Appendix 5

Study of Byron Shire Online Short-term Rental Accommodation Listings

1. Introduction and methodology

1.1 Introduction

This analysis looks at the pattern of Airbnb and HomeAway listings in the Byron Shire over a 3.5-year period from July 2016 to November 2019. The purpose of the research is to investigate the distribution and concentration of listings and to gain insight into the type of accommodation being offered and the frequency of use.

1.2 Data sources

Two data sets have been used: one from consulting firm AirDNA and a publicly available data set published by Insideairbnb.

Most of the analysis is based on data from AirDNA as it includes listings from both Airbnb and HomeAway and covers a greater period of time. Regional comparisons of Byron Shire with surrounding Northern Rivers and Sydney LGA's are drawn from Insideairbnb.

1.3 Why focus on Airbnb and HomeAway?

Given the number of different booking platforms and agents offering accommodation in the Byron Shire, it is not feasible to obtain data from all sites or agents. By focusing on the two most popular online platforms, it is hoped to obtain an impression of the STRA sector that is reflective of industry as a whole. The actual number of STRA properties is likely to be higher than the figures provided in this analysis as many listings may be managed through real estate agencies or advertised on other online platforms.

1.4 Limitations in the data

Airbnb and HomeAway do not make their data publicly available. This forces researchers to obtain information from third parties who 'scrape' data from the public facing section of these websites. The scraping method of data acquisition comes with inherent limitations which need to be acknowledged.

Airbnb and HomeAway randomise the geographical coordinates for each listing by up to 450 feet (approximately 130m), making it difficult to identify the property address for each listing (Wachsmuth et. al., 2017). While attempts have been made to organise listings by suburb, the nature of the data means there is a possibility for minor errors to accumulate when listings are grouped together. AirDNA also reports on both the availability and occupancy of each listing. It is understood that these figures are estimates calculated by an algorithm developed by AirDNA.

Despite these limitations, the AirDNA data is accepted as being a good estimation of short-term rental activity and has been used in recent studies into short-term rental accommodation by Australian and international researchers (Crommelin et. al., 2018).

1.5 Methodology

The AirDNA data set identifies the number of days per month that a listing is either ‘available’, ‘reserved’ or ‘blocked’. A blocked listing means that the host ‘blocked’ it from being used for a specified number of days (or entirely) during the reporting period. This could be because the owner was staying in the dwelling at the time, or they simply didn’t want it to be used for a specified period. An available listing means that the dwelling was ‘available’ for rent, while a reserved listing means that it had been ‘reserved’, or booked, by a prospective guest.

This analysis adopts a simplified methodology of counting listings that were either ‘available’ or ‘reserved’ for at least one day in the monthly reporting period. This is necessary to avoid inflated counts that include blocked listings.

Even though ‘available’ days do not involve any accommodation (otherwise they would be noted as ‘reserved’), they imply that a dwelling is not available for long term residential accommodation at that time, and hence, is not part of the Shires dwelling supply for the monthly reporting period. This is essential to gain an understanding of the effect that STRA is having on the supply of housing and how many dwellings are being used for STRA casually versus commercially.

The dataset records four different accommodation types (1) entire home/apt, (2) private room, (3) shared room, (4) hotel room. Hotel rooms have been excluded from the count as we are only interested in the effect on the housing market. Private rooms and shared rooms have been combined into a single count due to the similarity between these use cases. It should be noted that shared rooms and hotel rooms comprise a negligible proportion of the total listings and do not have a significant effect on the analysis.

1.6 Dual listings

Many STRA properties are listed across multiple advertising platforms at the same time. The AirDNA dataset identifies properties that are listed on both Airbnb and HomeAway, which removes the risk of duplicate counts.

1.7 Frequently available listings

This analysis defines a ‘frequently available dwelling’ as an entire house or apartment that was available or reserved for more than 90 days in the previous 12 months.

Recent international and Australian studies into the impact of Airbnb on long term housing markets have adopted similar methodologies. Wachsmuth et. al. (2017) adopted a 60 day threshold in their analysis of short-term rentals in major Canadian cities, while Crommelin et. al. (2018) adopted a 90 day threshold in their recent study of the impacts of Airbnb on housing markets in Sydney and Melbourne.

As noted by Crommelin et. al. (2018), ‘a 90 day threshold is generally consistent with other international regulatory approaches and is considered to be the maximum period of time that long-term occupants could vacate their dwelling without having to alternative long term accommodation themselves’.

For the sake of comparison, this analysis also looks at dwellings that were 'available' or 'reserved' for more than 180 days in the previous 12 months. This is consistent with the 180 day limit for certain LGA's adopted in the draft *State Environmental Planning Policy (Short-term Rental Accommodation) 2019.*

1.8 Breakdown of listings by suburb

To simplify the analysis, dwelling numbers were obtained from the Byron Shire Community Profile, published by profile.id, which is based on data from the 2016 Australian Census.

The data includes a breakdown of dwelling numbers across eight different suburbs in the Byron Shire. Airbnb and HomeAway listings have been aggregated into the same suburb areas as the dwelling counts to enable a comparison of listings and dwellings in different parts of the Shire.

1.9 Estimation of dwelling numbers

Dwelling numbers in this analysis have been estimated by taking the dwelling count from the profile.id statistics (enumerated by suburb) and adding to it all occupation certificates for residential dwellings issued since the close of the census.

Occupation certificate data was harvested from Council's internal records and was manually counted and added on a month by month basis. Some errors may exist due to a lack of accounting for dwelling demolitions, however, the figures provided are generally considered to be a good estimate of total dwelling numbers and any errors are likely to be minor in nature. The data allows for a timeline comparison of the growth of Airbnb and HomeAway listings relative to the growth of dwellings.

2. Number of listings

2.1 Total listings

The total number of listings on Airbnb or HomeAway for the Byron Shire was estimated to be 4237 at 1 November 2019. Of this figure, 3613 (85%) listings were for entire homes of apartments, and 624 (15%) listings were for private or shared rooms within a dwelling. The breakdown of dwelling type for total listings is shown in table 1.

Table 1: Airbnb and HomeAway listings in the Byron Shire, November 2019

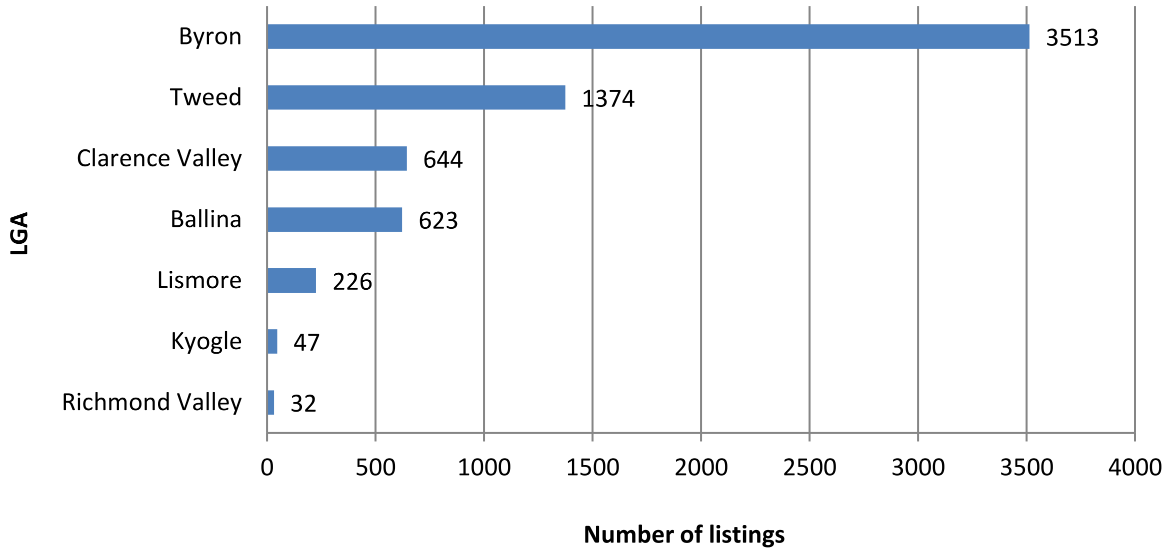
Accommodation type	No. of listings	%
Entire home/apt	3613	85%
Private or shared room	624	15%
Total (excluding hotel)	4237	100%

Source: Byron Shire Council, based on data from Airdna (2019)

2.2 Regional comparison

For a regional comparison, we use data from insideairbnb.com (Cox, 2019), which shows that the total number of Airbnb listings for the Byron Shire was estimated to be 3,513 at 30 November 2019. This compares to Tweed with 1374, Clarence Valley with 644 and Ballina with 623. Regionally, there are more Airbnb listings in Byron Shire than in all other northern Rivers LGA's combined. A comparison of regional Airbnb listings is illustrated in figure 1.

Figure 1: Comparison of Airbnb listings for Northern Rivers LGA's

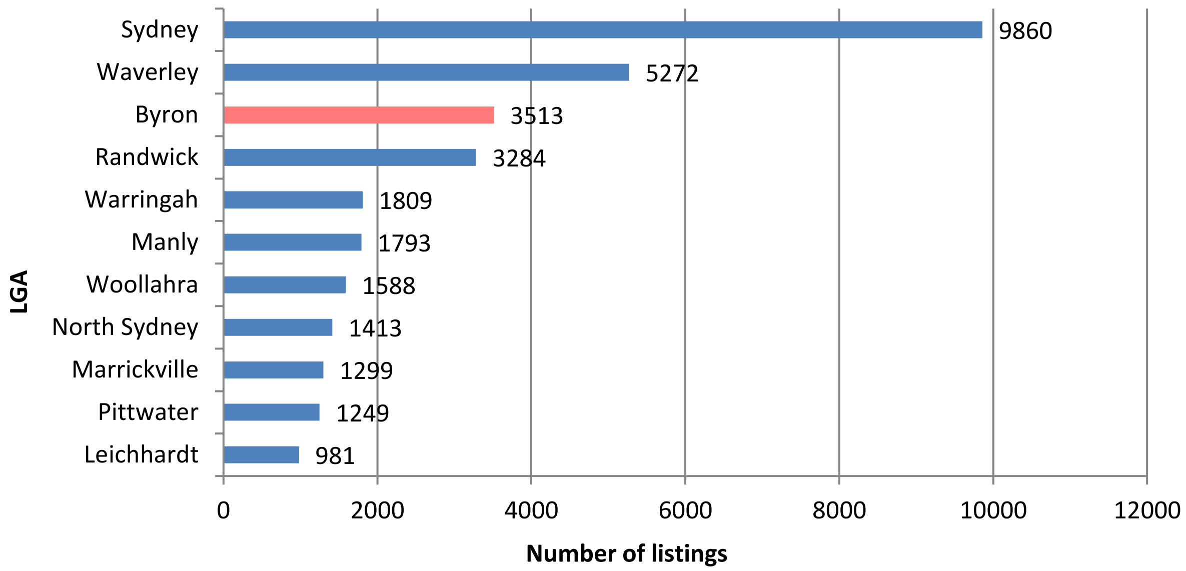


Source: Byron Shire Council, based on data from Inside Airbnb, 30 November 2019

2.3 Greater Sydney Region comparison

Only two LGA's in the Greater Sydney Region were shown to have more Airbnb listings than Byron Shire, those being Sydney (9860) and Waverly (5272), highlighting the prevalence of the Airbnb phenomenon in Byron Shire. This is a significant finding when considering the relatively low population and dwelling numbers in Byron Shire compared to these metropolitan LGA's. A comparison of Airbnb listings for Byron Shire and the top 10 LGA's for the Greater Sydney Region is illustrated in figure 2.

Figure 2: Comparison of Airbnb listings between Byron Shire and the top 10 LGA's in the Greater Sydney Region



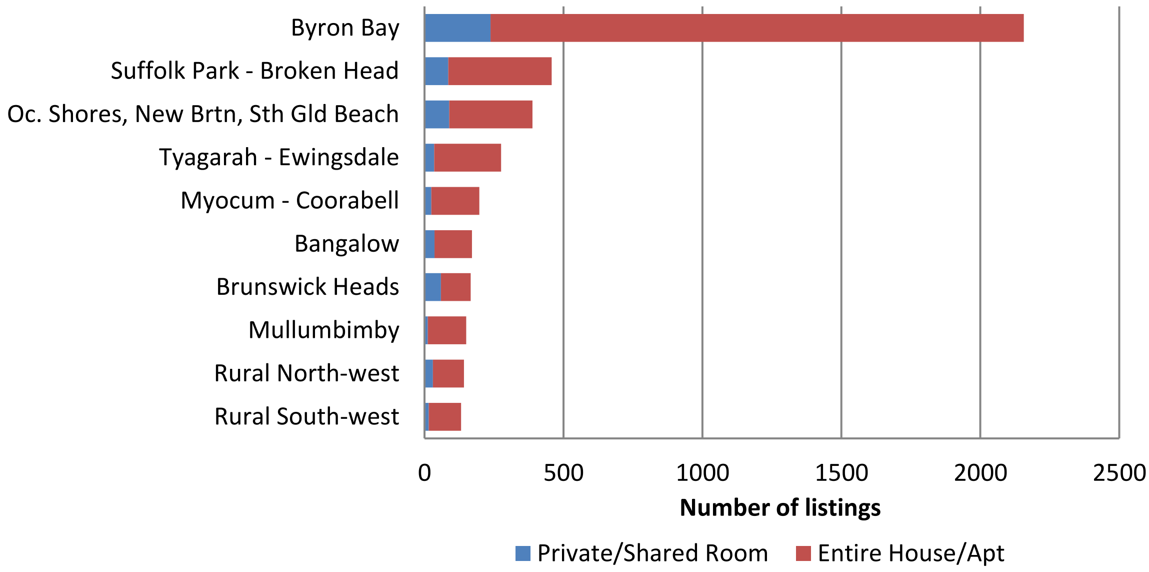
Source: Byron Shire Council, based on data from Inside Airbnb, 30 November 2019

2.4 Spatial distribution of listings

The majority of Airbnb and HomeAway listings are concentrated in Byron Bay, with Suffolk Park being the next most popular location. At 1 November 2019, Byron Bay had a total of 2157 listings, representing 62% of dwellings, followed by Suffolk Park/Broken Head with 457 listings, which equates to 24% of dwellings.

This finding reflects previous research on Airbnb that indicates listings tend to concentrate in areas with significant tourism appeal (Crommelin et. al., 2018). Listings in other areas of the Shire were still considerably higher the regional and State-wide averages, although the majority of activity appears to be occurring in coastal areas, particularly Byron Bay. A breakdown of total listings for eight different areas in the Shire is illustrated in Figure 3 and Table 1. Listings as a proportion of dwellings are shown in figures 11-13, in Section 4 of this Appendix.

Figure 3: Distribution of Airbnb and HomeAway listings in Byron Shire by suburb



Source: Byron Shire Council, based on data from AirDNA, 1 November 2019

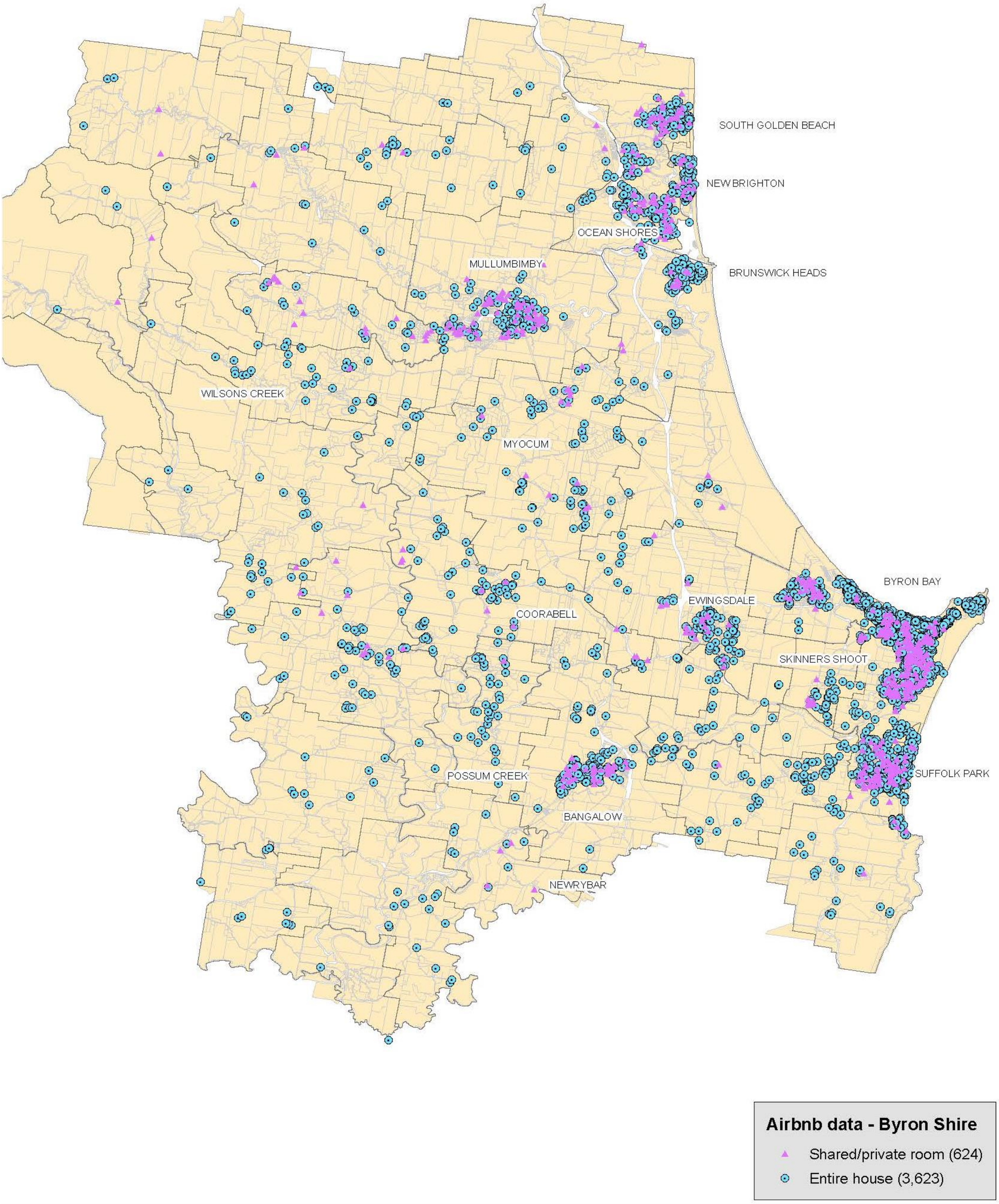
Table 2: Distribution of Airbnb and HomeAway listings in Byron Shire by suburb

Suburb	Private/Shared Room	Entire House/Apt	Total listings
Byron Bay	238	1919	2157
Suffolk Park - Broken Head	85	372	457
Oc. Shores, New Brighton, South Golden Beach	89	300	389
Tyagarah - Ewingsdale	35	241	276
Myocum - Coorabell	25	172	197
Bangalow	36	135	171
Mullumbimby	59	107	166
Brunswick Heads	12	138	150
Rural North-west	30	112	142
Rural South-west	15	117	132
Total	**624**	**3613**	**4237**

Source: Byron Shire Council, based on data from AirDNA, 1 November 2019

A clear spatial pattern of listings is evident in figure 4 which illustrates the concentration of activity in and around Byron Bay. Each listing is represented as an individual point on the map, with listings for entire houses or apartments shown as a blue dot and private or shared rooms shown as a purple triangle.

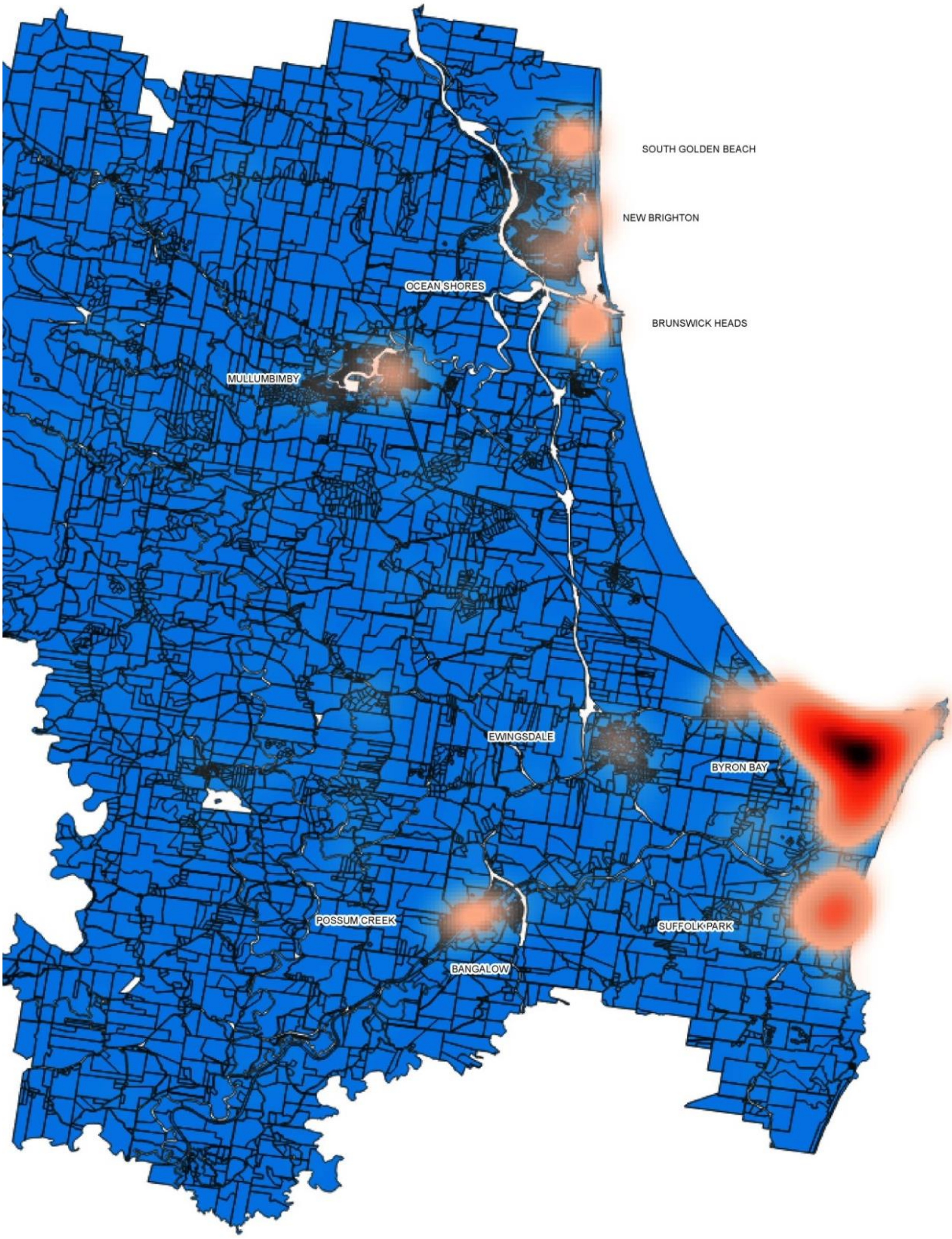
Figure 4: Airbnb and HomeAway listings based on publicly available spatial coordinates



Source: Map: Byron Shire Council (2019). Coordinate Data: Airdna (2019)

Due to the high number of listings, the concentration of activity is difficult to visualise using individual points on a map. Figure 5 uses a heat map to illustrate the density of listings, which gives a better impression of the concentration of activity in different parts of the Shire. As discussed earlier, Byron Bay is a clear hotspot of activity with 2157 listings accounting for 51% of total listings.

Figure 5: Heat map providing a visual guide for the concentration of Airbnb and HomeAway listings in Byron Shire



Source: Map: Byron Shire Council (2019). Coordinate Data: Airdna (2019)

2.5 Frequently available listings

Analysis of the data indicates there are a wide range of participants on both platforms, from hosts occasionally renting a single room through to professional investors renting out multiple properties year-round.

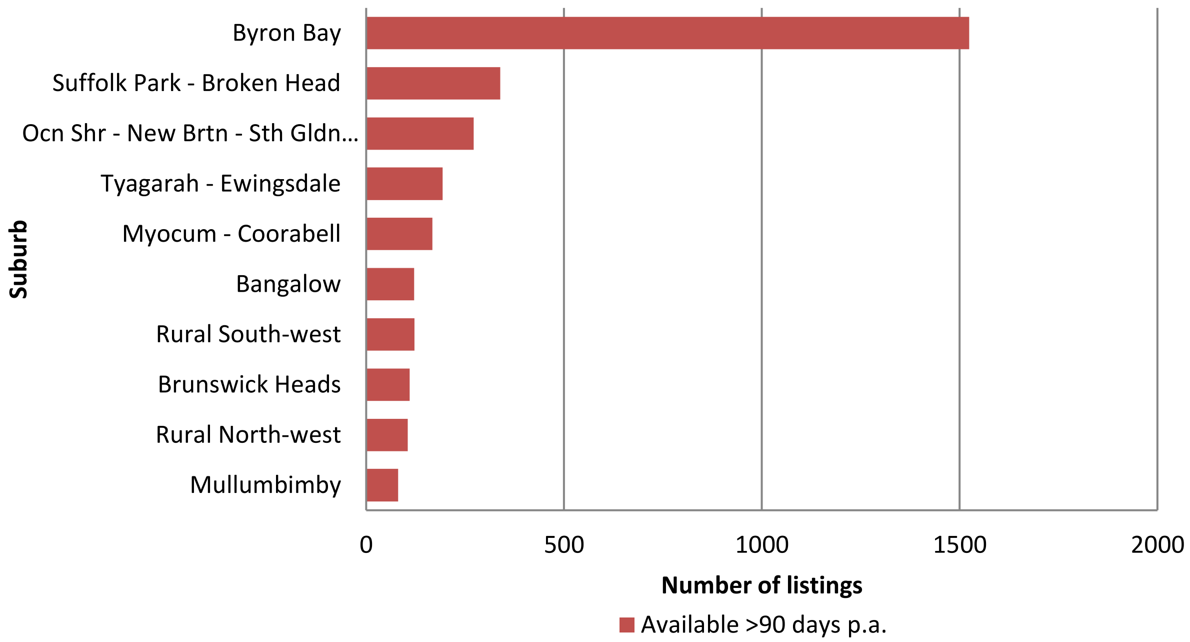
In terms of housing, we are interested in identifying the numbers of dwellings that are frequently used for tourist accommodation purposes, and thus are considered to have been removed from the long term housing market. Dwellings that are only partially or occasionally used for holiday letting while the occupants are away are not considered to have significant net impact on dwelling supply as the primary use of the dwelling has not substantially changed.

To estimate the impact, we have chosen to focus on entire houses or apartments that were listed as ‘available’ or ‘reserved’ for at least 90 days in the previous 12 months. For the sake of comparison, additional analysis using a more permissive 180 day threshold (similar to the draft SEPP) has also been carried out.

Out of a total of 3613 listings for entire houses or apartments, 3034 (84%) were ‘available’ or ‘booked’ for more than 90 days in the previous 12 months. Raising the threshold to 180 days in the previous 12 months reduced the number to 1794 which constitutes approximately 50% of listings. The majority of frequently available listings are concentrated in Byron Bay.

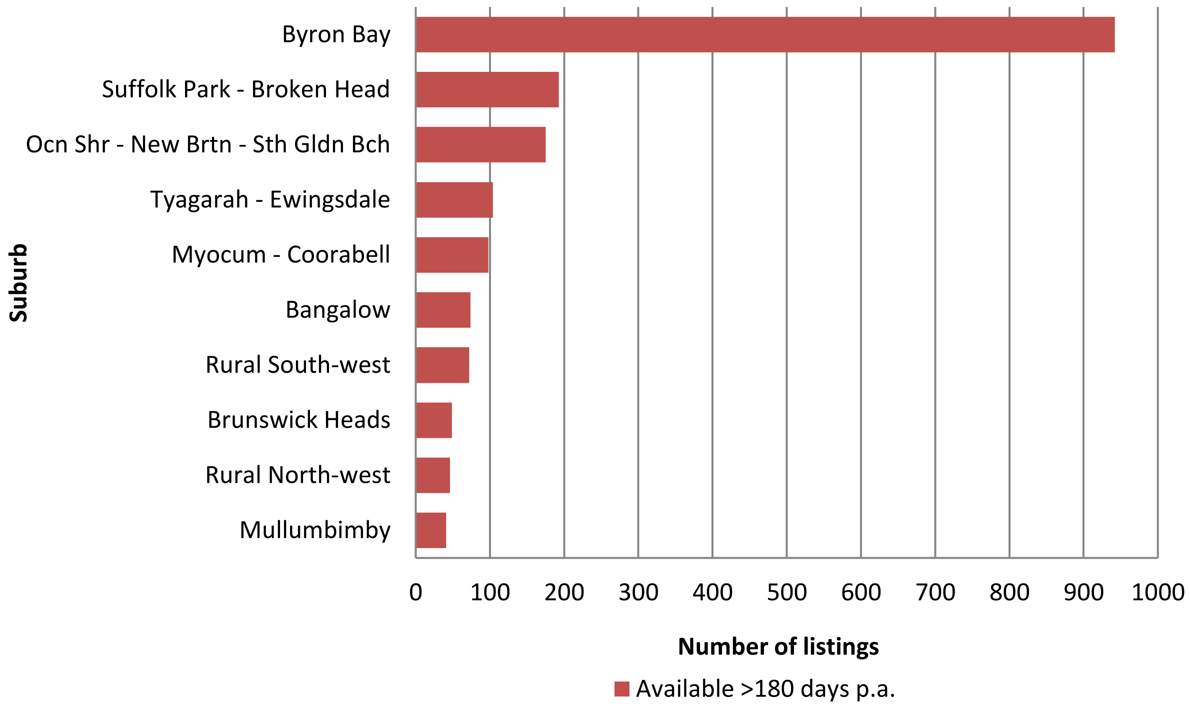
Figures 6 and 7 illustrate frequently available listings as a percentage of total listings. Figures for each suburb are shown in table 2.

Figure 6: Frequently available listings (>90 days p.a.) by suburb



Source: Byron Shire Council, based on data from AirDNA, 1 November 2019

Figure 7: Frequently available listings (>180 days p.a.) by suburb



Source: Byron Shire Council, based on data from AirDNA, 1 November 2019

Table 3: Breakdown of frequently available listings by suburb

Suburb	Available >180 days p.a.	Available >90 days p.a.
Byron Bay	942 (44%)	1524 (71%)
Suffolk Park - Broken Head	193 (42%)	339 (74%)
Ocean Shores, New Brighton, South Golden Beach	175 (45%)	272 (70%)
Tyagarah - Ewingsdale	104 (38%)	193 (70%)
Myocum - Coorabell	98 (50%)	167 (85%)
Brunswick Heads	49 (33%)	110 (73%)
Bangalow	72 (42%)	122 (71%)
Rural South-west	74 (32%)	121 (92%)
Rural North-west	46 (32%)	105 (74%)
Mullumbimby	41 (21%)	81 (48%)
Total	**1794 (42%)**	**3034 (71%)**

Note. Percentages indicate frequently available listings relative to total listings

2.6 Number of reserved days

To gain an insight into the usage of properties, listings were filtered to identify the number of days that a property was listed as 'reserved' (i.e. booked), as this provides an indication of a dwelling being actively used for STRA. Listings were split into the following three groups based on the number of days they were reserved in the previous 12 months:

- 0-90 days;
- 91-180 days;
- 181-365 days.

Table 3 below illustrates that the market is roughly split between frequently and infrequently reserved properties. Slightly more than half of listings (55%) were reserved for less than 90 days per year, while 27% were reserved from 91-181 days per year and 18% of listings were reserved for more than 181 days per year.

This shows that while the number of 'frequently available' properties is relatively high, many of these dwellings have a usage of less than 90 days per year. There could be a number of explanations, such as holiday houses that are listed frequently but not often booked.

If new planning rules were introduced that reduced the period of non-hosted accommodation to 90 days, this would be likely to impact on 45% of listed properties. Slightly less than 20% would be affected if a 180 day threshold were adopted.

Table 3: Breakdown of reserved days

Reserved days (last 12 months)	Entire homes/apt	%
0-90	1958	55%
91-180	946	27%
181-365	645	18%
Total	3549	100%

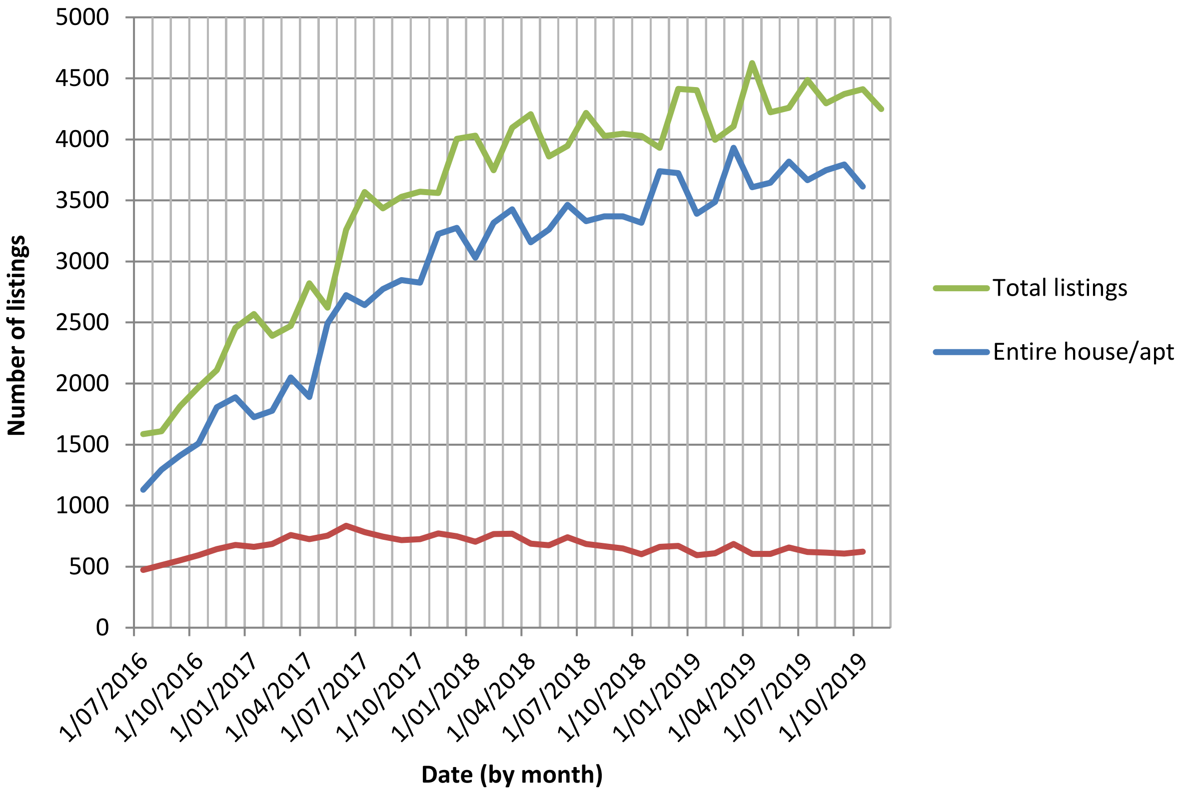
3. Growth trends

3.1 Growth in total listing

Between 1 August 2016 and 1 November 2019 the total number of Airbnb and HomeAway listings increased from 1603 to 4237 (264%). Listings growth appears to have accelerated rapidly in period from 2016 – 2018. The total volume of listings is still increasing, but take up rates appear to be slowing overall. The majority of growth is being driven by listings for entire houses and apartments rather than for private/shared rooms.

It should be acknowledged that the growth trends are indicative of listings growth on the Airbnb and HomeAway platforms, and may not be reflective of actual STRA growth in the Shire as there is no way of knowing how many listings are 'new entrants' to the market or whether the trend represents a shift in advertising of existing properties. Nevertheless, the total volume of listed properties indicates a significant upward trend that is unlikely to be explained solely by a change in advertising mediums. Total listings growth is depicted in figure 8.

Figure 8: Growth in total Byron Shire Airbnb and HomeAway listings Jul 2016 – Nov 2019

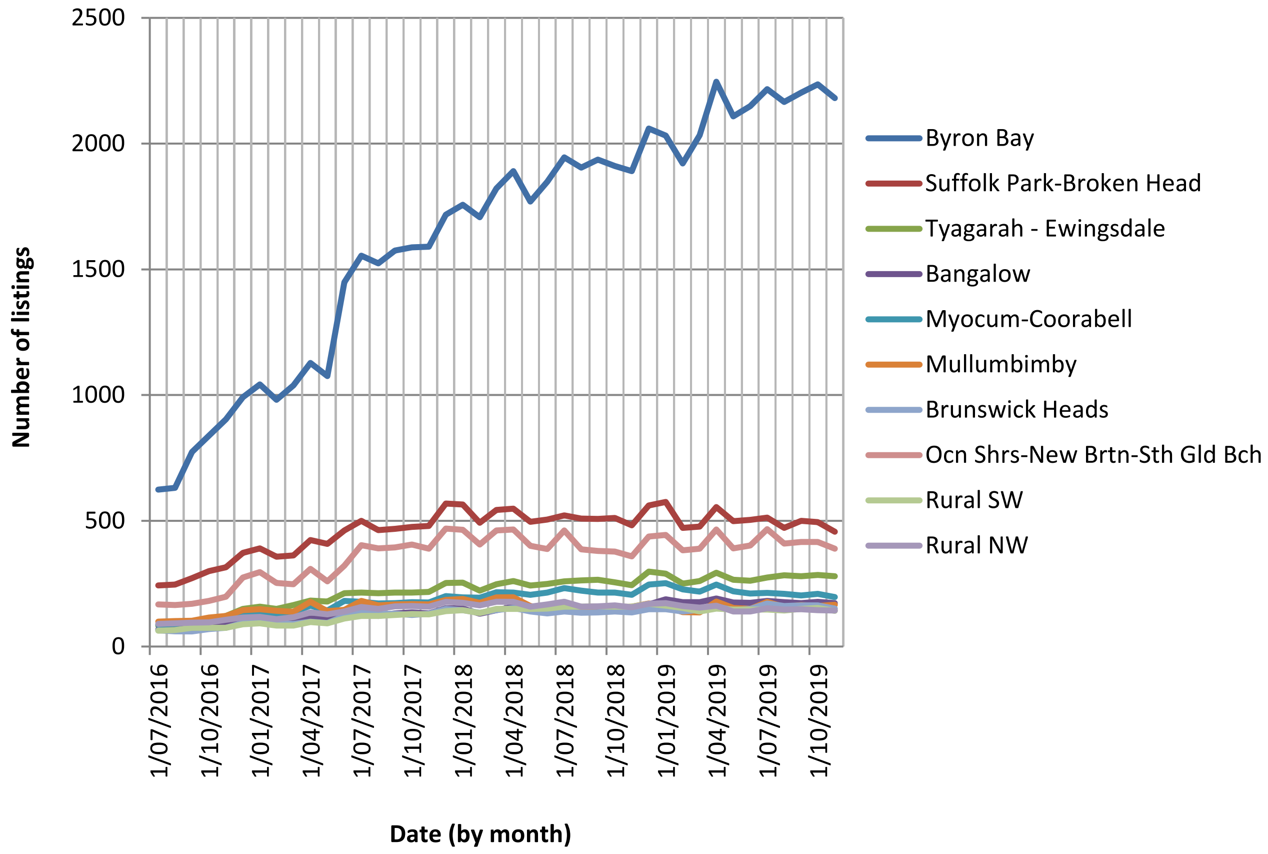


Source: Byron Shire Council, based on data from AirDNA, 1 November 2019.

3.2 Growth most evident in Byron Bay

When growth is filtered by suburb, it becomes clear that the strong growth trend is being driven primarily by listings in Byron Bay. Other areas of the Shire also experienced increased growth, but to a lesser degree. Listings growth by suburb is illustrated in figure 9.

Figure 9: Growth of total listings in Byron Shire, by suburb, Jul 2016–Nov 2019

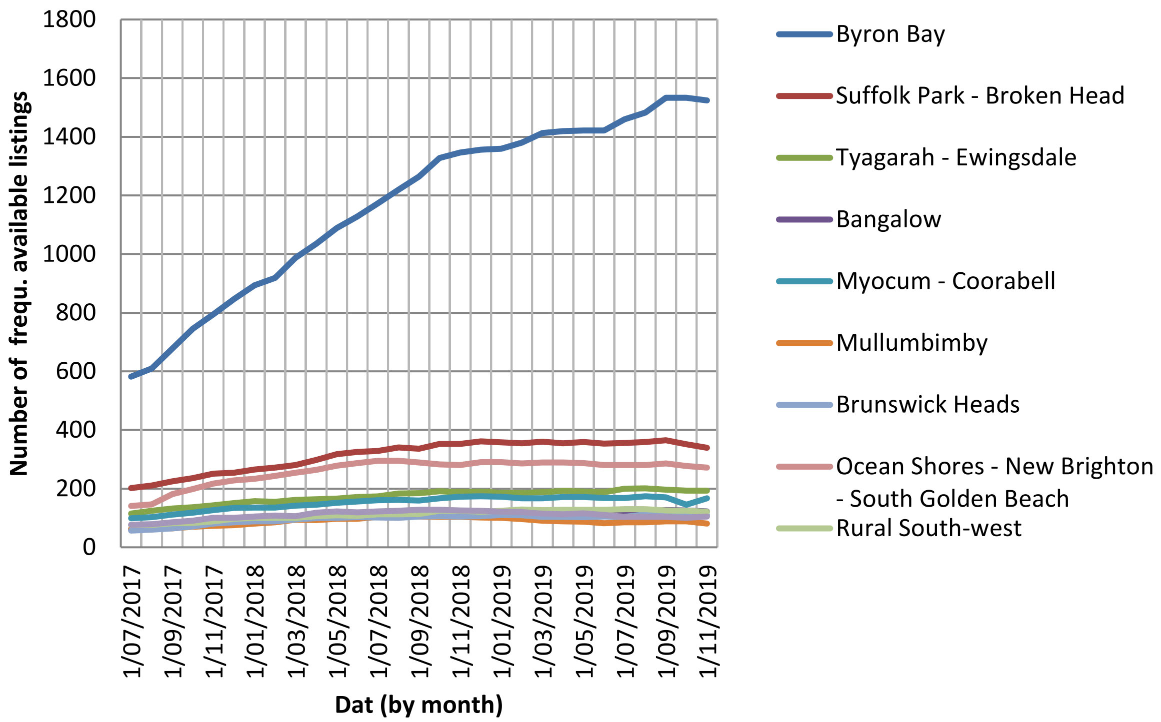


Source: Byron Shire Council, based on data from AirDNA, 1 November 2019

3.3 Growth in frequently available listings

Growth in frequently available properties, being whole houses or apartments that were available or reserved for more than 90 days in the previous 12 months, shows a similar trend to listings growth overall. The number of frequently available properties rose rapidly in the period of 2016 to 2018 with growth slowing in the past 12 months. The nature of this analysis results in a 'smoothing' of the growth trend because it averages the total number of available or reserved days over the previous 12 months. Again, the upward growth trend is primarily driven by growth in Byron Bay listings. Growth in frequently available listings by suburb is depicted in figure 10.

Figure 10: Growth of frequently available listings by suburb Jan 2017 – Oct 2019



Source: Byron Shire Council, based on data from AirDNA, 1 November 2019

4. Listings relative to dwelling supply

4.1 Significant proportion of dwellings

It is estimated there were 16,592 dwellings in the Byron Shire by 1 November 2019. When considered as a proportion of the total dwelling supply, Airbnb and HomeAway listings equate to 25% of total dwellings in the Byron Shire. Consistent with other findings in this analysis, the greatest concentration of activity was evident in Byron Bay, where Airbnb and HomeAway listings equate to approximately 62% of dwellings. This figure is inclusive of shared rooms, private rooms and entire dwellings and covers frequent and infrequent users.

Frequently available properties that were available or reserved for more than 90 days in the previous 12 months are estimated to comprise 18% of total dwellings in the Shire. This figure reduces to 11% if the availability threshold is raised to a more permissive 180 days per year. For comparison, this compares to a national rate of 0.2% and a rate of 1.7% for the Greater Sydney Region (Gurran et. al., 2018).

Charts 12-13 and tables 4-5 illustrate total listings and frequently available listings as a proportion of dwelling supply in each suburb.

Figure 11: Total listings as a proportion of dwelling supply, by suburb

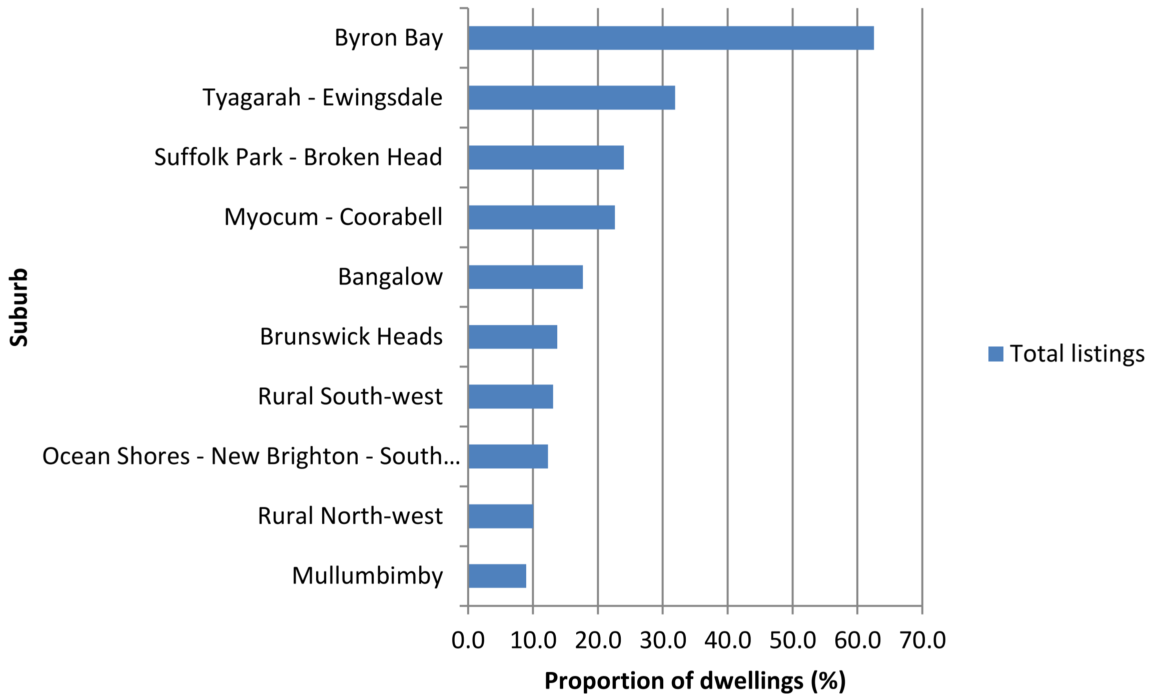
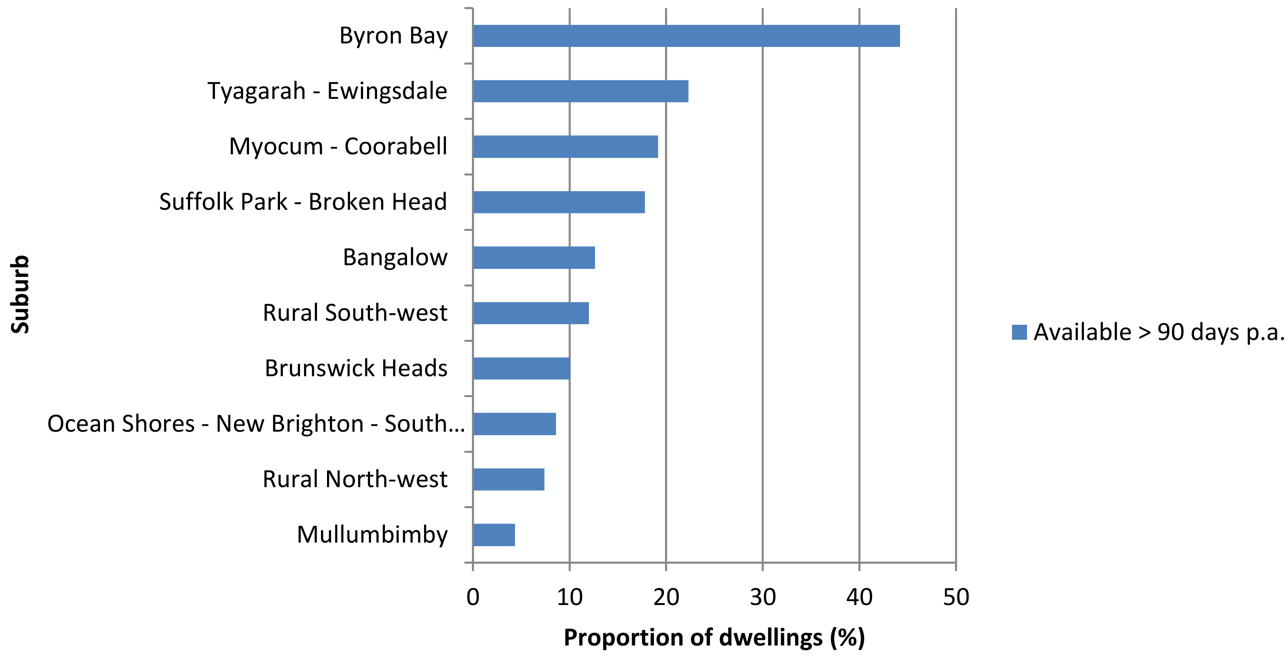


Table 4: Total listings as a proportion of dwelling supply, by suburb

Suburb	Available (total)	Dwellings	Pct. of dwellings
Byron Bay	2,157	3,447	62.6%
Tyagarah - Ewingsdale	276	865	31.9%
Suffolk Park - Broken Head	457	1,905	24.0%
Myocum - Coorabell	197	871	22.6%
Bangalow	171	966	17.7%
Brunswick Heads	150	1,093	13.7%
Rural South-west	132	1,007	13.1%
Ocean Shores - New Brighton - South Golden Beach	389	3,162	12.3%
Rural North-west	142	1,418	10.0%
Mullumbimby	166	1,858	8.9%
Total	**4237**	**16,592**	**25.5%**

Source: Byron Shire Council, based on data from AirDNA, 1 November 2019

Figure 12: Frequently available listings as a proportion of dwelling supply, by suburb



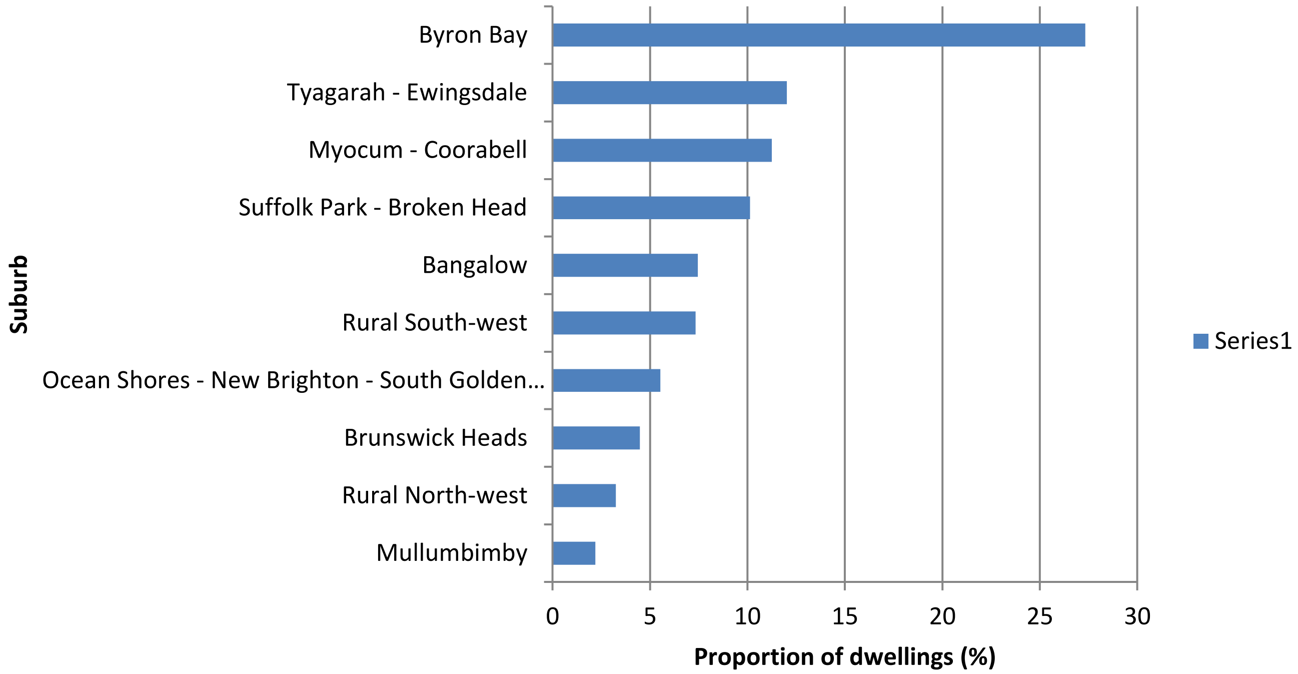
Source: Byron Shire Council, based on data from AirDNA, 1 November 2019

Table 4: Frequently available listings as a proportion of dwelling supply, by suburb

Suburb	Available >90 days p.a.	Dwellings	Pct. of dwellings
Byron Bay	1524	3,447	44%
Suffolk Park - Broken Head	339	865	18%
Ocean Shores, New Brighton, South Golden Beach	272	1,905	9%
Tyagarah - Ewingsdale	193	871	22%
Myocum - Coorabell	167	966	19%
Brunswick Heads	110	1,093	10%
Bangalow	122	1,007	12%
Rural South-west	121	3,162	12%
Rural North-west	105	1,418	7%
Mullumbimby	81	1,858	4%
Total	**3034**	**16,592**	**18%**

Source: Byron Shire Council, based on data from AirDNA, 1 November 2019

Figure 13: Frequently available listings (>180 days p.a.) shown as a proportion of dwellings, by suburb



Source: Byron Shire Council, based on data from AirDNA, 1 November 2019

Figure 5: Frequently available listings (> 180 days p.a.) as a proportion of dwelling supply, by suburb

Suburb	Available >180 days p.a.	Dwellings	Pct. of dwellings
Byron Bay	942	3,447	27%
Tyagarah - Ewingsdale	104	865	12%
Myocum - Coorabell	98	1,905	11%
Suffolk Park - Broken Head	193	871	10%
Rural South-west	74	966	7%
Bangalow	72	1,093	7%
Ocean Shores, New Brighton, South Golden Beach	175	1,007	6%
Brunswick Heads	49	3,162	4%
Rural North-west	46	1,418	3%
Mullumbimby	41	1,858	2%
Total	**1794**	**16,592**	**11%**

Source: Byron Shire Council, based on data from AirDNA, 1 November 2019

4.2 Growth trends relative to dwelling supply

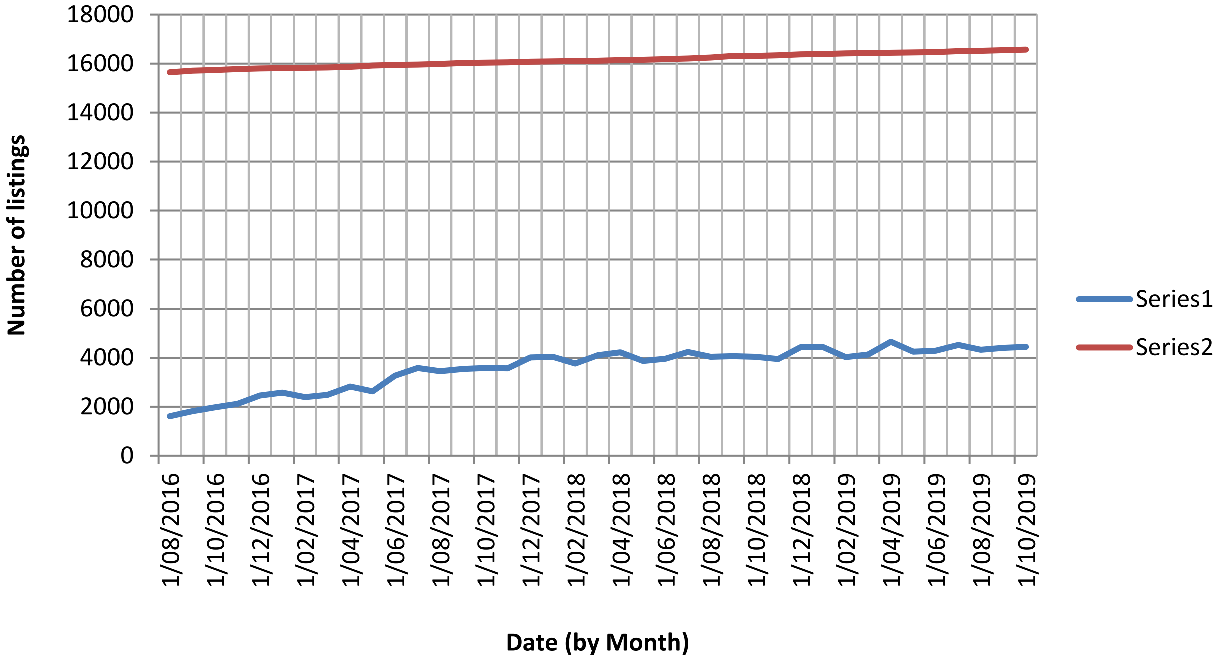
Between August 2016 and November 2019, 877 occupation certificates for residential dwellings were issued. The number of dwellings is estimated to have grown from 15,715 to 16,592 over that time, representing an increase of 5.5%.

Over the same period, total Byron Shire Airbnb and HomeAway listings rose by 264% from 1603 to 4237. Listings of frequently available dwellings grew by 211% from 1437 at 1 July 2017 to 3034 by 1 November 2019.

Note: A smaller time period was required for this analysis as the figures needed to be inclusive of the average number of days a property was available or reserved in the previous 12 months.

As indicated in figure 14, listings growth outpaced the supply of new residential accommodation over the reporting period and this trend appears to be ongoing.

Figure 14: Growth in Airbnb and HomeAway listings relative to growth in dwellings in Byron Shire



Source: Byron Shire Council, based on data from AirDNA, 1 November 2019

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