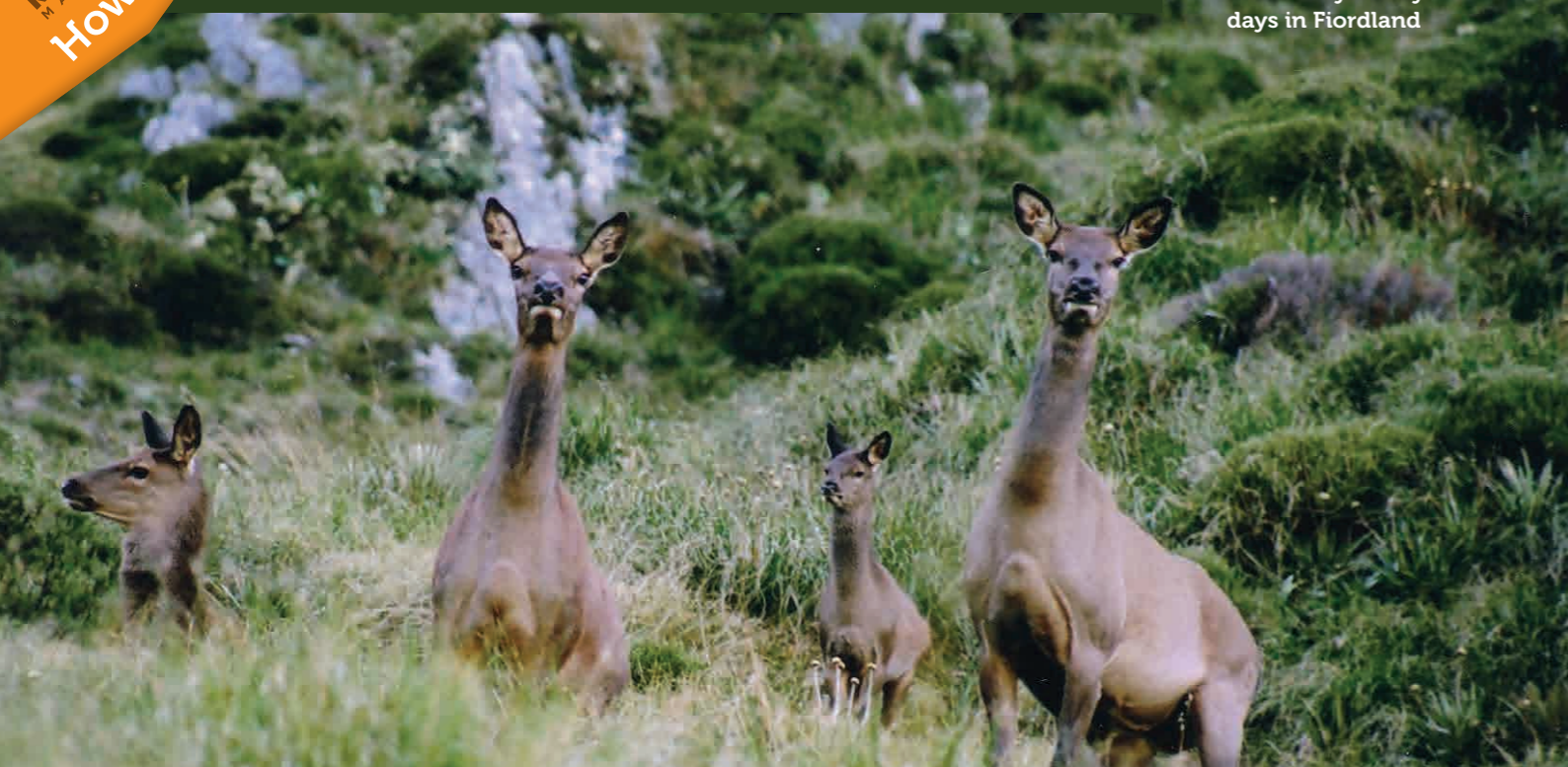


'Whakatautika' (keeping the balance) is key to effective Game Management

Some Wapiti cows photographed on film in Roy's early days in Fiordland



PT 3: AGE

WRITTEN BY ~ ROY SLOAN AND CAM SPEEDY

A NEW APPROACH FOR GAME MANAGEMENT

The current Deer Policy Statement within which the Department of Conservation works on public conservation land was put in place in 2001 by the then Minister of Conservation, Sandra Lee

The opening statement of the Policy reads: "Deer are a serious conservation pest". Very few of us believe that statement, although we all recognise game animals do have an ecological consequence in natural habitats and that they must be carefully managed. .

It is very clear 20 years on that the current Deer Policy has been an abject failure. Reliance on fickle international commodity markets and exchange rates to drive a commercial Wild Animal Recovery Operator (WARO) based deer management model that directly competes with other hunting sectors is fundamentally flawed. A lack of investment in research and monitoring hasn't helped.

As the Department of Conservation follows a new Deer Plan development process, the opportunity arises to address game animal impacts through a new approach. There are huge win-win outcomes available for both conservation and hunting if we can get it right. Examples such as the Fiordland Wapiti

Area highlight such outcomes, but it requires open hearts and open minds across the social and political spectrum to bring to fruition.

In this three part series, we look at some key issues that might underpin a new collaborative approach to game animal management on public conservation land in New Zealand. An approach that sees high quality, sustainable natural habitats supporting healthy organic meat animals to nourish Kiwis from all walks of life, and quality trophies that re-establish New Zealand as a hunters paradise. Such outcomes highlight the huge value our game animal resource could make to our provincial economies and to New Zealand society as a whole.

PART 3: AGE

In the first two parts of this series we have looked at nutrition and genetics. This part looks at the third aspect of the game animal management trifecta - AGE.

Age is critical to good game management outcomes. For males, it is only well fed, quality animals that have reached maturity (six to ten years, depending on species) that will produce quality trophies. But it is not all about bone, horn or antler. For many of us, it's about the quality of meat we put on the table and a much wider hunting 'experience'. For those of us also concerned with important habitat and biodiversity values, it is also about managing animal density. The age of females and overall herd structure are critical to all the above outcomes.

So what is 'herd structure'? Simple answer - it is the relative proportions of the different age and sex classes of animal in a game population. Most game animals are born in equal proportions of male and female - or near enough - usually about 510-520 males: 480-490 females per thousand offspring. The potential life expectancy of individuals in most game species is 10 to 15 years,

so over the life of each age cohort (year class) the various environmental influences to which the herd is exposed will generate a range of possible herd structure outcomes, depending on the survival or mortality of different individuals. **These influences are many and varied but without doubt, the biggest influence on a game herd is usually human hunting activity.** Males and females might be born equal, but once human harvest regimes kick in, their relative proportions change dramatically year on year.

The sex and age specific behaviours of game animals and the powerful selective forces various hunting influences have on individuals, hugely affect herd structure within our New Zealand game herds. Critically, young males are extremely vulnerable when they leave their mothers on 'breeding' country to seek the company of other, older males that live much of the year in bachelor groups on high quality (often open) feed areas - the 'fattening' country. **Their naïve behaviour, limited life skills, sudden lack of maternal supervision, open habitat where they are extremely visible,** and a heavy preference from both the recreational and commercial hunting sectors to remove males, results in a large and chronic over-harvest of young males. In contrast, the preference of adult females for shelter cover over much of the year to raise and protect young, makes them (and their resident offspring) less vulnerable. Females are also targeted to a much lesser degree by most hunting regimes.

Figure 1 shows a typical herd structure for a heavily exploited wild deer herd in New Zealand. Note that survival of young stags in the 1+ and 2+ year classes is extremely low. These are the spikers and young velvet stags that form the majority of the New Zealand Christmas BBQ venison order. They also make up the vast majority of our pre-Christmas wild venison export shipments (when there is a market). **Additional to this poor 1+ and 2+ stag survival in spring, is the heavy harvest selection of 3+ and 4+ stags every rut by recreational hunters - those small 8 or 10 pointers that rush so readily and carelessly in to challenge a hunter's roar.** It's not hard to see why most of our wild deer herds have herd structures characterised by an absence of mature (6+) stags - **dead stags don't grow.** The result is sex ratios that heavily favour females - just 35 males: 65 females (or worse) for every 100 deer in most of our herds.

The upshot of this is that our herds are

Fig 1. Herd Structure – Typical Highly Exploited NZ Herd

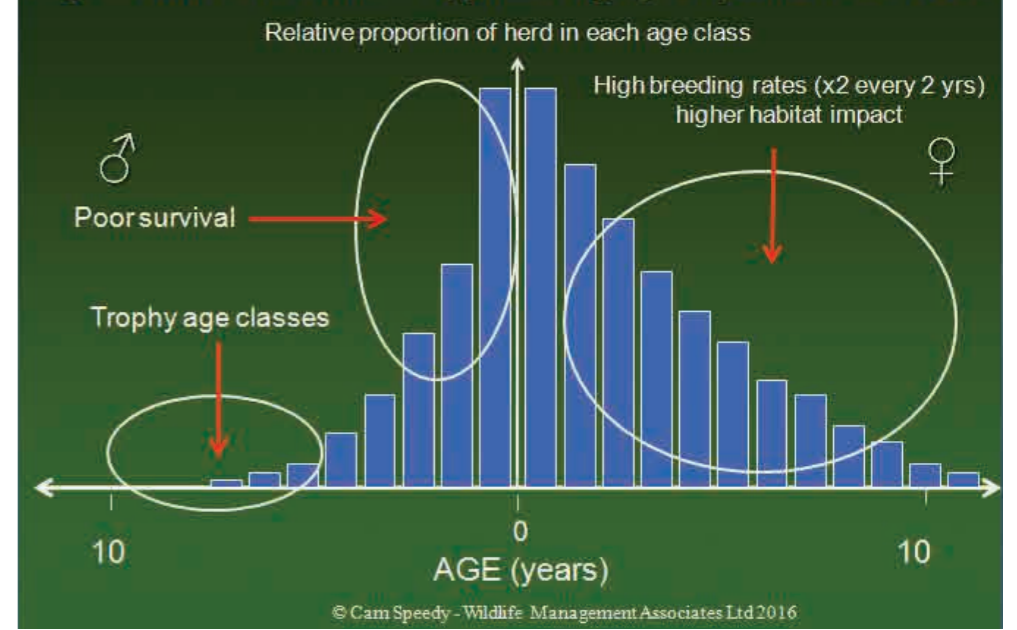


Fig 2: Herd Structure – Quality Management Approach

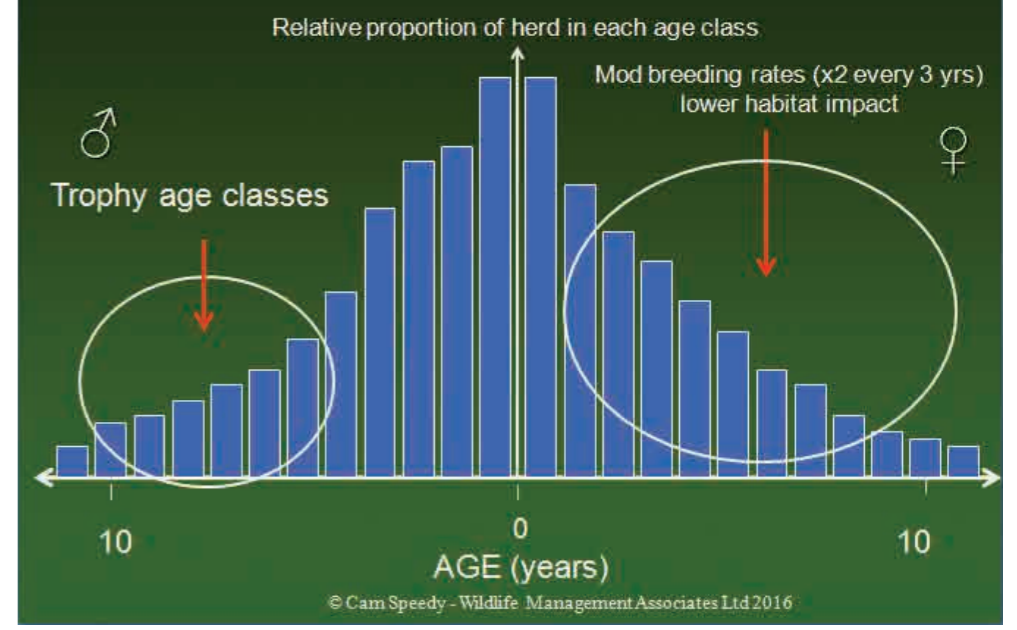
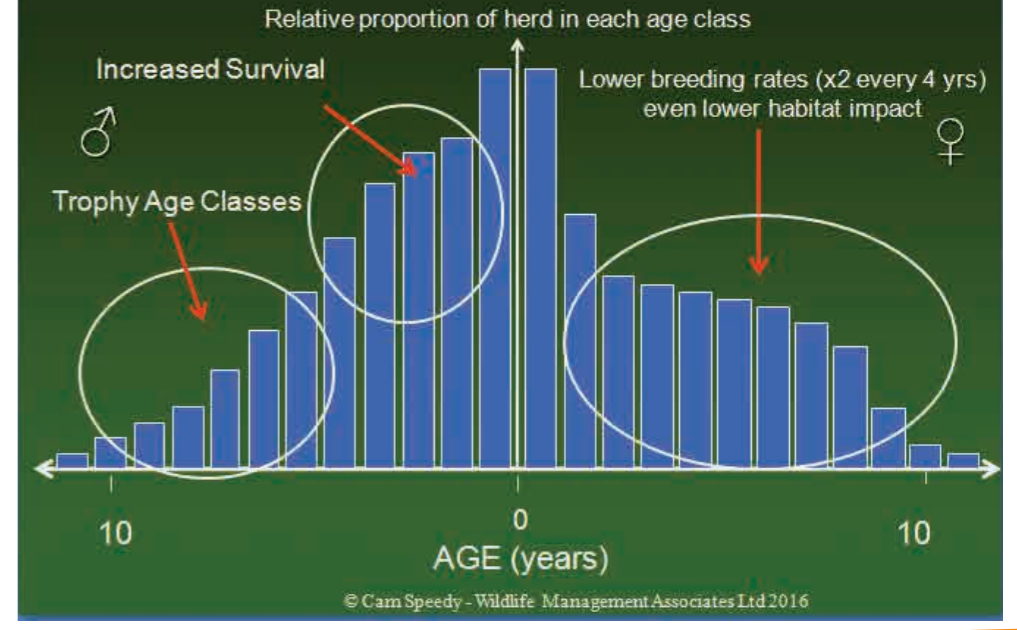


Fig 3: Herd Structure – Trophy Management Approach





ROY - In 2006 I was at the head of Cow Valley. Prior to 2006 I was seeing the best bulls that I have ever seen in the Wapiti area in this valley. Prior to 2006 the animal density was very low. By 2008 the female population had exploded, I actually have a video of a line of 22 mature cows walking down the head of the valley. Because of the quality of these cows the recovery team refrained from culling some. By 2008 onwards the quality of the males in the herd declined noticeably (and quickly) in this area and it wasn't the animals fault, it was the decision made by us. Animal numbers exploded, female population vs male population went

way out of kilter. Everything that could have gone wrong went wrong, by the time we adjusted the predicament it was too late. But it wasn't a waste of time as the learning was huge.

The key message? We can't allow this to happen, we can quickly adjust the balance of the herd but the environment takes a lot longer. It's all about balance.

The above bull was in Cow Valley again, believe it or not this is a baby, just a first head in 2002. This boy grew into a very big head, I followed him for several years until he vanished. I often wonder what could have been if we had just managed this area better



Fast forward to 2021 and these are two incredible bulls seen during the recovery period. We made mistakes in the early 2000's but we learnt from them and this is the result. (Images are screenshots from phone videos)

highly productive (at least where the habitat remains healthy), reproducing at in excess of 45% per annum (the potential to almost double every two years). However, because the intensity of rutting behaviour is governed by the level of competition between males, the 'roar' tends to be poor under such situations. Few adult males sharing lots of females does not result in particularly exciting rut hunting. More poor quality young males also get to pass on their genes. And trophy production is limited, even where habitat provides good nutrition, as few males reach trophy

age classes.

Even more damaging is that, due to their more sedentary lifestyles, the greater the proportion of females in the herd the more environmental impact the herd will inflict on the habitat. **Female-led family groups occupy home ranges 3 to 10 times smaller than adult males** - depending on species (eg., 100ha - 200ha for Sika hinds vs 600ha - 1,000ha for Sika stags). All the environmental impact of female family groups is concentrated on small areas of breeding habitat. **If female harvest is inadequate, such**

herds expand quickly and habitat impact then starts to affect animal condition. They become skinny, reducing meat quality. Females stop breeding every year, and a lack of 'hot' (cycling) females reduces the intensity of the annual rut even further. More importantly, when your game habitat is public conservation land with high native biodiversity value, this brings game hunting into conflict with other land values. It is important to understand that forest damage can take many decades to repair. Game herds can rebound in just a few seasons, especially after heavy harvest. Being conservative with female harvesting is dangerous without careful monitoring, particularly in sensitive environments.

An approach that has been developed in the USA since the mid 1970's to manage some of the negative aspects of female dominated deer herd structure is "Quality Deer Management". **This approach advocates for greater restraint in the harvest of 1+ and 2+ males and a far greater harvest of females.** The herd structure that develops (very quickly) under such a regime is shown in **Figure 2 (Pg 29)**. Note that the sex ratio is far more balanced (1:1) as a result of shifting the harvest pressure off the 1+ and 2+ males onto the female components of the herd - thereby limiting game density to levels that can be better sustained by the habitat.

Ideally, female harvest should be focused on removing older and sub-adult females to keep a contained, core breeding base of females (farmers call this the 'capital stock'), tightly grouped in the three to seven year age classes. Annual herd output falls to a more modest 30% - 35% per annum (potential to double every three years) due to the overall lower proportion of females. **But this lower proportion of females, living in healthier habitat, also increases animal condition and therefore the breeding rates of individual females.** Females start breeding younger and breed most years. More importantly, higher quality meat turns up on the dinner table.

Because male survival increases, more males mature, leading to far greater competition between males for the fewer hinds on offer - and all the females are hot because they are in good condition. The quality of the rut hunting improves significantly with an increase in rut activity/intensity. Larger, stronger males dominate gene flow, suppressing the contribution of younger or poorer quality males to the next generation, improving genetics over time.

Roar hunting within such a herd structure is truly exciting and the chances of a trophy are greatly enhanced with a higher proportion of males in older, trophy age classes. From a habitat perspective, a herd structure such as shown in Figure 2 (pg 29) will also inflict less environmental impact.

Where habitat impact by a game herd is a potentially significant issue (due to sensitive biodiversity or other values), another herd structure that could be pursued is shown in **Figure 3: "Trophy Management"** (pg 29). This approach heavily targets females and actively protects males until they are mature. The reproductive output of such a herd will fall as low as 20% to 25% per annum (potential to double every four years) as the males out-number the females, which makes the herd much easier to control. **This is a low-density approach (2 to 3 animals per km²),** so large areas are required to allow for viable herds to exist. Some males disperse due to the intense competition between potential sires and some die from fighting during intense rutting activity. However, the low density allows maximum nutrition and it is therefore, an approach that can produce outstanding meat quality and trophy hunting opportunities. In our view, this approach has considerable merit on

many remote areas of public conservation land in New Zealand where a low density, low impact, high quality trophy resource might be more compatible with significant conservation value. The best example is the Fiordland Wapiti Herd. Such an outcome requires extremely careful management to ensure it is female focused and that young males (less than five-six years old) are given the protection they need. It cannot occur unless the harvest is tightly controlled.

Tragically, current harvest regimes on public conservation land in New Zealand remain totally uncontrolled except in a very few, tenuous, select locations. This outcome completely undermines what could be an incredibly valuable resource. **Even more ironic is that Conservation NGO's and therefore, large factions within the Department of Conservation, refuse to accept that 'active game management' regimes might actually achieve better conservation outcomes than the current 'default' uncontrolled regimes.**

New Zealand's game animals are a valuable resource - one that can: feed hungry people with clean, healthy protein; power up provincial economies; and get young people off the couch, reconnecting them with nature. But they need active management because, if the

balance is not right, they can impact our native forests. Hunting is conservation and hunters are conservationists. It is time to dust off the ignorance and old biases - across the social and political spectrum. We all need to play our part under a new approach to game animal management.

SUMMARY OF KEY MESSAGES FOR THE THREE PART SERIES:

- Only feeding will bring out the breeding;
- Healthy forest, healthy herd - forests heal very slowly, game herds heal fast;
- Females impose most habitat impact and their condition and reproductive output best reflects habitat quality;
- Female harvest should be a priority where habitat values are important;
- More mature males means more competition, better rut hunting and better gene flow;
- The most sustainable male-female ratio is 1:1 or better;
- Releasing 'new blood' (genetics) is not a fix for bad management;
- Hunting is conservation and hunters are conservationists;
- We all need to play our part.



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