



Local raptor monitoring

Dr. Ben Darvill (BTO Scotland)

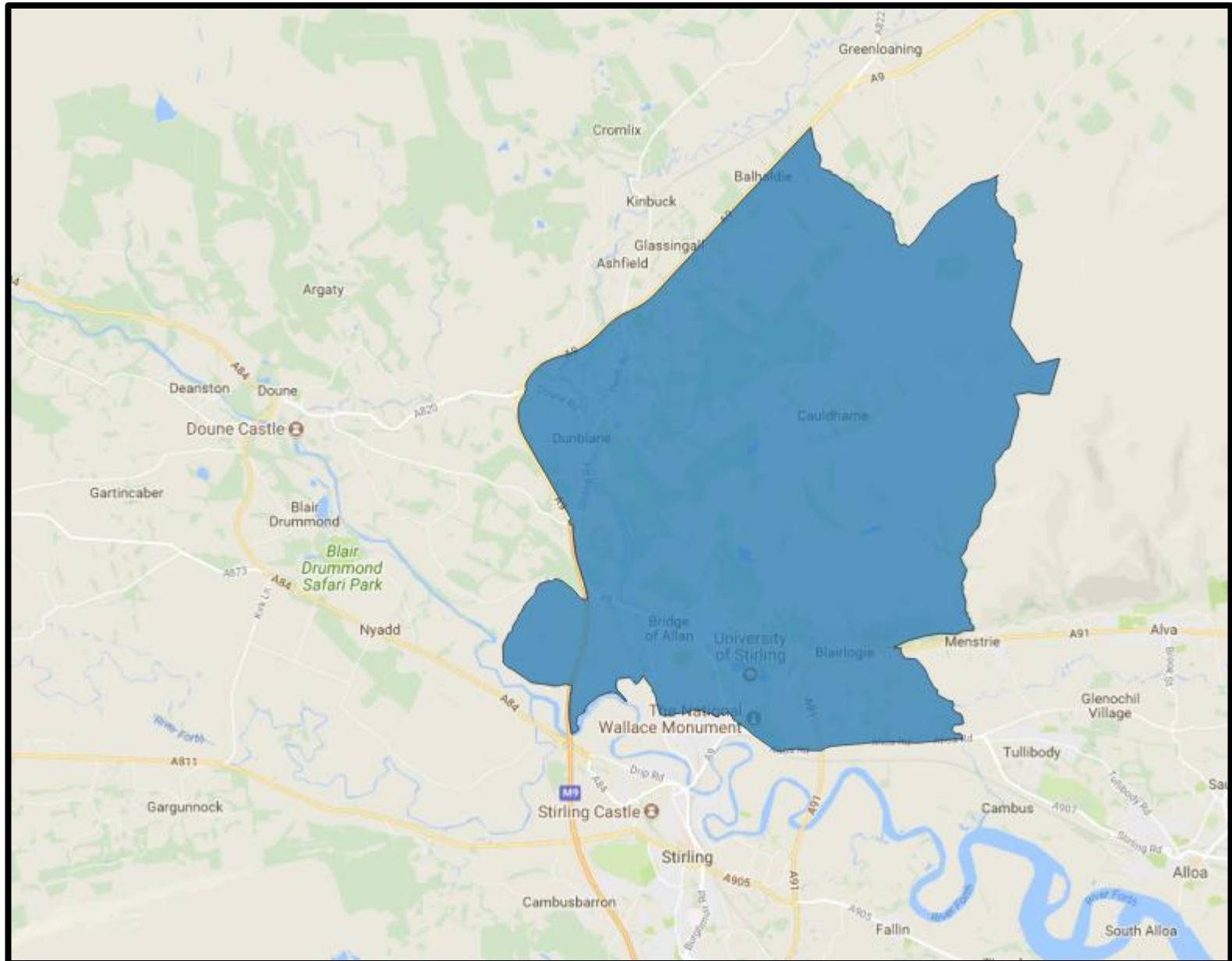
Introduction to the study area



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Species found within the study area



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Why?

- To contribute to regional and national trends in numbers, range, survival and productivity
- To understand causes of change
- And... because it's fun!



What does our
raptor monitoring
involve in practice?

RAPTORS

A FIELD GUIDE FOR SURVEYS AND MONITORING



Jon Hardey Humphrey Crick Chris Wernham
Helen Riley Brian Etheridge Des Thompson

Third edition

Breeding season visit schedule:

Visit	Aim of visit
1	To establish occupancy of a home range
2	To check for breeding by locating active nests
3	To check for successful hatching (& ring chicks)
4	To measure breeding success by counting fledged young

What we may often be missing...

Initial results – all species, territories occupied by pairs

Species	Year		
	2015	2016	
Red Kite	1	1	1
Buzzard	17	39	39
Sparrowhawk	0	1	7
Peregrine	1	1	1
Kestrel	3	1	6
Long-eared owl	1	1	10
Short-eared owl	0	0	6
Barn owl	0	0	1
Raven	3	5	2
Total	23	49	72



Location of all nests (2017)



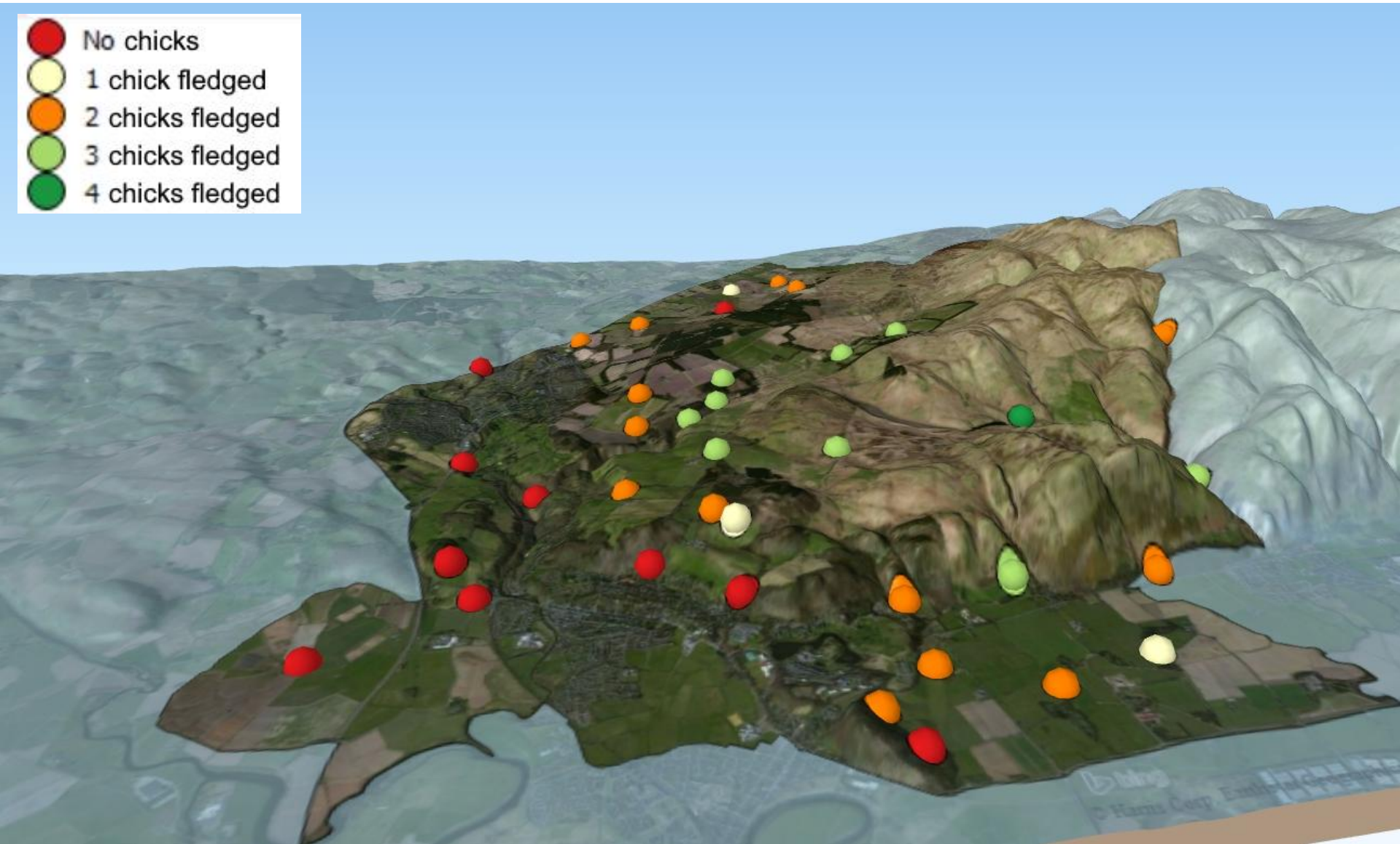
- ★ Barn Owl
- Common Buzzard
- Common Kestrel
- Eurasian Sparrowhawk
- Long-eared Owl
- Northern Raven
- Peregrine
- ◆ Red Kite
- Short-eared Owl

Initial results - Buzzards

Variable	Year		
	2015	2016	2017
No. checked	18	44	46
No. occupied	17	39	39
No. successful	13	23	27
Total no. fledglings	24	38	62
Mean no. fledglings per successful nest	1.85	1.65	2.3
No. ringed	15	32	62



The effect of a good vole year?



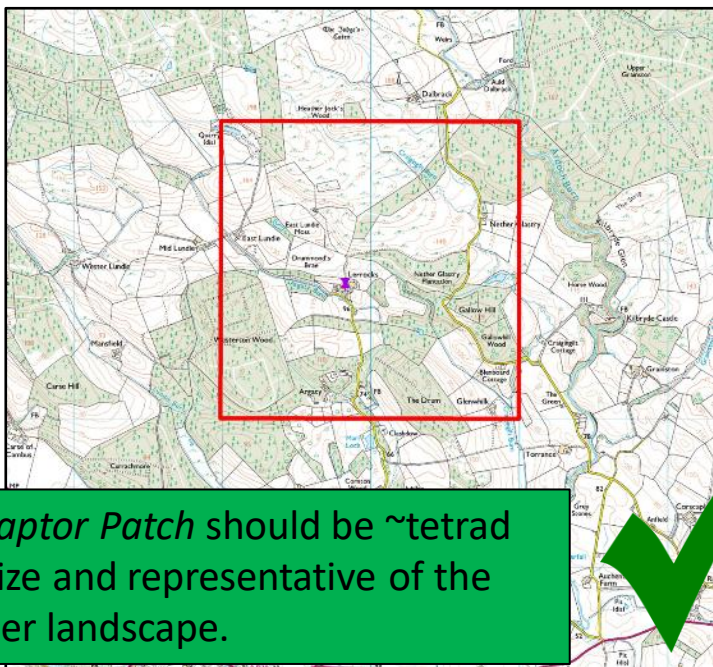
An aerial photograph of a landscape, likely a wetland or riparian area, composed of numerous irregular, interlocking polygonal patches. The patches are outlined in black and contain various shades of green, brown, and tan, representing different land cover types such as fields, forests, and water bodies. A central black rectangular box contains the text "Raptor Patch" in white. The overall shape of the mosaic is roughly circular with many protrusions and indentations.

Raptor Patch

The *Raptor Patch* approach...

The *Raptor Patch* approach...

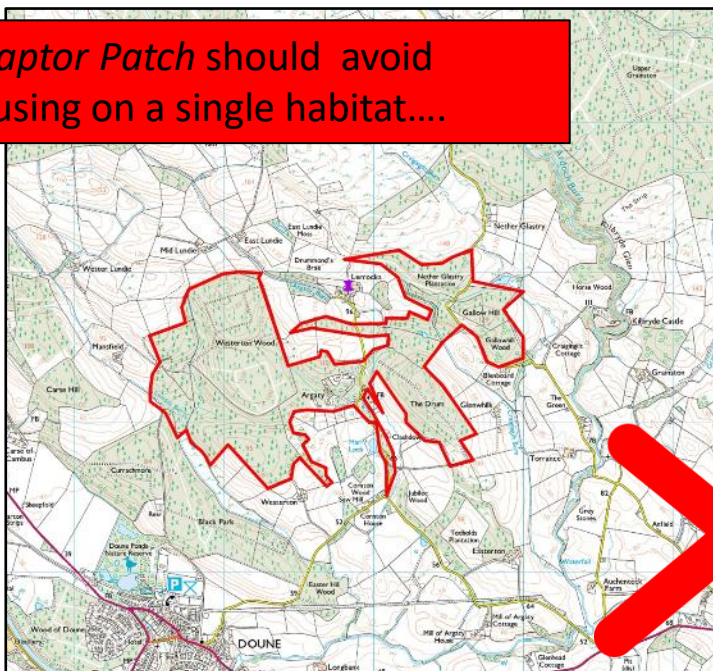
- **Complete coverage** of an area, i.e. to find every breeding pair of the species.
- To **sample areas that represent the wider landscape.**
- Keep it **manageable!**



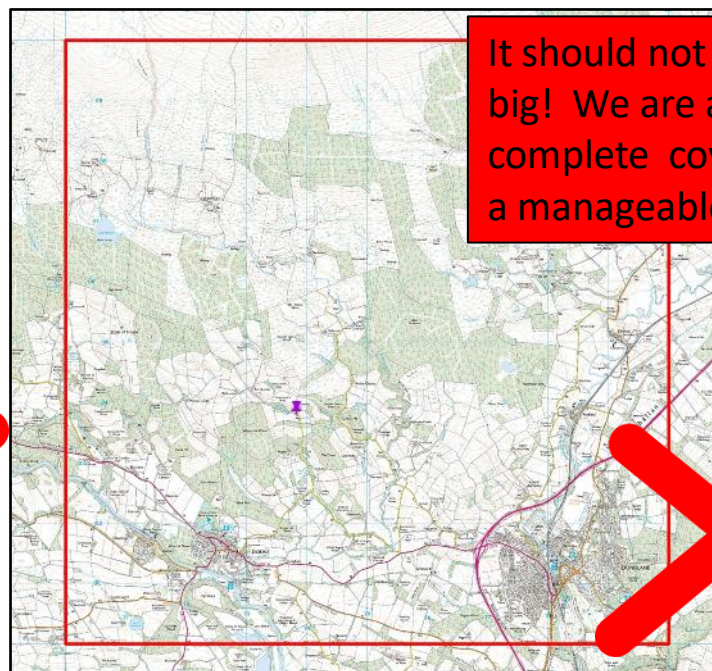
A Raptor Patch should be ~tetrad in size and representative of the wider landscape.



....it can be irregular in shape and follow physical features



A Raptor Patch should avoid focusing on a single habitat....



It should not be too big! We are aiming for complete coverage of a manageable area

Raptor Patch

A new survey brought to you by the
Scottish Raptor Monitoring Scheme



Can you help with your local piece of the
Scottish raptor jigsaw?

Raptor Patch

A new survey brought to you by the
Scottish Raptor Monitoring Scheme



Getting Started

Raptor Patch

A new survey brought to you by the
Scottish Raptor Monitoring Scheme



My Raptor Patch

<http://raptormonitoring.org/getting-involved/raptor-patch>

Species found within the study area



SHORT-EARED OWLS



Direct observations
n = 27 territory-years
2006-07

Calladine *et al.* 2010
Bird Study 57: 89-99



VHF radio-telemetry
n = 4 birds
2011

Calladine & Morrison 2013
Bird Study 60: 44-51

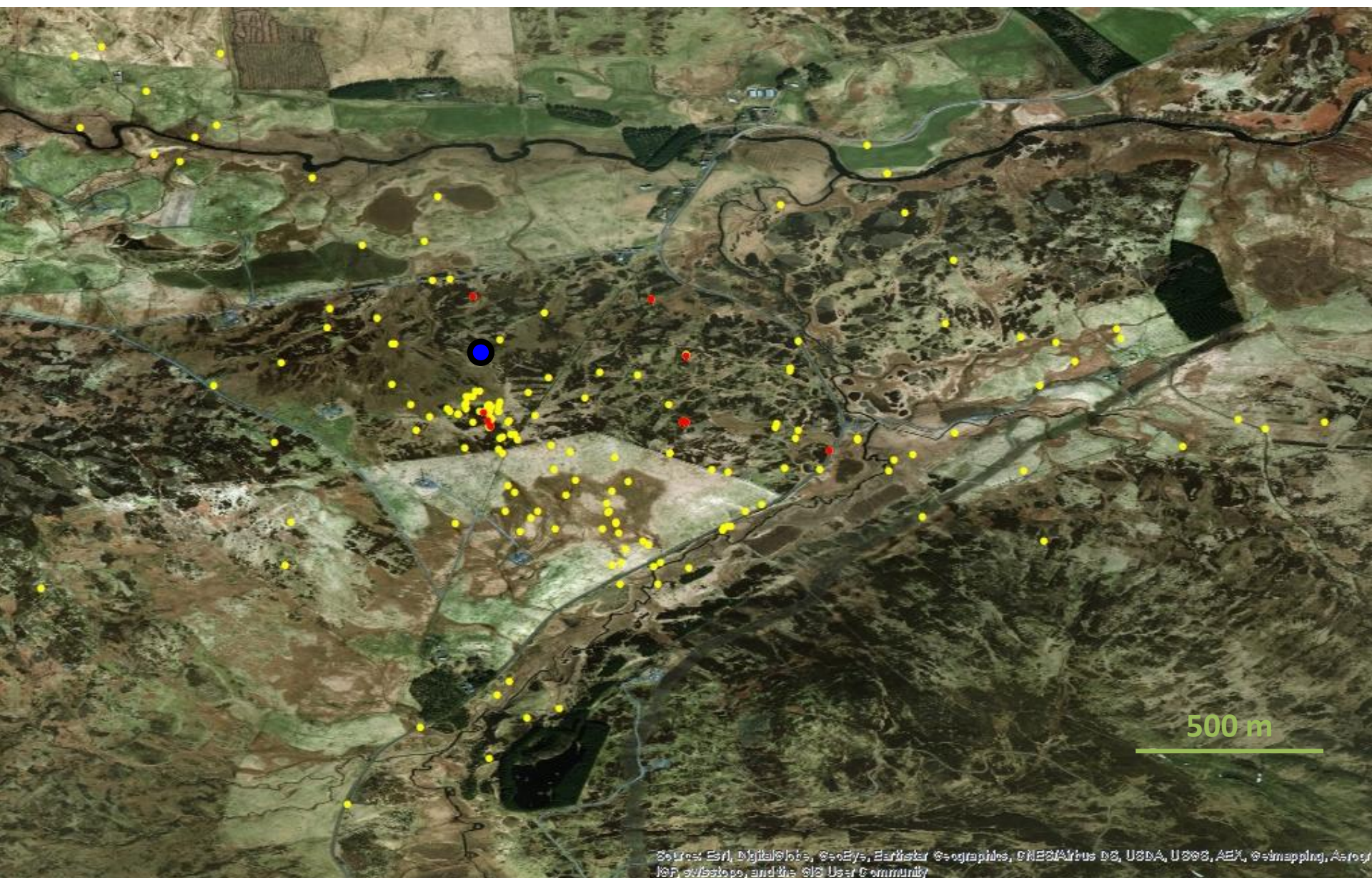


GPS-Satellite telemetry
n = 7 birds
2017-18

Ongoing

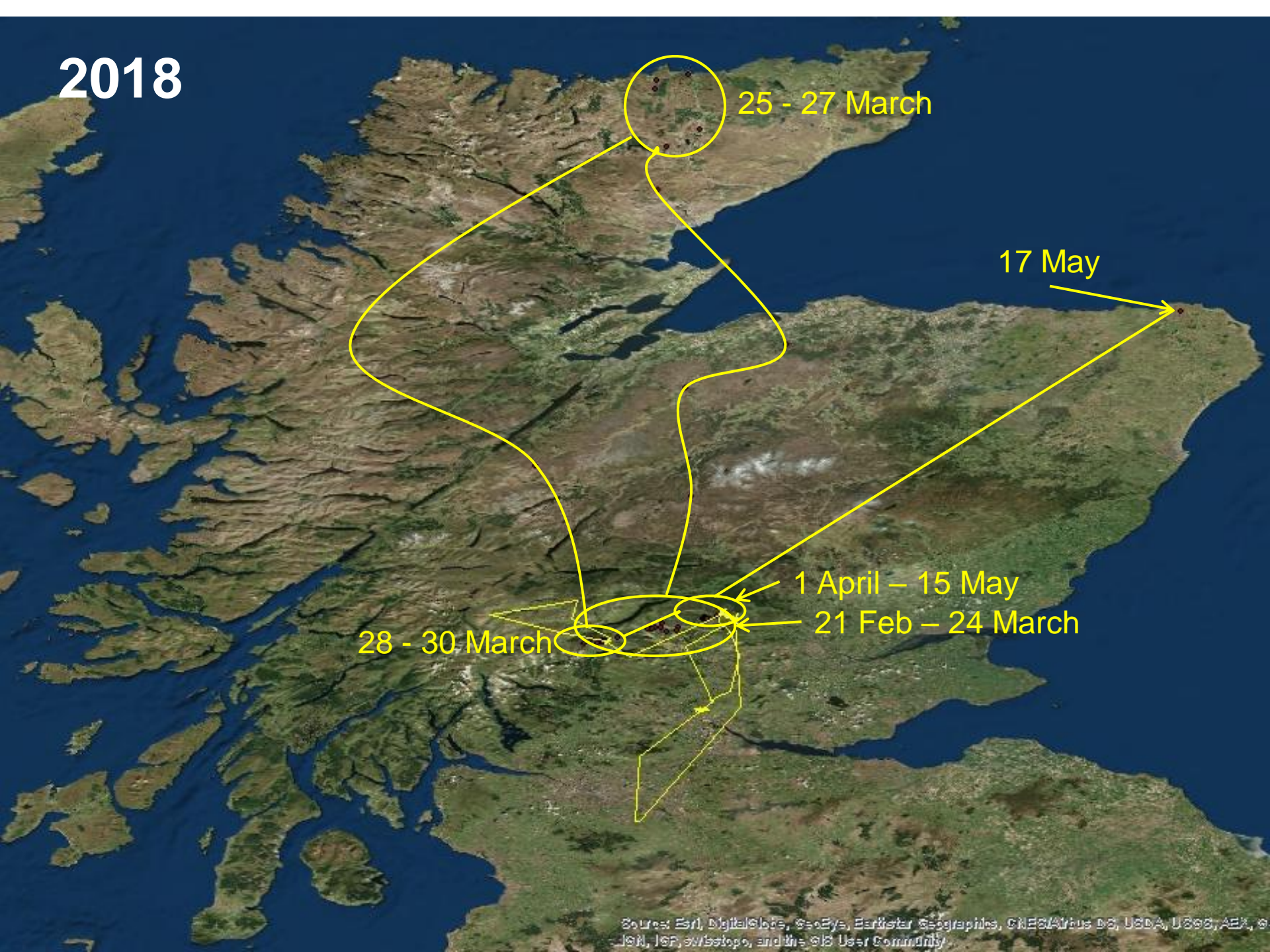


Female, May 2017



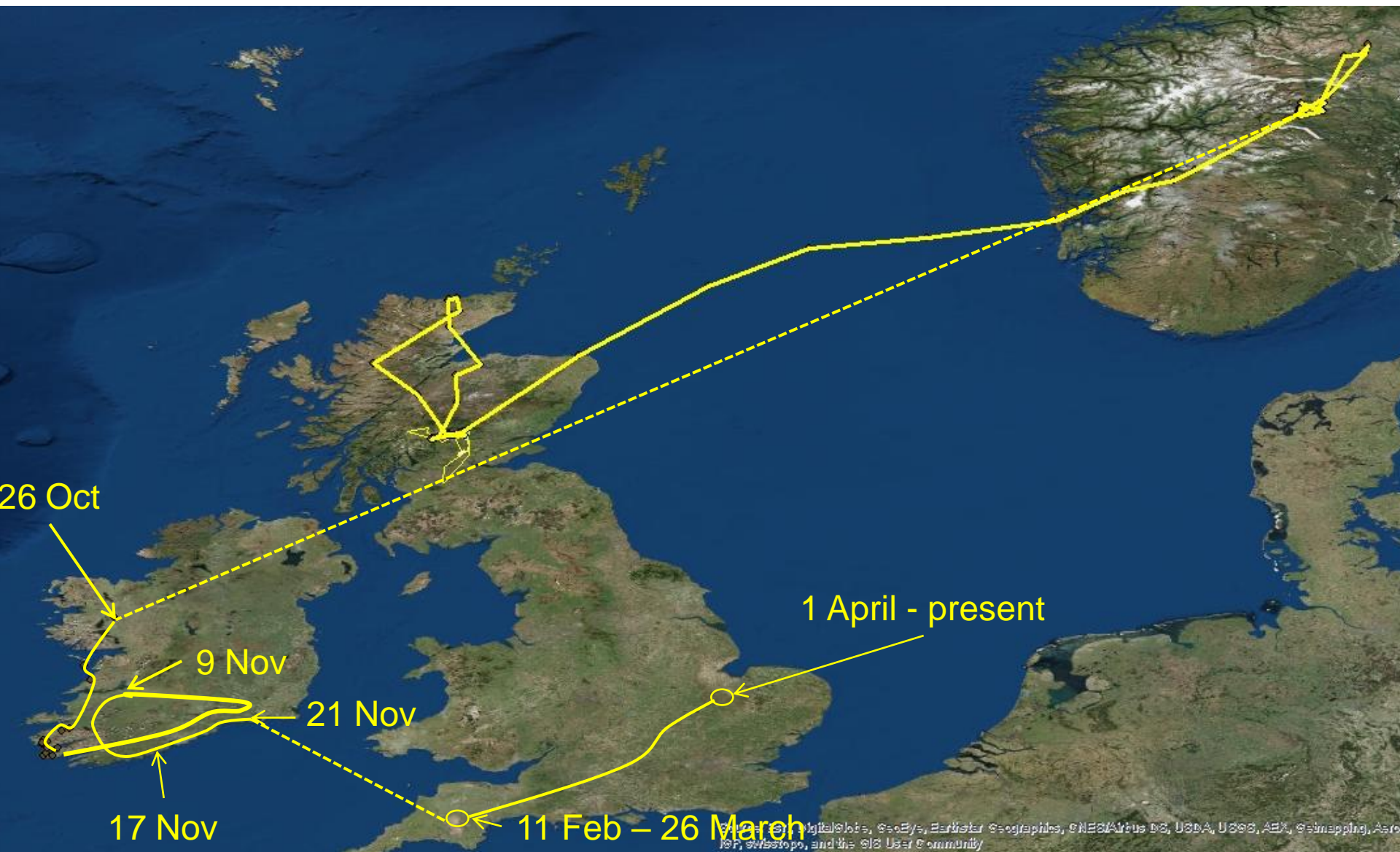
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroX, GeoMapping, Aerox, IGN, swisstopo, and the GIS User Community

2018



2018





Thanks for listening!

- Thanks also to photographers – Alex Mckerracher, Steven Mcgrath (Urban Wildlife Photography)
- and Landowners

