

Supplementary material for

A survey and critical review of wombat diets in captivity

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Table of Contents

Appendix S1 – Diet survey distributed to zoos and wildlife parks

Appendix S2 – Diet survey distributed to carers, sanctuaries and other wildlife care facilities

Appendix S3 – Diet information table distributed to all survey respondents

Table S1. – Daily diets for bare-nosed wombats (BNW) and southern hairy-nosed wombats (SHNW) provided by survey respondents

Table S2. – Nutritional composition (from Foster et al. 2009) of native grasses fed to wombats as identified by survey respondents

Table S3. – Nutrient composition (Food Standards Australia and New Zealand 2015) of foods provided to bare-nosed and southern hairy-nosed wombats in captivity as identified by survey respondents

Table S4. – Nutrient composition of livestock feeds provided to bare-nosed and southern hairy-nosed wombats in captivity as identified by survey respondents

Appendix 1 – Diet survey distributed to zoos and wildlife parks

Wombat Nutrition and Health in Captivity - Zoos/Wildlife Parks

Wombat Nutrition

This survey is being conducted as part of an undergraduate research project at Western Sydney University. The project is examining captive wombat diets, how diet affects health, and how captive diets compare to the nutrition of wild wombats. The aim of the survey is to determine the current feeding regimes and health of wombats in captivity.

The survey consists of three sections (Introductory questions, Wombat information, and Feeding program). Each section contains a series of questions. Please provide an honest response to each question. Please note that many of the questions require information to be collected prior to beginning the online survey – for details about the information that questions will require, see the survey document (attached to the email that you will have received regarding survey completion).

By completing this survey, you give consent for your answers to be used for analysis by the researchers listed on the approval for up to 15 years, after which all data will be discarded. Your answers will remain anonymous.

Your participation is greatly appreciated.

Below are links to two important files for survey completion - the first is a participant information sheet, outlining eligibility and further survey details, and the second is a diet information sheet, which should be filled out and uploaded in the appropriate survey question.

Introductory Questions

Please classify your facility as one of the following:

- Zoo
 - Wildlife park
 - Rehabilitation centre
 - Sanctuary
 - Wildlife carer
-

Which state is your facility located in?

- WA
 - NT
 - SA
 - ACT
 - QLD
 - NSW
 - VIC
 - TAS
 - Other - please specify (e.g. if outside Australia):

-

Do you have permission from your manager/business owner or other authorising person to complete this survey?

Yes

No

If you wish to receive a copy of the results of this study, please provide a name and email address. If you do not complete this question, your answers will remain anonymous. Please note that all data will be deidentified, so even if you do provide contact details, the answers that you provide will not be associated with your facility.

Wombat Information

Are the wombats currently in the zoo/wildlife park (please select all that apply):

- Adult male non-reproductive
 - Adult male reproductive
 - Adult female non-reproductive
 - Adult female reproductive
 - Juvenile male weaned
 - Juvenile male non-weaned (reliant on milk)
 - Juvenile female weaned
 - Juvenile female non-weaned (reliant on milk)
-

Are the wombats in the zoo/wildlife park captive born?

- Yes
 - No
 - Other (e.g. mix of captive and wild born animals)
-

How many wombats are currently in the zoo/wildlife park?

- 1
 - 2
 - 3
 - 4
 - 5 - 10
 - 10+
-

What species of wombats, and how many of each species, are present in the zoo/wildlife park?

- Common or bare-nosed wombat _____
 - Southern hairy-nosed wombat _____
-

Are wombats individually housed?

- Yes
- No
- Other (e.g. mix of individual and group housing)

Feeding Program

Diet Details

Please upload the diet information table (attached to the email received about survey completion) here.

How long has the diet described been implemented for?

- 1 - 3 months
 - 3 – 6 months
 - 6 – 12 months
 - 1 – 3 years
 - 3+ years
-

Are the wombats generally given any mineral/vitamin supplements?

- No, not generally
- Only if recommended by veterinarian or animal nutritionist
- Yes – please provide details of what mineral/vitamin supplement:

- Other – please specify: _____

Diet Variation

Are there any seasonal changes to the diet? (This may be in terms of amounts of each feed item given, in terms of broad food categories, e.g. amounts of grasses, vegetables may vary, in terms of specific feed items, etc.)

- Yes
- No
-

If there are seasonal changes, please select any of the following statements that may be relevant to these changes:

- Changes due to availability of fruit/vegetables
- Changes due to availability of grass species
- Changes due to pricing of food items
- Same foods given to wombats but amounts of each food vary across seasons
- Same broad food categories given to wombats, but specific types of grasses/fruit/vegetables/etc. are varied
- Other – please provide any other relevant comments/statements:

Are there any individual variations to the diet in place for breeding individuals?

- Yes
- No
- No breeding individuals present

Are there any individual variations to the diet in place for lactating individuals?

- Yes
 - No
 - No lactating individuals present
-

Are there any individual variations to the diet in place for young wombats prior to weaning?

- Yes
 - No
 - No young wombats present
-

When are young wombats transferred to the previously described adult diet, i.e. are completely weaned?

- Prior to 12 months of age
 - 12 – 14 months of age
 - 14 – 18 months of age
 - 18+ months of age
 - No young wombats present
-

Please provide any further details or comments about individual variations to the diet that do not apply to the above questions. (For example, diet differences due to gender, medical conditions, etc.).

Feeding Behaviours

How are the wombats fed?

- In a group
 - Individually
 - Both
 - Other – please specify: _____
-

If wombats are fed in a group context, what feeding behaviours are observed to occur? Please select all that apply.

- Feeding dominance
 - Older individuals feeding first
 - Younger individuals feeding first
 - Males feeding first
 - Females feeding first
 - None observed
 - Other – please specify: _____
-

Are there opportunities for the wombats to consume matter in their enclosure that is not fed to them directly? (For example, are there grasses or other plant matter growing in the wombats' enclosure that they may consume?)

Yes

No

Unsure

Please give any further notes or comments regarding diet and feeding behaviours, if relevant.
This may include any 'favourite' food items.

Diet Reference Material

Where is information about wombat diet gained from? I.e. what references/resources are used in making decisions about wombat diet?

Husbandry manual/s

Published guide/s

Advice from veterinarian

Advice from animal nutritionist

Online research

Other – please specify: _____

Over the past five years, have there been any changes made to wombat diet?

Yes

No

If yes, why have these changes been implemented?

Nutrition and Health

For what reason/s has the wombat/s seen a veterinary professional in the last 6 months?

How often do the wombats undergo a health check?

Monthly

Every 2 months

Every 3 – 4 months

Every 5 – 6 months

Every 6 - 12 months

Every 12+ months

Have any of the wombats ever been diagnosed with a nutritional or gastrointestinal disorder/disease OR a dental disorder/disease by a veterinarian?

Yes

No

If yes, please select any of the following that apply to the nutritional disorder/disease:

- Nutrient/vitamin deficiency
 - Nutrient/vitamin toxicity
 - Copper toxicity
 - Lactose excess/intolerance
 - Poor body condition observed
 - Irregular faeces/diarrhoea occurred
 - Weight loss observed
 - Bloating observed
 - Overgrowth of teeth due to insufficient tooth wear
 - Malocclusion (overbite) or other teeth alignment issues
 - Impaired feeding ability observed
 - Mouth injury
 - Mouth infection
 - Other – please specify: _____
-

If yes, what actions or treatment were taken? Please select all that apply.

Change in diet – permanent

Change in diet – temporary

Medication

Vitamin/mineral supplements

Surgical procedure

Other - please specify: _____

Please add any other information that you can provide regarding diet.

Appendix 2 – Diet survey distributed to carers, sanctuaries and other wildlife care facilities

Wombat Nutrition and Health in Captivity - Sanctuaries/Carers

Wombat Nutrition

This survey is being conducted as part of an undergraduate research project at Western Sydney University. The project is examining captive wombat diets, how diet affects health, and how captive diets compare to the nutrition of wild wombats. The aim of the survey is to determine the current feeding regimes and health of wombats in captivity.

The survey consists of three sections (Introductory questions, Wombat information, and Feeding program). Each section contains a series of questions. Please provide an honest response to each question. Please note that many of the questions require information to be collected prior to beginning the online survey – for details about the information that questions will require, see the survey document (attached to the email that you will have received regarding survey completion).

By completing this survey, you give consent for your answers to be used for analysis by the researchers listed on the approval for up to 15 years, after which all data will be discarded. Your answers will remain anonymous.

Your participation is greatly appreciated.

Below are links to two important files for survey completion - the first is a participant information sheet, outlining eligibility and further survey details, and the second is a diet information sheet, which should be filled out and uploaded in the appropriate survey question.

Introductory Questions

Please classify your facility as one of the following:

- Zoo
 - Wildlife park
 - Rehabilitation centre
 - Sanctuary
 - Wildlife carer
-

Which state is your facility located in?

- WA
 - NT
 - SA
 - ACT
 - QLD
 - NSW
 - VIC
 - TAS
 - Other (e.g. if outside Australia): _____
-

Do you have permission from your manager/business owner or other authorising person to complete this survey?

Yes

No

If you wish to receive a copy of the results of this study, please provide a name and email address. If you do not complete this question, your answers will remain anonymous. Please note that all data will be deidentified, so even if you do provide contact details, the answers that you provide will not be associated with your facility.

Wombat Information

Are the wombats currently in your care (please select all that apply):

- Adult male non-reproductive
 - Adult male reproductive
 - Adult female non-reproductive
 - Adult female reproductive
 - Juvenile male weaned
 - Juvenile male non-weaned (reliant on milk)
 - Juvenile female weaned
 - Juvenile female non-weaned (reliant on milk)
-

Are the wombats in your care captive born?

- Yes
 - No
 - Other (e.g. mix of captive and wild born animals)
-

How many wombats are currently in your care?

- 1
 - 2
 - 3
 - 4
 - 5 - 10
 - 10+
-

What species of wombats, and how many of each species, are present in your care?

- Common or bare-nosed wombat _____
 - Southern hairy-nosed wombat _____
-

Are wombats individually housed?

- Yes
 - No
 - Other (e.g. mix of individual and group housing)
-

For what reasons have wombats come into your care (please select all that apply)?

- Hit by a car
- Injured by a trap
- Poisoned by bait
- Affected by sarcoptic mange
- Burrow was buried over
- Been shot/have bullet wound
- Wombat brought in as juvenile with injured mother
- Fight wounds from other animals
- Other (please describe): _____

Feeding Program

Diet Details

Please upload the diet information table (attached to the email received about survey completion) here.

How long has the diet described been implemented for?

- 1 - 3 months
 - 3 – 6 months
 - 6 – 12 months
 - 1 – 3 years
 - 3+ years
-

Does wombat diet generally change from when the wombats are admitted to care until their release?

- Yes
 - No
-

If yes, please select any of the following reasons that may apply:

- Injury/condition when admitted to care meant that standard diet had to be modified due to physical feeding difficulties
 - Injury/condition when admitted to care meant that more of certain nutrients/vitamins were required
 - Wombats exhibited a preference to certain foods
 - Wombats rejected certain foods
 - Wombats were pre-weaning age when admitted to care (i.e. were reliant on milk) and post-weaning age when released
 - Other – please specify: _____
-

Are the wombats generally given any mineral/vitamin supplements?

- No, not generally
 - Only if recommended by veterinarian or animal nutritionist
 - Yes – please provide details of what mineral/vitamin supplement:

 - Other – please specify: _____
-

Diet Variation

Are there any seasonal changes to the diet? (This may be in terms of amounts of each feed item given, in terms of broad food categories, e.g. amounts of grasses, vegetables may vary, in terms of specific feed items, etc.)

Yes

No

If there are seasonal changes, please select any of the following statements that may be relevant to these changes:

Changes due to availability of fruit/vegetables

Changes due to availability of grass species

Changes due to pricing of food items

Same foods given to wombats but amounts of each food vary across seasons

Same broad food categories given to wombats, but specific types of grasses/fruit/vegetables/etc. are varied

Other – please provide any other relevant comments/statements:

Are there any individual variations to the diet in place for breeding individuals?

Yes

No

No breeding individuals present

Are there any individual variations to the diet in place for lactating individuals?

- Yes
 - No
 - No lactating individuals present
-

Are there any individual variations to the diet in place for young wombats prior to weaning?

- Yes
 - No
 - No young wombats present
-

When are young wombats transferred to the previously described adult diet, i.e. are completely weaned?

- Prior to 12 months of age
 - 12 – 14 months of age
 - 14 – 18 months of age
 - 18+ months of age
 - No young wombats present
-

Please provide any further details or comments about individual variations to the diet that do not apply to the above questions. (For example, diet differences due to gender, medical conditions, etc.).

Feeding Behaviours

How are the wombats fed?

- In a group
 - Individually
 - Both
 - Other – please specify: _____
-

If wombats are fed in a group context, what feeding behaviours are observed to occur? Please select all that apply.

- Feeding dominance
 - Older individuals feeding first
 - Younger individuals feeding first
 - Males feeding first
 - Females feeding first
 - None observed
 - Other – please specify: _____
-

Are there opportunities for the wombats to consume matter in their enclosure that is not fed to them directly? (For example, are there grasses or other plant matter growing in the wombats' enclosure that they may consume?)

- Yes
- No
- Unsure

Please give any further notes or comments regarding diet and feeding behaviours, if relevant.
This may include any 'favourite' food items.

Diet Reference Material

Where is information about wombat diet gained from? I.e. what references/resources are used in making decisions about wombat diet?

- Husbandry manual/s
- Published guide/s
- Advice from veterinarian
- Advice from animal nutritionist
- Online research
- Other – please specify: _____

Over the past five years, have there been any changes made to wombat diet?

Yes

No

If yes, why have these changes been implemented?

Nutrition and Health

For what reason/s has the wombat/s seen a veterinary professional in the last 6 months?

How often do the wombats undergo a health check?

- Monthly
 - Every 2 months
 - Every 3 – 4 months
 - Every 5 – 6 months
 - Every 6 - 12 months
 - Every 12+ months
 - Upon admission to care
 - Before being released into the wild
-

Have any of the wombats ever been diagnosed with a nutritional or gastrointestinal disorder/disease OR a dental disorder/disease by a veterinarian?

- Yes
 - No
-

If yes, please select any of the following that apply to the nutritional disorder/disease:

- Nutrient/vitamin deficiency
 - Nutrient/vitamin toxicity
 - Copper toxicity
 - Lactose excess/intolerance
 - Poor body condition observed
 - Irregular faeces/diarrhoea occurred
 - Weight loss observed
 - Bloating observed
 - Overgrowth of teeth due to insufficient tooth wear
 - Malocclusion (overbite) or other teeth alignment issues
 - Impaired feeding ability observed
 - Mouth injury
 - Mouth infection
 - Other – please specify: _____
-

If yes, what actions or treatment were taken? Please select all that apply.

Change in diet – permanent

Change in diet – temporary

Medication

Vitamin/mineral supplements

Surgical procedure

Other - please specify: _____

Q43 Please add any other information that you can provide regarding diet.

Appendix 3 - Diet information table distributed to all survey respondents

Diet information table

Please complete the following table regarding feed items and quantities supplied to adult wombats. If necessary, extend table to accommodate all feed items in the diet. See below for additional notes on completing the table.

	Weight of feed item offered (grams)** and time of day offered (am/mid/pm)						
Feed item and brief description*	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday

Further instructions:

If amounts of items do not vary from day to day, please indicate this by writing “DAILY”. If this is not the case, please complete each individual day column in the table.

Please be as detailed and specific as possible when completing this table. However, if amounts or feeding schedule are not known, please simply complete the table to the best of your ability. For example, if you cannot fully complete the table, you may choose to complete the “food item” column and write an estimate of how many times a week the wombats are fed this food item.

* Please be as specific as possible when specifying feed items, e.g. if grass feed, please specify species where known. For any purchased food mixtures or items, please provide the product name, supplier details and form (e.g. pellets). When giving a “brief description” of the food item, for items such as fruit or vegetables, this may include how coarsely/finely it is chopped, while for grasses, hay, etc. this may include whether these items are given in a bale, broken up, and how finely they are chopped.

** Please provide weight of feed item where possible. If this is not possible, please describe the amount in standard quantities, e.g. 3 carrots, 2 bales.

Table S1. Daily diets for bare-nosed wombats (BNW) and southern hairy-nosed wombats (SHNW) provided by survey respondents

Facility	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Notes
1	Mixture of wheat grass, spear grass and weeping grass (shopping bag full); Homebrand® rolled oats 375grams	Mixture of wheat grass, spear grass and weeping grass (shopping bag full); EasiFeed OldTimer Four® horse feed 1 scoop	Mixture of wheat grass, spear grass and weeping grass (shopping bag full)	Mixture of wheat grass, spear grass and weeping grass (shopping bag full); EasiFeed OldTimer Four® horse feed 1 scoop	Mixture of wheat grass, spear grass and weeping grass (shopping bag full); Homebrand® Rolled Oats 375grams	Mixture of wheat grass, spear grass and weeping grass (shopping bag full); EasiFeed OldTimer Four® horse feed 1 scoop	Mixture of wheat grass, spear grass and weeping grass (shopping bag full)	Observed malocclusion in wombats and teeth grinding response
2	Grass	Grass	Grass	Grass	Grass	Grass	Grass	Carrot, sweet potato, rolled oats given as an occasional treat; Observed worms, teething issues, dwarfism, gastric upset
3	Black and Gold® rolled oats 180g; Sanitarium® Weetbix 1 bar; Vegetables (120g sweet potato); Freshly picked grass: <i>Poa</i> spp. and green grasses including roots and soil*	Black and Gold® rolled oats 180g; Sanitarium® Weetbix 1 bar; Vegetables (120g carrot); Freshly picked grass: <i>Poa</i> spp. and green grasses including roots and soil*	Black and Gold® rolled oats 180g; Sanitarium® Weetbix 1 bar; Vegetables (120g corn kernels); Freshly picked grass: <i>Poa</i> spp. and green grasses including roots and soil*	Black and Gold® rolled oats 180g; Sanitarium® Weetbix 1 bar; Vegetables (120g sweet potato); Freshly picked grass: <i>Poa</i> spp. and green grasses including roots and soil*	Black and Gold® rolled oats 180g; Sanitarium® Weetbix 1 bar; Vegetables (120g carrot); Freshly picked grass: <i>Poa</i> spp. and green grasses including roots and soil*	Black and Gold® rolled oats 180g; Sanitarium® Weetbix 1 bar; Vegetables (120g corn kernels); Freshly picked grass: <i>Poa</i> spp. and green grasses including roots and soil*	Black and Gold® rolled oats 180g; Sanitarium® Weetbix 1 bar; Vegetables (120g sweet potato); Freshly picked grass: <i>Poa</i> spp. and green grasses including roots and soil*	*Equivalent of 1 standard stock feed bag (average chook, horse, sheep, etc. feed bag size). Half offered at 9am, half offered at 4pm.
4	Macropod pellets (300gms per wombat); 1/2 a	Macropod pellets (300gms per wombat); 1/2 a carrot; 1 cob of	Macropod pellets (300gms per wombat); 1/2 a	Macropod pellets (300gms per wombat); 1/2 a carrot; Sweet	Macropod pellets (300gms per wombat); 1/2 a	Macropod pellets (300gms per wombat); 1/2 a	Macropod pellets (300gms per wombat); 1/2 a carrot; 1 cob of	*The Display SHNWs are not fed carrots daily due to one wombat's

	carrot. Freshly picked grass daily.	corn (husk removed). Freshly picked grass daily.	carrot. Freshly picked grass daily.	potato (approx. same amount to carrots). Freshly picked grass daily.	carrot. Freshly picked grass daily.	carrot. Freshly picked grass daily.	corn (husk removed). Freshly picked grass daily.	obesity issues, and to help it cope with bad hips. They can be offered one carrot occasionally as an enrichment treat. Diet used for SHNW and BNW
5	1 large carrot, chopped into 4 pieces; 2cm piece of corn on the cob; 3x3cm piece of sweet potato; *lucerne chaff 22g roughly ¼ cup; *Barastoc® kangaroo & wallaby pellets 386g; *maize 54g; 4 cups fresh picked grass (unknown species grows on property); 1 large handful grass hay.	1 large carrot, chopped into 4 pieces; 2cm piece of corn on the cob; 3x3cm piece of sweet potato; *lucerne chaff 22g roughly ¼ cup; *Barastoc® kangaroo & wallaby pellets 386g; *maize 54g; 4 cups fresh picked grass (unknown species grows on property); 1 large handful grass hay	1 large carrot, chopped into 4 pieces; 2cm piece of corn on the cob; 3x3cm piece of sweet potato; *lucerne chaff 22g roughly ¼ cup; *Barastoc® kangaroo & wallaby pellets 386g; *maize 54g; 4 cups fresh picked grass (unknown species grows on property); 1 large handful grass hay	1 large carrot, chopped into 4 pieces; 2cm piece of corn on the cob; 3x3cm piece of sweet potato; *lucerne chaff 22g roughly ¼ cup; *Barastoc® kangaroo & wallaby pellets 386g; *maize 54g; 4 cups fresh picked grass (unknown species grows on property); 1 large handful grass hay	1 large carrot, chopped into 4 pieces; 2cm piece of corn on the cob; 3x3cm piece of sweet potato; *lucerne chaff 22g roughly ¼ cup; *Barastoc® kangaroo & wallaby pellets 386g; *maize 54g; 4 cups fresh picked grass (unknown species grows on property); 1 large handful grass hay	1 large carrot, chopped into 4 pieces; 2cm piece of corn on the cob; 3x3cm piece of sweet potato; *lucerne chaff 22g roughly ¼ cup; *Barastoc® kangaroo & wallaby pellets 386g; *maize 54g; 4 cups fresh picked grass (unknown species grows on property); 1 large handful grass hay	1 large carrot, chopped into 4 pieces; 2cm piece of corn on the cob; 3x3cm piece of sweet potato; *lucerne chaff 22g roughly ¼ cup; *Barastoc® kangaroo & wallaby pellets 386g; *maize 54g; 4 cups fresh picked grass (unknown species grows on property); 1 large handful grass hay	* Fed together in one bowl. Wombats are fed 2 x per day, however what is fed in AM and PM is randomly assigned.
6	Rolled oats 110g; Hygain® equine senior 68g; sunflower seeds 2tbsp (~14g); Barastoc® calm performer pellets 132g; 1 x corn cob,	Rolled oats 110g; Hygain® equine senior 68g; sunflower seeds 2tbsp (~14g); Barastoc® calm performer pellets 132g; 1 x corn cob,	Rolled oats 110g; Hygain® equine senior 68g; sunflower seeds 2tbsp (~14g); Barastoc® calm performer pellets 132g; 1 x corn cob,	Rolled oats 110g; Hygain® equine senior 68g; sunflower seeds 2tbsp (~14g); Barastoc® calm performer pellets 132g; 1 x corn cob,	Rolled oats 110g; Hygain® equine senior 68g; sunflower seeds 2tbsp (~14g); Barastoc® calm performer pellets 132g; 1 x corn cob,	Rolled oats 110g; Hygain® equine senior 68g; sunflower seeds 2tbsp (~14g); Barastoc® calm performer pellets 132g; 1 x corn cob,	Rolled oats 110g; Hygain® equine senior 68g; sunflower seeds 2tbsp (~14g); Barastoc® calm performer pellets 132g; 1 x corn cob,	Grasses fed daily – ad lib for SHNW as is growing in enclosures. Large handful given to BNW as is minimal grass growing in enclosures, usually

	husk removed; ½ pear; ½ carrot (~80g); grass – various species	husk removed; ½ pear; 50g sweet potato; grass – various species	husk removed; ½ pear; ½ carrot (~80g); grass – various species	husk removed; ½ pear; 50g sweet potato; grass – various species	husk removed; ½ pear; ½ carrot (~80g); grass – various species	husk removed; ½ pear; 50g sweet potato; grass – various species	husk removed; ½ pear; 50g sweet potato; grass – various species	in pm; Hay (prime) - 1 to 2 large handfuls given approx. once a fortnight, usually in PM. Dental work every 5-6 months, due to overgrowth of teeth and malocclusion/other teeth alignment issues
7 BNW	1 cup of wallaby pellets (Barastoc®); ½ cup crushed maize (Pro-Vit-Min®); 3 cups of chopped vegetables (corn, pumpkin, broccoli, cauliflower and sweet potato); 3 cups of chopped carrot; 1 handful of grass found locally	1 cup of wallaby pellets (Barastoc®); ½ cup crushed maize (Pro-Vit-Min®); 3 cups of chopped vegetables (corn, pumpkin, broccoli, cauliflower and sweet potato); 3 cups of chopped carrot; 1 handful of grass found locally	1 cup of wallaby pellets (Barastoc®); ½ cup crushed maize (Pro-Vit-Min®); 3 cups of chopped vegetables (corn, pumpkin, broccoli, cauliflower and sweet potato); 3 cups of chopped carrot; 1 handful of grass found locally	1 cup of wallaby pellets (Barastoc®); ½ cup crushed maize (Pro-Vit-Min®); 3 cups of chopped vegetables (corn, pumpkin, broccoli, cauliflower and sweet potato); 3 cups of chopped carrot; 1 handful of grass found locally	1 cup of wallaby pellets (Barastoc®); ½ cup crushed maize (Pro-Vit-Min®); 3 cups of chopped vegetables (corn, pumpkin, broccoli, cauliflower and sweet potato); 3 cups of chopped carrot; 1 handful of grass found locally	1 cup of wallaby pellets (Barastoc®); ½ cup crushed maize (Pro-Vit-Min®); 3 cups of chopped vegetables (corn, pumpkin, broccoli, cauliflower and sweet potato); 3 cups of chopped carrot; 1 handful of grass found locally	1 cup of wallaby pellets (Barastoc®); ½ cup crushed maize (Pro-Vit-Min®); 3 cups of chopped vegetables (corn, pumpkin, broccoli, cauliflower and sweet potato); 3 cups of chopped carrot; 1 handful of grass found locally	1 cob of corn. Used for training - cut up into 7 pieces and given across the week; ¼ - ½ cup of frozen corn for training.

7 SHNW	½ cup of wallaby pellets (Barastoc®); crushed maize (Pro-Vit-Min®); wheat (Oxley Feed Mill®); 2 cups of carrot; 1 Handful of grass found locally; 1 cup of chopped vegetables (corn, pumpkin, broccoli, cauliflower and sweet potato)	½ cup of wallaby pellets (Barastoc®); crushed maize (Pro-Vit-Min®); wheat (Oxley Feed Mill®); 2 cups of carrot; 1 Handful of grass found locally; 1 cup of chopped vegetables (corn, pumpkin, broccoli, cauliflower and sweet potato)	½ cup of wallaby pellets (Barastoc®); crushed maize (Pro-Vit-Min®); wheat (Oxley Feed Mill®); 2 cups of carrot; 1 Handful of grass found locally; 1 cup of chopped apple	½ cup of wallaby pellets (Barastoc®); crushed maize (Pro-Vit-Min®); wheat (Oxley Feed Mill®); 2 cups of carrot; 1 Handful of grass found locally; 1 cup of chopped vegetables (corn, pumpkin, broccoli, cauliflower and sweet potato)	½ cup of wallaby pellets (Barastoc®); crushed maize (Pro-Vit-Min®); wheat (Oxley Feed Mill®); 2 cups of carrot; 1 Handful of grass found locally; 1 cup of chopped apple	½ cup of wallaby pellets (Barastoc®); crushed maize (Pro-Vit-Min®); wheat (Oxley Feed Mill®); 2 cups of carrot; 1 Handful of grass found locally; 1 cup of chopped vegetables (corn, pumpkin, broccoli, cauliflower and sweet potato)	½ cup of wallaby pellets (Barastoc®); crushed maize (Pro-Vit-Min®); wheat (Oxley Feed Mill®); 2 cups of carrot; 1 Handful of grass found locally; 1 cup of chopped apple	1-2 tbs of peanut butter (Bega®) - For enrichment so maybe once or twice per week. ¼ cup of large parrot seed (Pro-Vit-Min®) used in enrichment maybe once or twice per week. 1-2 tbs of honey used in enrichment maybe once or twice per week
8	Lucerne Chaff 1 cup; Barastoc® ½ cup; Calm Pellets 1 cup; Sweet potato 300 – 500g chunks, not cut; Carrot ½; Apple ½; Corn ½ cup kernels off the cob; Grass Large clump*	Lucerne Chaff 1 cup; Barastoc® ½ cup; Calm Pellets 1 cup; Sweet potato 300 – 500g chunks, not cut; Carrot ½; Apple ½; Corn ½ cup kernels off the cob; Grass Large clump*	Lucerne Chaff 1 cup; Barastoc® ½ cup; Calm Pellets 1 cup; Sweet potato 300 – 500g chunks, not cut; Carrot ½; Apple ½; Corn ½ cup kernels off the cob; Grass Large clump*	Lucerne Chaff 1 cup; Barastoc® ½ cup; Calm Pellets 1 cup; Sweet potato 300 – 500g chunks, not cut; Carrot ½; Apple ½; Corn ½ cup kernels off the cob; Grass Large clump*	Lucerne Chaff 1 cup; Barastoc® ½ cup; Calm Pellets 1 cup; Sweet potato 300 – 500g chunks, not cut; Carrot ½; Apple ½; Corn ½ cup kernels off the cob; Grass Large clump*	Lucerne Chaff 1 cup; Barastoc® ½ cup; Calm Pellets 1 cup; Sweet potato 300 – 500g chunks, not cut; Carrot ½; Apple ½; Corn ½ cup kernels off the cob; Grass Large clump*	Lucerne Chaff 1 cup; Barastoc® ½ cup; Calm Pellets 1 cup; Sweet potato 300 – 500g chunks, not cut; Carrot ½; Apple ½; Corn ½ cup kernels off the cob; Grass Large clump*	BNW fed in AM. SHNW fed in PM. Chaff, pellets and Barastoc® come from local supplier, brand varies depending on availability. * Picked on site, fed out in the afternoon
9 BNW	1 ½ cups macropod pellets; ½ cup gumnuts; ½ cob corn and 1 medium carrot; ¼ biscuit of Rhodes hay to each wombat (fed in PM)	1 ½ cups macropod pellets; ½ cup gumnuts; 5 snow peas chopped up about 1cm width and 1 medium carrot	1 ½ cups macropod pellets; ½ cup gumnuts; ½ cob corn and grated pumpkin to fit on a corn husk each; cardboard box	1 ½ cups macropod pellets; ½ cup gumnuts; 1 medium carrot; 2 snow peas chopped, and grated pumpkin to	1 ½ cups macropod pellets; ½ cup gumnuts; 1 cup of sweet potato, chopped into cm cubes scattered through pellets; ¼ biscuit of Rhodes hay to each	1 ½ cups macropod pellets; ½ cup gumnuts; 1/3 corn cob and 1 medium carrot	1 ½ cups macropod pellets; ½ cup gumnuts; small amount of pumpkin grated to fit on a corn husk each; 2 chopped snow peas and ½	

fit on a corn husk
each

wombat (fed in
PM)

medium carrot;
Herb scent scatter

9 SHNW	1 cups macropod pellets; 1 cup gumnuts; ½ cob corn and 1 medium carrot each; ¼ biscuit of Rhodes hay to each wombat (fed in PM)	1 ½ cups macropod pellets; ½ cup gumnuts; 5 snow peas chopped up about 1cm width and 1 medium carrot	1 ½ cups macropod pellets; ½ cup gumnuts; ½ cob corn and grated pumpkin to fit on a corn husk each; cardboard box	1 ½ cups macropod pellets; ½ cup gumnuts; 1 medium carrot; 2 snow peas chopped, and grated pumpkin to fit on a corn husk each	1 ½ cups macropod pellets; ½ cup gumnuts; 1 cup of sweet potato, chopped into cm cubes scattered through pellets; ¼ biscuit of Rhodes hay to each wombat (fed in PM)	1 ½ cups macropod pellets; ½ cup gumnuts; 1/3 corn cob and 1 medium carrot	1 ½ cups macropod pellets; ½ cup gumnuts; small amount of pumpkin grated to fit on a corn husk each; 2 chopped snow peas and ½ medium carrot; Herb scent scatter
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Table S2. Nutritional composition (from Foster *et al.* 2009) of native grasses fed to wombats as identified by survey respondents

Common name	Scientific name	Dry	ME	Crude protein	Nitrogen	Fat	Carb		NDF	Ca	P	K	Fe	Na	Zn
		matter					ohyd	ADF							
		%	MJ/kg	%	%	%	%	%	%	mg/100g	mg/100g	mg/100g	mg/100g	mg/100g	mg/100g
Weeping rice grass ^a	<i>Microlaena stipoides</i>	32.2	10.6	20.4	3.3	2.8	10.4	24.7	49.8	579	238	2120	11	162	9
Wheatgrass ^a	<i>Elymus scaber</i>	38.3	7.4	10.0	1.6	2.6	12.6	33.9	60.9	440	201	1780	10	43	10
Elegant speargrass	<i>Austrostipa elegantissima</i>	51.1	4.5	11.1	1.8	2.1	1.4		74.3	221	107	1000	24	105	4
Speargrass	<i>Austrostipa nodosa</i>	42.7	6.6	10.6	1.7	2.0	1.5		72.8	462	97	1190	31	26	1.7
Desert speargrass	<i>Austrostipa eremophila</i>	48.0	7.5	14.3	2.3	3.1	4.6		64.1						

All values are reported as a dry matter basis, ME- metabolisable energy, ADF- acid detergent fibre, NDF- neutral detergent fibre; ^a identified in free-ranging wombat diets (Evans et al. 2006)

Table S3. Nutrient composition (Food Standards Australia and New Zealand 2015) of foods provided to bare-nosed and southern hairy-nosed wombats in captivity as identified by survey respondents

Food	Energy	Moisture	Protein	Total fat	Carbohydrates	Starch	Dietary fibre	Ca	P	Fe	Mg	K	Na	Zn
	MJ/kg	%	%	%	%	%	%	mg/100g	mg/100g	mg/100g	mg/100g	mg/100g	mg/100g	mg/100g
Fruit and vegetables														
Apple (granny-smith, unpeeled)	2.02	85.2	0.3	0	10.8	0.2	2.3	5	9	0.16	4	108	1	0.07
Apple (red delicious, unpeeled)	2.48	84.5	0.3	0	13.8	0.5	2.3	5	9	0.16	4	102	1	0.06
Broccoli	1.31	89.7	4.7	0.3	0.4	0	3.7	32	75	0.84	21	336	22	0.6
Carrot	1.33	88.6	0.8	0.1	5	0	4	30	35	0.27	12	270	38	0.19
Cauliflower	1.03	91.7	2.2	0.2	2	0	2.8	17	49	0.48	14	292	30	0.25
Corn kernels	3.9	76	3	0.9	16.8	13.8	2.5	3	71	0.4	24	202	5	0.5
Corn on cob	4.32	75.9	4.3	2.1	14	10	5.6	9	104	1.06	30	351	3	0.68
Pear (brown, unpeeled)	2.64	81	0.3	0	14.3	0	3.4	6	13	0.2	7	100	2	0.1
Pear (green, unpeeled)	2.47	84.8	0.3	0	13	0	3.6	6	11	0.12	6	111	1	0.09
Pumpkin (butternut, peeled)	1.89	85	2.1	0.6	6.9	1.7	1.8	18	52	0.32	17	376	1	0.16
Pumpkin (golden nugget, peeled)	1.24	91.3	2.2	0.3	4	1.4	1.1	22	21	0.2	6	230	1	0.3
Pumpkin (jarrahdale, peeled)	1.11	90.5	0.7	0.1	5.2	0	1.6	16	22	0.12	9	196	0	0.07
Pumpkin (queensland blue, peeled)	2.08	83.8	2	0.3	8.4	3.5	2.7	41	21	0.9	13	340	2	0.3
Snow pea	1.57	88.2	3	0.2	4.7	1.8	2.6	25	40	0.9	36	420	1	0.6
Sweet potato (orange flesh)	2.97	78.7	1.9	0.1	14.1	8.5	3	27	33	0.5	14	250	10	0.5

Sweet potato (white flesh)	3.69	78.7	1	0.2	19.3	16.4	2.3	12	33	0.5	14	388	10	0.5
Other														
Rollled oats	15.48	9.3	12.7	8.9	54.5	53.5	9.7	38	340	3.5	100	310	2	2.3
Sunflower seed	24.65	3.9	26.8	51	2.2	0.2	10.8	100	840	4.6	370	460	0	5.82
Wheet-bix	14.42	5.9	12.1	2.2	62.8	60.9	11	31	290	14	110	350	300	6.5
Treat items														
Honey	13.18	16.2	0.2	0	82.1	0	0	8	3	0.2	3	62	14	2.6
*Gingernut biscuit	2.34		6	10	77		2.2					346	501	
*Peanuts (with skin, unsalted)	23.76	4.8	24.7	47.1	8.9	3.8	8.2	54	370	2.3	160	540	1	3
Peanut butter (added sugar and salt)	25.09	1.5	22.2	50	14.3	5.7	5.8	54	358	1.72	190	620	477	2.84
Peanut butter (no added sugar or salt)	26.34	1.5	24.3	54.3	9.7	4.2	6.5	54	358	1.72	177	632	25	2.84

*Items fed as very occasional treats to aid training/medicine intake.

Table S4. Nutrient composition of livestock feeds provided to bare-nosed and southern hairy-nosed wombats in captivity as identified by survey

respondents

	Energy	Protein	Fat	Carbohydrates	Starch	Crude fibre	Ca	P	Fe	Mg	K	Na	Zn
	MJ/kg	%	%	%	%	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Riverina macropod pellets	10	12				6	10000	400	50				40
Wombaroo kangaroo pellets	9	14	5		10	22							
Quayle Milling's Kangaroo & Wallaby Pellets	9.4	15	4.3				25000	600					
Barastoc Kangaroo and Wallaby Pellet		16	3			15							
Hygain® Equine Senior		15	7			14	11000	500					
Barastoc® calm performer pellets	11.5	11	4.25		15	20	12500	550	220				170
Easifeed OldTimer Four® horsefeed	13.1	15	5.9			7.7	9200	5800	173	3000	9000	2700	126
Mitavite® Gumnuts	12	16	7	7.2	18	10	12000	10000	190	5000	12000	5000	200
Cracked corn (maize)	14.1	9					20	260					
Wheat	14.4	12					60	320					

Energy presented as metabolisable energy; nutrient values presented as either minimum or maximum levels as per manufacturer specifications (Hy Gain Feeds Pty

Ltd 2016; Mitavite 2018; Pryde's EasiFeed® 2020; Ridley 2018; Riverina (Australia) Pty Ltd. 2017; Wombaroo Food Products 2014)

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