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THE SABAP2 "FOUR DEGREES BLUE" PROJECT: THE CHALLENGE TO OBTAIN AT LEAST 11 CHECKLISTS IN 576 PENTADS

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PROJECT REPORT

THE SABAP2 "FOUR DEGREES BLUE" PROJECT: THE CHALLENGE TO OBTAIN AT LEAST 11 CHECKLISTS IN 576 PENTADS

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Introduction

The Second Southern African Bird Atlas Project (SABAP2) started on 1 July 2007 and is ongoing (Underhill & Brooks 2016). The SABAP2 area includes South Africa, Lesotho and Swaziland. The project aims to map the distribution and relative abundance of bird species in this area.

An area centred on Gauteng has become known as the "Four Degrees". These are the four one-degree grid cells 25S 27E ("northwest"), 25S 28E ("northeast"), 26S 27E ("southwest") and 26S 28E ("southeast"), and are referred to as Greater Gauteng. The area contains 576 pentads, of which 270 are in Gauteng (actually less than half), and the remainder are in Limpopo, North West, Free State and Mpumalanga. Gauteng alone is home to 25% of South Africa's population (Statistics South Africa 2015), so the Four Degrees are probably home to about 30% of the population of South Africa and the need for careful monitoring is great (Underhill & Brooks 2016). This is an area which is rapidly urbanising.

The "Four Degrees Yellow" challenge is an ongoing annual attempt to atlas each of the 576 pentads at least once every year, so that

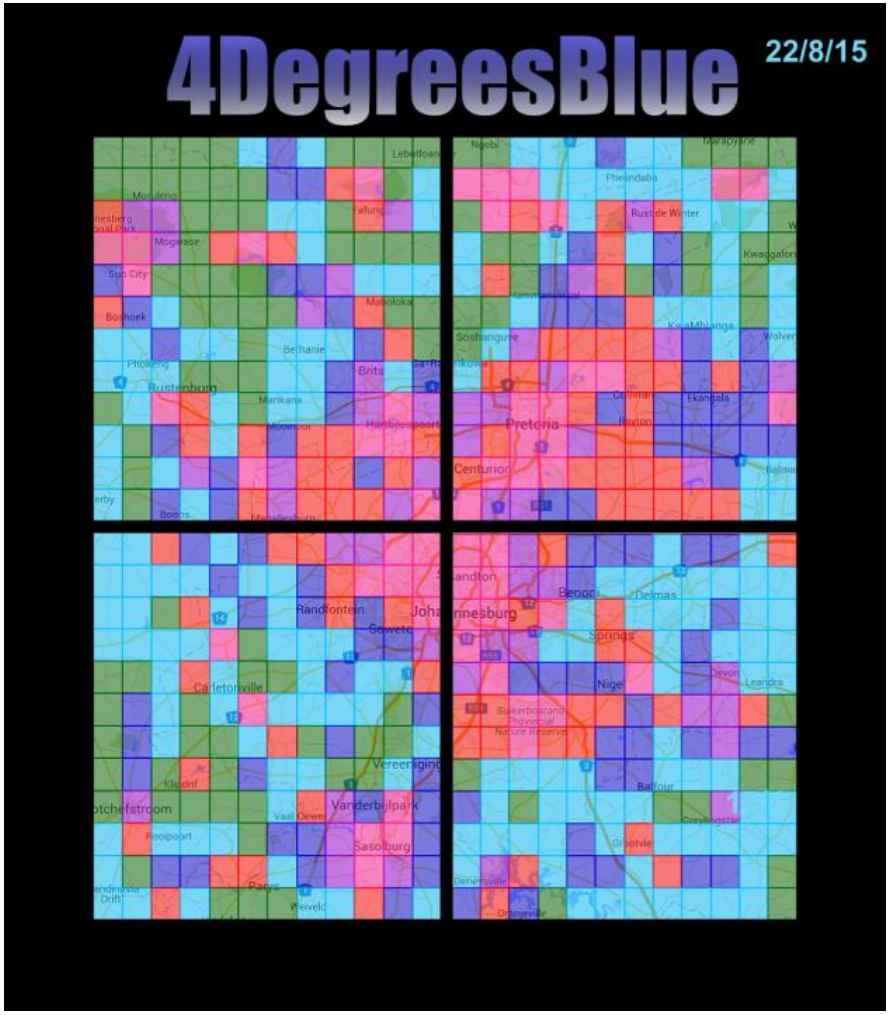

Figure 1. The coverage map for the four one-degree cells of Greater Gauteng as it appeared at the start of the Four Degrees Blue Challenge. Pentads shaded dark green had 7–10 checklists, light blue 11–16 checklists, dark blue 17–25, red 25–49, purple 50–99 and more than 100 checklists in the pink pentads.

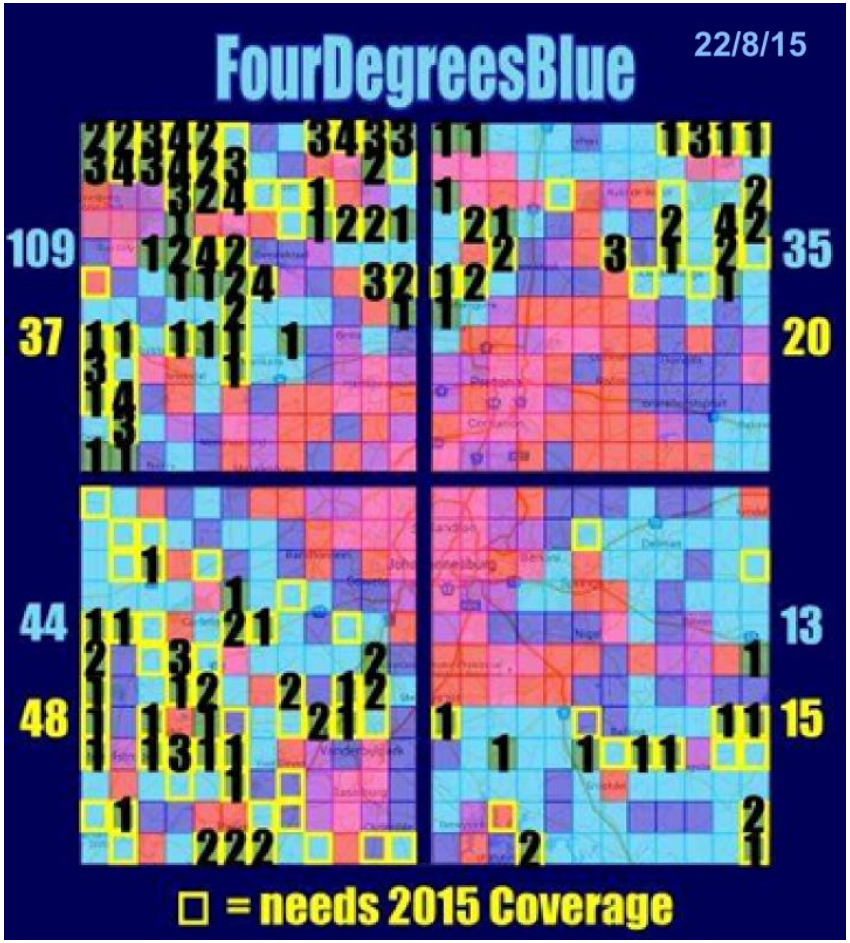

Figure 2. The "battle map" at the start of the Four Degrees Blue Challenge on 22 August 2015. Pentads containing numbers were the target pentads for which additional fieldwork was required to turn them blue on the coverage map. The number within these pentads was the numbers of checklists needed to reach blue status. The map also shows the status of the 2015 Challenge, and the pentads with a yellow outline had not yet been visited in 2015, prior to 22 August.

changes in the distribution and abundance of bird populations are closely monitored. Yellow is the colour for pentads which have had one checklist on the coverage map.

Various Gauteng challenges have taken place in addition to the annual Four Degrees Yellow, and Etienne Marais, Koos Pauw, Ernst Retief, Roger Fieldwick and Mike and Chibby Clacey have all helped drive the SABAP2 coverage of Gauteng and Greater Gauteng over the years. The most notable of these were the "Four Degrees Green" challenge (which aimed to reach four cards for every pentad; green is the colour for pentads with four or more checklists), and the "747" challenge (which aimed to have seven cards for every pentad in the four degrees in seven months, and thereby turn the coverage map dark green for Greater Gauteng).

Single checklist coverage for the 270 pentads of province of Gauteng had been achieved on 30 January 2009, and two-checklist coverage on 8 February 2010. Coverage for all 576 pentads of the Four Degrees area was first achieved on 16 October 2010. Four Degrees Green was achieved on 15 May 2011, and seven checklist coverage (the Dark Green or "747" challenge) was achieved on 1 May 2013.

The "Four Degrees Blue" challenge

The key concept to understanding this challenge is that a pentad reaches the colour blue on the coverage map once it has 11 checklists. An inference which can be drawn from Harrison & Martinez (1995) is that, once a pentad has this many checklists, the species which are added are not part of the regularly occurring bird species of the pentad. A study of the coverage map for Greater Gauteng in mid-2015 showed that many of the pentads were standing on 10 checklists, with only one further checklists needed to turn them from dark green to blue on the coverage map (Figures 1 and 2). The Four Degrees Blue challenge was launched on 22 August 2015 (Figure 2). At this stage 201

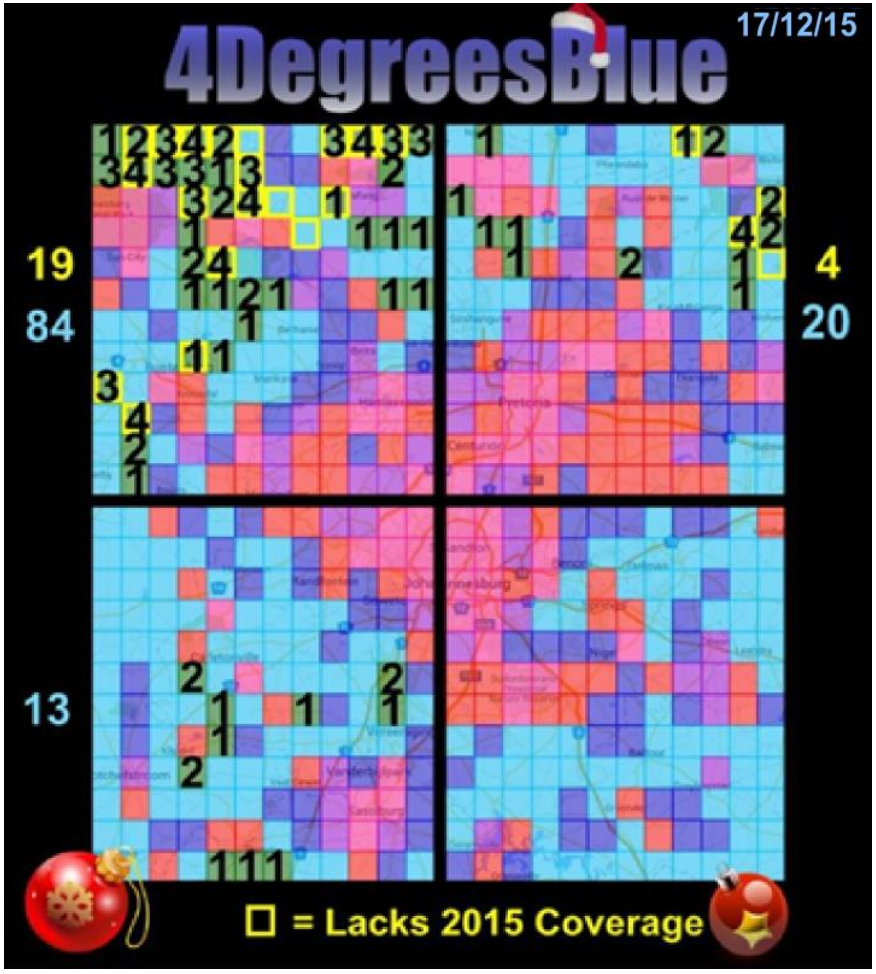

Figure 3. The "battle map" for Four Degrees Blue,17 December 2015.

checklists were needed from 111 pentads; the northwest degree cell, 25S 27E, needed the most checklists, 109, and the southeast degree cell, 26S 28E, needed only 11. The aim was to have all remaining dark green pentads on the Gauteng coverage map turn to blue with 11 atlas checklists.

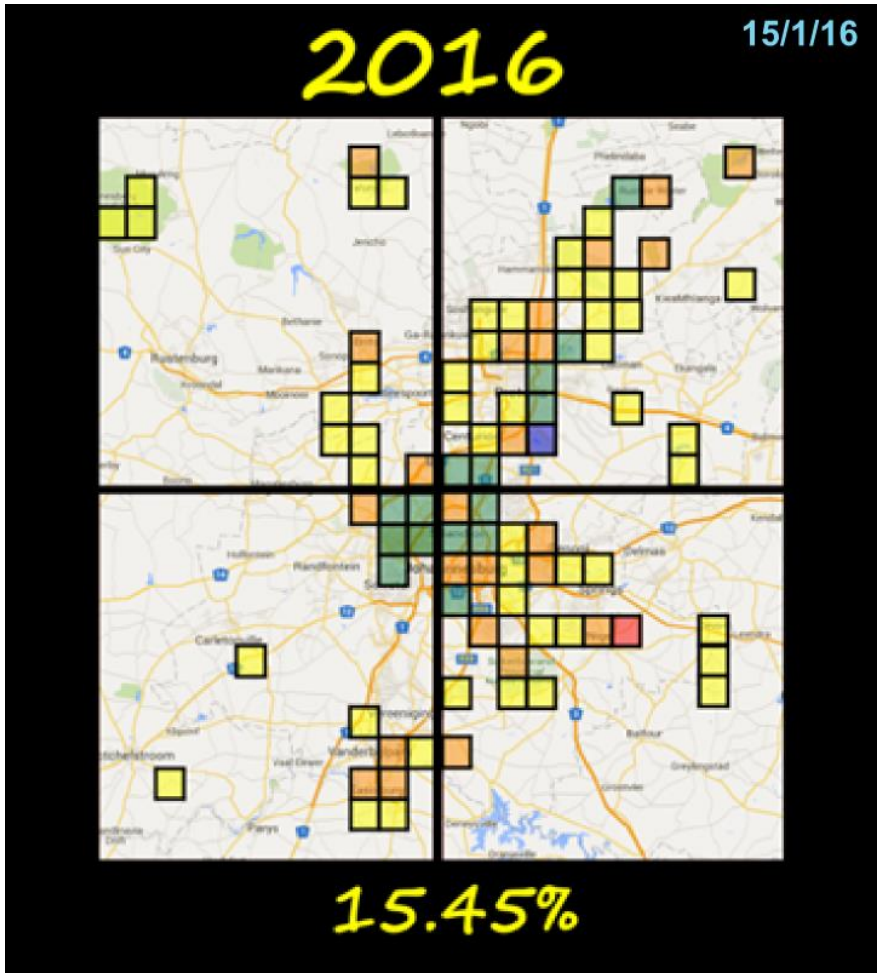

Figure 4. The 2016 Four Degrees Yellow challenge map at 15 January 2016.

The Gauteng birding community, and particularly the SABAP2 community, is active on Facebook (the URL for the SABAP2 group is https://www.facebook.com/groups/sabap2/) and it was therefore on this platform that the challenge was driven. Figure 2 was posted to the

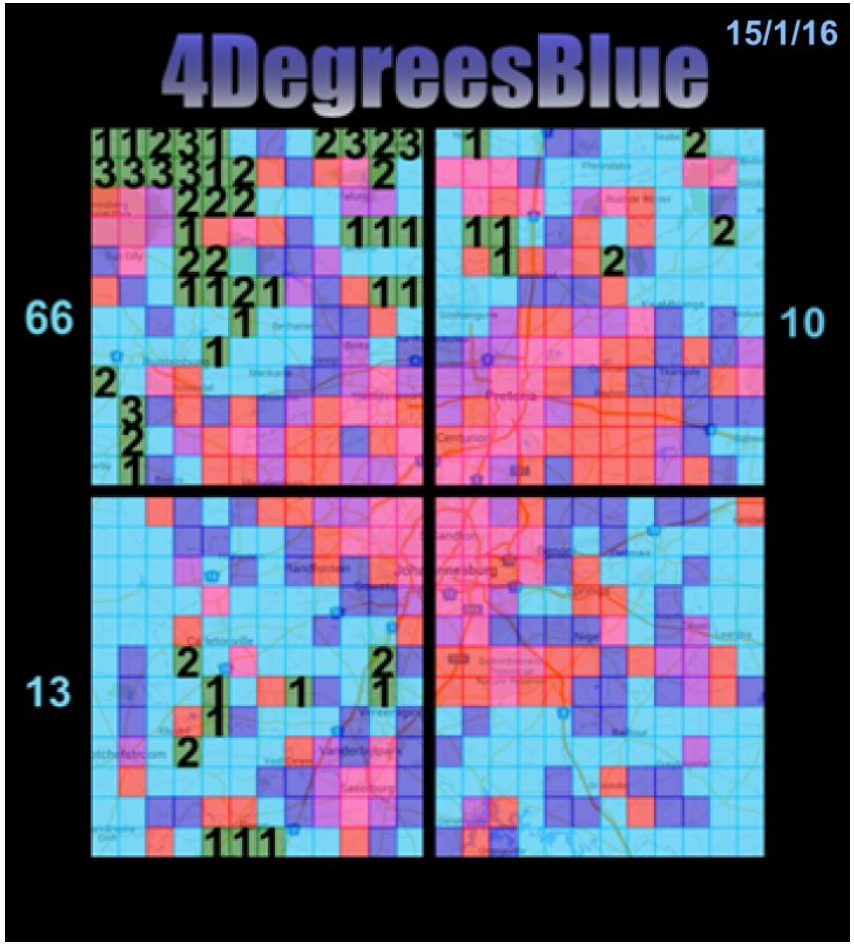

Figure 5. The Four Degrees Blue challenge map on 15 January 2016.

SABAP2 Facebook group on 22 August 2015. The Four Degrees Blue challenge was run in parallel with the 2015 Four Degrees Yellow challenge. At this point in time, this challenge needed 120 pentads to be visited in the remaining months of 2015 (Figure 2). For all except 27 of the 120 pentads the atlas checklists for the Four Degrees Blue challenge would also contribute to the 2015 challenge.

Up-to-date maps of target pentads were posted regularly, usually towards the end of each week, to provide guidance for weekend atlasing. The challenge's achievements over the weekend were shown in a posting early in the following week, with the revised challenge map being posted prior to the following weekend.

On 17 December 2015, checklists from 23 pentads were needed to complete 2015 Four Degrees Yellow challenge and the Four Degrees Blue required 117 checklists (Figure 3). A mini "Atlas Bash" in the northwest degree cell during this midsummer holiday period ensured that the 2015 Four Degrees Yellow challenge was achieved, and also advanced the cause of the Four Degrees Blue challenge.

From the beginning of 2016 the new 2016 Four Degrees Yellow challenge and the ongoing Four Degrees Blue challenge were represented with three different graphics (Figures 4, 5 and 6).

A "photo album" countdown for the Four Degrees Blue challenge was maintained on the SABAP2 Facebook Group, recording the "fall" of individual target pentads as they were atlased (the album is at https://www.facebook.com/media/set/?set=oa.939478629427176&type=1).

The southeastern degree cell achieved blue status on 6 December 2015, and the southwestern degree cell followed it on 10 April 2016, 2016. The northeastern degree cell achieved blue status on 16 June, and the last remaining pentads in the northwestern degree cell were turned blue on 29 June 2016. (Figure 7).

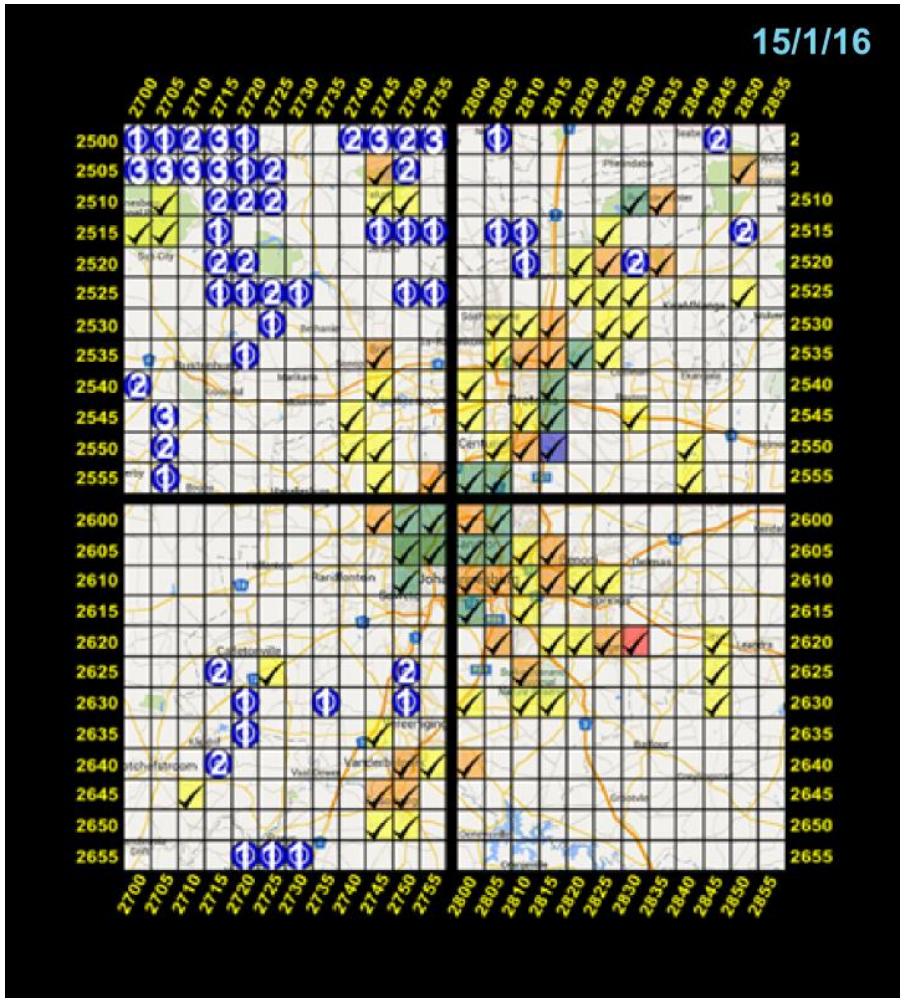

Figure 6. The Four Degrees Yellow & Blue combined challenge map, with pentad numbers, 15 January 2016.

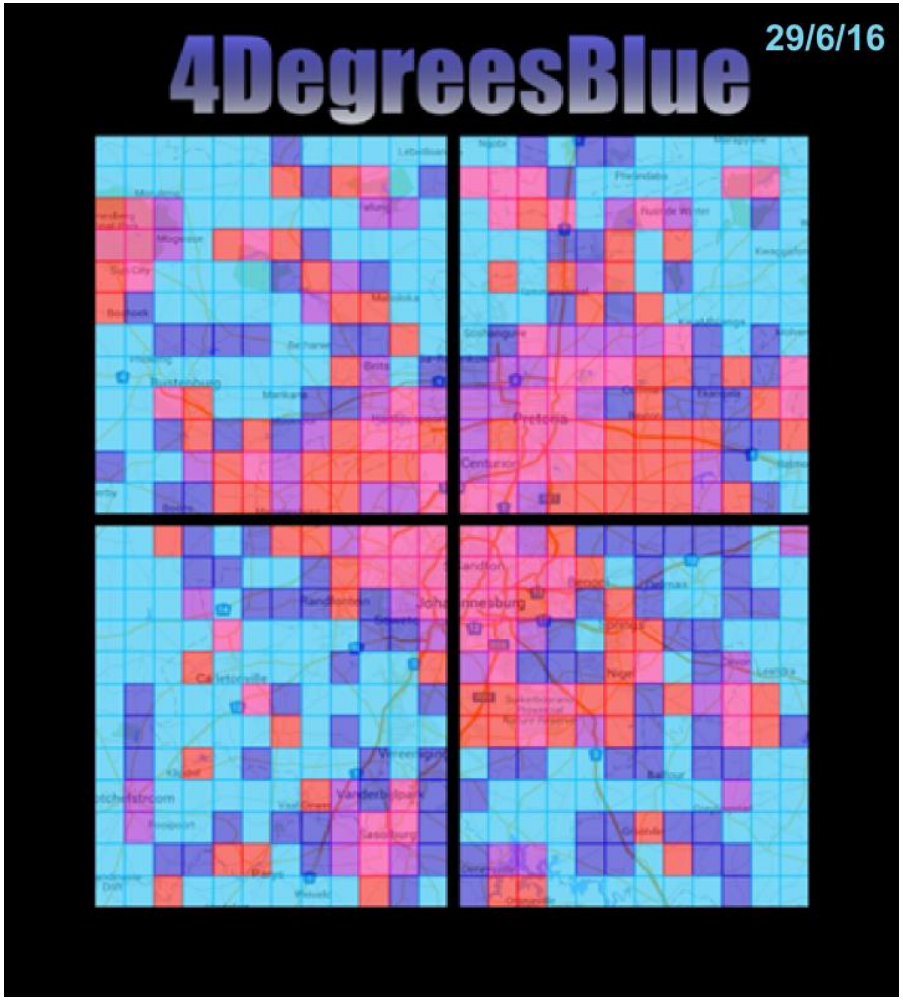

Figure 7. The coverage map for Greater Gauteng as it appeared at the end of the Four Degrees Blue challenge, on 29 June 2016.

Thus, from the start of the Four Degrees Blue challenge in August 2015, it took 10 months to complete the 2001 checklists needed to for the challenge. Target pentads were atlased at a rate of 20 checklists per month.

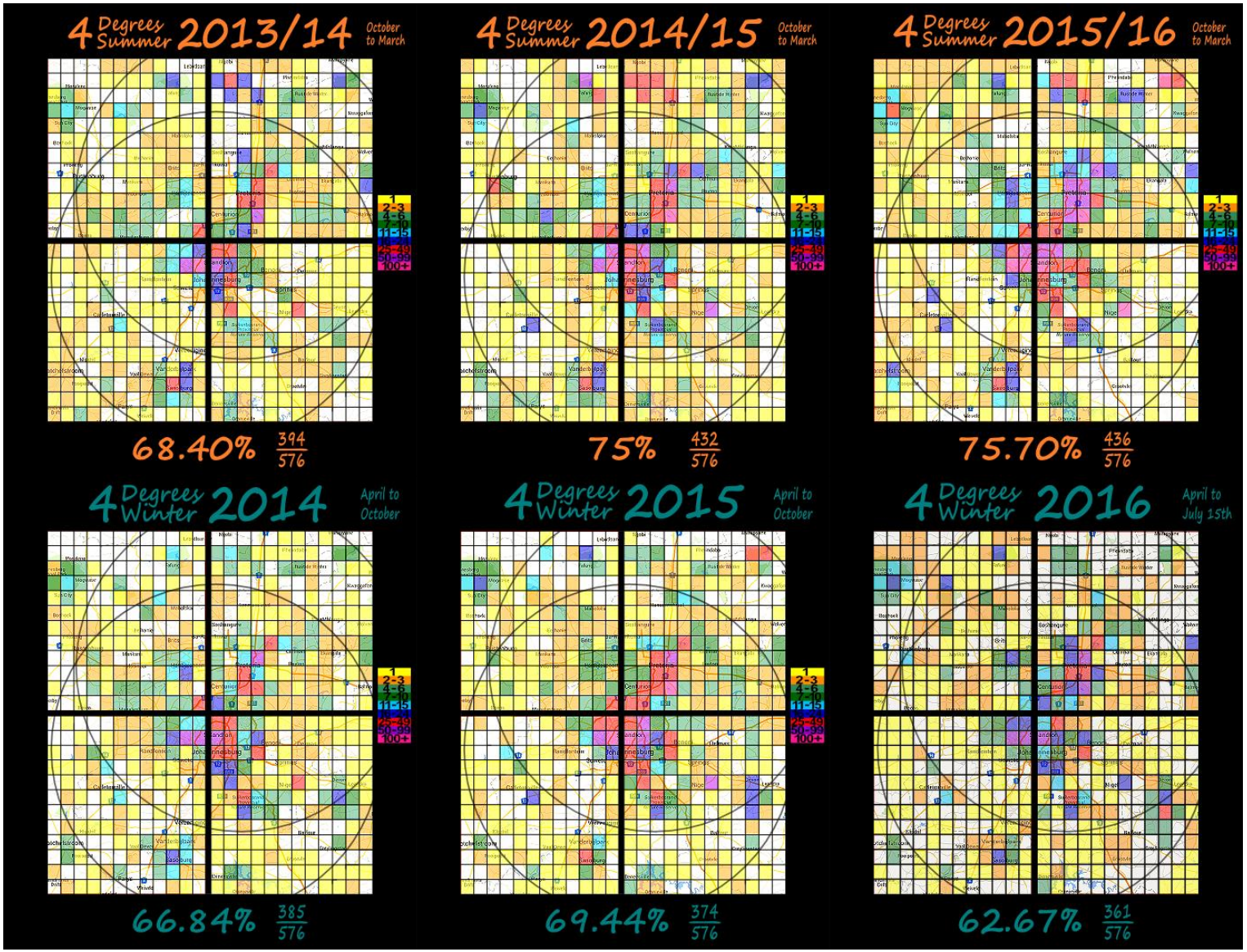

Figure 8. Atlas coverage in summer (October to March) and winter (April to September) for the Four Degrees region of Greater Gauteng. Three years are shown: summers 2013/14, 2014/15 and 2015/16, and winters 2014 and 2015 and winter 2016, as far as 15 July.

Suggestions for further challenges in Greater Gauteng

At the end of June 2016, when the Four Degrees Blue challenge had been completed, the annual challenge for the year, the 2016 Four Degrees Yellow challenge, reached 80% coverage. This meant that six months of the year were remaining to complete the remaining 20%. In 2015, it was not until 24 August that 80% coverage was reached, nearly two months later.

In a paper describing progress and priorities for SABAP2 after nine years, Underhill & Brooks (2016) suggested that the annual challenges for the Four Degrees of Greater Gauteng could become two challenges per year, one in summer (October to March) and one in winter (April to September). This bi-annual strategy would enhance the ability of the project to monitor changes in the bird community in this rapidly development section of South Africa.

To test the feasibility of this suggestion, I examined the historical record of the project over the past few years in achieving summer and winter coverage (Figure 8). In the summers of both 2014/2015 and 2015/16, the coverage statistics was 75% for this region. In the winters of 2014 and 2015, the coverage statistics were 67% and 69% respectively; for winter 2016, the coverage statistic had reached 63% on 15 July 2016, so is on course to a value of about 75% by the the winter season at end of September 2016. These coverage levels were achieved without specifically targeting them. Thus with a consistent and deliberate atlasing strategy, it seems to be feasible to attain near-complete, or even complete, coverage of the 576 pentads of the Four Degrees of Greater Gauteng in both summer and winter. I recommend that this summer and winter strategy be implemented.

Acknowledgements

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References

Harrison JA & Martinez P 1995. Measurement and mapping of avian diversity in southern Africa: implications for conservation planning. Ibis 137: 410–417.

Statistics South Africa 2015. Mid-year population estimates: 2015. Statistics South Africa, Pretoria. Statistical Release P0302. 18pp. https://www.statssa.gov.za/publications/P0302/P03022015.pdf.

Underhill LG & Brooks M 2016. SABAP2 after nine years, mid 2007–mid 2016: coverage progress and priorities for the Second Southern African Bird Atlas Project. Biodiversity Observations 7.35: 1–18 http://oo.adu.org.za/content.php?id=230.