





ORIGIN OF THE CAMEL

- ▶ Despite their strong association with the Middle East and Africa, camels originated in North America 45 million years ago.
- ▶ Between 3 and 5 million years ago, they crossed the Bering land bridge to Eurasia and eventually migrated south.
- ▶ They also wandered down to South America, where some evolved into llamas and alpacas.
- ▶ There are three surviving species of camel. The one-humped dromedary which makes up 94% of the world's camel population, and the two-humped Bactrian Camel which makes up the other 6%.
- ▶ The wild Bactrian camel is a separate species and is now critically endangered.

BUILT FOR THE HEAT

- ▶ Camels have a series of physical adaptations that allow them to withstand long periods of time without any external source of water.
- ▶ The dromedary camel can go without water for up to 10 days even under very hot conditions.
- ▶ They can lose up to 30% of their body mass due to dehydration.
- ▶ Unlike other mammals, camels' red blood cells are oval rather than circular in shape. This enables the flow of red blood cells during dehydration and helps them better withstand the high pressure that occurs in the body when drinking large amounts of water after a long period of time without it.
- ▶ A 600 kg camel can drink 200 L of water in three minutes.
- ▶ Camels are able to withstand changes in body temperature and water consumption that would kill most other mammals.
- ▶ Their temperature ranges from 34 °C at dawn and steadily increases to 40 °C by sunset, before they cool off again at night.
- ▶ Camels rarely sweat, even when ambient temperatures reach 49 °C. Any sweat that does occur evaporates at the skin level rather than at the surface of their coat; the heat of vaporization therefore comes from body heat rather than ambient heat.
- ▶ Camels can withstand losing 25% of their body weight to sweating, whereas most other mammals can withstand only about 12-14% dehydration before cardiac failure.





PHYSICAL ATTRIBUTES

- ▶ A full-grown adult dromedary camel stands 1.85m at the shoulder and 2.15m at the hump.
- ▶ Bactrian camels can be around 30cm taller.
- ▶ Bactrian camels weigh 300 to 1,000kg and dromedaries 300 to 600kg.
- ▶ The camel's thick coat insulates it from the intense heat radiated from desert sand; a shorn camel must sweat 50% more to avoid overheating.
- ▶ During the summer the coat becomes lighter in colour, reflecting light as well as helping avoid sunburn.
- ▶ The camel's long legs help by keeping its body farther from the ground, which can heat up to 70°C
- ▶ Dromedaries have a pad of thick tissue over the sternum or chest area called the pedestal. When the animal lies down in a sternal resting position, the pedestal raises the body from the hot surface and allows cooling air to pass under the body.
- ▶ Camels' mouths have a thick leathery lining, allowing them to chew thorny desert plants. Long eyelashes and ear hairs, together with nostrils that can close, form a barrier against sand.
- ▶ If sand gets lodged in their eyes, they can dislodge it using their transparent third eyelid.
- ▶ The camels' gait and widened feet help them move without sinking into the sand

The Camelid Family



CAMEL TERMINOLGY

- ▶ The average lifespan of a camel is 40 to 50 years.
- ▶ A male is called a Bull.
- ▶ A female is called a Cow.
- ▶ Babies are called calves.
- ▶ Pregnancy last for 12 to 14 months. A mother camel will find a private spot to have her young.
- ▶ Female camels usually only have one baby, but sometimes camels have twins.
- ▶ The newborn calf can walk within 30 minutes, though the two won't re-join the herd until around two weeks later.
- ▶ Camels become fully mature when they are 7 years old.
- ▶ The herds are led by a dominant male, there is also groups of males that form their own herd called a bachelor herd.





INTERESTING FACTS

- ▶ The widening toes on a camel's hoof provide extra grip.
- ▶ Camels do not actually store water in their humps its mostly a reserve of fatty tissue. Concentrating body fat in their humps minimizes the insulating effect fat would have if distributed over the rest of their bodies, helping camels survive in hot climates.
- ▶ The male dromedary camel has an organ called a *dulla* in its throat, a large, inflatable sac he extrudes from his mouth to assert dominance and attract females. It resembles a long, swollen, pink tongue hanging out of the side of his mouth.
- ▶ When the camel exhales, water vapor becomes trapped in their nostrils and is reabsorbed into the body as a means to conserve water.
- ▶ Camels can run at up to 65 km/h in short bursts and sustain speeds of up 40km.
- ▶ Camels are known for spitting on people. In fact, the animals are throwing up the contents of their stomach along with spit. This is a defence tactic when the animals feel threatened.
- ▶ The large beasts make a variety of moans, groans and deep, throaty bellows. One of the camel's noises was even used to voice the character Chewbacca in the Star Wars movies.
- ▶ Camels are very social and like to greet each other by blowing in each other's faces.



INTRODUCTION IN TO AUSTRALIA

- ▶ Humans may have first domesticated dromedaries in Somalia and southern Arabia around 3,000 BC, and Bactrian camels in central Asia around 2,500 BC
- ▶ Camels were first introduced into Australia in the 1840's to assist in the exploration of inland Australia.
- ▶ Between 1840 and 1907, between 10,000 and 20,000 camels were imported from India with an estimated 50-65% of them landing in South Australia.
- ▶ Camels were introduced for their climate suitability, which is the very reason why they have prevailed in the arid rangeland's areas of Central Australia.



CAMEL INVASION

- ▶ Like most introduced species in Australia camels are classified as feral and remain unchecked.
- ▶ Australia may now have the largest wild population of Arabian camels in the world.
- ▶ They live in most of Australia's desert country including the Great Sandy, Gibson, Great Victoria and Simpson deserts, as well as much of the semi-desert lands.
- ▶ Feral herds of up to 500 individuals have been recorded.
- ▶ Camels have a low rate of reproduction with females usually only giving birth to one young every second year, but they can live for up to 50 years, and have few mortality factors, other than by human intervention.
- ▶ As large herbivores, camels add to the total grazing impact with damage likely to be most severe during and coming out of drought.
- ▶ They also destroy fences and are a potential carrier of exotic diseases that may be a threat to livestock.
- ▶ Camels are of concern to indigenous communities because they can foul water holes and damage ceremonial art and other cultural sites that are often associated with water holes.
- ▶ Fences that exclude camels but allow free access of native wildlife have been used to reduce their damage to key waterholes.

AUSTRALIAN CAMEL INDUSTRY

- ▶ There is a rapidly expanding industry based on camels, primarily for game meat, although some are also taken for live export and for use in the tourist industry.
- ▶ Managed camels are widely grazed under strict biosecurity protocols across the far western Queensland border regions.
- ▶ Camels in Queensland contribute to land management outcomes through weed control and increased cattle weight through the transfer of a gut bacterium from camels to cattle when co-grazed.
- ▶ In the APY Lands in South Australia, Indigenous communities have been provided with employment opportunities and industry in the supply of feral camels to the emerging halal and domestic camel meat markets.



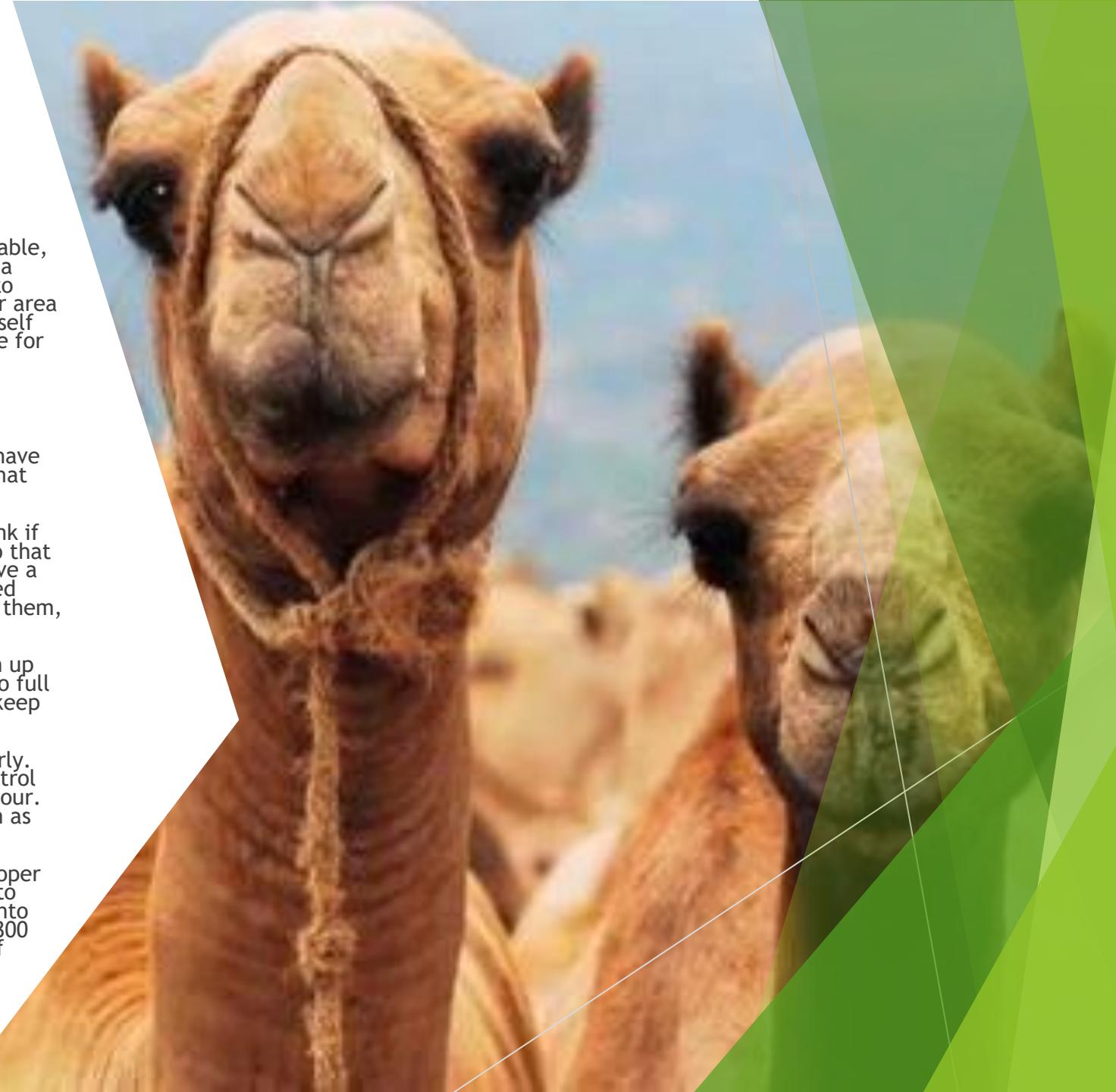
A photograph of two camels with identification tags on their ears. The camel on the left has a tag with the number '139'. The camel on the right has a tag with the number '15'. They are standing close together, facing each other.

FUTURE INDUSTRY OPPURTUNITIES

- ▶ The immigration of Islamic people into western culture has created a demand for international exports of a cultural meat.
- ▶ Camel meat is also occasionally found in Australian cuisine; did you know there is a camel lasagne available in Alice Springs.
- ▶ Australia has exported camel meat, primarily to the Middle East but also to Europe and the US, for many years. The meat is very popular among North African Australians, such as Somalis. Other Australians have also started consuming it.
- ▶ The feral nature of the animals means they produce a different type of meat to farmed camels in other parts of the world, and it is sought after because it is disease-free, and a unique genetic group.
- ▶ Demand is outstripping supply, and governments are being urged not to cull the camels but redirect the cost of the cull into developing the market.
- ▶ Australia has seven camel dairies, which produce milk, cheese and skincare products in addition to meat. The camel may well be the answer to future food security issues that could arise.
- ▶ Australia may need to consider a wider variety of protein sources that do not fit into the traditional European models of pastoral enterprise.

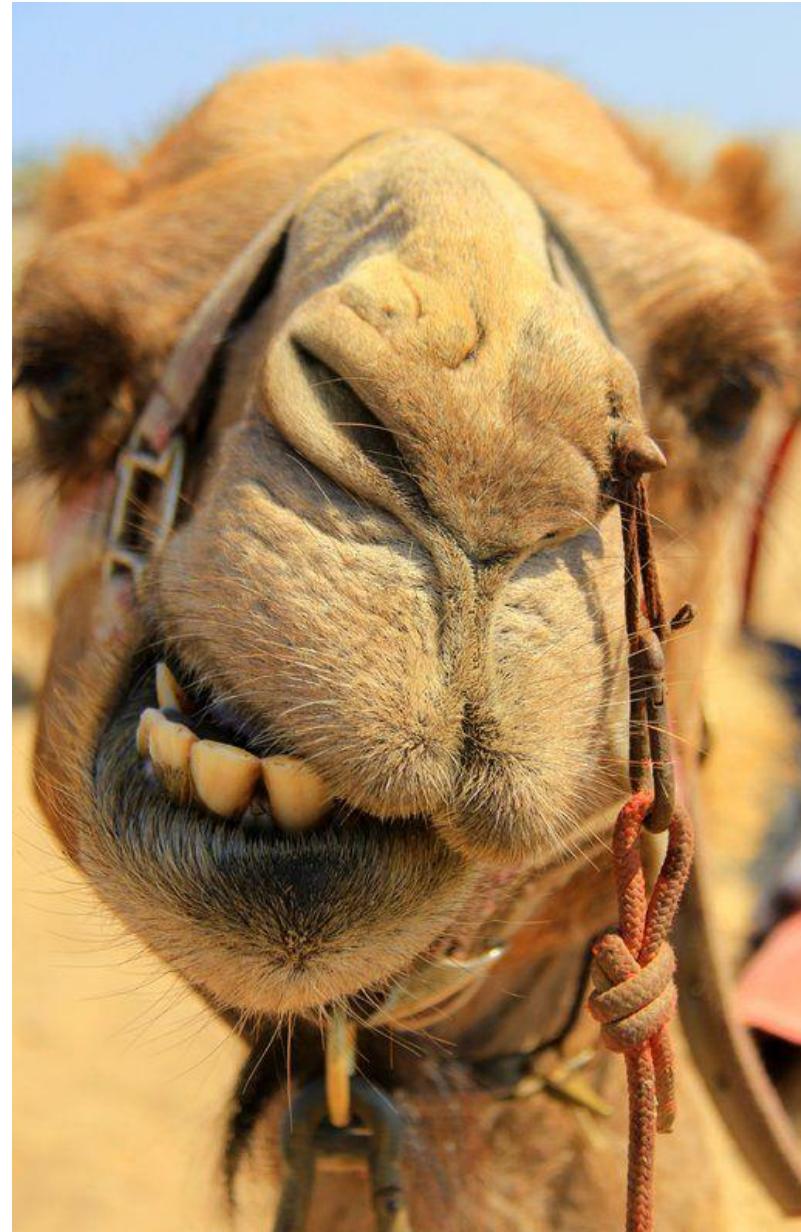
DO CAMELS MAKE GOOD PETS

- ▶ Camels can make wonderful pets. They are intelligent and sociable, making them loving companions. However, the proper care for a camel is needed. Since they are less common as pets, it's best to make sure you can find a vet who can take care of them in your area before purchase. It's a good idea to research and educate yourself before taking on any new pets, especially camels which can live for up to 50 years. It's a very big commitment.
- ▶ Feeding camels costs about as much as it costs to feed a horse. Expect to spend about \$250 a month feeding an adult camel.
- ▶ Sodium is incredibly important in a camel diet. Camels should have constant access to a salt lick, which you can buy at any store that sells horse supplies.
- ▶ Camels need fresh, clean water every day. Camels may not drink if the water isn't clean. Run the hose into their bowls each day so that they get fresh water, and nothing is stagnant. While camels have a reputation for needing only a little water, this is only for trained camels accustomed to desert life. The more water you can get them, the better.
- ▶ Camels are quite clean animals and hate to be in a mess. Clean up their dung in their hut and/or yard weekly, and make sure to do regular cleanings. Comb and brush out your camels' fur, and keep their living spaces clean as best you can.
- ▶ Camels are massive and can be dangerous if not handled properly. Training requires patience and the ability to be firm and in control while using positive reinforcement with a treat for good behaviour. Camels are smart, social, and affectionate animals. Treat them as such and they will become dream pets.
- ▶ Other factors to consider are do you have enough space and proper fencing. Council laws differ from region to region and it's best to contact your local council before welcoming any large animal into your family. Many areas require owners to have a minimum of 800 square metres or about 0.2 acres of unencumbered land free of buildings and dams for each animal.



HEALTH CARE, PESTS & DISEASES

- ▶ Animal health, welfare and biosecurity are all important stages of the livestock production chain. If managed poorly each can have adverse impacts on productivity.
- ▶ Biosecurity programs for farming industries are designed to prevent the spread of infectious disease and contain disease outbreaks when they occur.
- ▶ Parasites and disease impact on all animals, including Alpacas. Animals affected by disease may not always show obvious clinical signs.
- ▶ Biosecurity is important at the national, regional and property level.
- ▶ Producers are governed by Australian Animal Welfare Standards and Guidelines. State and territory governments are responsible for animal welfare laws and their enforcement. These are enforced through animal welfare or prevention of cruelty to animals' legislation.





RISKS & CHALLENGES

- ▶ Like any primary production enterprise there are risks associated with commercial production of Alpacas. Some will be outside of a producer's control however experienced producers are usually able to manage these risks.
- ▶ Risks include the loss of vital export markets. The COVID-19 outbreak had a massive impact on a lot of our export markets.
- ▶ Disease and pests, it is extremely important that we maintain Australia's freedom from major diseases through strict quarantine laws and procedures.
- ▶ Here in Australia weather events such as drought, fires and flooding take a huge toll on our farming communities. They really need our support.



POP QUIZ

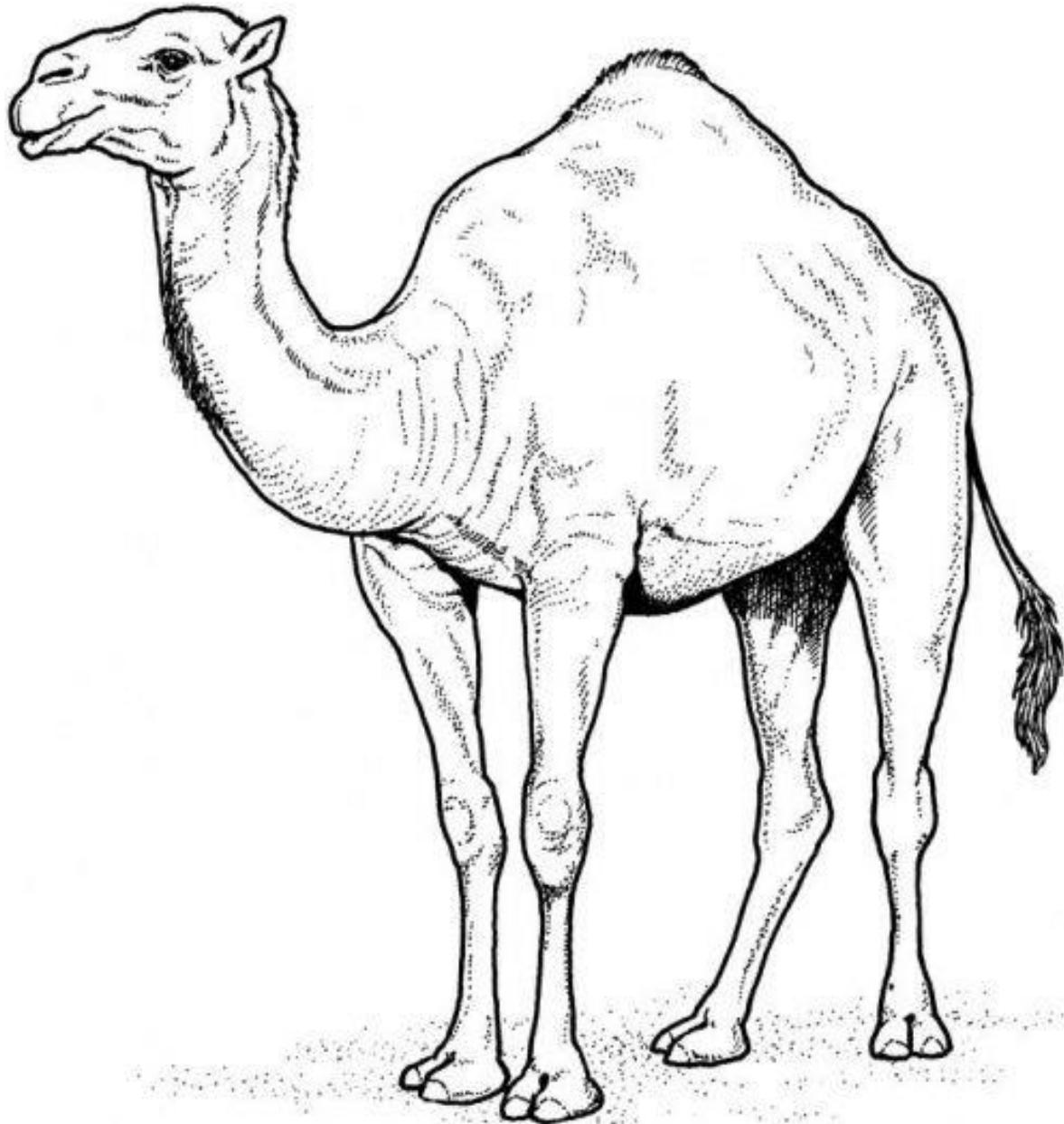
- ▶ The male camel is called a _____ and the female is called a _____.
- ▶ A baby camel is called a _____
- ▶ Camel pregnancy last for about _____
- ▶ A group of camels is called a _____
- ▶ A camel can live for up to _____ years.
- ▶ Camels are apart of the Camelid family TRUE/FALSE
- ▶ The two breeds of Camel are the _____ & _____.
- ▶ Camels where introduced in to Australian in _____.
- ▶ Camels are considered a pest in Australia TRUE/FALSE.
- ▶ Camels store water in their humps TRUE/FALSE.
- ▶ How do camels like to greet each other

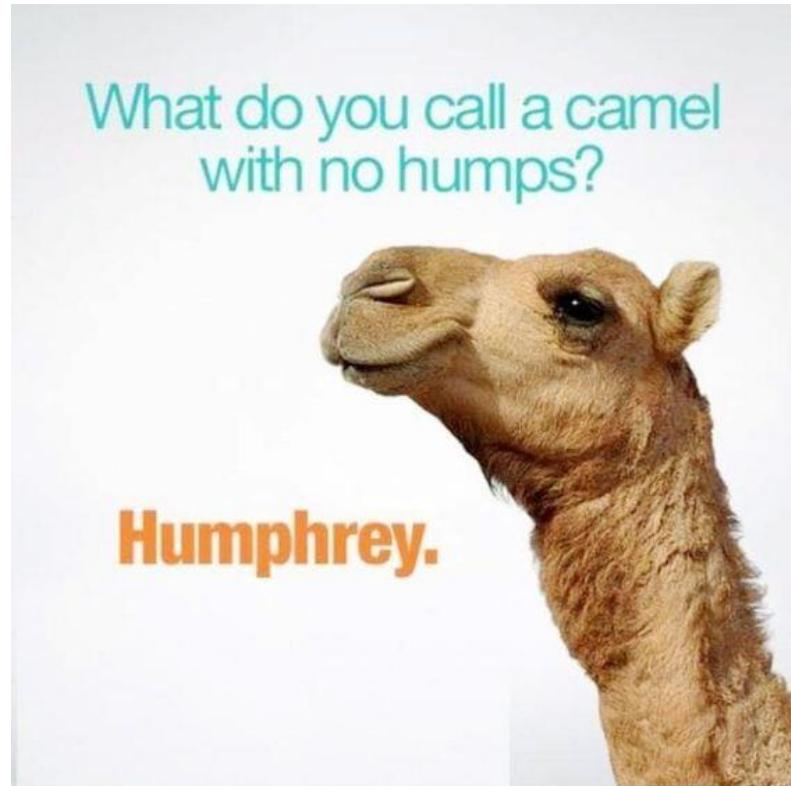
- ▶ _____, _____ & _____.
- ▶ What are three challenges farmers face in Australia _____, _____ & _____.

NOTES



CAMELS





What do you call a camel
with no humps?

Humphrey.



RESOURCES

<https://www.history.com>

<https://www.pestsmart.org.au>

<https://www.livescience.com>

<https://www.wikihow.com>

Wikipedia