting a year long research exercise into how people talk about science. Using our social media tracking programme we are able to see who is talking about science online, what they are talking about, and when. In essence –

**what makes science ‘sticky’?**

## July – October (Q3) objectives:

- To continue to examine the mechanics by which particular stories spread over social networks
- Search subjects – the **badger cull** and hydraulic fracturing (“**fracking**”)
- The monitoring period this quarter was extended by a month to encompass more of the badger cull period



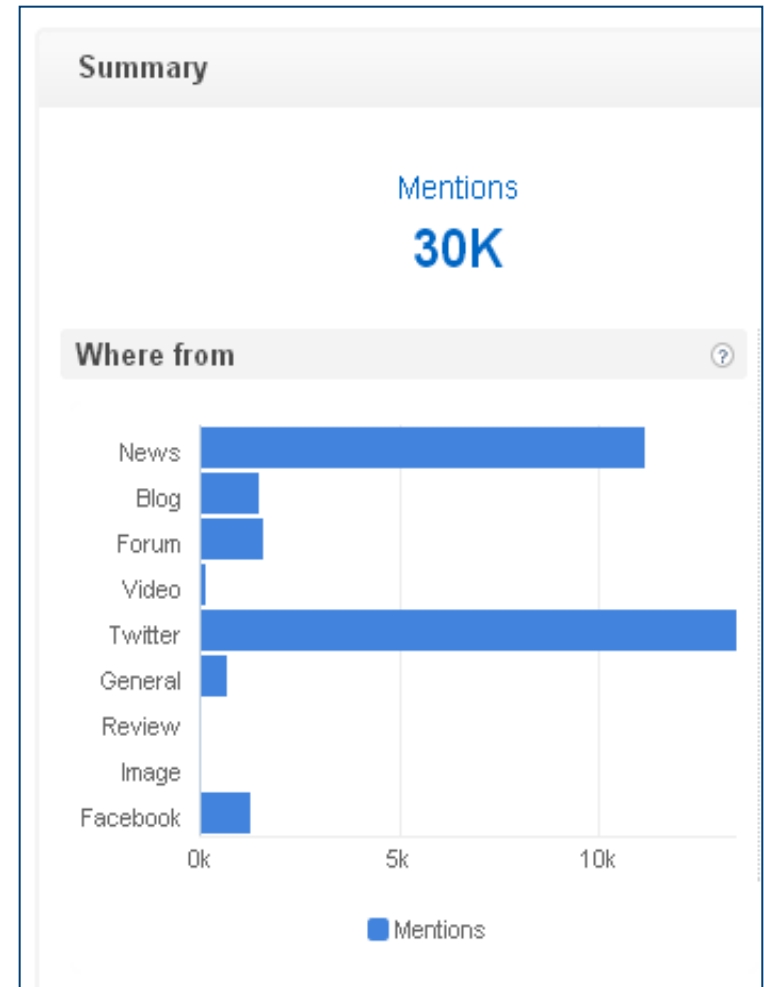
# Method

Using our in-house social media platform we are able to measure internet traffic volumes on different subjects across a range of online sources, including Twitter, forums, blogs, news sites, etc.

Over this period we searched for mentions relating to the badger cull in southwest England and fracking.

Our search terms:

- (("Bovine Tuberculosis" OR "Bovine TB" OR "badger cull") NEAR/10 (scien\* OR expert\* OR tests))
- (fracking OR shale) NEAR/10 (scien\* OR evidenc\* OR tests)

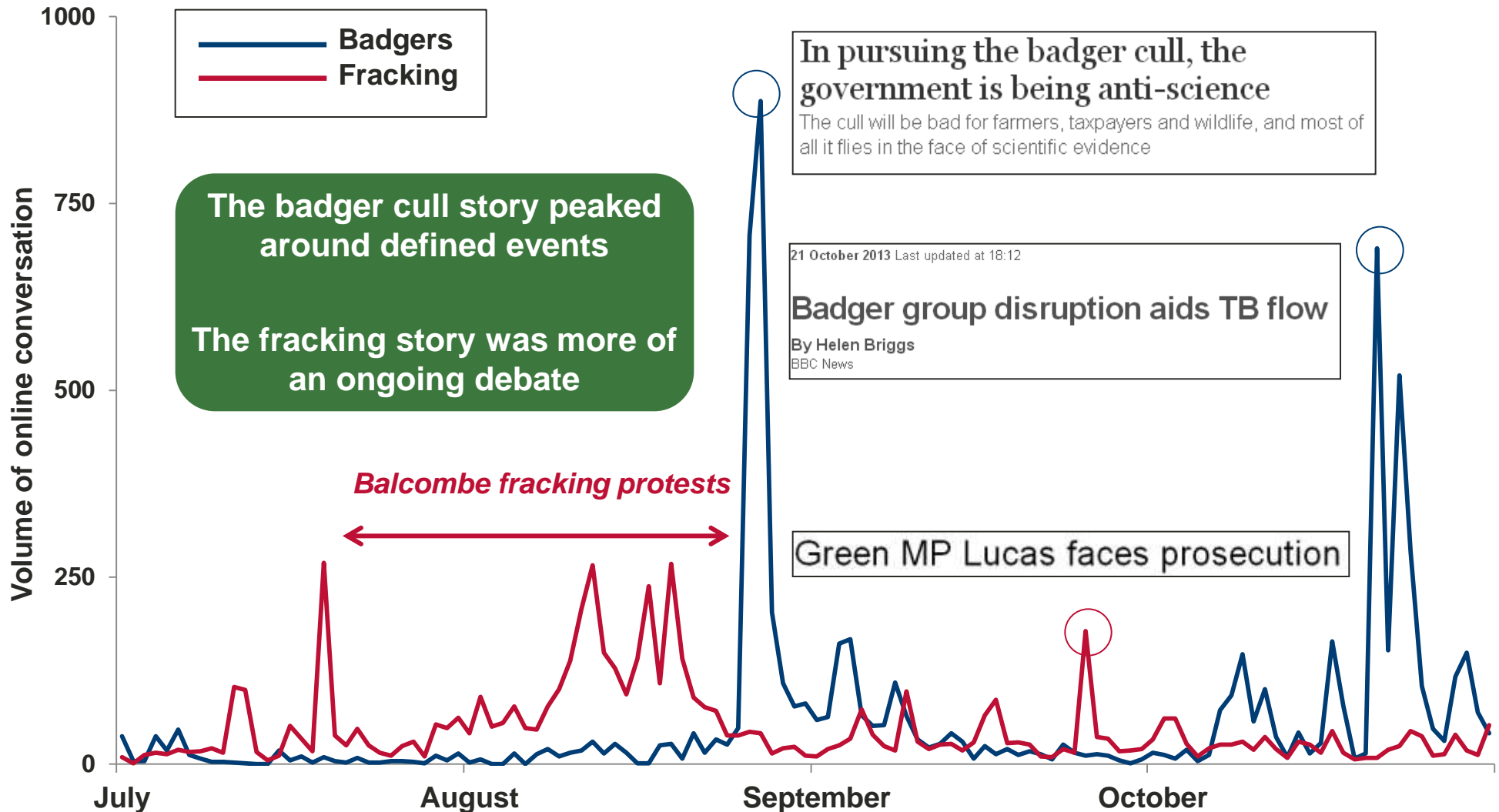


# Headline findings

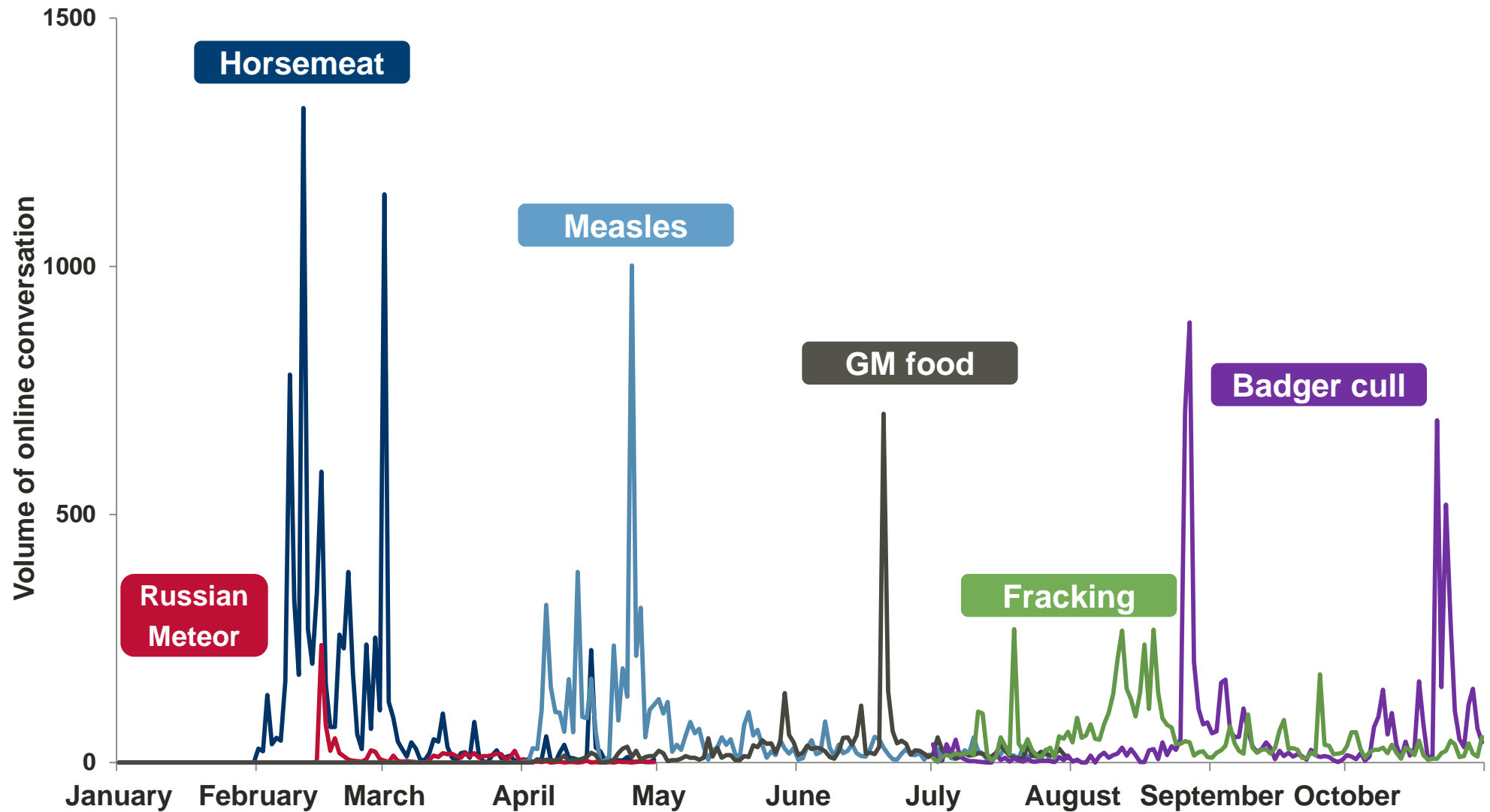




# The badger cull and fracking – UK internet traffic

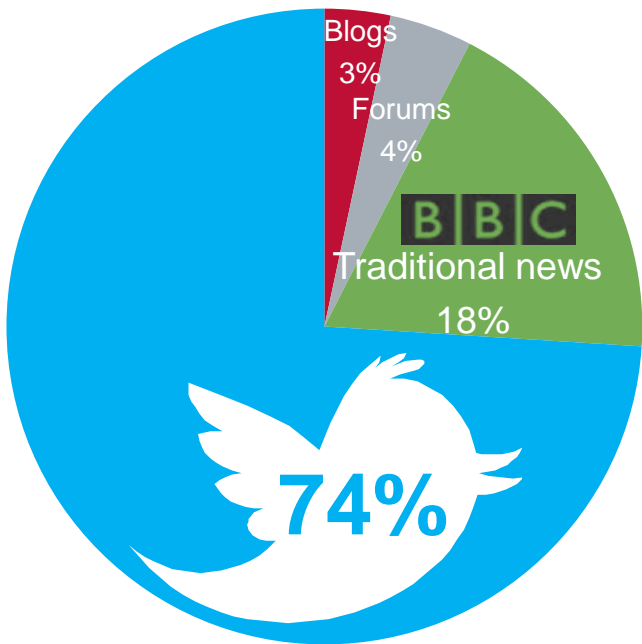


# In context of the year...



# Both stories are predominantly Twitter-based

Fracking



Badger culling



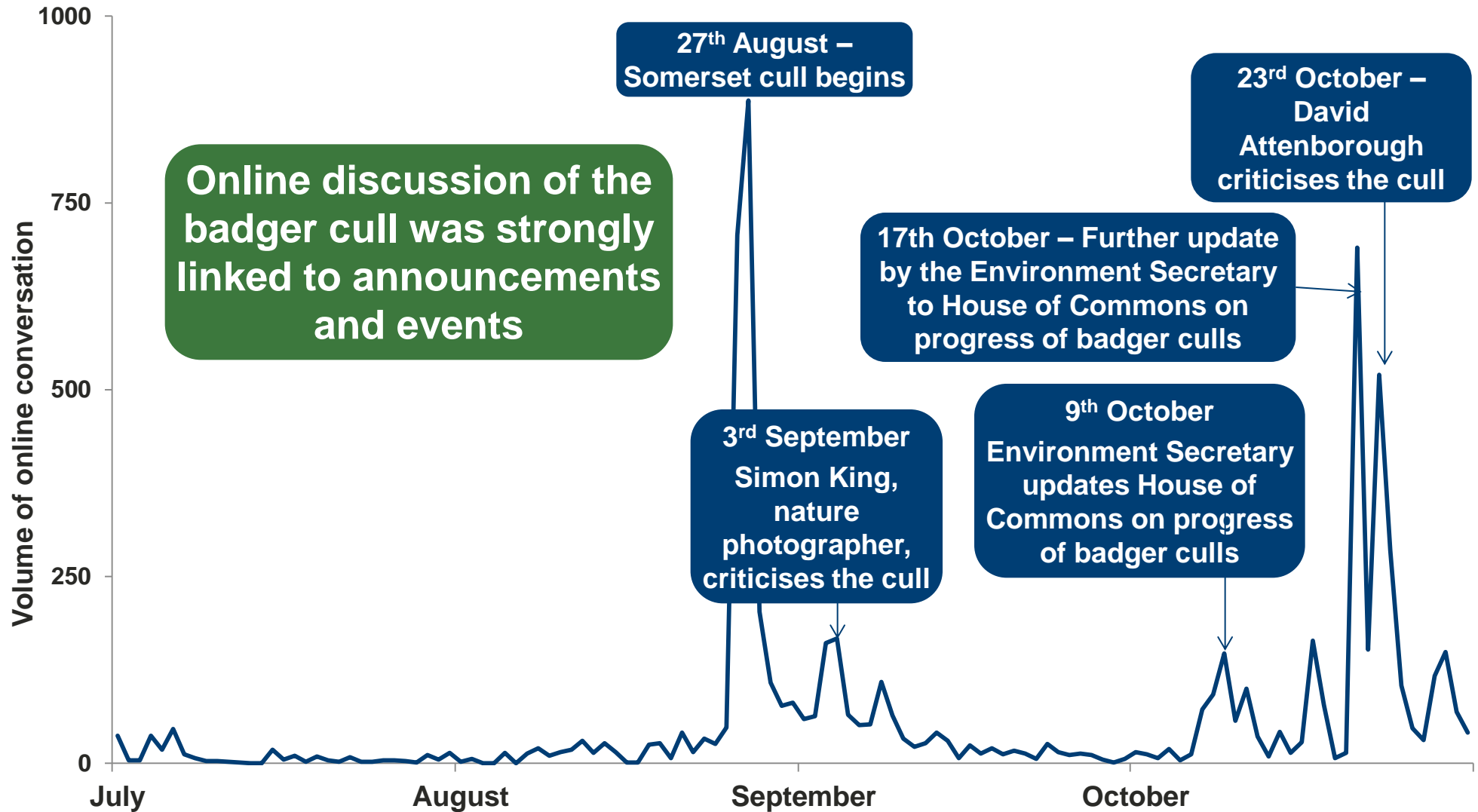
# The badger cull

Science-led disease control





# Driven by events



# Twitter also strongly driven by announcements and events

8 of the top 10 most shared stories in Twitter were around two dates – the day before the Somerset cull started (26<sup>th</sup> August) and the Gloucester cull extension (23<sup>rd</sup> October)

Strong presence of *The Guardian* articles too

Top Stories	TWEETS ▼
<a href="http://www.theguardian.com/environment/2013/oct/23/badger-cull-david-attenborough">http://www.theguardian.com/environment/2013/oct/23/badger-cull-david-attenborough</a>	115
<a href="http://www.theguardian.com/environment/2013/oct/21/stop-badger-cull-immediately-nat">http://www.theguardian.com/environment/2013/oct/21/stop-badger-cull-immediately-nat</a>	114
<a href="http://www.theguardian.com/environment/2013/oct/23/badger-cull-david-attenborough?C">http://www.theguardian.com/environment/2013/oct/23/badger-cull-david-attenborough?C</a>	98
<a href="http://www.theguardian.com/environment/2013/oct/21/stop-badger-cull-immediately-nat">http://www.theguardian.com/environment/2013/oct/21/stop-badger-cull-immediately-nat</a>	97
<a href="http://www.theguardian.com/environment/2013/aug/26/badger-cull-evidence-labour-defra">http://www.theguardian.com/environment/2013/aug/26/badger-cull-evidence-labour-defra</a>	73
<a href="http://www.theguardian.com/commentisfree/2013/aug/26/badger-cull-government-anti-s">http://www.theguardian.com/commentisfree/2013/aug/26/badger-cull-government-anti-s</a>	71
<a href="http://www.theguardian.com/environment/2013/aug/26/badger-cull-evidence-labour-defra">http://www.theguardian.com/environment/2013/aug/26/badger-cull-evidence-labour-defra</a>	55
<a href="http://www.theguardian.com/commentisfree/2013/aug/26/badger-cull-government-anti-s">http://www.theguardian.com/commentisfree/2013/aug/26/badger-cull-government-anti-s</a>	47
<a href="http://www.bbc.co.uk/news/science-environment-24645914">http://www.bbc.co.uk/news/science-environment-24645914</a>	42
<a href="http://www.bbc.co.uk/news/science-environment-24714068">http://www.bbc.co.uk/news/science-environment-24714068</a>	33

# Who was talking?

A high volume of Twitter traffic came from low-key individuals

Animal lovers

Campaigners

Cull-specific individual accounts

Individual accounts

## Top ten most prolific tweeters – 9 in 10 are individuals:

		TWITTER ⓘ		DEMOGRAPHIC
TWEETER		TWEETS ▼	FOLLOWERS	ACCOUNT TYPE <small>BETA</small>
@ [redacted]		80	633	Individual
@badgersni		71	1180	Organisation
@ [redacted]		70	3158	Individual
@ [redacted]		67	1534	Individual
@ [redacted]		65	7798	Individual
@ [redacted]		59	1230	Individual
@ [redacted]		53	1507	Individual
@ [redacted]		48	472	Individual
@ [redacted]		36	1281	Individual
@ [redacted]		36	467	Individual
Total for tweeters		585	19260	

# Intensely partisan on Twitter

Twitter traffic was entirely anti-cull – the nature of the subject only attracts the strongly held opposition of some

Top Hashtags
#stopthecull
#badgermonday
#badgercull
#badger
#heslaughterhasbegun
#cull
#badgers
#stopthebadgercull
#industrylapdog
#savethebadger



*Pressure groups planned to get #stopthecull trending on Twitter*

**Pro-cull sentiment was only to be found on farmers' forums**



# Twitter dominated online discussion of the cull

90% of internet traffic on the cull was Twitter-based, and the most frequently used terms were highly partisan



Word cloud\* for entire monitoring period

The “Natural England science expert” was cited extensively as an authoritative source of anti-cull evidence

The “anti-science” label comes from a Labour Party release and was shared widely

*\*A representation of the frequency with which particular terms are present in the data*

# The use of “science” in badger cull discussions was mainly limited to the invocation of scientific authority

Over three quarters (79%) of all tweets about the cull used the words “science” or “scientific”



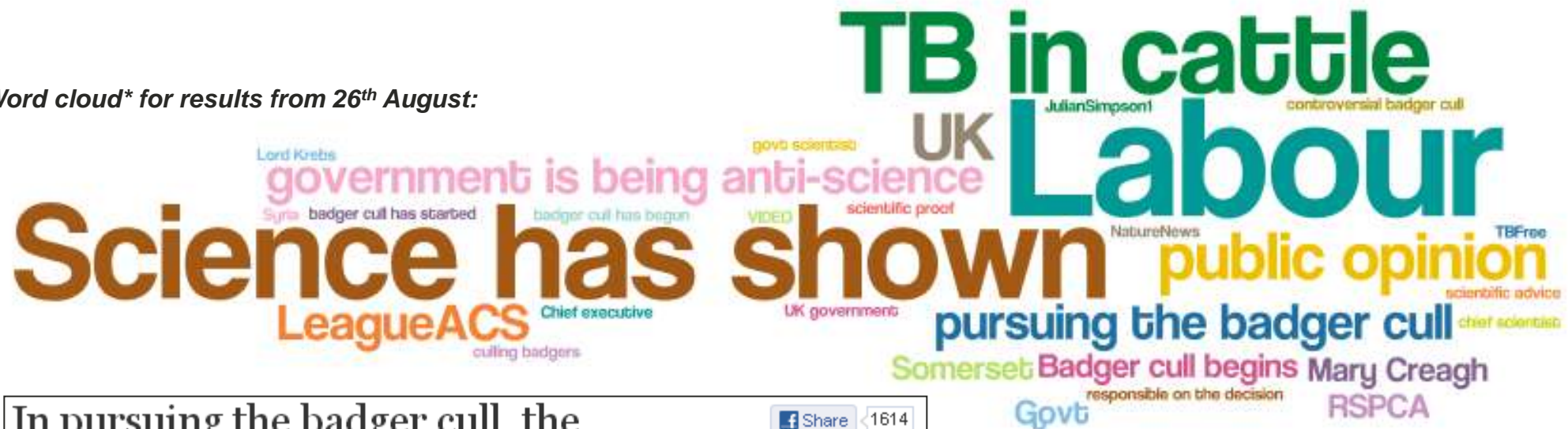
Although the number who cited scientific sources, terminology or arguments was much lower – a function of the 140 character limit?

- 17% of tweets used the word “evidence”
- 14% of tweets mentioned “TB” or “bTB”
- Three tweets mentioned “perturbation”

## 26<sup>th</sup> August – the day before the Somerset cull started

## The height of the story – a large presence for Labour and Mary Creagh (then shadow DEFRA Minister)

**Word cloud\* for results from 26<sup>th</sup> August:**



## In pursuing the badger cull, the government is being anti-science

The cull will be bad for farmers, taxpayers and wildlife, and most of all it flies in the face of scientific evidence



**Mary Creagh**

theguardian.com, Monday 26 August 2013 07.00 BST

[Jump to comments \(234\)](#)

Share 1614

 **Tweet** 307

 $g_{+1} \prec 12$ 

[Pin it](#)

 **Share**  9

 Email

## Article history

**An article written by Mary Creagh was the tweeted 118 times in total across the monitoring period**

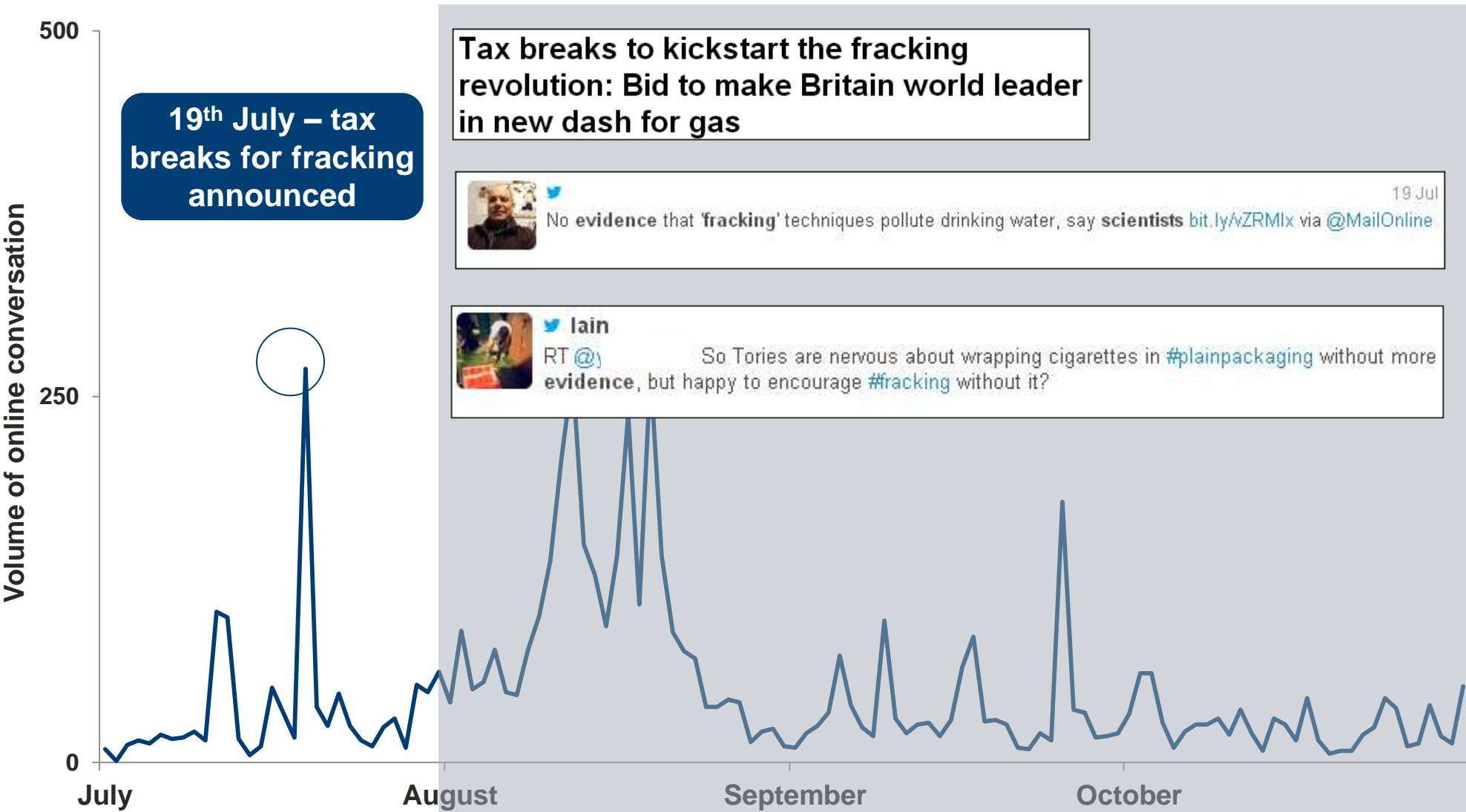
# Fracking in England

## Policy and protest

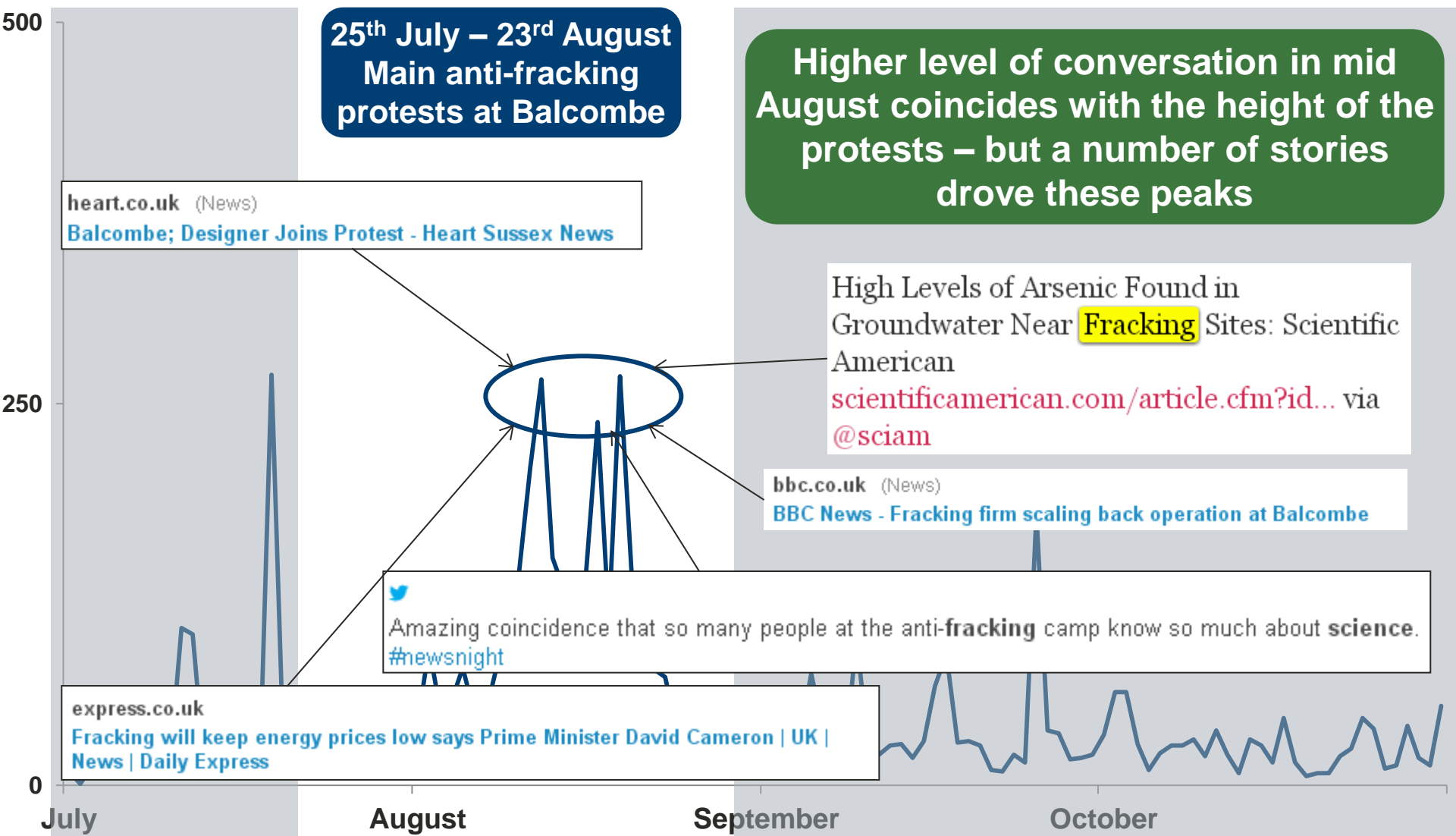




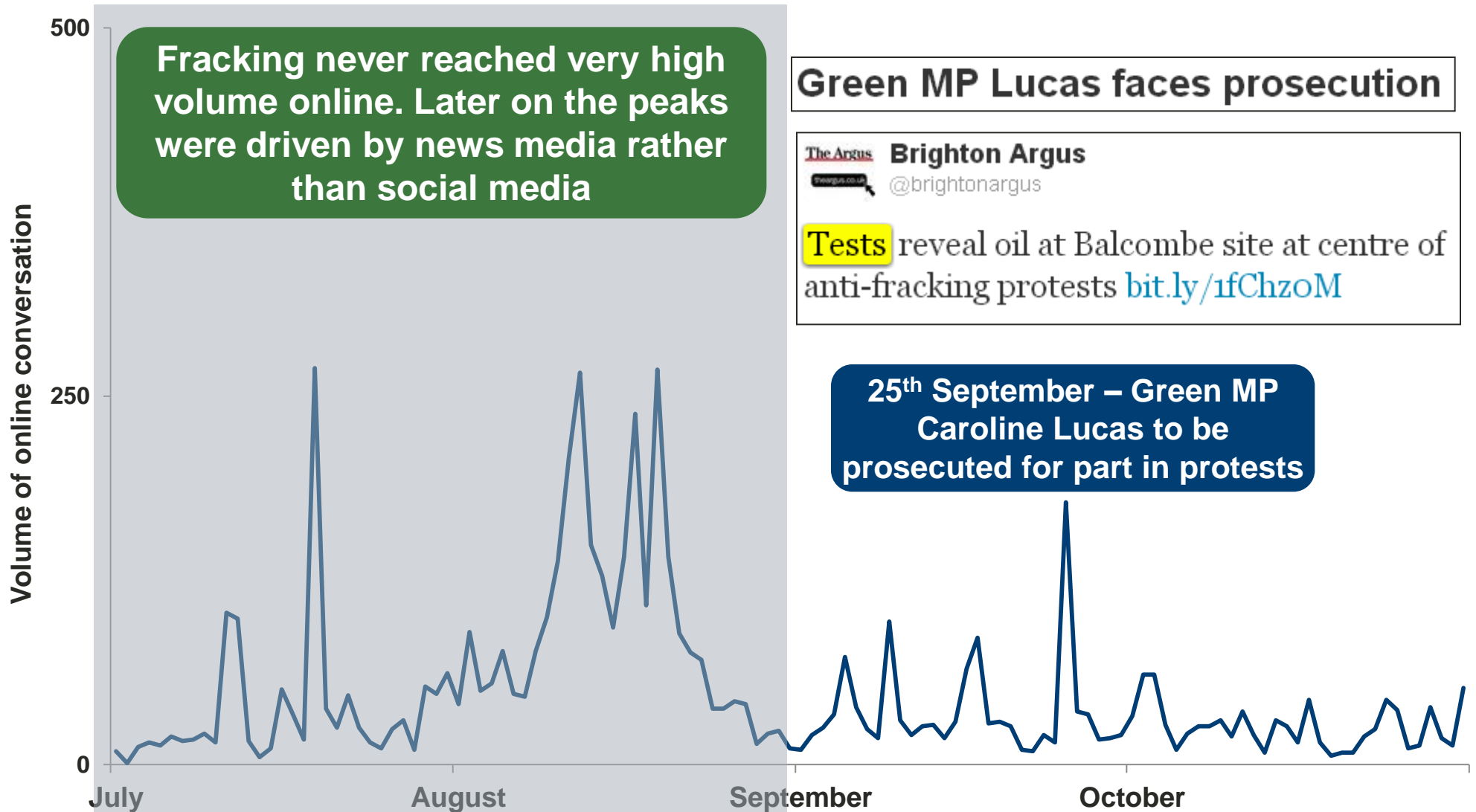
# Driven by events but a low level story



# Driven by events but a low level story







# Driven by events








# Traffic was driven from the bottom up – led by those with strongly held views but little public recognition

The most frequent  
Tweeters were little-  
known individual  
sources

		Fracking	TWITTER ⓘ	
TWEETER		TWEETS ▼	FOLLOWERS	
@ [redacted]	 	368	752	Anti-fracking activist
@ [redacted]	 	202	344	Anti-fracking activist

Four of the top  
ten most frequent  
were linked to the  
same individual

@ [redacted]	 	29	89	Alternative journalist
@ [redacted]	 	28	1151	
@ [redacted]	 	28	12272	
@ [redacted]	 	26	1827	

*Friends of the earth*


@eastbournefoe	 	23	551
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*Brighton-based bookshop*

@MyriadEditions	 	19	1894
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Sussex-based  
organisations reflect  
focus on Balcombe

*Both industrial  
chemists/engineers*

@ [redacted]	 	16	5286
@ [redacted]	 	16	455

Pro-fracking individuals  
also featured in the top  
ten most frequent



# Fracking in forums

Here are five things they keep saying that are simply false. First, that shale gas production has polluted aquifers in America. Second, that it releases more methane than other forms of gas production. Third, that it uses a worryingly large amount of water. Fourth, that it uses hundreds of toxic chemicals. Fifth, that it causes damaging earthquakes. None is true.

**On more general discussion forums the debate on pros and cons was more science-based – and less civil**

No evidence that fracking poisons water? Yeah right. See here for latest info on flooded fracking sites in Colorado.

Here are links to an article and a study looking at private well water quality in aquifers overlying the Barnett Shale formation of North Texas:

article: <http://www.scientificamerican.com/article.cfm?id=high-levels-of-arsenic-found-in-ground-water-near-fracking-sites>

**Environmental forum threads comprised open discussions and anti-fracking announcements**



**Re: Is fracking safe?**

« Reply #1 on: 23 Sep, 2013, 08:32 AM »

Hi Isonomian

One of the major reasons Friends of the Earth is opposed to fracking is because it is a fossil fuel

**More in depth discussions of fracking occurred in a variety of discussion forums**

The OilBarrel article is further evidence that IGas is not just a start up with its more conventional oil business. It is also building up a company is very wise in ensuring that there is plenty to fall back on. It is disappointing in the UK, though I do not think that this will be the case, at least not in medium to long term.

**Investment forums discussed the effect of the protests on UK policy and investment opportunities**

I am looking at oil economics, and do not panic they are still looking good, oil at \$85 dollars is still very good for oil shale economics and even as low as \$65 dollars if the productivity increases in oil in the UK continues....

...not want to be in Sussex over the next ... blocked by the hundreds of thousands of tanker journeys required to get the water and chemicals to a site and the gas and poisoned water away.

**Local area forums discussed the pros and cons of fracking for the area – typically jobs versus increased traffic**

So, perhaps the fracking argument needs an injection of reflection and proportionality. It MAY not be good for the environment, but we benefit from oil in every sphere of our lives and I think that's worth remembering too.

# Bodies of evidence

Three types of evidence were cited in the discussion; partisan, neutral and comedic

## Neutral

**Frack on or frack off: Can shale gas save the planet?**

12:00 08 August 2013 by [Michael Brooks](#)

Common sources: New Scientist, BBC

## Comedic

**Only a 30% chance of Cthulhu, say fracking experts**

18-04-12

THE chances of shale gas exploration releasing a monstrous denizen of the underworld are less than one in three, experts have claimed.

Common sources: Daily Mash

## Partisan



**Groundwater Contamination May End the Gas-Fracking Boom**


Well water in Pennsylvania homes within a mile of fracking sites is found to be high in methane


Common sources: Guardian, Scientific American

**Partisan sources were the most commonly cited**

# Citing evidence


Both sides used “scientific studies” and “scientists” to promote their point of view


 **Peter** 19 Jul  
@FactCheck can you hold Michael Fallon to account? On @BBCRadio4 #WATO he just claimed there is NO **evidence** of pollution from #fracking

 19 Aug  
RT @Occupy\_BR: Obama Administration Rushes To Expand **Fracking** On Public Lands, Despite Frightening **Evidence** [fb.me/6ruqFD29I](https://fb.me/6ruqFD29I)

Anti fracking sources tended to come from scientific sources, or put a critical spin on neutral sources

Pro Fracking sources often originated from Government or industry sources

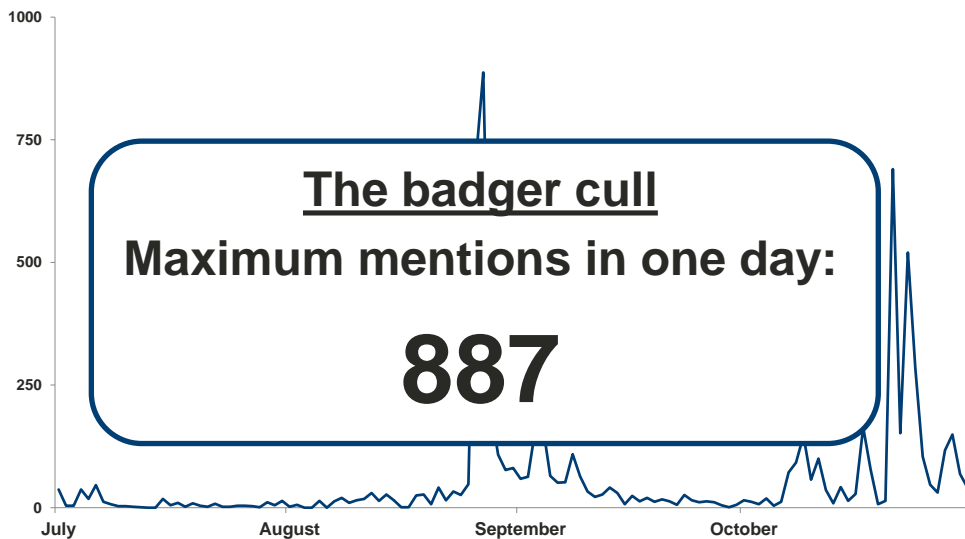
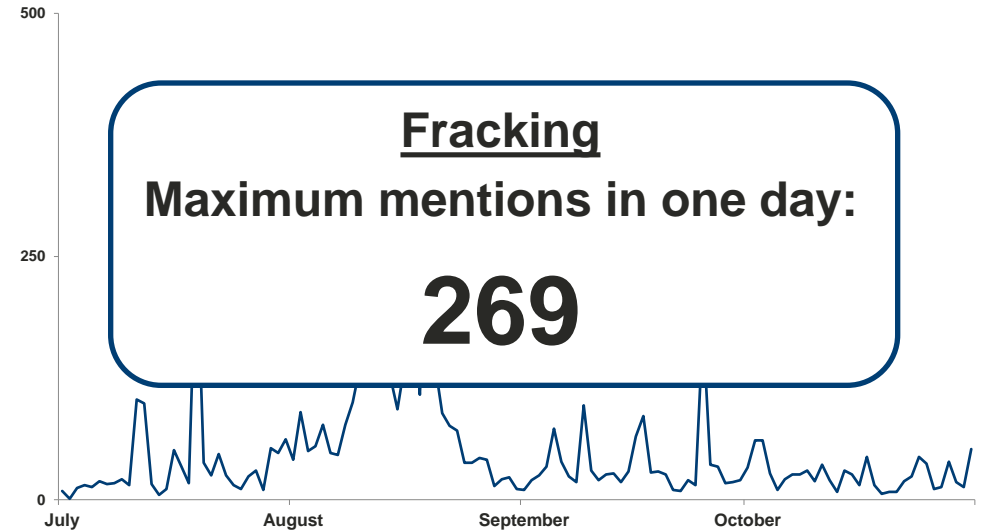
 **PetroMall** 19 Jul  
RT @AEA: DOE study: no **evidence** of #fracking chemicals reaching drinking water aquifers near PA drilling site [fxn.ws/12ZXskp](https://fxn.ws/12ZXskp) via @ap @kbegos

 19 Aug  
RT @EnergyfromShale: How Anti-**Fracking** Activists Deny **Science**: Public Health [bit.ly/17XJEZG](https://bit.ly/17XJEZG) h/t @saeveryley #fracking

Unlike in other debates, international examples frequently appeared

# Both stories were catalysed by political debate...

Opponents to fracking were especially vocal over social media networks, but lower party political involvement meant the story was relatively low-volume



The involvement of a prominent Labour politician and *The Guardian* newspaper, as well as the defined dates for the cull, drove higher peaks of traffic on badger culling

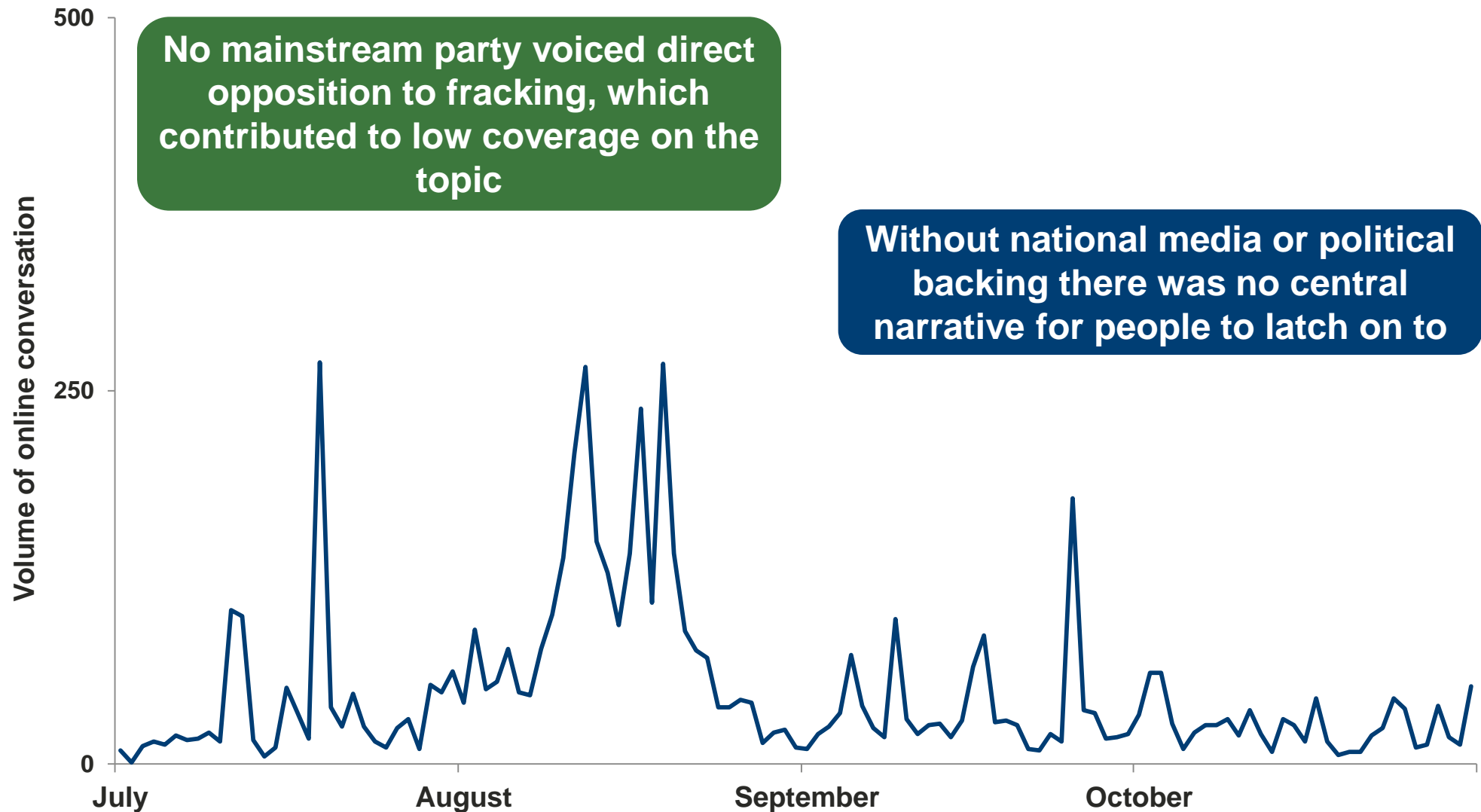
Perhaps also the greater popular appeal of badgers played a role



# ...but fracking was less strongly identified with any party

No mainstream party voiced direct opposition to fracking, which contributed to low coverage on the topic

Without national media or political backing there was no central narrative for people to latch on to



# Word clouds on fracking conversations reveal a greater proportion of technical terms than in badger culling



But it is unclear if this reflects a less scientific/technical public conversation on the cull, or less political influence on the terms of the fracking debate

## *Badger cull*



# Conclusions

**The two stories reinforce the importance of backing from traditional media sources to wide online coverage**

**Fracking and badger culling can be viewed as relatively 'niche' areas compared to the economy or immigration, but the intervention of a prominent Labour shadow Minister and a national newspaper drove a great deal of traffic on badger culling**

**By contrast, without backing from a mainstream source fracking did not reach the same level of internet traffic. Preserving badgers also has broader public appeal**

**The level of discussion involving science and scientists in both topics was relatively high, suggesting that people were using science to support their views on these topics**

***However, internet traffic on both subjects was strongly one-sided, meaning that the level of debate was limited***





**Please contact us with any questions:**

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