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Systematic atlasing in Hessequa - moving from mapping to monitoring

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Systematic atlasing in Hessequa - moving from mapping to monitoring

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Introduction

Les Underhill and Michael Brooks in their 2016 paper about the progress of the Second Southern Africa Bird Atlas Project (SABAP2), mention the Stilbaai Bird Club in the paragraph "Personal, club and group challenges and targets". In this paper, I document the targets set and achieved by the atlasers of the Stilbaai Bird Group over the period 1 October 2014 to 30 November 2017 (Underhill & BrooKs 2016).

In September 2014, the Stilbaai Bird Club was introduced to the SABAP2 protocol (fully described in Underhill 2016). Some members started atlasing in October 2014. The atlasing of the Stilbaai atlasers is coordinated by the author of this paper. In 2016 the bird club was integrated into the U3A: Stilbaai as a Bird Group.

The Stilbaai atlasers started off as a group of 10 atlasers of which eight are husband and wife teams and in 2017 they were joined by two more atlasers. All of them are retired and live in Stilbaai, except for one couple who reside in George.

Because Stilbaai falls in the Hessequa Municipality, it was decided to atlas the pentads that cover the municipal area. The area is shown in Figure 1 and lies more or less between the Breede River in the west and the Gouritz River in the east, and the Langeberg Mountain in the north and the ocean in the south. A few pentads without access roads in the Langeberg Mountain were excluded, as well as two pentads in the south on private land where access could not be arranged. The resultant "Hessequa Atlas Area" comprises 75 pentads. For ease of reference the pentads were all given names of farms or towns or other prominent features over and above the standard reference number and those names are used by all the atlasers in the group.

This is a large area of about 110 x 55 km with the farthest pentads between 90 and 100 km from Stilbaai. This area forms the eastern half of the Overberg and is almost entirely rural. Most of the area is agricultural, where the main crop is wheat. In the south, much of the coastal fringe is natural vegetation. The northern pentads lie along the Langeberg mountain range.

The objectives set by the group for each of the years evolved over time, but it was realised right from the outset that it must accommodate the two broad objectives of SABAP2. That is to improve the information for mapping purposes, as well as to move towards monitoring as a longer term goal. The objectives and achievements for each year are given in more detail in the rest of the paper.

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Figure 1: Map of Hessequa atlas area

It is important to realise that it is not only the Stilbaai atlasers who are doing SABAP2 fieldwork in this area. The coastal towns of Witsand, Stilbaai/Jongensfontein and Gouritsmond are popular holiday destinations and have attracted a fair share of visiting atlasers. The same applies to the Grootvadersbosch Nature Reserve and the very popular Voëlvlei near Gouritsmond. A number of visiting atlasers also contributed significantly in the rest of the area.

Coordination of atlasing in Hessequa

Atlasing systematically in Hessequa is coordinated by using a semi-automated spreadsheet system that incorporates the specific targets for any given year. The Stilbaai atlasers are issued with a priority list of pentads by email at the start of each month from which each atlaser then chooses the pentads they want to visit. Each atlaser informs the others of his/her choice by using "reply to all" to prevent duplication. The list is also updated weekly to show the choices already made and pentads completed.

The spreadsheet is updated regularly by keeping track of atlas cards that are submitted for the Hessequa area. A "Pentad Group" covering the Hessequa area was created on the SABAP2 website (Figure 2) and this shows information only for the 75 pentads. This simplifies the monitoring of submitted cards tremendously. Many cards are submitted by visitors to the area and this is the most efficient way of keeping track of those cards as well. The information from the website is copied to the spreadsheet to mirror the website and allows for calculations to compare cards submitted to the targets that were set.

Base conditions

In the remainder of this paper the pentads of the Hessequa atlas area are shown schematically and the number of completed full protocol cards for each pentad is shown in the same colours as on the SABAP2 website. The legend is given in Figure 3 for easy reference.

In each cell in the following figures the top line is the pentad number, the second line the Stilbaai atlasers' name for the pentad and the third line the number of full protocol cards.

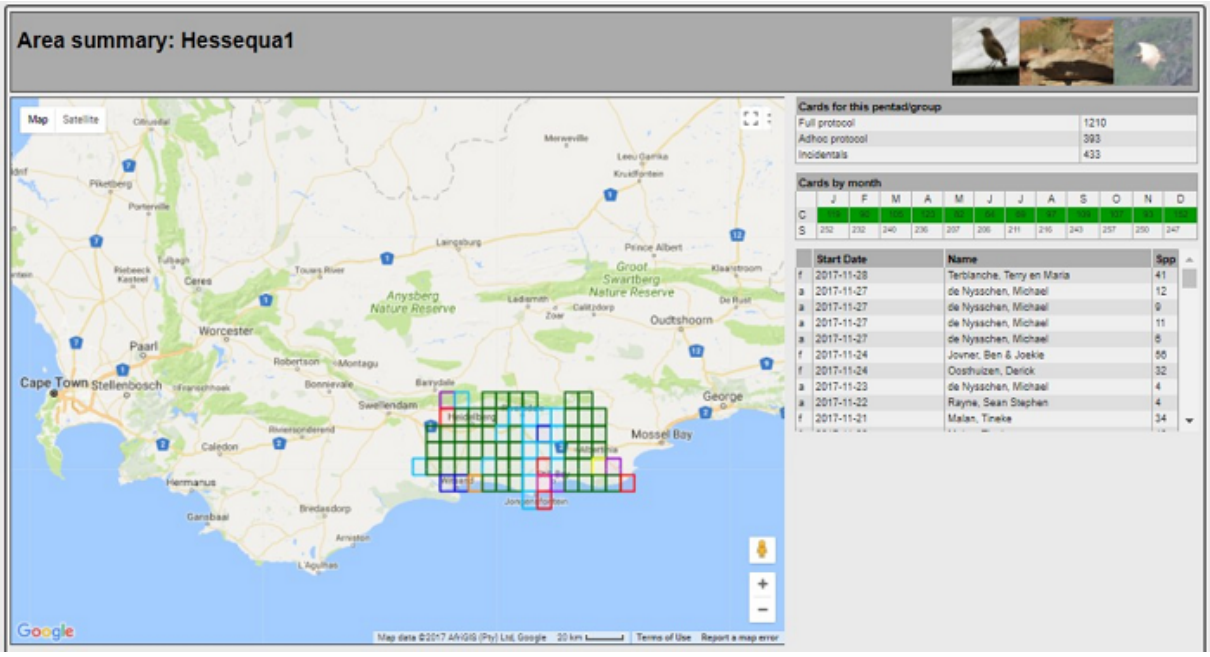

Figure 2: Hessequa pentad group on SABAP2 website

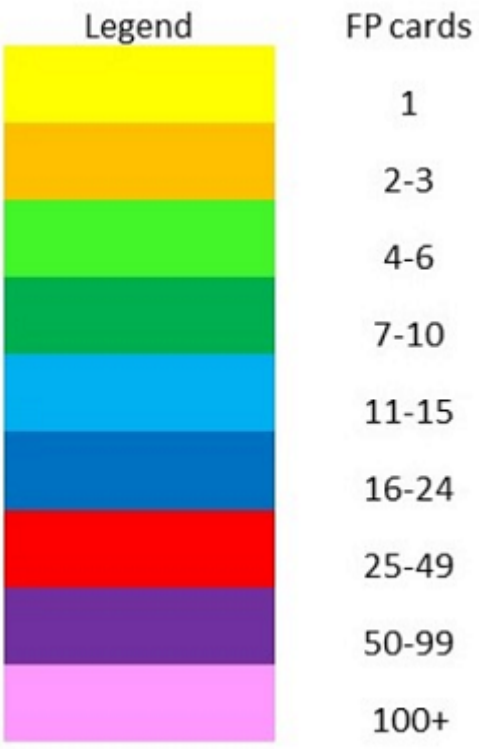

Figure 3: Legend indicating number of full protocol cards per pentad

The cumulative coverage of the Hessequa area from the start of SABAP2 in July 2007 up to the end of September 2014 is shown in Figure 4. At the start of this initiative, only 15 of the 75 pentads had one full protocol card and 27 pentads had reached the foundational coverage of four or more cards (Figure 4).

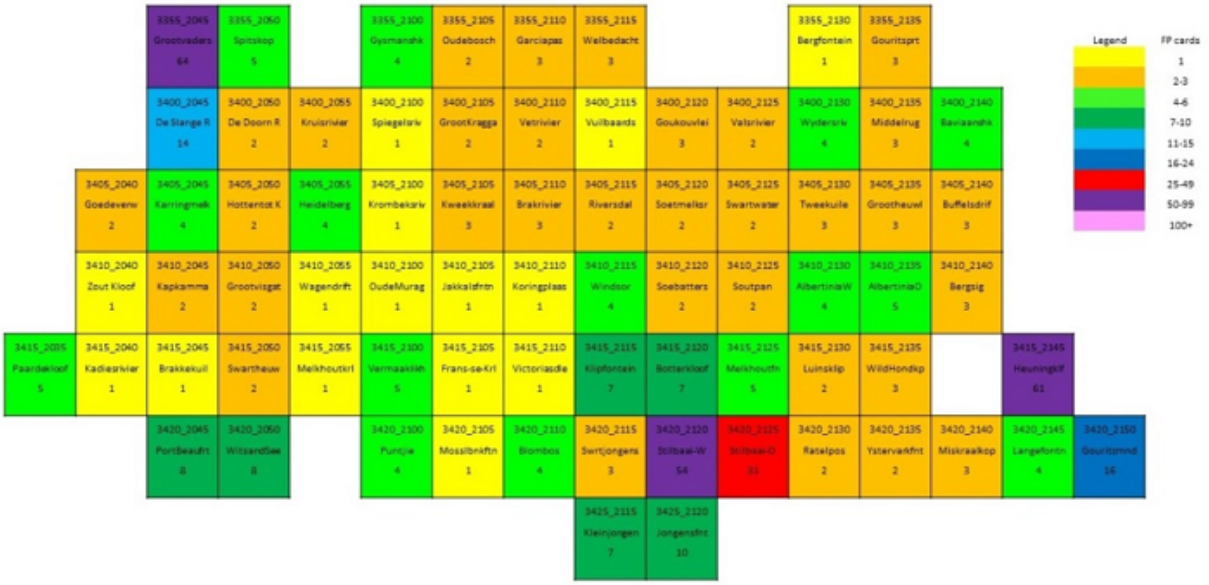

Figure 4: Cumulative full protocol cards up to 30 September 2014, at the start of systematic atlas fieldwork in the Hessequa

Atlasing in 2015

The Stilbaai atlasers started slowly in the last quarter of 2014 but firm targets were set annually from the beginning of 2015.

The first target for 2015 was to increase the coverage for mapping purposes and the specific aim was to turn Hessequa green, that is a minimum of four cards per pentad. It was, however, also agreed by the atlasers that more than that could be achieved and two quarter degree squares, one around Stilbaai (3421AD) and the one just north of it (3421AB) were selected for more intense atlasing. This area is called the Stilbaai core area and the aim was to turn it dark green with seven cards per pentad.

The second target for 2015 was already focusing on the monitoring objective of SABAP2 and it was decided that each pentad will be atlased at least once regardless of the number of cards already submitted.

The 2015 coverage that was achieved is shown in Figure 5. A total of 195 full protocol cards were submitted, 152 by the Stilbaai atlasers and 43 by visitors. The monitoring target of a minimum of one card per pentad was thus achieved. The cumulative coverage by 31 December 2015 is given in Figure 6.

The target of "turning Hessequa green" was, except for three pentads, achieved by the end of 2015 and the coverage of the Stilbaai core area was increased to seven cards or better (Figure 6).

Atlasing in 2016

The monitoring target was set slightly higher for 2016 to a minimum of one card per pentad for the whole area, except for the Stilbaai core area where it was set as a minimum of 4 cards.

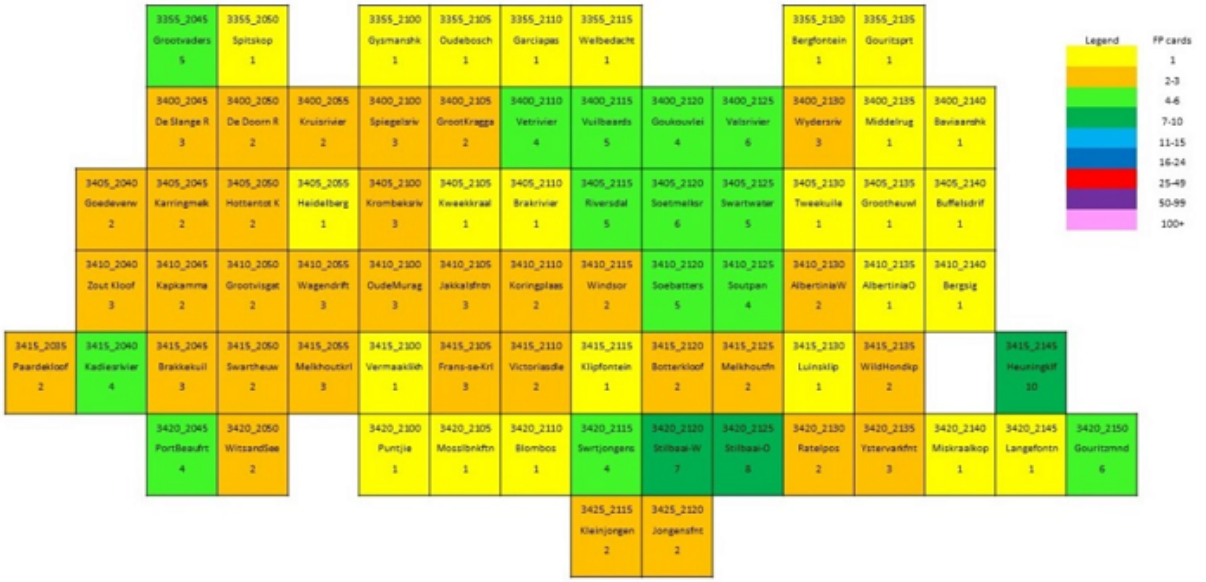

Figure 5: Full protocol cards submitted during 2015, the first year of systematic atlas fieldwork in the Hessequa

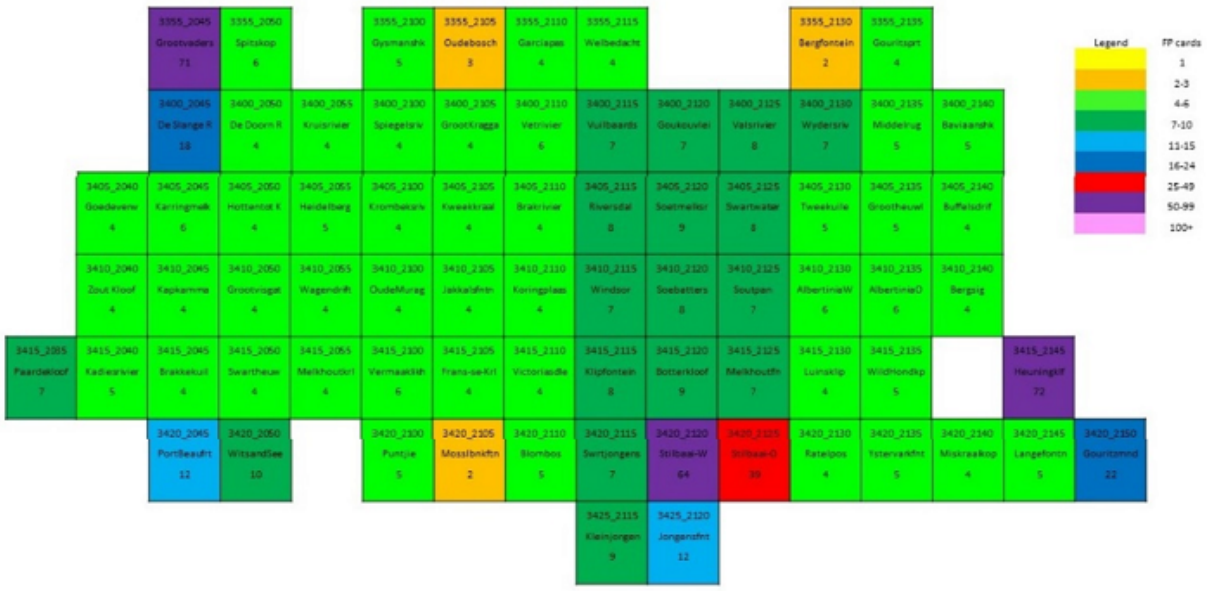

Figure 6: Cumulative full protocol cards up to 31 December 2015 at the end of the first year of systematic atlas fieldwork in the Hessequa

It was also decided to atlas the two home pentads around Stilbaai (3420_2120 and 3420_2125) at least once a month.

The mapping target was to get the Stilbaai core area to 11 cards (light blue). A longer term mapping target was to get the rest of Hessequa to a minimum of 7 cards (dark green) by the end of 2017. In order to spread the work load between 2016 and 2017 some pentads would then have to be atlased twice during 2016.

During 2015 no attention was paid to ensure an equal distribution of cards over the months of the year for each pentad. For 2016 and subsequent years, it was decided to aim for as equal a distribution as practically possible and pentads were prioritised on a monthly basis to achieve this target. The result of what was achieved to 30 November 2017 is discussed later on.

The 2016 coverage is shown in Figure 7. A total of 277 full protocol cards were submitted, 175 by Stilbaai atlasers and 102 by visitors.

The monitoring targets were met except for pentad 3355_2050. During a data quality control exercise during 2017 it was found that a number of cards that were submitted as full protocol cards did not cover the required minimum of two hours atlasing. They were subsequently changed to ad hoc cards and the one full protocol card that was submitted for 3355_2050 for 2016 was changed to an ad hoc card. Quality control is now done on a continuous basis in order to prevent this from occurring again.

The cards submitted for pentads 3420_2120 and 3415_2120 were much higher than expected due to the out-of-range Red-necked Buzzard that caused a huge influx of “twitchers” who also submitted full protocol cards. But as Underhill & Brooks (2016) stated: “There is no pentad for which SABAP2 has”enough" checklists."

The cumulative coverage by 31 December 2016 is given in Figure 8. All pentads had by this stage reached the minimum mapping requirement of 4 cards, the Stilbaai core area the 11 card target and some of the others had by now reached the 7 card (dark green) stage.

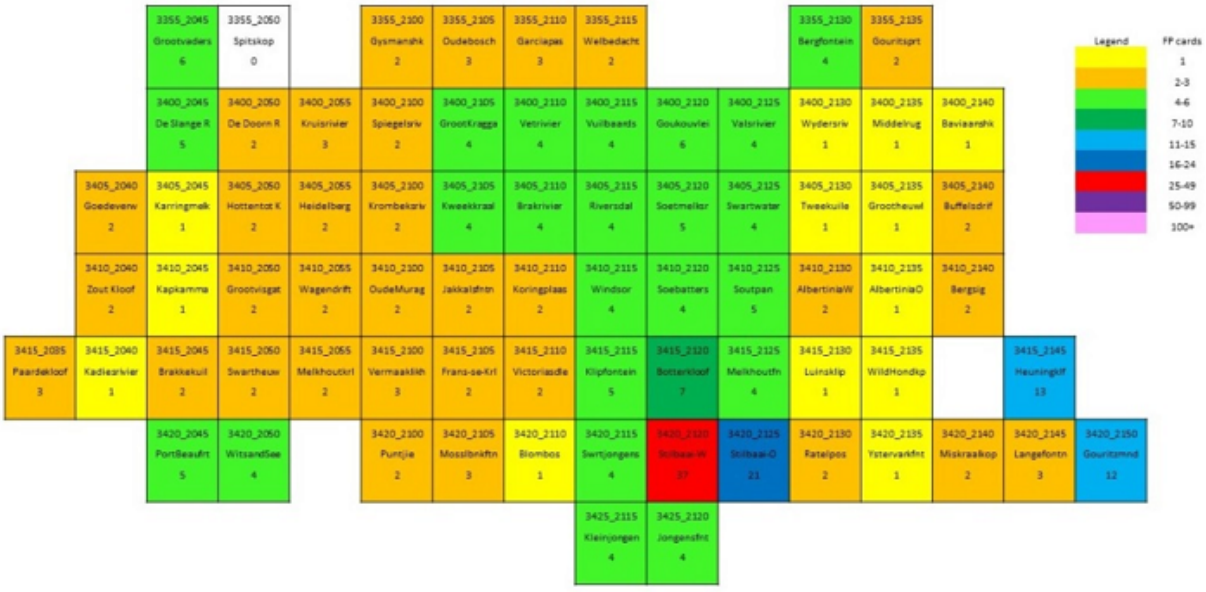

Figure 7: Full protocol cards submitted during 2016, the second year of systematic atlas field-work in the Hessequa

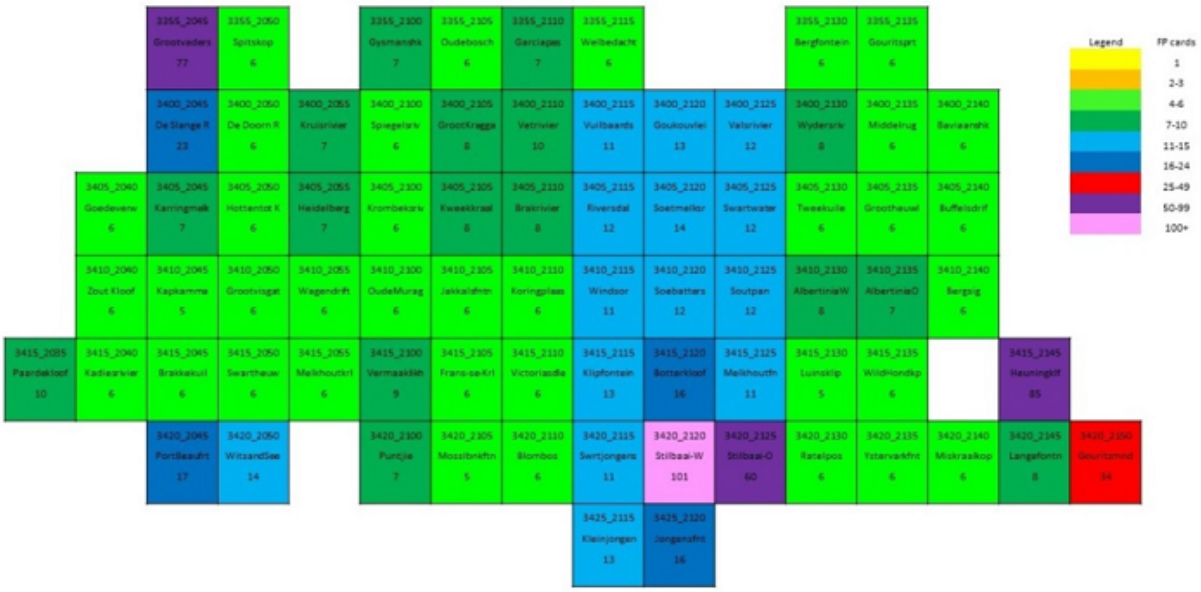

Figure 8: Cumulative full protocol cards up to 31 December 2016, at the end of the second year of systematic atlas fieldwork in the Hessequa

Atlasing in 2017

After a discussion with Prof Les Underhill late in 2016, it was decided to increase the monitoring target for Hessequa. The target for 2017 was set for a minimum of two full protocol cards per pentad for the whole area.

This target was already achieved by 30 November 2017 and is shown in Figure 9. A total of 267 full protocol cards was submitted, 212 by Stilbaai atlasers and 55 by visitors.

The cumulative coverage up to 30 November 2017 is shown in Figure 10 and the whole of Hessequa was by this date dark green (seven or more cards).

Targets for 2018

In further communication with Prof Les Underhill during 2017, it was recommended that an even more ambitious monitoring target be set for 2018. That is to again do two full protocol cards per pentad, but to distribute these cards evenly over the four seasons of the year.

The four seasons are defined as follows:

- Summer - December, January and February
- Autumn - March, April and May
- Winter - June, July and August
- Spring - September, October and November.

It is this definition that forced the "shortening" of the 2017 atlas year to end by 30 November in order to start with the new programme on 1 December 2018.

The Stilbaai atlasers, however, decided to increase the 2018 target by aiming to do four cards per pentad (one card per season) for the Stilbaai core area. The two home pentads will again be atlased at least once per month.

The target for 2018 is shown schematically in Figure 11. In this figure each pentad has four rows, one for each season starting with summer at the top.

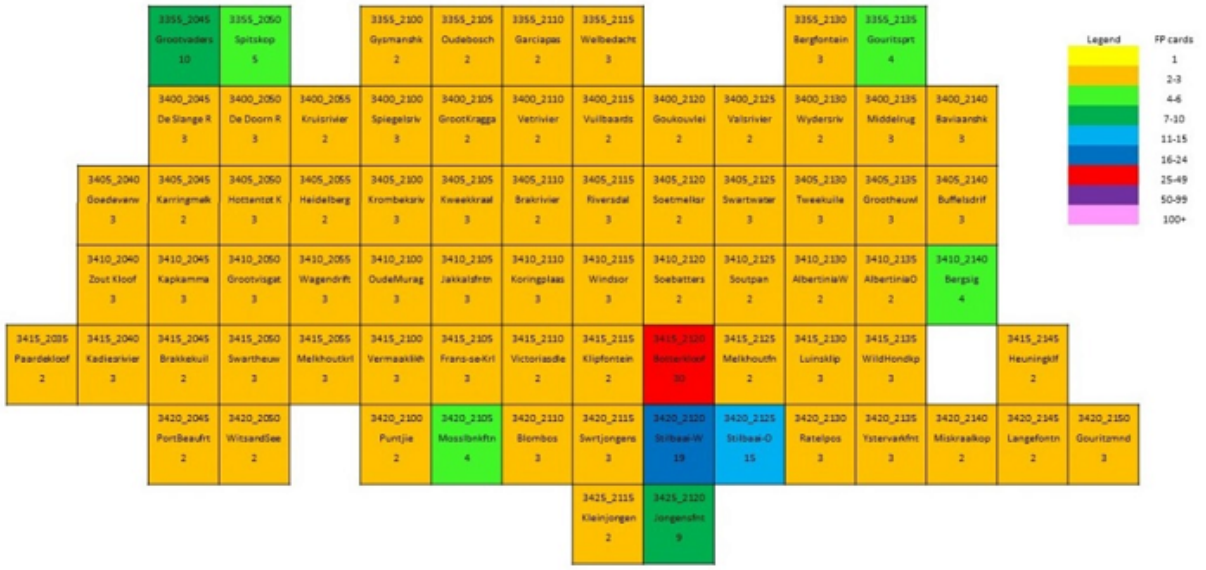

Figure 9: Full protocol cards submitted during 2017, the third year of systematic atlas fieldwork in the Hessequa

Figure 10: Cumulative full protocol cards up to 30 November 2017, at the end of the third year of systematic atlas fieldwork in the Hessequa

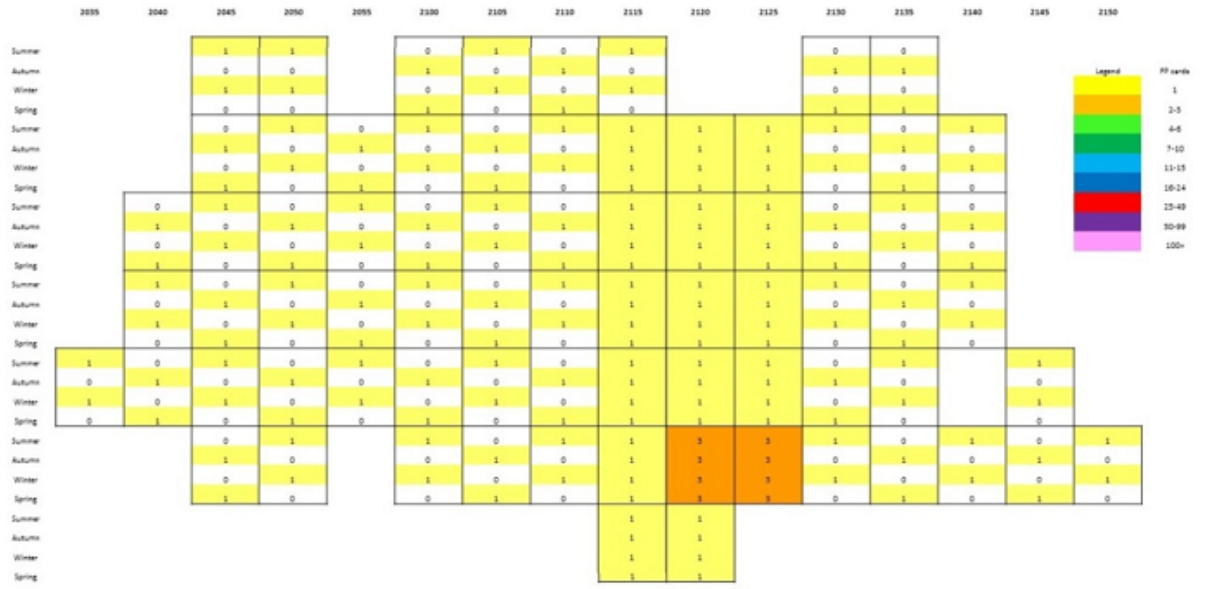

Figure 11: Atlas targets in the Hessequa for 2018, showing planned seasonal distribution of effort

Figure 11 shows that the 2018 target for the Stilbaai core area is a card in every season and three cards per season for the Stilbaai home pentads (continuing with the one card per month objective). In the rest of Hessequa the target is for each pentad to get a card for summer and winter while the adjacent pentads will get cards for autumn and spring in a chessboard pattern. If this is achieved, the pentads will be switched around in 2019 to cover all four seasons in a two year cycle. Two exceptions to this rule can be seen in the northeastern and northwestern corners of Hessequa where access problems make it a logistical imperative for two adjacent pentads be done at the same time.

If the above targets are achieved, the Stilbaai core area will be turned dark blue (16 cards) during 2018 and the rest of the Hessequa area light blue (11 cards) which will provide excellent information for the objective of mapping bird distributions.

Monthly distribution of full protocol cards

Since the start of 2016 the Stilbaai atlasers have aimed to spread the atlas cards as evenly as practically possible over the months of the year. The monthly distribution of the cards as on 30 November 2017 is shown in tabular form in Figures 12, 13 and 14. The colours used in the monthly columns are the standard colours used throughout this paper.

It can be seen from Figure 12, 13 and 14 that the distribution of the cards over the months of the year is very good, except for the pentads where a large number of cards have been done by visitors. That is perfectly understandable as they often visit the area during the same time of the year and those cards obviously contribute greatly towards the detailed understanding of species distribution during those months.

Conclusions

From 1 October 2014 to 30 November 2017, the Stilbaai atlasers, with a steady stream of cards from visitors, improved the foundational coverage of the Hessequa area. Initially 20% of pentads had one card and about a third of pentads had four cards (Figure 4). At the end of this

Hessequa pentads			Monthly totals cumulative to 30 November 2017											
	Pentad no	Naam	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	3355_2045	Grootvadersbos	7	7	12	10	3	4	3	9	11	9	7	5
2	3355_2050	Spitskop	0	0	1	0	1	0	0	2	3	1	3	0
3	3355_2100	Gysmanshoekpas	1	1	1	1	0	0	0	0	1	1	1	2
4	3355_2105	Oudebosch	1	1	0	1	1	0	0	1	1	1	1	0
5	3355_2110	Garciapas	0	0	1	1	1	1	1	0	2	0	0	2
6	3355_2115	Welbedacht	0	0	2	1	2	1	0	1	0	1	1	0
7	3355_2130	Bergfontein	1	1	0	2	0	1	1	1	0	1	0	1
8	3355_2135	Gouritspoort	1	1	0	1	0	1	1	1	0	2	0	2
9	3400_2045	De Slange Rivier	1	3	4	1	1	1	2	2	3	4	1	3
10	3400_2050	De Doorn Rivier	0	1	1	0	1	0	1	2	1	0	1	1
11	3400_2055	Kruisrivier	1	1	1	1	0	0	1	1	0	1	1	1
12	3400_2100	Spiegelsrivier	1	0	1	2	1	0	1	1	1	0	1	0
13	3400_2105	Groot-Kragga	1	0	0	1	0	1	1	3	0	1	0	2
14	3400_2110	Vetrivier	1	1	1	1	0	2	1	0	1	1	0	3
15	3400_2115	Vuilbaardsbos	2	1	1	2	1	1	1	1	0	1	1	1
16	3400_2120	Goukouvlei	1	2	1	1	1	1	1	1	2	1	1	2
17	3400_2125	Valsrivier	1	1	1	1	1	1	1	1	2	1	1	2
18	3400_2130	Wydersrivier	2	1	1	0	0	1	0	1	1	0	2	1
19	3400_2135	Middelrug	2	1	1	1	0	0	1	1	1	0	0	1
20	3400_2140	Baviaanshoek	1	1	0	1	1	1	0	0	1	0	1	2
21	3405_2040	Goedeverwagting	1	0	1	1	0	0	1	1	1	1	1	1
22	3405_2045	Karringmelk	0	1	1	1	0	0	1	2	1	1	1	0
23	3405_2050	Hottentot Kraal	0	2	1	0	1	1	1	1	1	1	0	0
24	3405_2055	Heidelberg	0	0	1	1	2	1	0	1	1	1	0	1
25	3405_2100	Krombeksrivier	0	1	1	1	1	1	1	1	1	0	0	1

Figure 12: Monthly distribution of cards in the Hessequa achieved up to 30 November 2017 (Pentads 1-25)

Hessequa pentads			Monthly totals cumulative to 30 November 2017											
	Pentad no	Naam	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
26	3405_2105	Kweekkraal	2	1	1	1	0	0	0	2	1	1	0	2
27	3405_2110	Brakrivier	1	1	1	0	1	0	1	1	1	0	1	2
28	3405_2115	Riversdal	2	1	1	1	1	1	2	0	2	1	1	2
29	3405_2120	Soetmelksrivier	1	2	2	1	1	1	1	1	1	2	1	2
30	3405_2125	Swartwater	1	1	1	1	1	1	1	2	1	1	2	2
31	3405_2130	Tweekuile	1	1	1	0	1	0	0	1	1	1	0	2
32	3405_2135	Grootheuwel	1	1	0	1	0	1	0	0	2	0	1	2
33	3405_2140	Buffelsdrif	2	1	1	1	0	1	0	1	1	0	0	1
34	3410_2040	Zout Kloof	1	0	1	0	1	1	0	1	2	1	0	1
35	3410_2045	Kapkamma	0	0	1	2	0	0	1	1	1	1	1	0
36	3410_2050	Groote Visgat	0	1	0	1	1	0	2	1	1	1	0	1
37	3410_2055	Wagendrift	0	0	1	1	1	1	1	1	1	1	1	0
38	3410_2100	Oude Muragie	1	1	1	2	1	0	1	1	0	0	1	0
39	3410_2105	Jakkalsfontein	0	1	1	2	1	0	0	1	1	1	1	0
40	3410_2110	Koringplaas	1	1	0	1	1	1	0	1	1	0	2	0
41	3410_2115	Windsor	1	1	1	2	1	1	0	1	1	1	2	2
42	3410_2120	Soebattersvlakte	1	1	1	1	1	1	1	1	1	0	3	2
43	3410_2125	Soutpan	1	1	1	1	2	1	0	0	1	3	1	2
44	3410_2130	Albertinia-Wes	2	0	1	1	1	1	0	0	1	0	1	2
45	3410_2135	Albertinia-Oos	1	0	1	1	0	2	2	0	1	0	1	0
46	3410_2140	Bergsig	1	1	0	1	0	1	1	1	1	1	1	1
47	3415_2035	Paardekloof	0	0	1	2	1	0	0	1	2	3	2	0
48	3415_2040	Kadiesrivier	1	0	1	1	1	1	0	1	1	1	1	0
49	3415_2045	Brakkekuil	0	0	1	1	1	0	0	1	1	1	1	1
50	3415_2050	Swartheuwel	0	1	1	1	1	1	1	1	1	0	0	1

Figure 13: Monthly distribution of cards in the Hessequa achieved up to 30 November 2017 (Pentads 26-50)

Hessequa pentads		Monthly totals cumulative to 30 November 2017											
Pentad no	Naam	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
51 3415_2055	Melkhoutkraal	0	0	1	1	1	1	1	1	1	1	0	1
52 3415_2100	Vermaaklikheid	1	0	2	2	1	0	1	2	0	2	1	0
53 3415_2105	Frans-se-Kraal	1	1	1	3	1	0	0	1	0	1	0	0
54 3415_2110	Victoriasdale	1	0	1	1	1	0	0	1	1	1	1	0
55 3415_2115	Klipfontein	2	1	2	1	1	1	1	1	1	2	0	2
56 3415_2120	Botterkloof	14	3	4	5	5	1	0	3	1	4	2	4
57 3415_2125	Melkhoutfontein	1	1	1	1	1	1	1	1	1	2	0	2
58 3415_2130	Luinsklip	0	0	0	1	1	0	1	1	2	0	1	1
59 3415_2135	Wilde Hondekop	0	1	1	1	1	0	1	0	1	1	1	1
60 3415_2145	Heuningkloof	12	4	8	6	3	4	4	5	8	10	6	17
61 3420_2045	Port Beaufort	2	4	1	3	2	2	0	0	0	0	2	3
62 3420_2050	Witsand See	1	4	2	1	1	1	0	1	1	0	2	2
63 3420_2100	Puntjie	1	1	2	1	0	0	0	2	0	2	0	0
64 3420_2105	Mosselbankfontein	1	1	0	0	1	0	1	1	1	1	1	1
65 3420_2110	Blombos	1	0	1	1	1	0	1	1	1	1	0	1
66 3420_2115	Swartjongensfontein	1	1	1	1	1	1	2	1	1	2	1	1
67 3420_2120	Stilbaai-Wes	15	7	7	12	5	5	6	7	8	8	10	30
68 3420_2125	Stilbaai-Oos	8	6	4	7	5	5	9	5	7	6	7	6
69 3420_2130	Ratelpos	0	1	0	1	1	1	0	1	1	1	2	0
70 3420_2135	Ystervarkfontein	1	0	1	2	1	0	0	1	1	1	1	0
71 3420_2140	Miskraalkop	0	1	1	1	0	1	0	0	1	1	0	2
72 3420_2145	Langefontein	0	1	2	2	1	0	0	1	0	2	0	1
73 3420_2150	Gouritzmond	5	2	3	4	4	1	1	1	3	5	3	5
74 3425_2115	Kleinjongensfontein	1	2	1	1	1	0	1	1	2	1	1	3
75 3425_2120	Jongensfontein	2	2	1	3	3	1	2	1	1	2	0	7

Figure 14: Monthly distribution of cards in the Hessequa achieved up to 30 November 2017 (Pentads 61-75)

period, the coverage depth was seven cards or more for every one of the 75 pentads of the Hessequa area and 11 or more cards for the Stilbaai core area.

This was achieved while simultaneously achieving monitoring targets of at least one card per pentad for 2015 and 2016 and two cards per pentad for 2017. An excellent distribution of full protocol cards over the months of the year was also achieved. This will be taken forward into the future.

With the foundational coverage on a sound footing, the Stilbaai atlasers will focus on more intensive monitoring in future and will strive for an even distribution of full protocol cards over the seasons of each year. This paper describes a good example of what can be achieved by a group of birders working together with a systematic strategy towards atlasing goals.

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