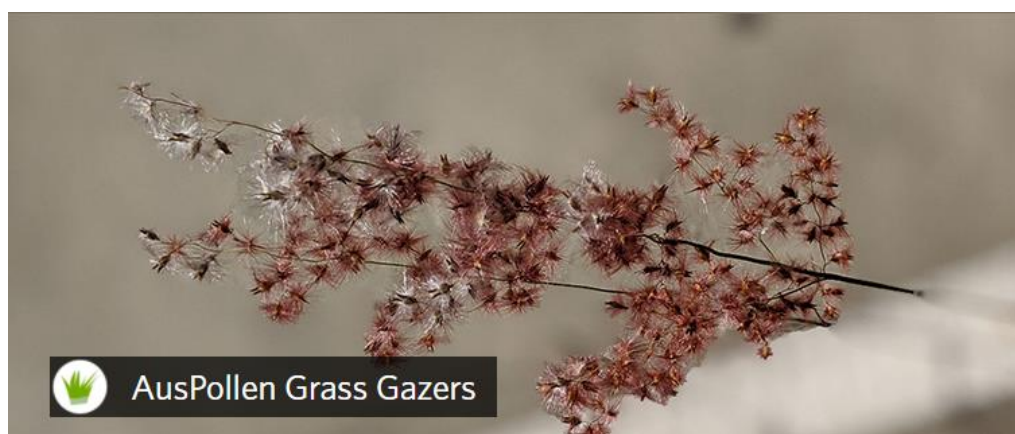


GRASS GAZERS



Oct 2021

iNaturalist Project Addendum

This report is an addendum to metrics which may be found on the Grass Gazers iNaturalist Project page,

<https://inaturalist.ala.org.au/projects/auspollen-grass-gazers>.

The AusPollen Grass Gazers project aims to collect data about grass distribution, diversity, flowering, and pollen production. The aim is to improve current pollen forecasting and help people to better manage their grass pollen allergies.

Grass Gazers

INATURALIST PROJECT ADDENDUM

INATURALIST GRASS ENTRIES

- 1915 observations
- 171 species
- 127 identifiers
- 305 observers
- The auxiliary phenological inaturalist fields defined by the QUT Allergy Research Group were used in 75 observations by 9 observers1121 observations were made since the Citizen Science project officially began, 68% (759) of which are Research Grade
- The 20 most observed species are shown below. Colours indicate the relative clustering of the sightings, using a density rank. This density rank is determined by calculating the convex hull of the observations and dividing by the number of observations. A high density rank indicates relatively clustered sightings (e.g. Bahia Grass).

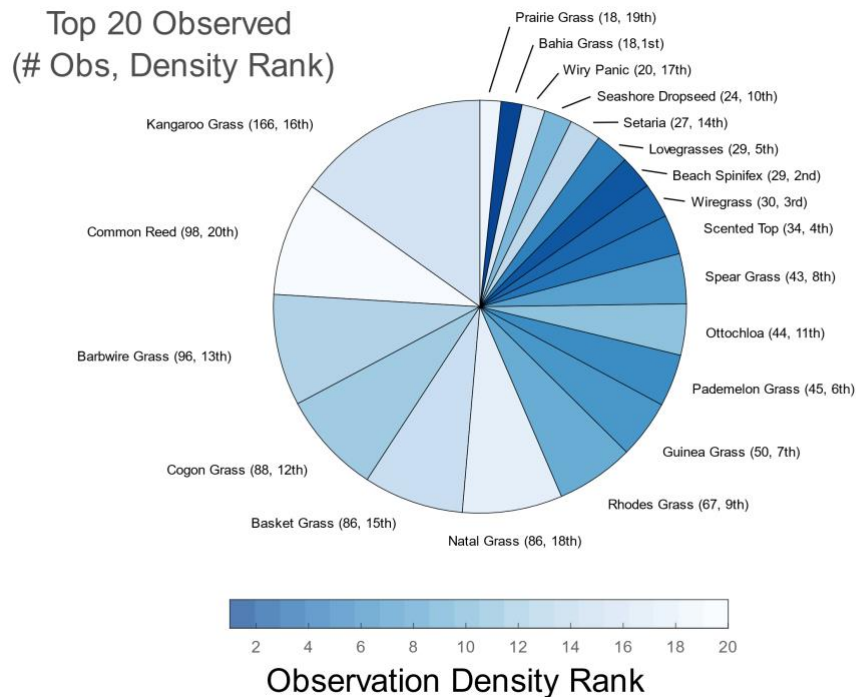
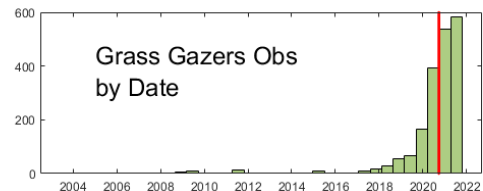


Figure 1: Top 20 grasses by number of observations, coloured according to density rank.

The density of observations (Figure 2) was highest in the Brisbane City LGA region, but there is a good spread of observations both North-South and East-West. Apart from a couple of noticeable exceptions, observations tended to cluster in and near populated areas.

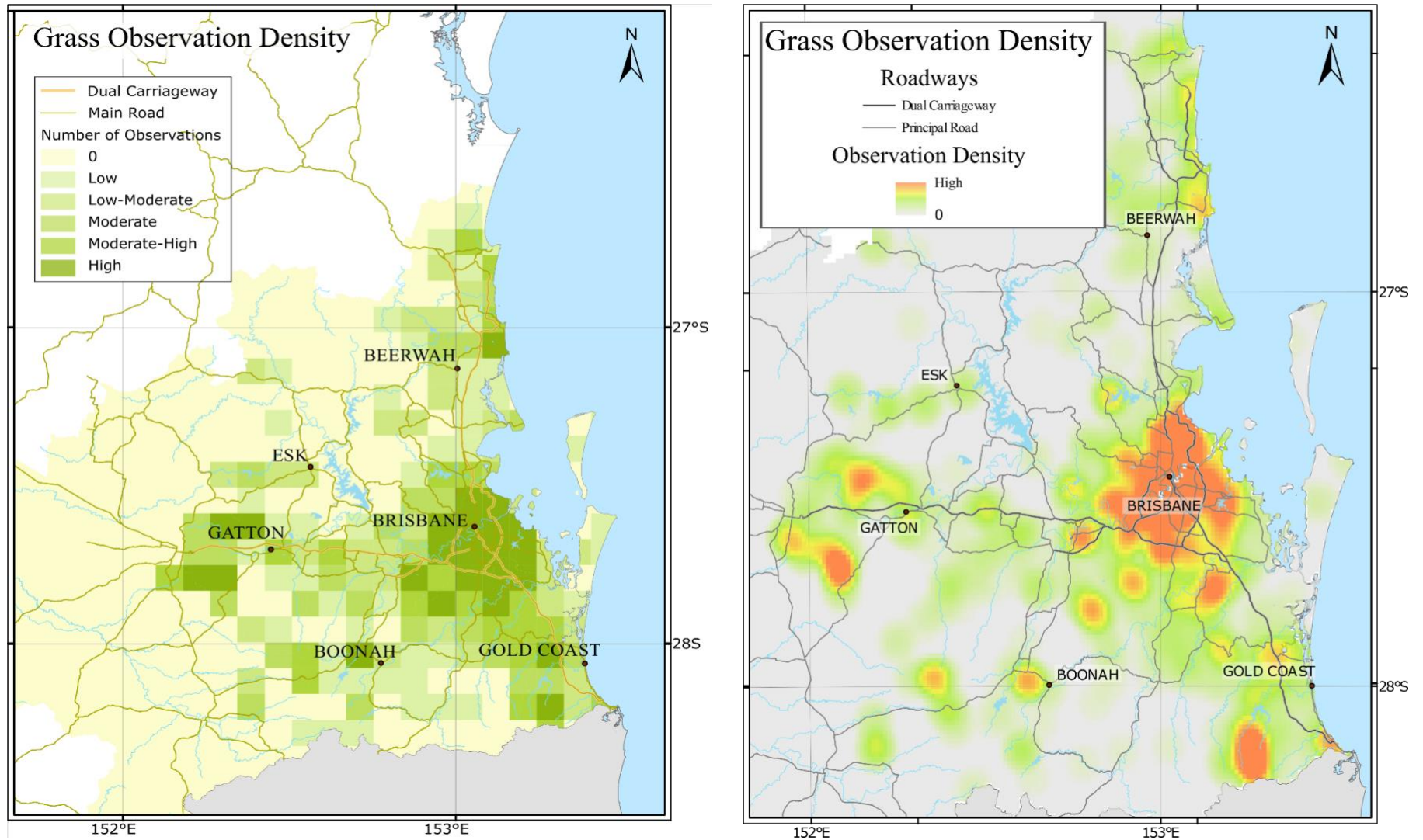


Figure 2: Density of Grassgazer observations: (left) per 0.1 degree square, and (right) using a kernel density function.

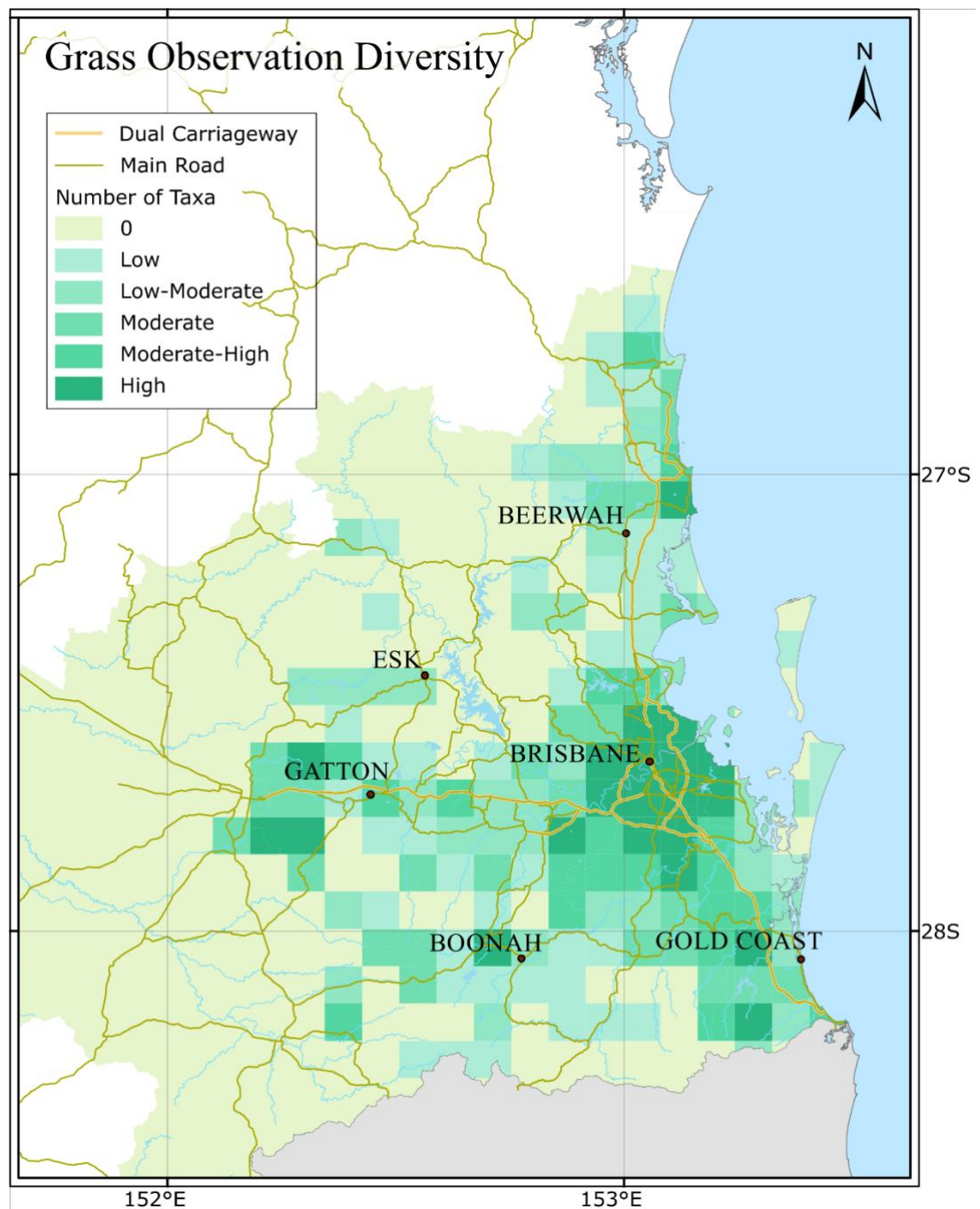


Figure 3: Diversity of Taxa per 0.1 degree square

The diversity of taxa (number of different taxa per 0.1 degree square, Figure 3) correlates with the density of observations. This could mean that there is widespread diversity but that some areas are under-sampled. Alternatively, observers may not wish to make multiple observations of the same species in a given area. Without a methodical survey it is difficult to tell.

The 20 most observed species are ranked according to a number of criteria in Table 1, which also shows the number of observations and the number of different users who observed each of those species. Kangaroo grass is the most observed grass by far. Kangaroo Grass and Natal grass were observed by a similarly large number of iNaturalists, perhaps because these are easily recognizable and widespread grasses. These two species were also observed over the largest area (convex hull). Barbwire grass and Common Reed had the largest longitudinal range (1.55 degrees ~ 150km) and latitudinal range (2.04 degrees ~ 200km), respectively, although Lovegrasses and Beach Spinifex had the largest IQR of longitudinal and latitudinal range, respectively,

Table 1: Counts and ranks within the top 20 most observed species. Density is calculated by dividing the convex hull size by the number of observations.

Common Name	Counts		Ranks 1 (largest) to 20 (smallest)						
	number of observations	number of observers	longitude range	latitude range	convex hull size	longitude IQR	latitude IQR	density	# of observers
Kangaroo Grass	166	56	2	2	2	3	2	16	2
Common Reed	98	24	16	1	6	19	20	20	8
Barbwire Grass	96	34	1	7	5	8	12	13	5
Cogon Grass	88	39	4	3	4	16	4	12	4
Basket Grass	86	26	15	4	12	12	11	15	7
Natal Grass	86	57	3	6	1	5	8	18	1
Rhodes Grass	67	40	6	14	3	6	9	9	3
Guinea Grass	50	34	12	12	13	14	18	7	6
Pademelon Grass	45	10	5	11	8	10	17	6	20
Ottobachloa	44	16	17	15	17	13	7	11	14
Spear Grass	43	18	14	18	15	2	10	8	10
Scented Top	34	12	8	13	7	4	14	4	19
Wiregrass	30	14	10	5	10	9	5	3	18
Beach Spinifex	29	22	19	10	18	7	1	2	9
Lovegrasses	29	16	13	16	11	1	15	5	15
Setaria	27	18	7	9	9	17	6	14	11
Seashore Dropseed	24	15	18	8	19	18	13	10	16
Wiry Panic	20	17	9	19	16	15	3	17	12
Bahia Grass	18	15	20	20	20	20	16	1	17
Prairie Grass	18	17	11	17	14	11	19	19	13

Spatial distribution of the species is described by the following boxplots and map:

