Wallaroo interaction

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Introduction

To explore behavioural shifts as well as enclosure space-use between kangaroos with the introduction of two different species of wallabies.

Methods

The formula for deriving the Shannon's Diversity Index (SDI) is as follow:

$$SDI = -\sum_{i=1}^{B} p_i \times ln \times p_i$$

where B is the number of behaviour types ($n = \leq 11$) and p_i is the proportion of behaviour i. Greater index values demonstrates a greater diversity in exhibited behaviour and index values increases linearly with number of behaviour types and abundances.

Results

- NVs are removed.They compose nearly 9 – 16% across all individuals.
- Behaviours that occur less than 1% of the time are also removed.

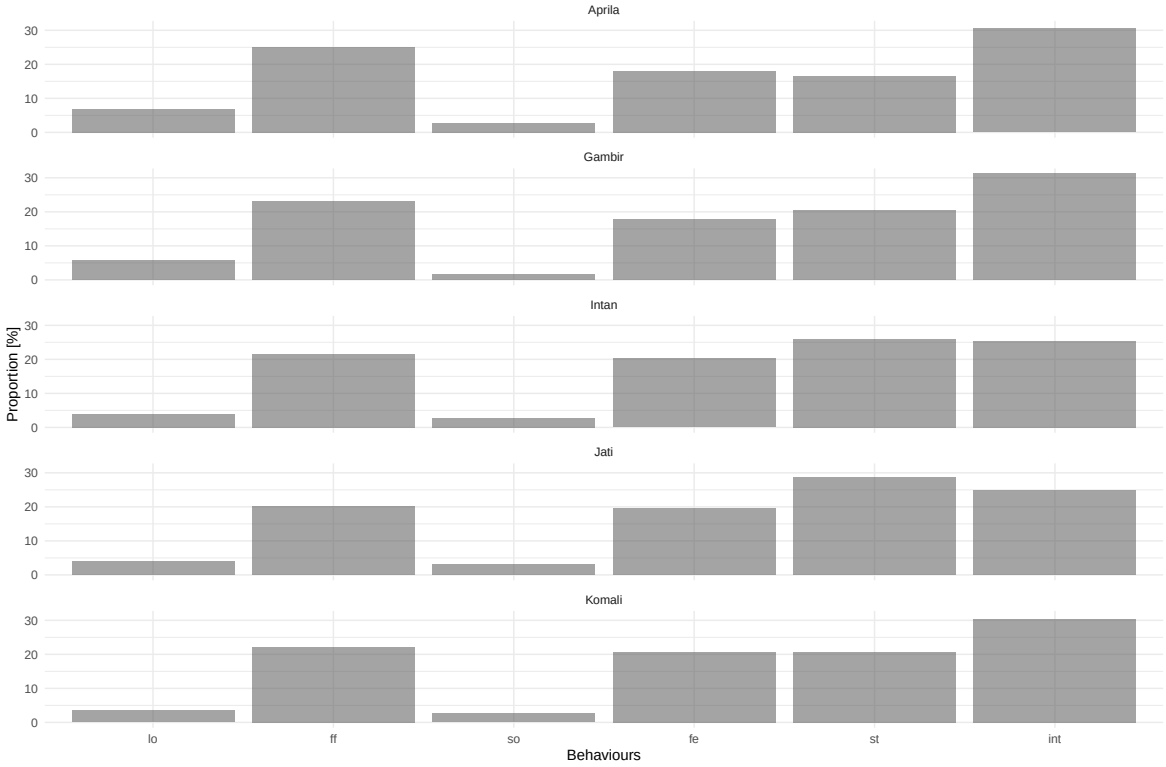

Figure 1: The overall activity budgets 0.5 elephants.

Table 1: The overall activity budgets of 0.5 elephants

	Behaviour	**Aprilia**	**Gambir**	**Intan**	**Jati**	**Komali**
lo	Locomotion	5.52	4.58	3.27	3.48	2.86
ff	Feed	20.03	19.24	17.42	17.30	17.52
ag	Aggression	1.22	0.26	0.31	0.93	0.43
so	Socialize	2.24	1.43	2.28	2.58	2.17
hi	Human Intercation	0.73	0.85	0.60	0.46	0.88
ee	Enrichment	1.00	0.69	0.62	0.77	0.91
fe	Feeding Enrichment	14.49	14.90	16.46	16.86	16.64
st	Stereotypy	13.19	17.24	21.58	25.14	16.71
ina	Inactive	25.37	26.66	21.60	21.78	24.96
oa	Other	0.96	1.25	0.75	1.16	1.23
nv	Non-visible	15.26	12.89	15.11	9.54	15.67

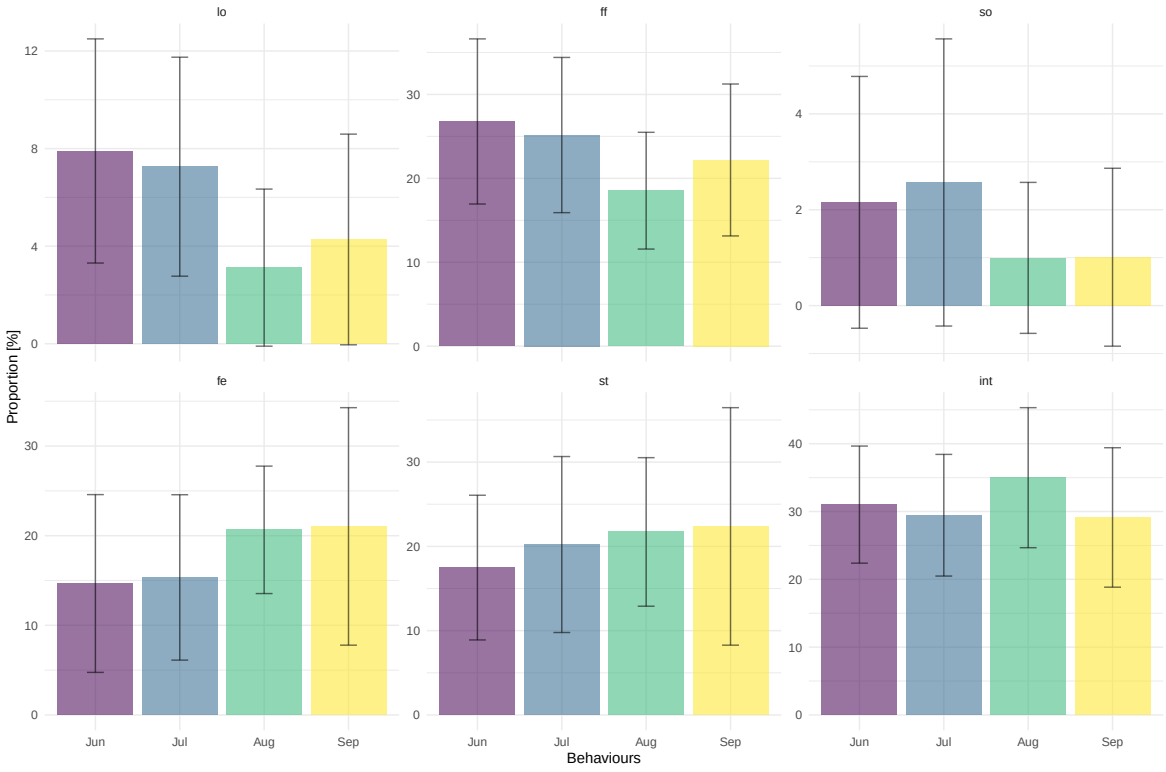

Figure 2: The activity budgets of Gambir across different months.

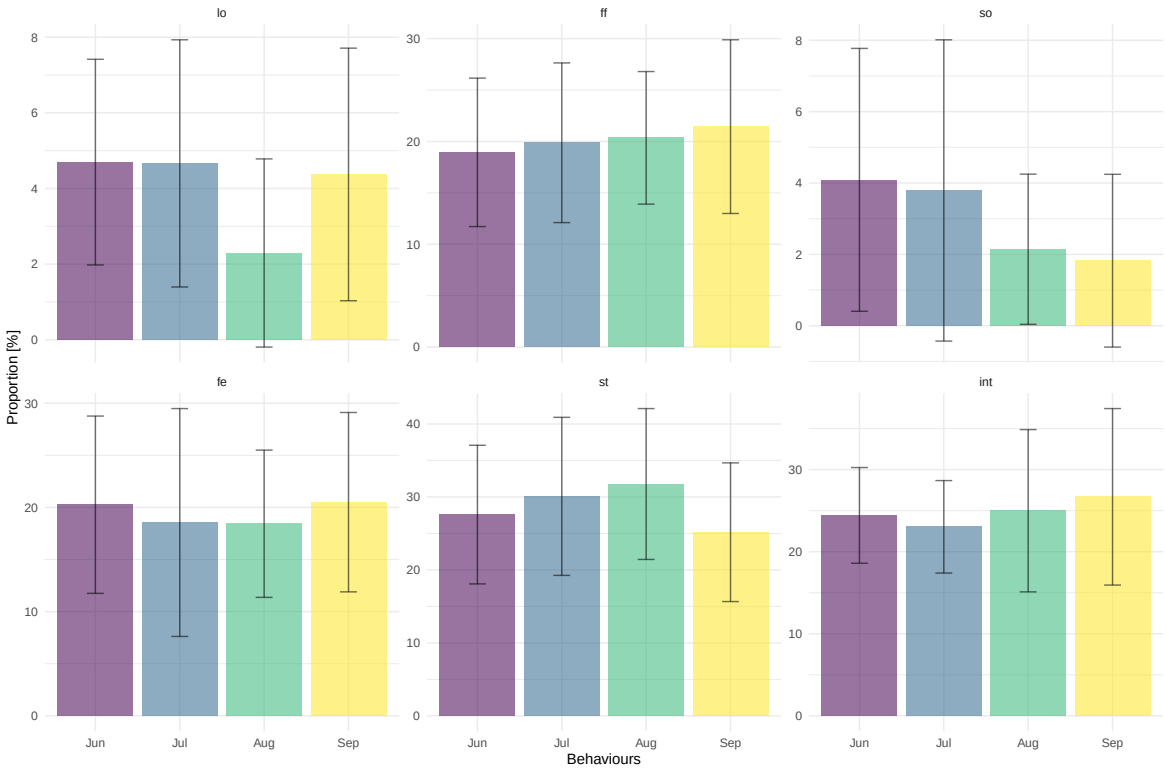

Figure 3: The activity budgets of Jati across different months.

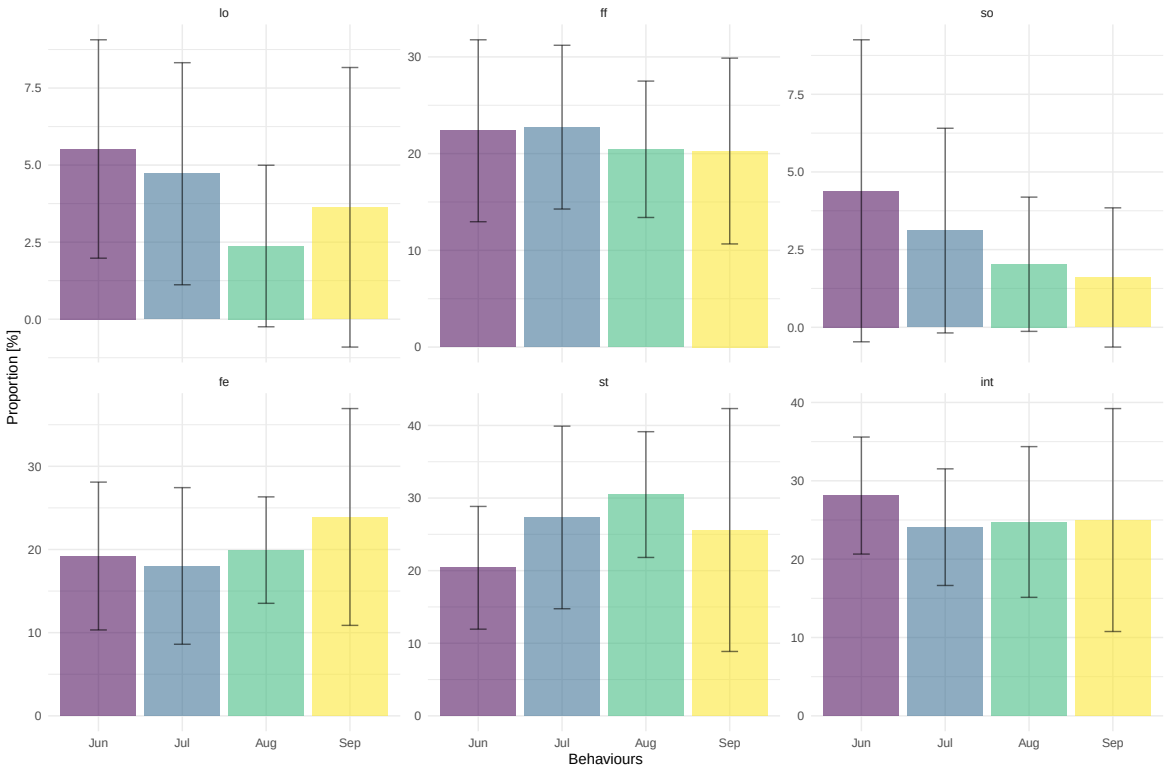

Figure 4: The activity budgets of Intan across different months.

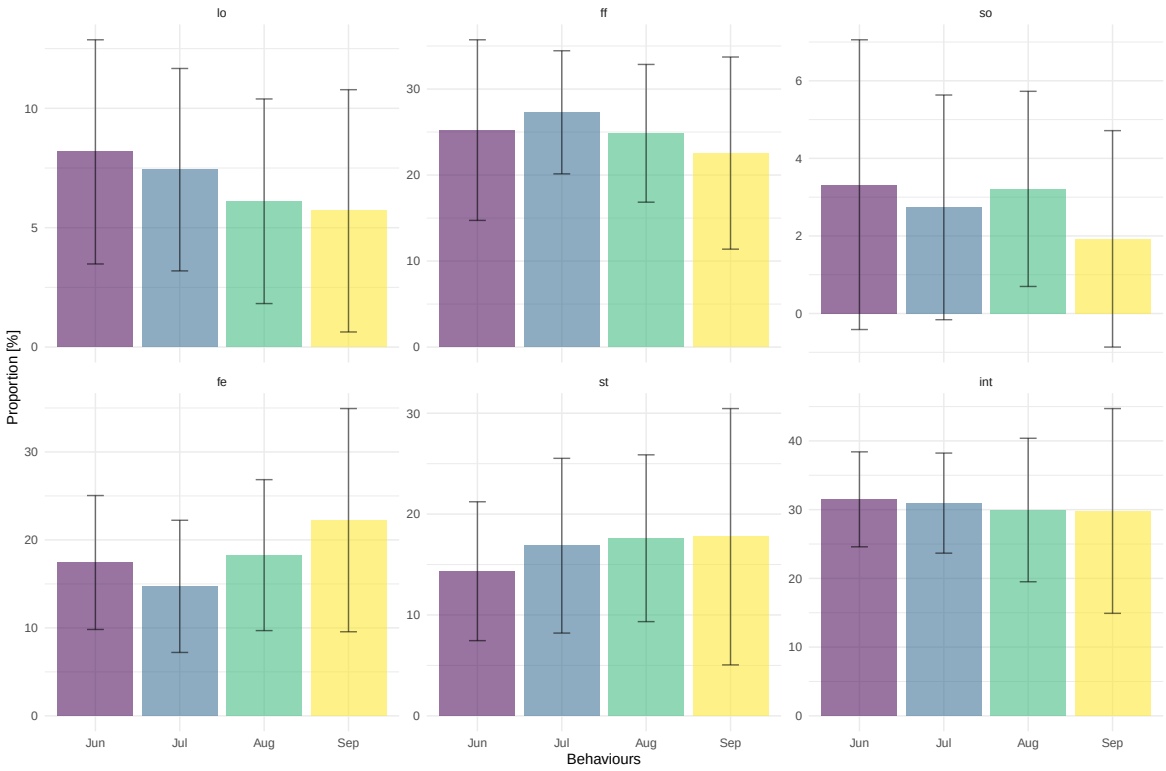

Figure 5: The activity budgets of Aprila across different months.

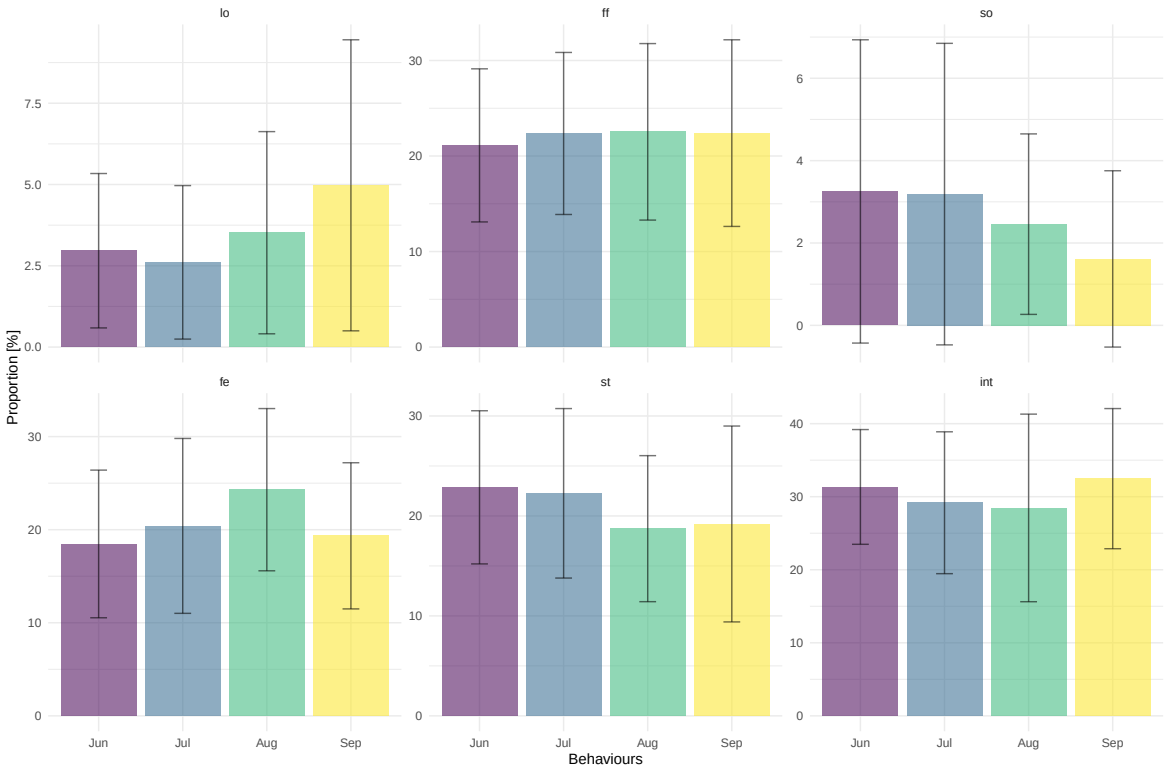

Figure 6: The activity budgets of Komali across different months.

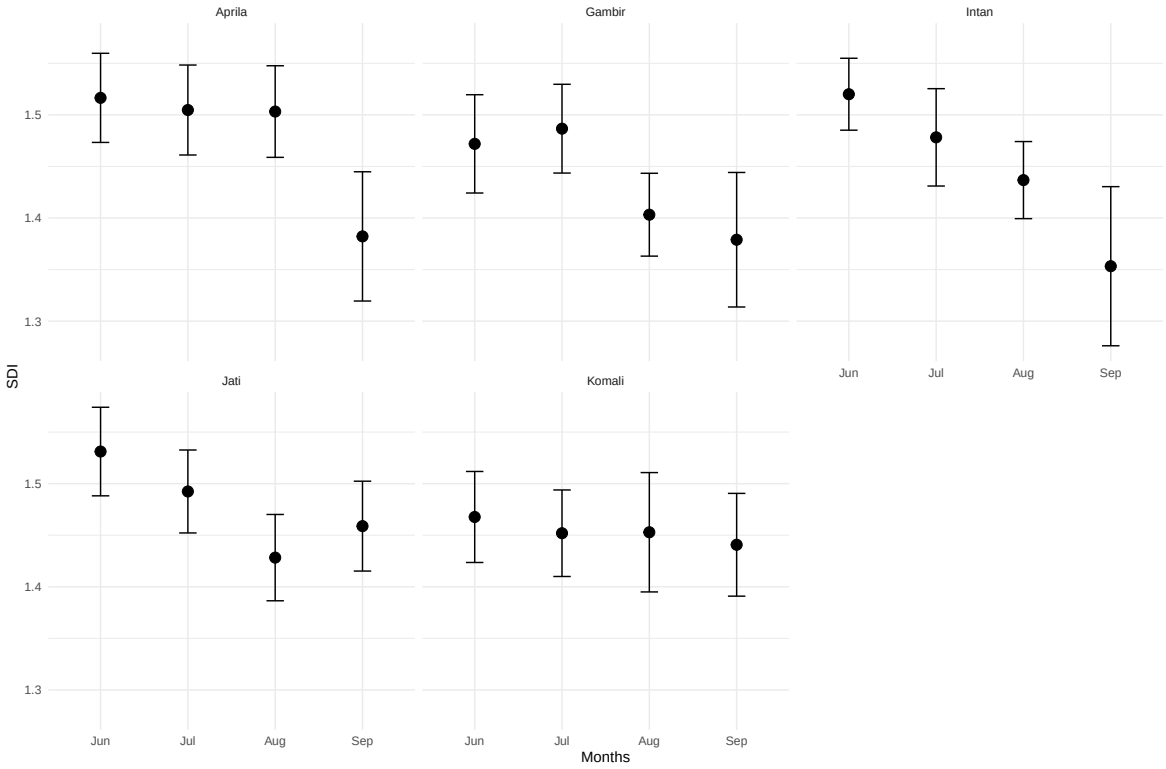

Figure 7: The daily SDI adapted to exmaine behavioural diversity in 0.5 elephants. Here, greater SDI values describes a greater diversity in exhibited behaviour and is usually indicative of better animal welfare.