

[Home](#) > [Publications](#) > [Geo UK](#)



Saving the last one per cent

Archived issues

Jump to a past issue



Subscribe today and stay ahead of the game!

£1 a Month - Online Pack

- access to online news & features
- unlimited access to archive
- benefit from exclusive events & offers
- e-News packed with latest news & what's on

[Join and Benefit](#)

**You now have 6 days left to read
the current issue for free...**

Clare Barber recounts how conservation of Europe's dwindling peatlands is being aided with a low-cost, high-accuracy toolkit based on Collector for ArcGIS

Ireland—the name is synonymous with lush green wetlands and raised bogs, sometimes also called peatlands. But in a country noted for its lush greenery, just 1% of the raised bog landscape remains in a near natural state.

“99% of these areas have been lost due to drainage associated with peat cutting or conversion to agricultural land,” says Dr. Patrick Crushell, director and senior consultant of Wetland Surveys Ireland (WSI)¹, a professional environmental consultancy based in Kenmare, County Kerry. “It’s a big battle to conserve peatlands in Ireland but the pressure from Europe to do so is substantial,” he adds. The reason why is that they represent Europe’s last remaining peatlands and exemplify some of the world’s best peatland biodiversity. Peat is also an ecosystem for purifying water and helps naturally mitigate flooding through water absorption.

Monitoring the one per cent

Monitoring the health of these wetlands requires the extremely accurate collection of vegetation data over a long period for comparison purposes. Surveyors, such as those employed by WSI, monitor the growth or decline of certain indicator species such as Sphagnum mosses. Crushell explains: “A high coverage of these species implies the area has sustained its water table—and sustained it throughout the year. It implies it’s in good condition, or not drying out.”

Ireland’s National Parks and Wildlife Service² recently asked WSI to gather and provide sub-meter accuracy data for its vegetation monitoring. “Having this extra level of accuracy supports the evidence base that will convince policy makers of the need to conserve these last remaining areas,” says Crushell. And while WSI had used all-in-one monitoring devices in the past for data collection, they had proved expensive and required replacement every few years. “They weren’t future proof,” notes Crushell.

Against this background, WSI sought a more sustainable, future-proof solution ... one that would allow field personnel take advantage of the devices and software they already used.

A tried-and-tested app

For the past five years, WSI had been using iPhones and iPads with Esri’s Collector for ArcGIS to record field data. Its staff were already familiar with the Collector interface and particularly liked the ease with which they could input large quantities of text notes. As such, WSI had a strong preference to continue using Collector on its iOS devices. There were other reasons too, says Crushell. “You don’t have to replace your device every few years; the software is continuously updated; it works on any device in our pocket, and the iPhone touch screen is less cumbersome than some other devices.” Not least, Collector makes it easy to create forms on iOS devices.

6

DAYS

7

HRS

36

MIN

52

SECS

[View Issues](#)

or [subscribe](#) for £1 to read at anytime!

- ## Online News
- Saudi Ministry of Interior Supports Hajj and Umrah Safety with Hexagon**

25 October 2017 • 4:26pm
- New Supply-Chain Accessories for the NAUTIZ X2**

25 October 2017 • 11:18am
- Bluesky's Tree Map Helps Community Forest Rebuild Environment**

25 October 2017 • 9:51am
- VSTEP provide CAE with bridge simulators for UAE Naval Training**

Another big advantage, says Crushell is that Collector permits working in disconnected environments. "In peatlands, you're in the middle of nowhere most of the time, with limited cell phone coverage. With Collector, we can access our data offline, view aerial imagery, record data and synch it at the end of the day when back at the office. It's something we do all the time."

The only downside was that the iOS GPS chip provided locational accuracy to little better than five meters. To satisfy the National Parks and Wildlife Service's new requirement for sub-meter accuracy, WSI needed a suitable solution and ideally one that could override the iOS devices' native location data and communicate with Collector.

Hitting the bullseye

After extensive product evaluation, WSI tested the Arrow 100 GPS receiver in a week-long trial survey of remote blanket bogs in western Ireland. The Arrow 100 is made by EoS Positioning Systems of Canada³, a provider of extremely high-accuracy GPS/GNSS receivers and related apps and an Esri Silver Tier partner.

WSI worked with Eos's UK distributor, MGISS⁴, to acquire the small, portable receivers that operate with the European Geostationary Navigation Overlay Service (EGNOS), a free European satellite-based augmentation system⁵. In operation, the Arrow 100 receives a differential correction signal from EGNOS, sends this to the iOS device via Bluetooth, and automatically overrides the device's native GPS with this far more accurate positional data.

Indeed, during the trial survey, field personnel consistently reported accuracy levels of between 0.2 and 0.7 meters. In practical terms, this means the team can measure the location of, say, Sphagnum moss and return weeks, months, or even a year later with the certainty that they are within a meter of the spot previously surveyed. "An accuracy level of five meters would skew our results quite seriously, so this five-fold improvement eliminates uncertainty in our monitoring and builds a higher degree of confidence," says Crushell.

In addition to accuracy, WSI noticed that Collector and Arrow 100 communicated easily through Bluetooth, and that its battery lasted all day. "This saves us a fortune," enthuses Crushell, who is even more pleased that the solution is future proof and won't need replacing any time soon."

Today, WSI continues monitoring the health of the bog ecosystem with Collector, iOS, and Arrow 100, ensuring progress in the fight to conserve Ireland's last remaining wetlands.

"Overall, we are very happy with the operation of the solution," concludes Crushell. He accepts that while the cost was significant, it was still more affordable than purchasing a stand-alone device running a proprietary operating system and software and which, as he notes, would have failed to generate a Return on Investment.


Web Links

Centre

24 October 2017 • 5:56pm

Globalstar IoT Solution Protects Norway Reindeer from Train Collisions

24 October 2017 • 4:34pm

 • [What is RSS?](#) • [More Online News...](#)



Online Articles

Going Digital for the Digital Enterprise

23 October 2017 • 1:06pm

Going underground

05 October 2017 • 2:30pm

Growing a global reach


01 September 2017 • 1:55pm

Back to the future at Vexcel Imaging

25 August 2017 • 3:50pm

The best of both worlds

25 August 2017 • 3:36pm

 • [What is RSS?](#) • [More Online Articles...](#)

¹.<http://www.wetlandsurveysireland.com>

².<https://www.chg.gov.ie/heritage/national-parks-wildlife/>

³.www.eos-gnss.com/en/

⁴.<https://mgiss.co.uk/>

⁵.<https://www.egnos-portal.eu/>

Clare Barber is Sales and Marketing Executive at MGISS based in Liverpool (<http://mgiss.co.uk>)

Topics:

Sectors:

Download a PDF of this article...



Download PDF

Share this article:

Email to friend

Like 0 tweet

Subscribe to the Magazine...

Subscribe to GeoConnexion Magazine

Sign Up Now! Free GeoConnexion Newsletter

Enter your email address

Go!

[View latest newsletter](#)

GeoConnexion

**Most Popular
Article Topics**

**Most Popular
News Topics**

Event Categories

Conferences

More...

About GeoConnexion

PO Box 594
Cambridge
CB1 0FY
United Kingdom

Tel: + 44 (0)1223 279151
Fax: + 44 (0)1223 279148
Email: info@geoconnexion.com

Follow GeoConnexion...



On Facebook



On Twitter

Asset Management
Environmental Monitoring
LiDAR
Location-Based Services
Mobile GIS
Municipal GIS
Open GIS
Remote Sensing
Utilities GIS
Web Mapping & Social
Networks
View more articles...

3D Visualisation
Data Capture
GIS - Geographic
Information Systems
GMES
GNSS
INSPIRE
Laser Scanning
Mapping Software
Remote Sensing
Web Mapping
View more news...

Exhibitions
GIS Awards
Seminars/Workshop
Social Events
Webinars
View more events...

Contingency Today
Advertising
Media Info
Terms and Conditions of
Website
Privacy Policy
Contact Us

Copyright © 2012 GeoConnexion • PO Box 594, Cambridge, CB1 0FY, United Kingdom • Tel: + 44 (0)1223 279151 • Fax: + 44 (0)1223 279148
Email: info@geoconnexion.com • Registered in England and Wales (No.4324955) GeoConnexion
Website design, development and hosting by Burnthebook

Secure payments by 