

Curlew GPS tracking 2016 - Ysbyty Ifan



Curlew are shy and vigilant (and sensitive to disturbance!) –
hard to observe, easy to disturb

Tags might allow ‘observation’ without disturbance

2016 – can we catch breeding Curlew, will they carry the tags comfortably? For how long?

They might help us answer important questions for Curlew –
and other farmland breeding waders:

- How big is a breeding territory?
- How do they cope with ‘patchy’ landscapes? What do they need?
- Are we making the right decisions (in agri-environment schemes) to support breeding birds?

3 males were caught using cannon-nets set at identified activity sites using decoys and playback




GPS tag weighs 6g

(a pound coin weighs 10g)

<1% bodyweight of >600g (male) Curlew



Downloaded data from base stations every 3-4 days

A photograph of a bird, possibly a kestrel, in flight over a green field. The bird's wings are spread wide, showing a pattern of dark and light feathers. The background is a rolling green field under a blue sky with some clouds.

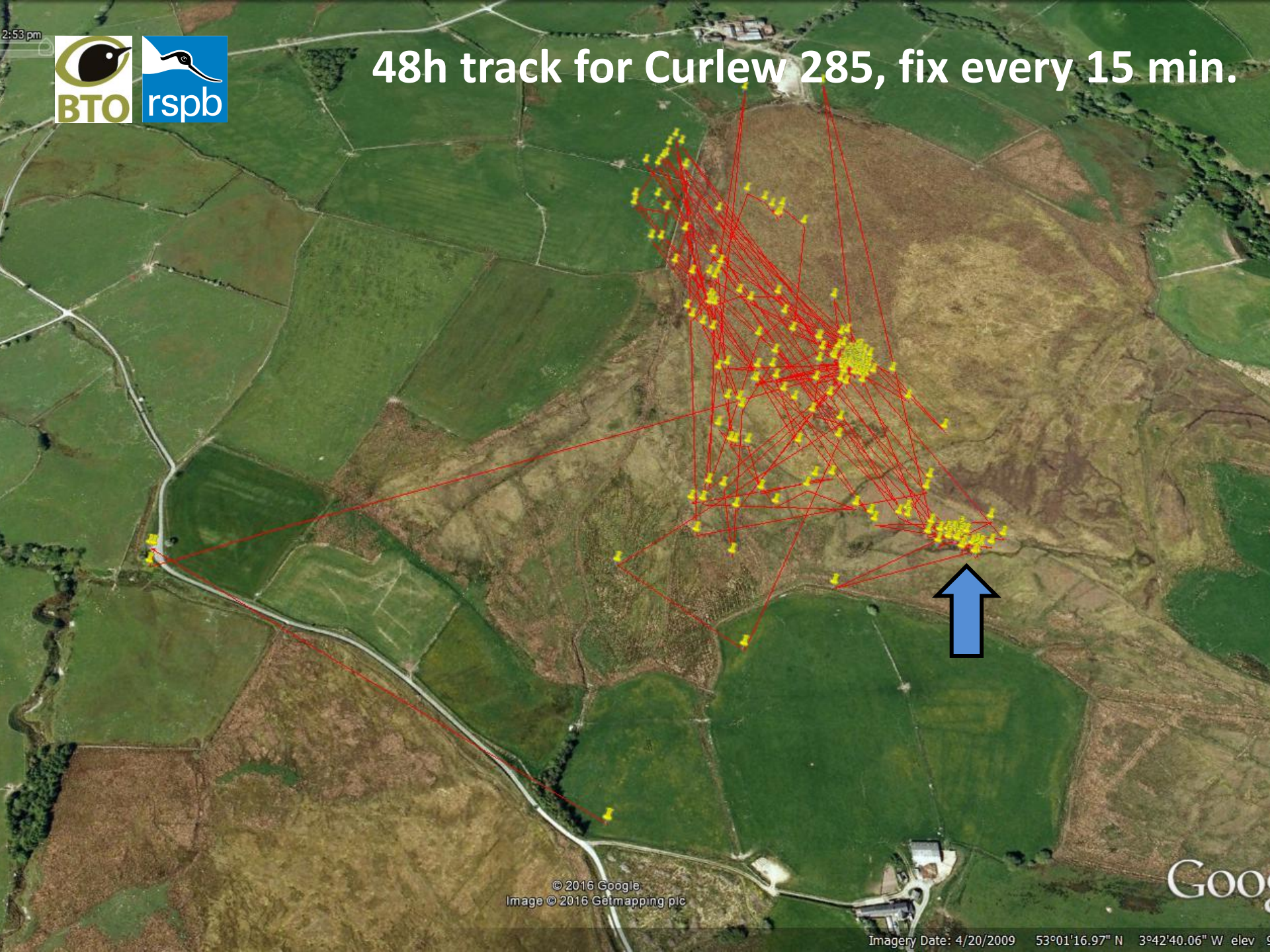
Tags recorded a location every 15 minutes until the battery ran out (2-4 weeks)

Tags “look” for a base station every hour: if in range they transmit their stored data to it





48h track for Curlew 285, fix every 15 min.





48h track for Curlew 301, fix every 15 min.



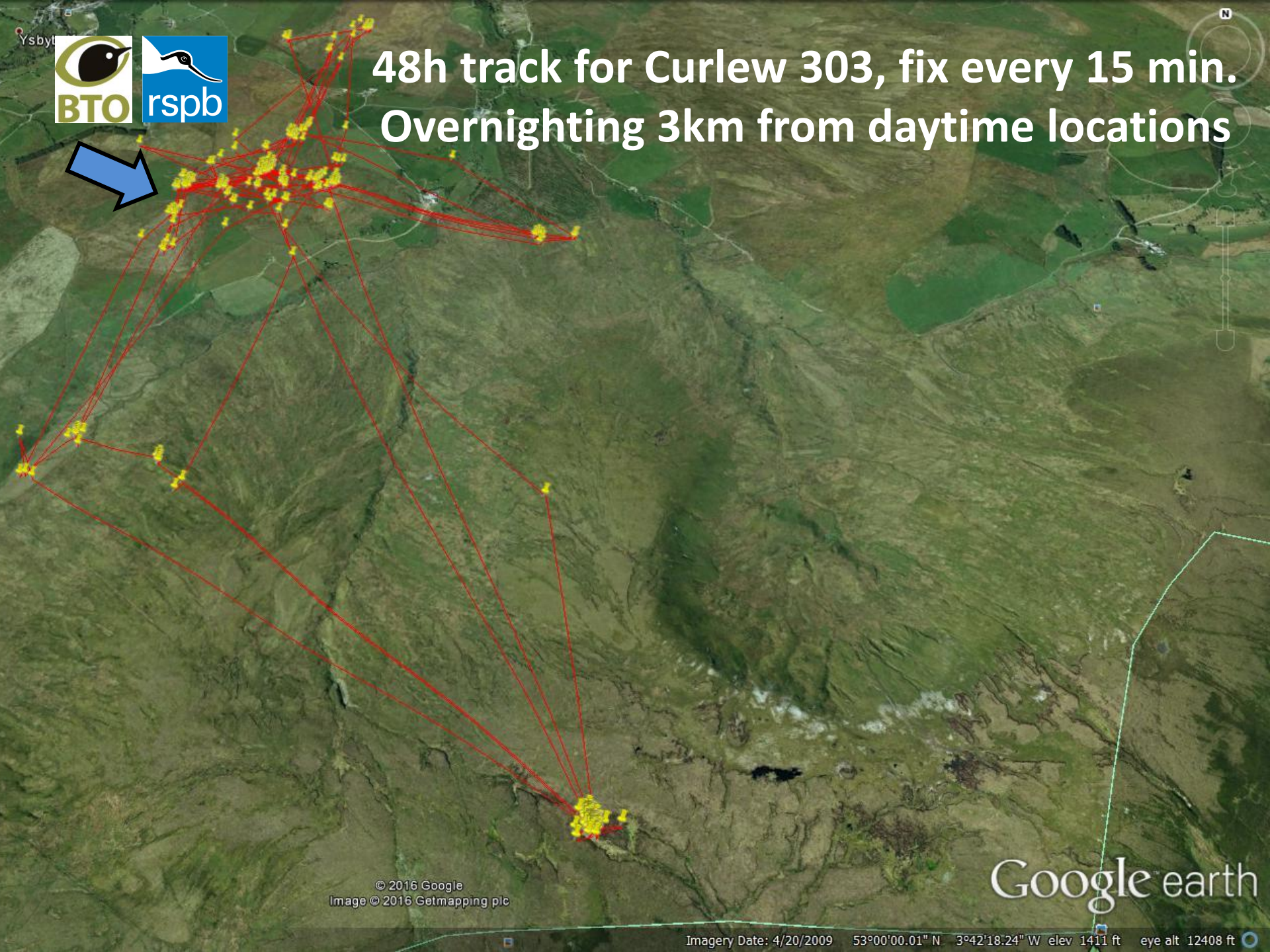
© 2016 Google
Image © 2016 Getmapping plc

Google

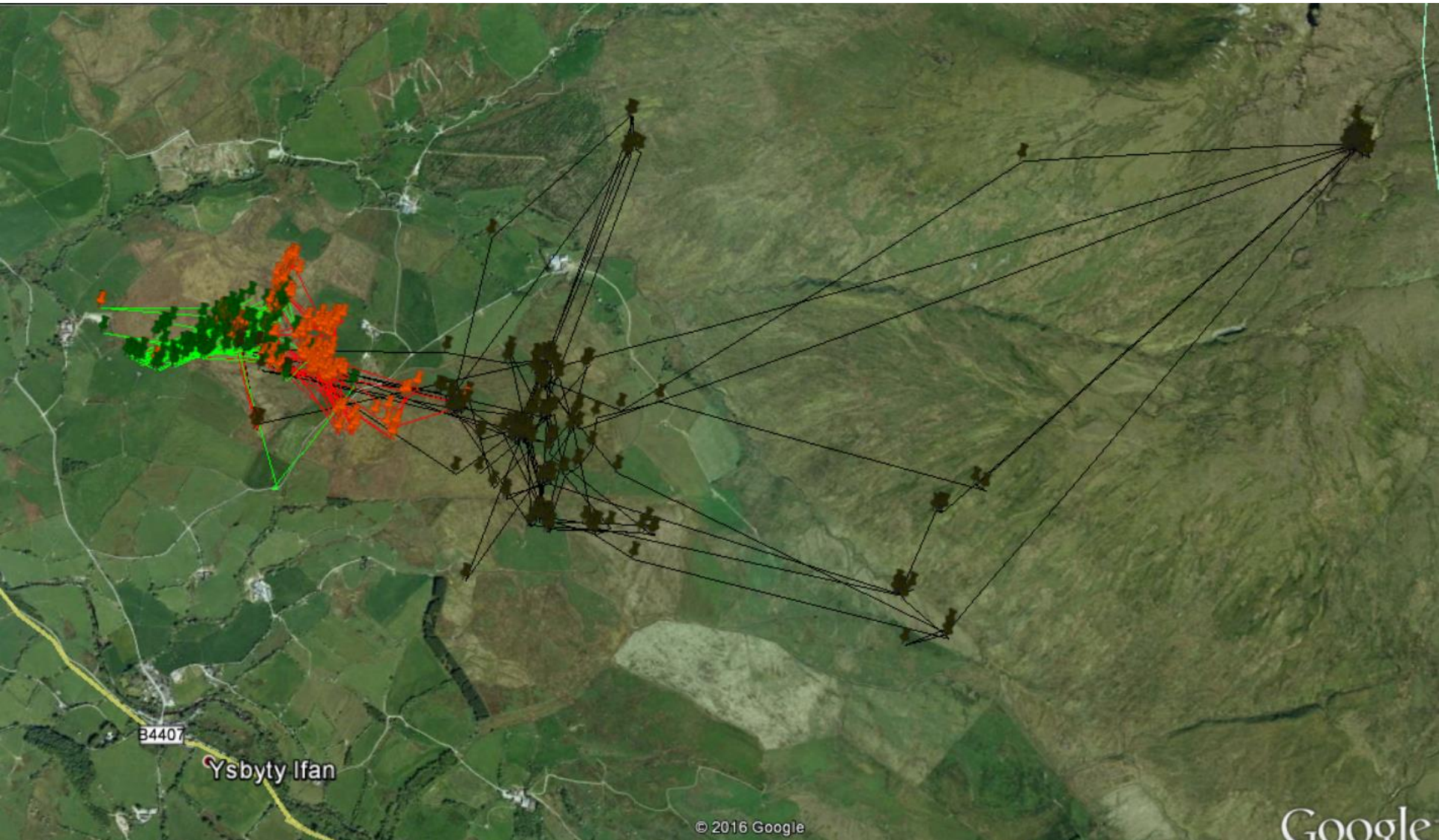
Imagery Date: 4/20/2009 53°01'10.32" N 3°42'40.07" W elev 999 ft



48h track for Curlew 303, fix every 15 min.
Overnighting 3km from daytime locations

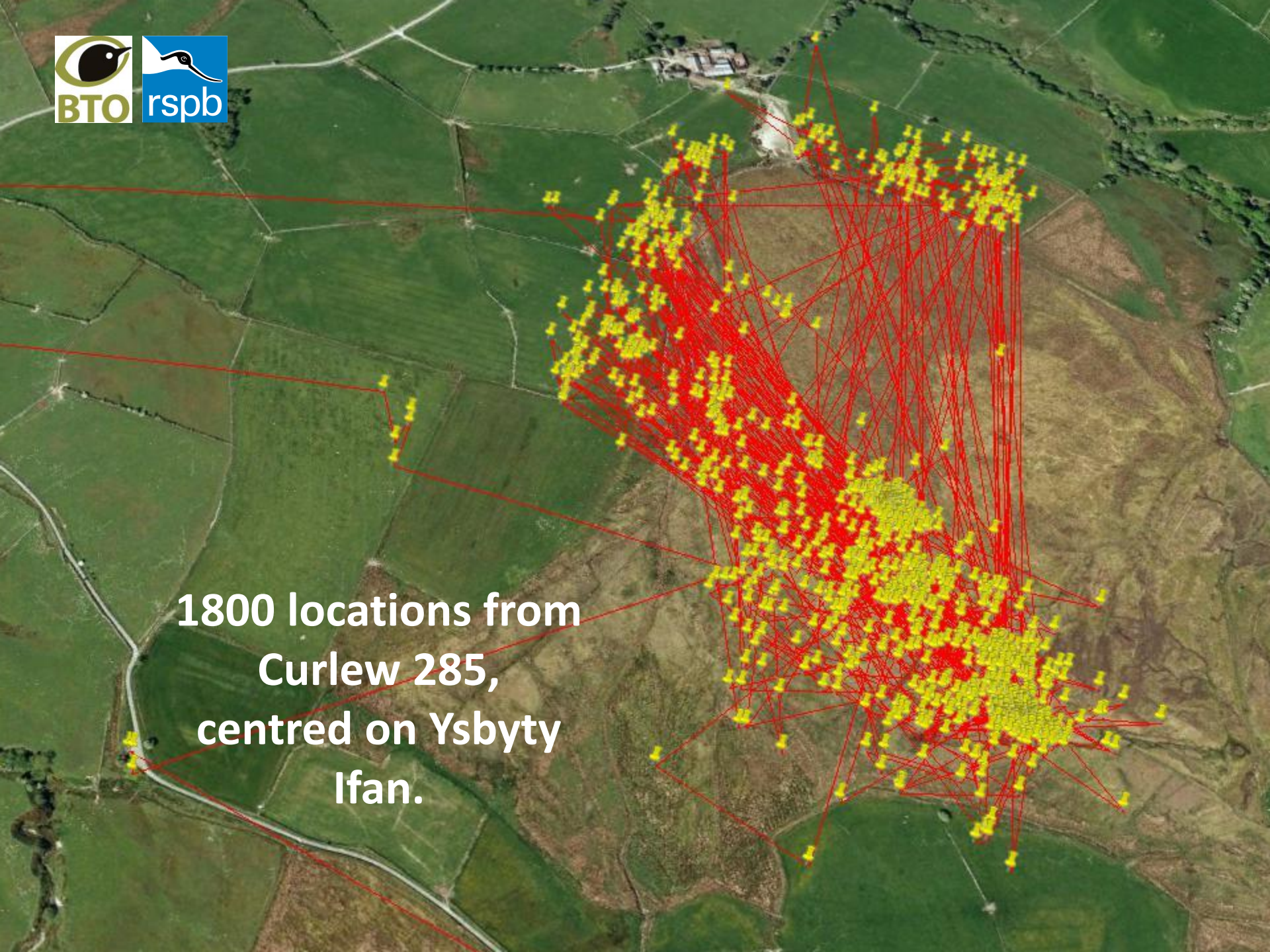


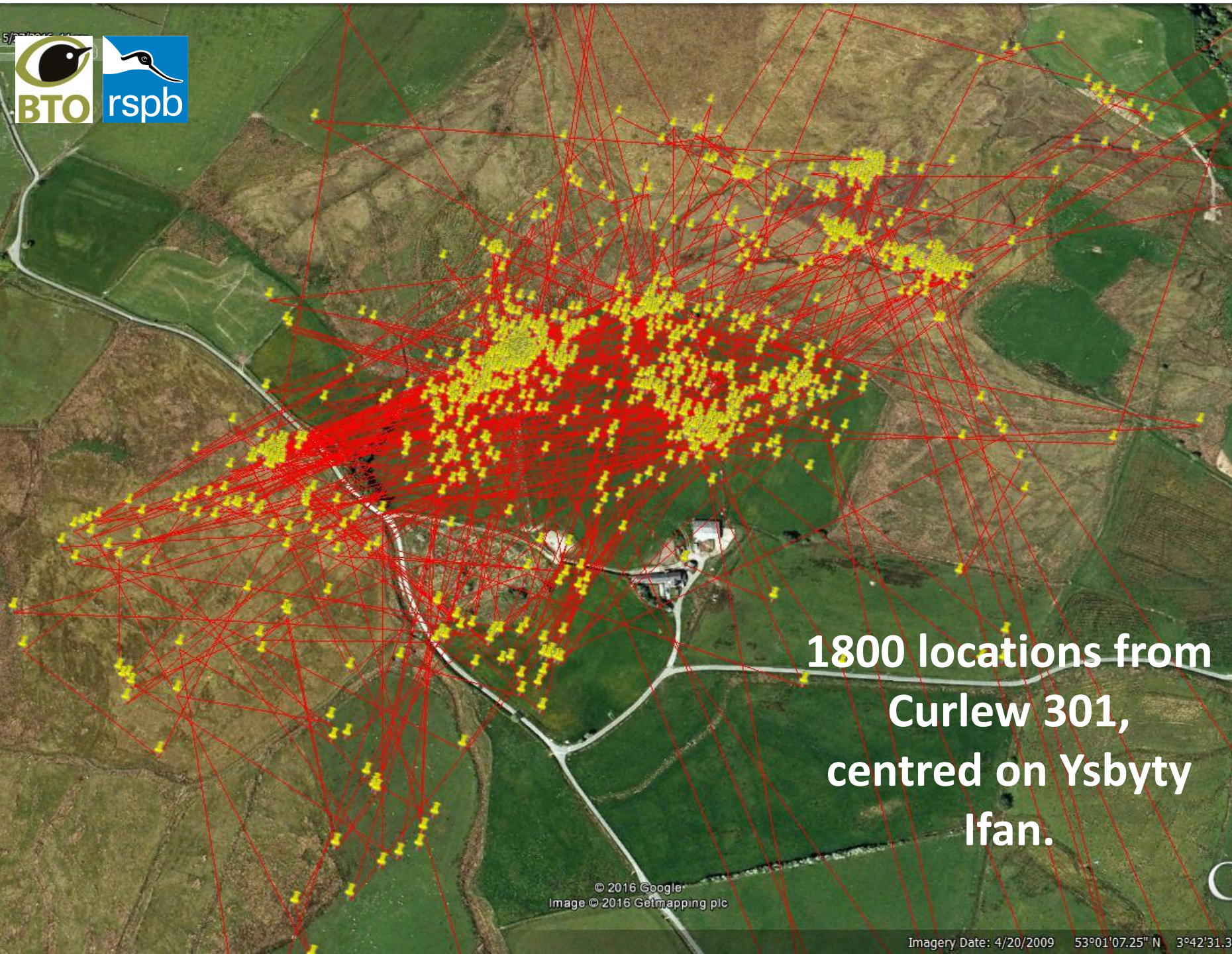
48h tracks from all three Curlew, fixes every 15 min.





1800 locations from
Curlew 285,
centred on Ysbyty
Ifan.





**1800 locations from
Curlew 301,
centred on Ysbyty
Ifan.**

5/25/2016 12:00

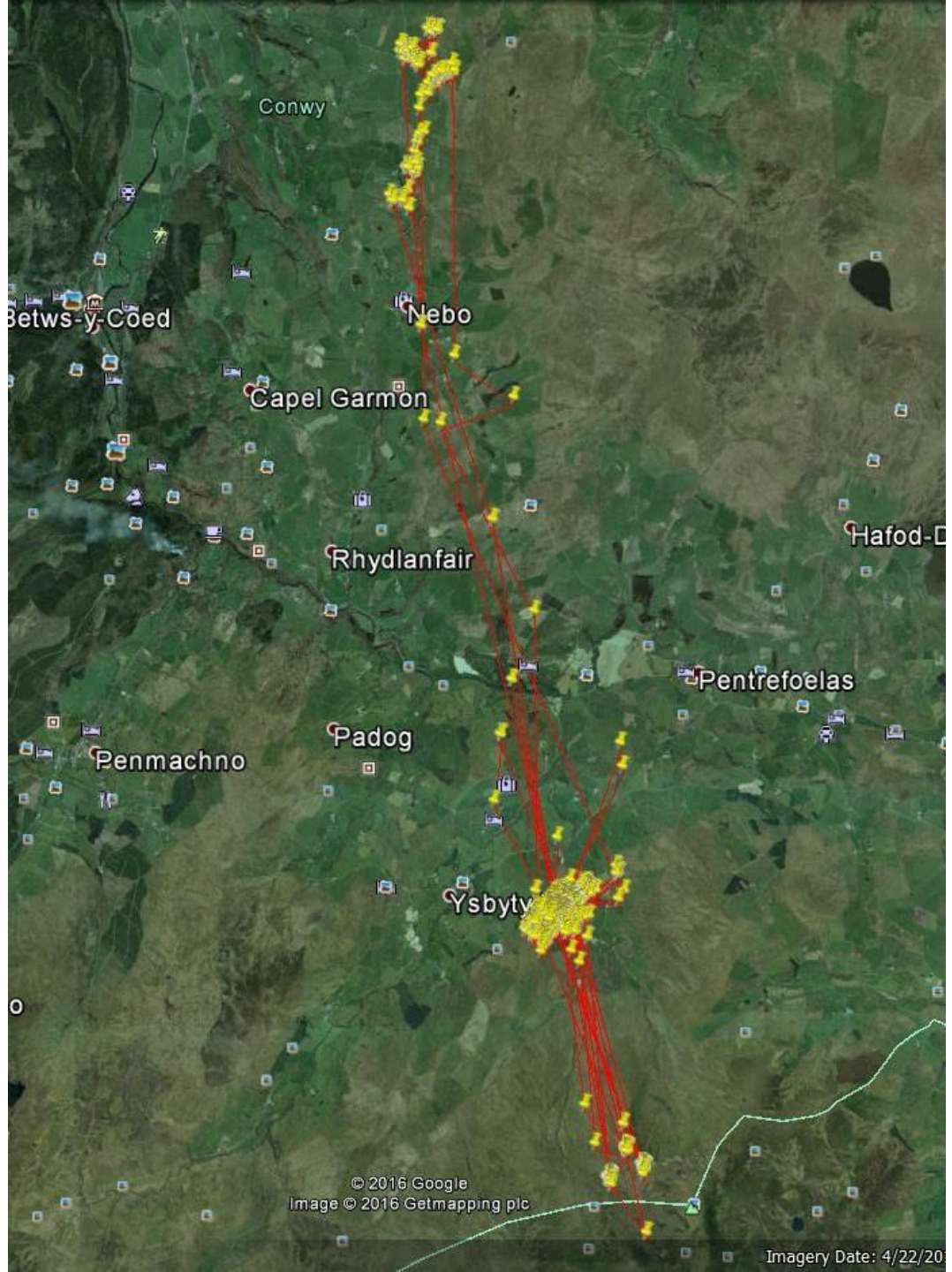


2400 locations from
Curlew 303,
centred on Ysbyty
Ifan.

© 2016 Google
Image © 2016 Getmapping plc

Imagery Date: 4/20/2009 53°00'56.45" N 3°42'39.70" W

1800 locations from
Curlew 285,
Travelling much
further than
Ysbyty Ifan.



5/25/2016 12:00



Padog

Rhydy

Ysbyty Ifan

2400 locations from
Curlew 303,
This birds was a
great traveller.

What did we learn?

- The tags work well on breeding Curlew: no evidence of any problems from the tag
- All the tagged birds used the whole area – several farms, many fields: including areas a long way from apparent breeding territory
- Some key sites and fields seemed important to all the birds – overlapping territories?
- NEWS! One of the Welsh Curlew has been seen in Cork Harbour (mid-July) after leaving Ysbyty Ifan.



Always more questions...

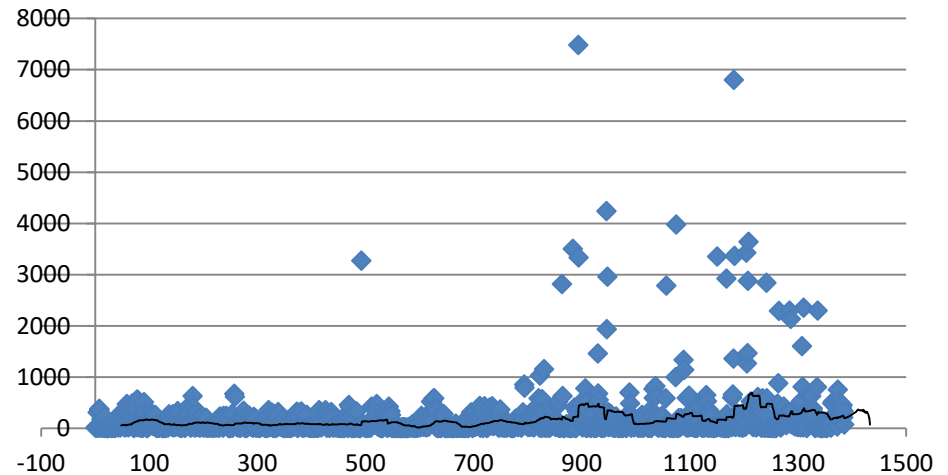
- Is Curlew breeding activity mediated by landscape structure?
- Why are they selecting individual places – food, water, plants, disturbance?
- Impacts of predators?
- Do males and females (different sizes and breeding roles) behave the same?
- We noticed how much feeding birds do on improved grassland. How do farmers' activities (land management, livestock) affect resources and territory size?



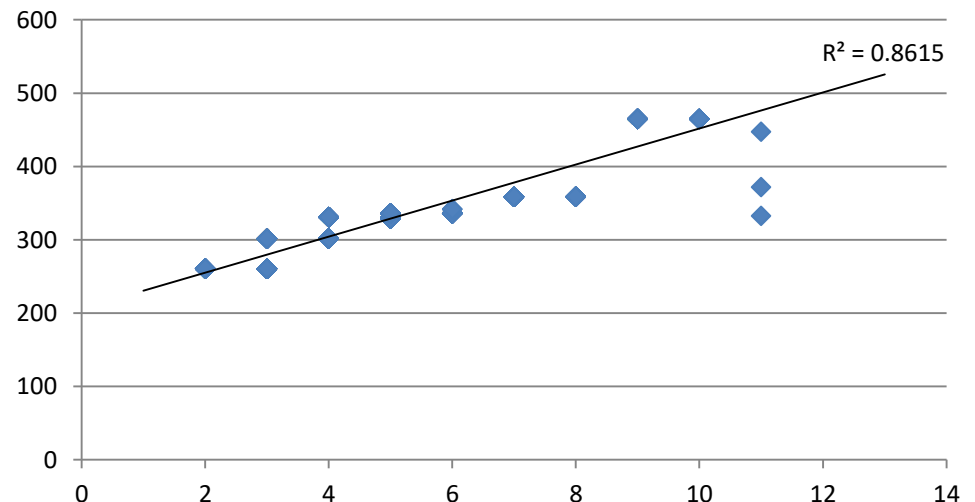
Some interesting results:

- Birds become abruptly more mobile partway through the season – this may pinpoint hatching date
- Territories overlap strongly in space, but individuals maintain a minimum distance (~250m) from each other, which increases as season progresses.
- Temporal rather than spatial territory separation?

Distance travelled between successive locations
(bird A)



24h mean daily minimum distance between birds
A and B



Future work – there's so much more to find out!

- Develop the tags – solar powered, different programming to give us better details
- Repeat the study – with a few more birds – to see how representative the results are
- Try tagging (a small number of) females
- Look for reasons for patch selection – vegetation mapping, insect sampling, water level measures, in places that birds visit often
- Consider a similar study tracking potential predators (crows, ravens, buzzards) so we can understand how they use the landscape too