



Our LiDAR Portal – A One Year Celebration!

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Our Citizen Science LiDAR portal has now been up and running for 1 year! 368 days ago we publicly launched the portal, a “first of its kind” in terms of making LiDAR data easily accessible for users to view and interpret. Since then just under 3,000 of you have registered on the website; 10,000 Citizen Science Records have been created, and our Reviewers have done a sterling job to date having turned those into over 3,000 records in the Master Database. In total our volunteers have spent well over 2,000

hours working on the portals!

There's still plenty of work to do though! Check out Ed's [blog post from June](#) showing where features have and haven't been located, and our Reviewers still have a small mountain of records to get through, so come to one of the training sessions, or drop in on a Mapathon, and join the fun!

Hillfort Fun Facts

Over thirty 'new' hillforts were discovered in Ireland last year because of drought conditions showing them up in fields.

Outstanding Citizen Scientists Celebrating our archaeological data specialists!

On 24 October, *Beacons of the Past* is teaming up with *Chalk, Cherries and Chairs* to present the first annual celebration of Citizen Science.

of such research at the regional and national levels, and how citizen scientists are championing the Chilterns across diverse subject areas.

Chilterns Champions: *Outstanding in their fields*



"Citizen Science is hugely powerful in helping us not only better understand our wildlife and heritage... I can't wait to join you on the 24th October to celebrate all of the great work you are doing across the Chilterns." - Chris Packham

This day-long free online event will present new findings and opportunities in wildlife, riverine, and heritage studies in and around the Chilterns.

Kicking off at 9.30 am with a keynote from **Chris Packham**, this conference gathers multiple experts and boots-on-the-ground volunteer voices to discuss key areas of citizen science work, the importance

If you are a LiDAR Portal Citizen Scientist, do come along and see just how much you are helping expand understanding and caring for the Chilterns.

Register for free on Eventbrite to get more details as they emerge!

<https://tinyurl.com/ChilternsChampions>

Venturing Beyond the Chilterns

Obviously you all love the Chilterns landscape, and hopefully lots of you have enjoyed exploring it and its archaeological features in our LiDAR portal. However, we understand that sometimes, just sometimes, an archaeological site you're interested in might lie outside the Chilterns. What do you do then? Lucky for you, there is a large, and growing, body of publicly accessible LiDAR data from across England, the wider UK, and the world!

(Before you read on, you must first make a promise that you'll come back to our little Chilterns survey once you've had fun fooling around with other datasets.)

At the end of June we held a workshop discussing how to find and make archaeological use of LiDAR data that is available in the wider world. We recorded the tutorial, and it is [now up on Youtube](#) so you can watch it in your own time, and follow along with the steps if you fancy giving this a go.

In England, the Environment Agency (EA) has been flying



LiDAR surveys since 1998. In November 2016 they announced that the LiDAR surveying was to continue as a "National LiDAR Programme" aiming to get complete coverage of England at 1 m-resolution by the end of 2021. As you can see from the map below, up to the end of 2019 a really large proportion of England has already been covered, over 75 % of the survey complete.

You can view the survey results as a nice, neat, easy to use web mapping service (WMS). I think the best place to look at it is on the [National Library of Scotland's "Side by Side" Map viewer](#).

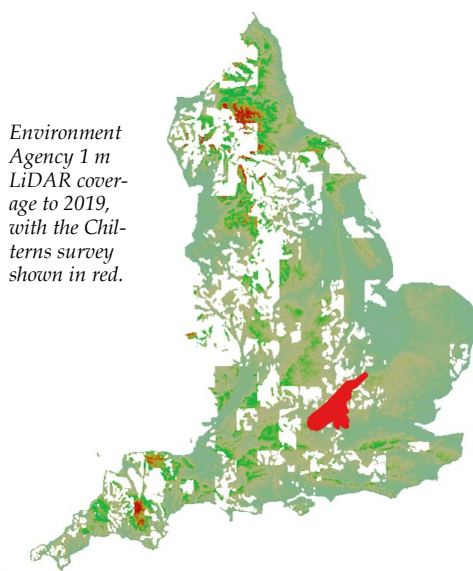
However, the symbology of this WMS, a colour ramp and a faint hillshade, is not ideal for bringing out subtle archaeological earthworks. If you have used the Chilterns LiDAR portal, you will know we use specialist visualisations, such as the "Local Relief Model" and the "Multi-directional hillshade," as these make many more sites visible. In order to turn the EA data,

or indeed data from anywhere else in the world, into these archaeological visualisations, we need to find, download, and process the files ourselves. This may sound like an overwhelming and scary task, and it does involve using GIS software, but the basic steps are actually very simple, and all of the data and software I show in the tutorial is free and open source.

The first step is to find and download the data you want, generally as "DTM" tiles. For England, you can use the [Environment Agency's download portal](#). A fantastic [list of datasets from around the world is maintained here](#).

Once you've got some tiles downloaded you might then need to merge them together in the free software [QGIS](#), before we run that tile through another piece of free software called "[Relief Visualisation Toolbox](#)." You should be left with lovely outputs to admire and study.

You can find the full tutorial on [Youtube here](#), and the [PDF of the slides here](#). Good luck and have fun, and feel free to share your creations with us on Twitter [@edpev7](#) and [@Hillfortian](#).



Environment Agency 1 m LiDAR coverage to 2019, with the Chilterns survey shown in red.

What's coming up?

What: [Mapathon](#)

When: Friday 18th September

It's that time again! - log on with the group to work together on the Citizen and Review Portals, with Ed Peveler and others around to bounce ideas, discuss difficult sites, and just generally enjoy some (remote) company. Sign up by clicking the link

Each issue, this area will list opportunities for getting involved in the Project.

(Additional events that arise between editions will still be sent out in emails)

What: A LiDAR walk with Dr Ed Peveler

When: Wednesday 28th October, 10am start

On this walk we will use our LiDAR survey data to explore the archaeology along our route, a c. 7 mile circuit taking in woods and grasslands around Greenfield, Watlington Hill, and Christmas Common. Along the way we will see prehistoric field systems, bodgers' saw pits, old enclosures, sunken ways, quarries, and much more, whilst exploring the beautiful hills and woods of this part of the AONB.

Numbers are limited, sign up through the Walking Festival [website](#), which is not yet live so save the date and watch the space!

Because of COVID-19 and the necessary restrictions on movement, we have postponed our hands-on works. However, there are still a lot of things to do from indoors, and Ed has done an amazing job of converting his face-to-face training sessions to an online remote format. Do sign up for some – they are well worth it, and will enrich your LiDAR portal experience!

HELP WANTED!!

Beacons of the Past is delighted to be working alongside a 'sister project' at the CCB, also generously funded by the National Lottery players. The *Chalk, Cherries & Chairs* Landscape Partnership Scheme has several projects looking at the heritage of the Central Chilterns. Heritage Projects Lead and archaeologist Sam Johansen is taking on volunteers for research into several areas, including the linear earthworks collectively known as Grims' Ditch as well as the sunken route ways that crisscross the Chilterns AONB and have myriad stories to tell!

[Volunteer for the Heritage of the Central Chilterns!](#)



We are teaming up with Sam to use our LiDAR portal to help volunteers discover more. Maybe you already work with LiDAR for #Chilforts—maybe you would be trying it for the first time! Sam has lots of great things in store for the next 3 years of the project, so sign up at the link to the left or drop him an email at sjohansen@chilternsaonb.org

Featured Feature: A New Hillfort?

Hillforts in the Chilterns seem to have a fairly regular distribution, with a few notable gaps. One of the things we had really hoped to discover through the Beacons of the Past project was an undiscovered hillfort. Early on in the project, Ed and I discussed the likelihood of this, and it did seem a remote possibility.

The Chilterns Hills are and have been for some time a highly attractive place for walkers—surely any earthworks not on the maps would be noticed. And the antiquarians who documented so many of our British hillforts (despite often misunderstanding them—how many ‘Caesar’s Camps’ are there?*) surely would not have missed anything so obvious as a hillfort.

Indeed, in our conversations, we decided that the only chance for a ‘new’ hillfort would be spotting a subtle one that had been mostly ploughed out, and thus had gone unnoticed—but also nearly destroyed.

So imagine our delight when one autumnal day, after poring over countless square kilometres of LiDAR visualisations, Ed turned to me in the office (oh, those carefree days when people worked in proximity in shared offices) and said, ‘How do you like this for a hillfort, then?’

First spotted by Ed, an earthwork in the southern Chilterns was then subsequently and completely independently identified

as a potential hillfort by several of our amazing Citizen Scientists.

It took some time to get in touch with the landowner, but once we did, they were very helpful. But alas, with lockdown looming, we were unable to conduct a site visit until finally, in early August, Ed and I were able to conduct an extensive walk-over survey.

The surviving earthwork consists of a bank nine metres wide and an external ditch seven metres wide; running over 500 metres in perimeter, it would have enclosed an area of about 3 hectares (7.5 acres).

Although one can never be certain of the age of a prehistoric earthwork without excavating for dating evidence, visual inspection of the rampart and ditch, paired with its location, dominating views in the landscape, give me the confidence to say this is very likely to be an Early Iron Age univallate hillfort. (c.800-500 BC)

There is no public access to the site, and the exact location of the hillfort is currently being withheld to protect sensitive



A view across the ditch with rampart to the right, and counterscarp to the left



Who is that masked man? Our very own Dr Peveler acting as human scale on the eastern rampart of the hillfort

archaeology and the landowner’s privacy. We are now actively engaged with the landowner to protect and preserve what remains.

The ‘Fun Fact’ on the cover of this issue mentions the number of Irish hillforts discovered last year—in open cropped ground, this is made a great deal easier. But it has been a long time since a ‘new’ hillfort has been discovered in Britain, and under tree cover, this would not have been possible without the LiDAR data. The confirmation of a new hillfort in the AONB coincides with the Online LiDAR Portal’s one-year anniversary, and we can’t think of a better way to celebrate.

** Many antiquarians attributed the hillforts they found to the Romans, and in Southern Britain, they were certain these were built by Julius Caesar as overnight camps on his (failed) march of ‘conquest’. Of course, we now know that the hillforts were constructed and indeed mostly out of use at least a century before Caesar crossed the Channel!*