



Velvet and “The Meaning of Life”

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Velvet quantity may, in part, be yet another factor beyond the control of the farmer. Body condition alone does not explain the perplexing ups and downs of velvet harvest. It is my suspicion that a stag reacts to upcoming weather conditions when it is starting to grow new antlers.

When emerging from the rut, growth is required in both body condition and antlers. It is possible that a stag decides how much effort it will contribute to growing antlers, based on an innate ability to sense weather conditions over the growing period.

From my observations it appears that, for stags between the ages of 3 to 10 years, the total velvet cut generally correlates with the rainfall from July and December.

As with all attributes, weather forecasting ability is better in some animals than in others. Several other factors also affect velvet growth. Accordingly, it will take many years of careful observation to be conclusive regarding this theory.

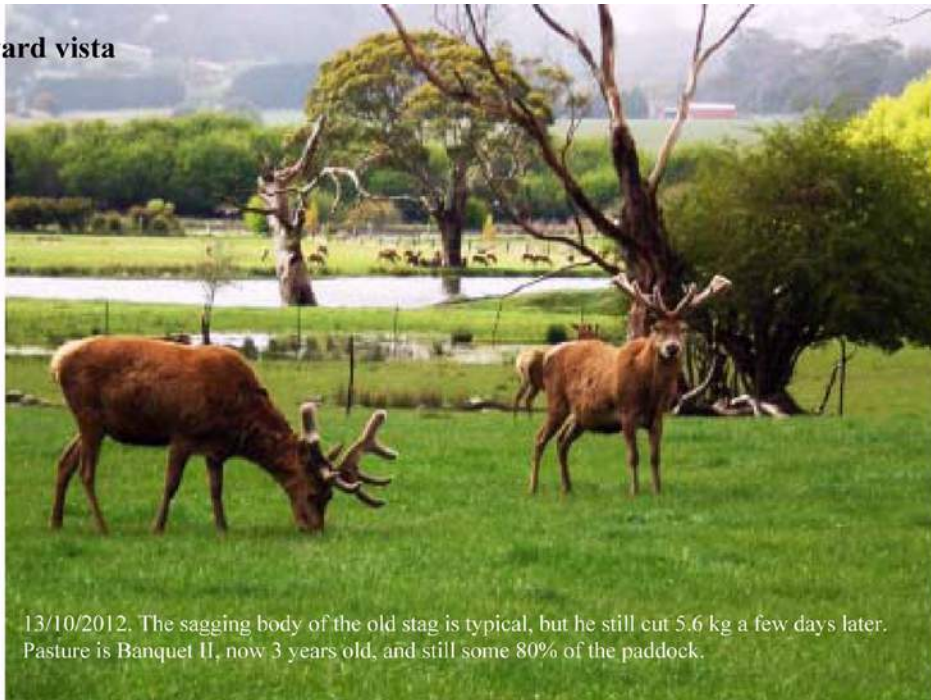
The recent excellent SBS television documentary by physicist Stephen Hawking was fascinating, but I cannot agree with his conclusion on the meaning of life – “perhaps there is no meaning at all”.

The main purpose of all life forms is propagation of the species. All life is finite. Without a successful means of propagation, a species will become extinct. It is self-evident that the best strategy is to propagate the “best of breed” – “survival of the fittest”.

The big picture for all species is very, very daunting. It is estimated that in 1.1 billion years our sun’s temperature will be so hot that all water will evaporate from this planet and in some 5 billion years the sun will expand in a fiery red ball that will consume the Earth. We can aspire to prevent the star or planet from getting hotter. We could discover an exact replica of the Earth in the same relationship to a sun, be in the same evolutionary stage as the Earth is at present, and hope that we humans could be able to co-habit with whatever is at the top of the food chain. In the meantime, we need to ensure that we do not destroy our environment and eco-systems.



My backyard vista



13/10/2012. The sagging body of the old stag is typical, but he still cut 5.6 kg a few days later. Pasture is Banquet II, now 3 years old, and still some 80% of the paddock.

At a basic level, much can be understood about a species by looking at the key driver for life itself. For a stag, the yearly cycles revolve around the rut.

For its entire life, a red stag goes through a yearly cycle: growing antlers whilst being sterile and putting on condition; completing the antlers; regaining testosterone levels; becoming obsessed with fighting and marking territory, whilst paying little attention to (and consequently losing) body condition.

Red deer stags exhibit an unmistakable life cycle to propagate the fittest of the species. Nearly half of the year is spent growing antler and the remainder is spent fighting with it.

For a stag, the rut is the most important time of the year. It is essential that a stag enters the rut in peak physical condition. Having a good rack on its head is the next major key attribute.

As soon as the rut is over, the stag begins to prepare for the next rut. To a large degree, his condition at the end of June can explain the extent to which his velvet will reach its potential. Yet something else also plays a key role.

It is possible that, when emerging from the rut at the time of the winter solstice, a stag makes a key decision. This decision is in regard to the proportion of energy put into body growth compared with antler growth. Body condition takes precedence over antler growth. Being armed with the best weapon is not much use if you are weak and incapable.

Stags may have a sophisticated means to forecast the near future weather. Then again, it may be very basic as with trees and shrubs. Given this premise, the stag could

decide how much effort it can afford to put towards antler growth. The key determinant of food growth is rain. (The Southern Oscillation Index tends to stabilise by the end of May. This coincides with stags emerging from the rut).

As is typical with all attributes, some stags are better forecasters than others. Our highest yielding stags (compared with the more average performing stags) appear to drop velvet weight to a greater proportion when we have poor spring rain.

Like most farmers, we record daily rainfall and yearly velvet antler yields. We tend to only weigh the stags at velvetting. This is helpful, but unfortunately it does not show at what time the weight gains were achieved. Certainly, stags tend to more or less achieve their usual summer weight at the time of the second cut. The body weight may be consistent with expectations, but the velvet weights bounce around in a perplexing fashion.

Many factors have an effect on body weight when emerging from the rut e.g. age, herd dynamics and whether or not the stag was used as a sire.

A stag that is comprehensively beaten in a serious challenge (as opposed to many posturing rituals) will not challenge that stag again that season. It is usually run ragged by the victor to the point of exhaustion. The winner is extremely ruthless and relentless, usually merely trotting up and down the centre of the paddock whilst the loser is bolting around the boundary. Needless to say, that weight loss is significant for the loser and it has no choice but to eat mainly for body weight gain in early spring.

In any one group of rutting stags, it would seem obvious that only one hasn't lost a challenge. However, nature evens out the situation somewhat by individualising the rut

timing. Some of our stags commence roaring at Christmas, whilst the two year olds can typically rut in late April. Further, the intense period appears to be only some two to three weeks duration. Big dominant stags stay clear of small young stags during their intense rutting period due to the timing differences where the older stags are past their intense period and coming "off the boil".

Putting high yielding stags with smaller and younger stags is one strategy to obtain the best velvet. In our case, there is considerable movement of stags between paddocks, even those with 2m fencing on all boundaries, as the stag searches for the mob where he feels most comfortable. Easter is typically the most intense period of the rut for mature stags and it is not unusual for the composition of a paddock to change frequently.

With some 200 rutting stags, there are plenty of stimuli for our single sire stag. The roar can be heard for kilometres



Unfortunately, all of the above are downside effects that are intensified in the very confined farming situation. A stag can eat up to some 3% of his weight each day. If the feed is low quality, the stag will tend to rest to conserve energy as a last resort. Resting stags during the velvet season are not a good sign.

The first task was to correlate rainfall and velvet data in order to determine the rainfall period that appears to be important for the stag. If progressively longer daylight hours trigger velvet growth, actual antler growth is very fast and starts just before casting.

The bulk of our mature stags cast late August/early September so July and August must be a time of rapid testosterone loss, causing stags to stop fighting, stop smelling attractive to hinds and to begin prioritising body weight gain. The stag is also preparing to grow antlers

up and down the valley. It helps if other stags are not in adjacent paddocks or close by, but the sire continuously rounds up the harem and checks them out. He also tends to go hoarse trying to out-roar rivals and makes plenty of false charges to the fence if other stags are visible. High energy usage and very little intake lead to high weight loss during the rut for a sire stag.

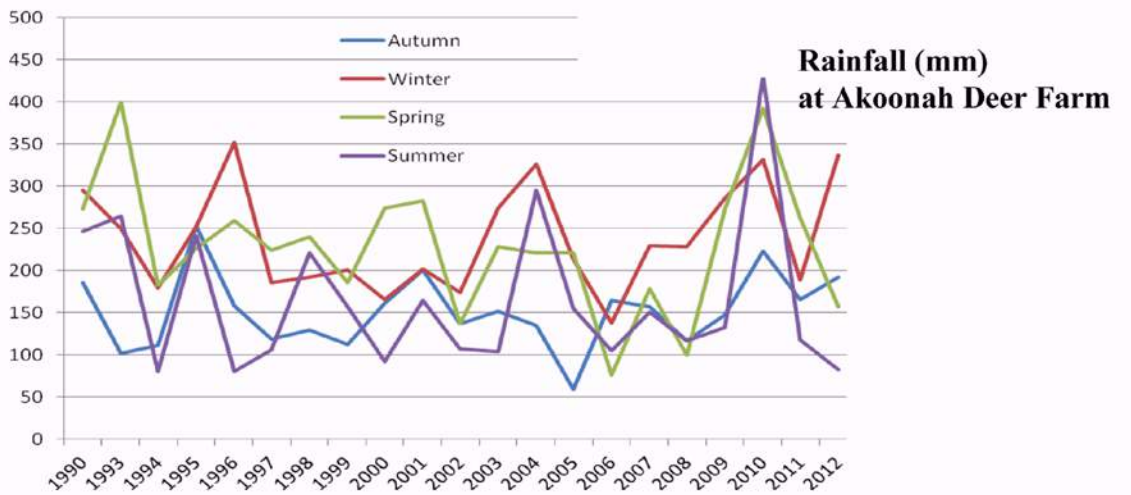
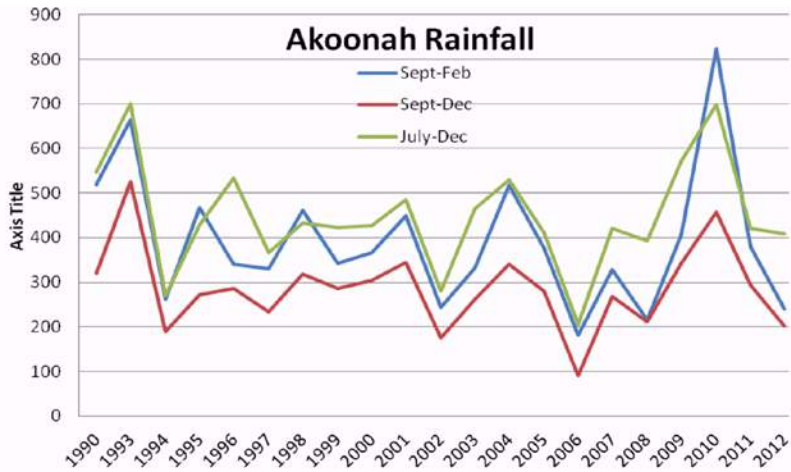
Finally, old age and loss of teeth also will have a marked effect on velvet quantity. Across the herd the data indicates that, for stags between 3 and 10 years of age that make their usual spring and summer weights, velvet harvest and rainfall generally follow a similar pattern. However, we do have several stags that follow similar velvet/rainfall patterns between 3 and 15 years old, but these are the exception and curiously relate to those with some 10% Yugoslavian genetics.

and the loss of testosterone is an important trigger because castrated stags do not grow another set of antlers. Casting dates are an individual variable trait which, if understood, may assist in improving the velvet operation.

All periods from individual months to the full velvet period of six months was compared to the velvet harvest of that year. September to February was also closely looked at because this is the actual antler growing period.

The total annual rainfall, as well as rainfall for the period from January to June, was investigated but they did not indicate any correlation to velvet yield.

The cold hard numbers indicate that the July to December (inclusive) rainfall shown below here in green, has good general correlation to velvet antler total cut.



Between the ages of 3 to 10 years, the stags total cut curve generally follows that of the July to December rainfall. The trend, peaks and troughs are identical for the high yielding stags.

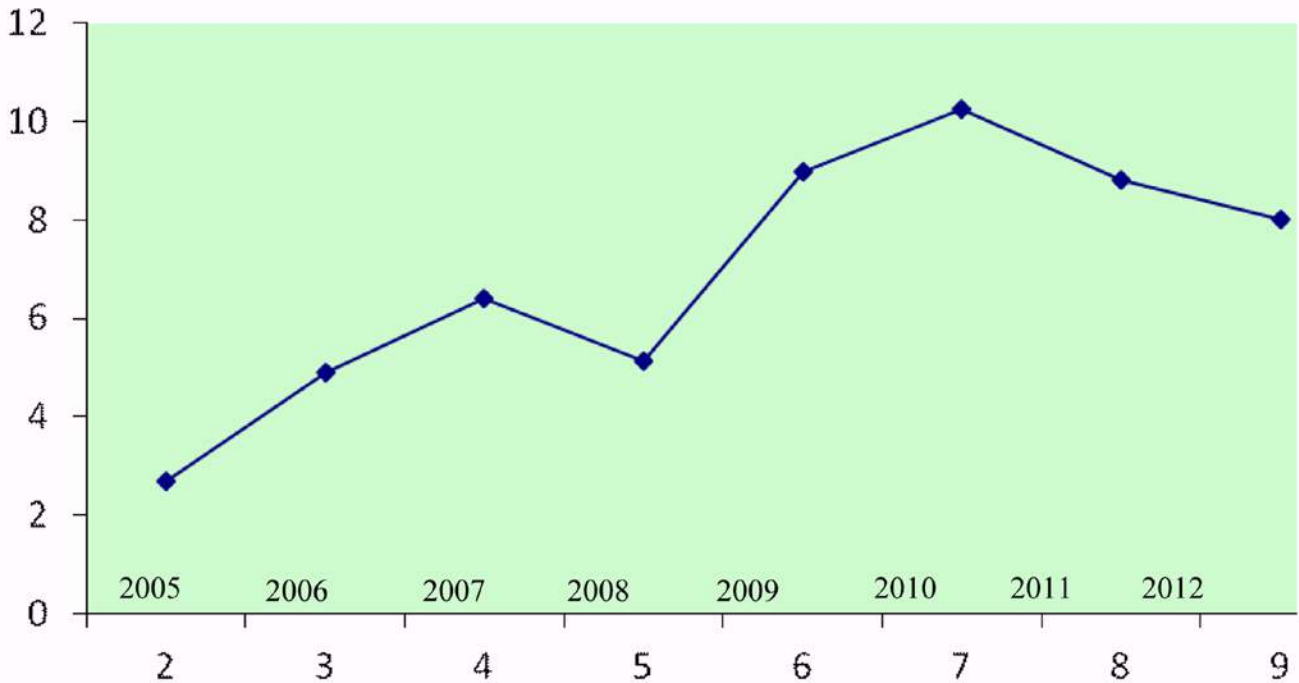
Note: We lost the rainfall data for 1991 and 1992 - early technology issues with the computers of that time.

The three graphs below relate to one of our high yielding stag's velvet and weight data. The final graph indicates the ability of the stag to predict the rainfall for the velvet growing period.



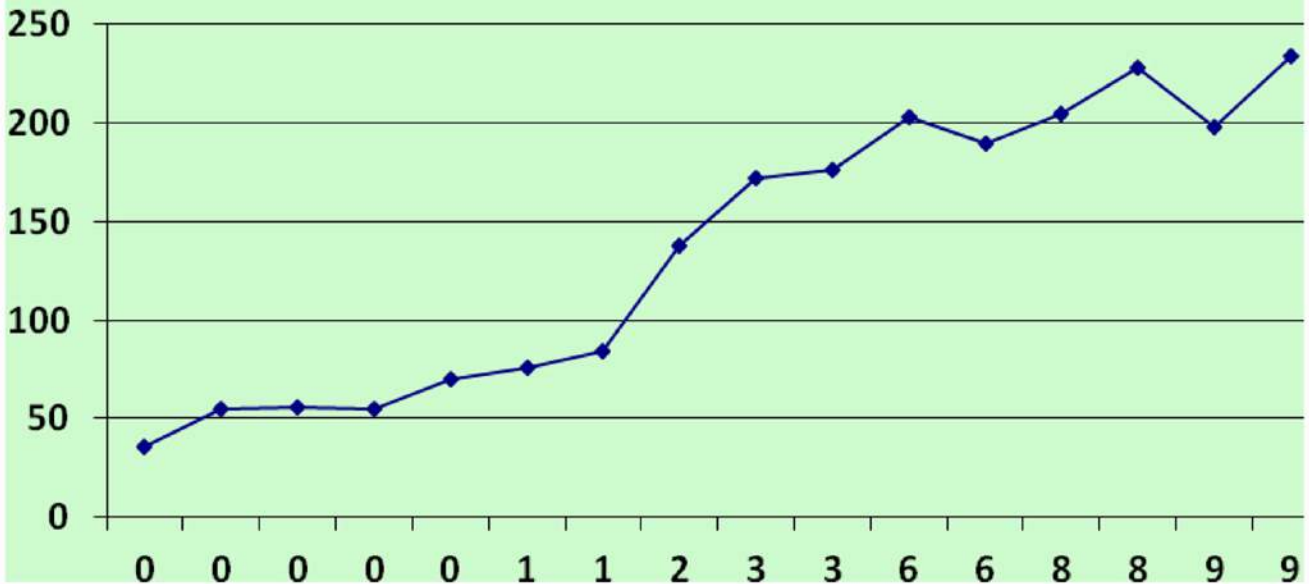
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Total Cut vs Age



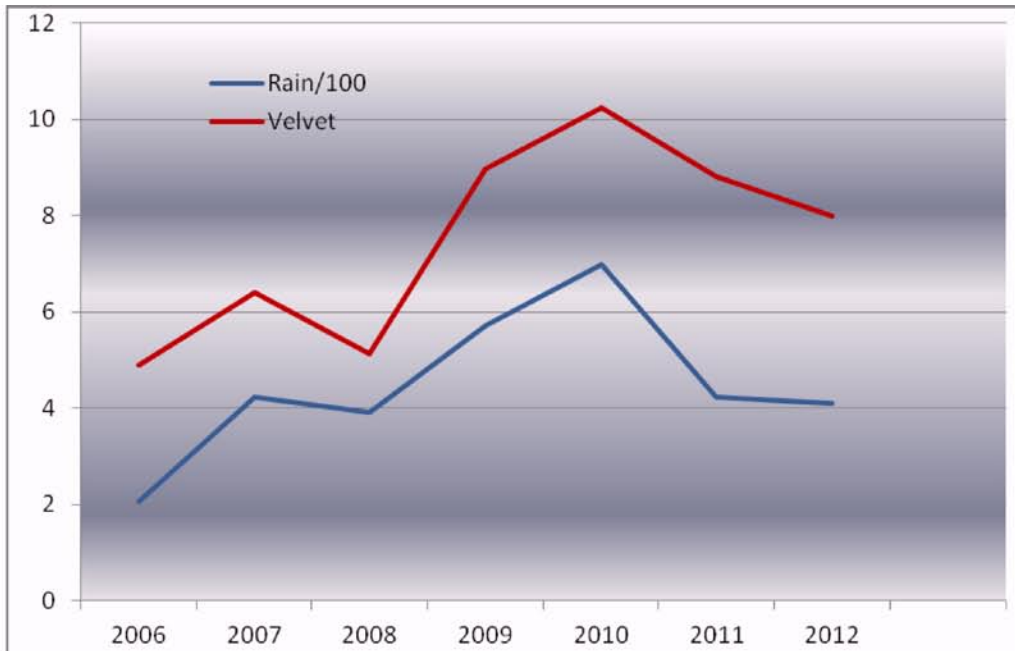
The summer body weights steadily increase:

Stag Weight vs Age



The weights are rounded to the nearest whole number and the two weights are at 1st and 2nd cut velvetting times. By 6 years of age, the first cut is at a similar time of the year and body weight is some 200 Kg. The summer weight steadily increases, but the velvet weights are a different story.

The following graph is for the stag's total cut from 3 to 9 years of age with the rain in mm divided by 100 (for the July to Dec. period) to be displayed on the same scale as the velvet. The trend rate of change is dissimilar, but the inflection points and trend correlation is obvious. He was used as sire in 2008 and 2009.



r me, there are obvious implications:

1. The weather forecasting ability has evolved over millions of years and supplementary feeding is not in the equation. Spring supplementary feeding may not significantly translate into velvet if usual body weight is being maintained because innate senses may be indicating lean times ahead.

Many years ago we gave half the stags a good portion of lupins every day for the velvet season and nothing to the other half. There was no significant difference in velvet weights although the conformation was generally better for the high protein diet.

2. It is a theory at this stage that a weather forecast is made at the time of the winter solstice (when a trigger for antler growth is initiated). It is probably important to supplementary feed in late May and through June in order to be at a good weight at the time of the winter solstice. The better the weight, the more effort can be allocated to velvet. Obtaining good weight before June 20/21 may be crucial to consistently realising the velvet potential of the stag.
3. If this theory is correct, then a velvet benefit may be possible with quality supplementary feeding when the stag senses good rainfall but is not getting adequate feed from the pasture alone.

