SECRETS of the Reds

A complete guide to hunting red deer

PAUL RATTRAY
SECRETS OF THE REDS:
A Complete Guide to Hunting Red Deer

By Paul Rattray
Contents

Contents ......................................................................................................................... 3
Preview – “A Big One” ................................................................................................. 4
Introduction .................................................................................................................. 6
Seven secrets of the red ............................................................................................. 7
Acknowledgements ..................................................................................................... 8
Overview ...................................................................................................................... 10
Glossary of terms ........................................................................................................ 10
Red Deer Seasons ........................................................................................................ 10
Vital Statistics ............................................................................................................. 10
CHAPTE R 1 .................................................................................................................. 11
Being a hunter .............................................................................................................. 11
Upbringing matters ..................................................................................................... 12
Hunting mentors ......................................................................................................... 14
Hunting life .................................................................................................................. 15
Bush survival .............................................................................................................. 20
Local knowledge ........................................................................................................ 22
Hunter or shooter ....................................................................................................... 23
Know your prey .......................................................................................................... 25
Conclusion ................................................................................................................... 25
CHAPTE R 2 .................................................................................................................. 27
Deer behaviour .......................................................................................................... 27
Deer anatomy .............................................................................................................. 29
Deer habits .................................................................................................................. 32
Deer herds ................................................................................................................... 34
Deer seasons .............................................................................................................. 35
Deer senses ................................................................................................................ 40
Deer signs ................................................................................................................... 47
Deer country .............................................................................................................. 49
Conclusion ................................................................................................................... 51
CHAPTE R 3 .................................................................................................................. 52
Solitary season ........................................................................................................... 52
Casting antlers .......................................................................................................... 53
Growing antlers ....................................................................................................... 54
Birthing young ......................................................................................................... 57
Raising young .......................................................................................................... 57
Small groups ............................................................................................................. 61
Overlapping ranges ................................................................................................. 63
Environmental factors ............................................................................................. 66
Conclusion ................................................................................................................... 69
The roar had been massive. Big red stags roaring in the hills—the biggest ones secreted away in inaccessible country closed to hunters. I knew he was a big one, because local farmers told me they had seen him with his huge antlers and large harem of hinds. One of the things I had learned about hunting big stags is that they may only roar for at most, a few weeks, then go quiet, but they actively congregate with hinds throughout the rut, which may last for a couple of months.

Another thing I had learned was that big stags seek more highly nutritious feed towards the end of the rut as they recharge their bodies after eating virtually nothing during the roar. With this foreknowledge I knew that the stag my farmer friend had seen on his cultivation was a big one. I knew he would be wily and unlikely to come out in daylight. The farmer, who said he had only seen him fleetingly in the spotlight before jumping the fence, confirmed this fact. So, in planning my tactics, I included these factors into my strategy.

“Driving along the road and into the cultivation of oats and Lucerne I had already asked the land owner to go directly to the gate and into the paddock rather than stopping or slowly moving along the fence line whilst panning the plot with his spotlight. I had already done the legwork of checking where the deer were coming in from and noticed that the big stag was entering from the top end of the paddock. I was sure that he would not be far from that fence line as it was his escape point. Sure enough, as I asked the farmer to train the spotlight on that fence line a big stag—the big one—started bounding then prepared to jump the fence. I had already positioned myself for a quick shot in that direction. As I picked his moving figure up through the scope, I knew he would slow briefly as he went to jump the fence, so lined him up and pulled the trigger as he began to turn and jump. Boom! “You missed,” the farmer said. “I don’t think so,” I replied. “How can you be sure?” he asked. “Two things”, I said, “because the sound of the shot was a muffled rather than an echoing boom, which signifies a hit and I am sure I heard him flailing around in the bushes. The sceptical farmers’ reply, “Maybe it was just him running away.” So sure was he that I had missed the stag that he decided to go home. I went back with him and picked up my Jack Russell dog, just in case he had gone further than I thought. A hunting friend accompanying me said as we crawled through the fence, “No blood trail.” “Not unusual”, I said. (Often deer that are hit through the chest (but not the lungs) don’t start bleeding out for 20 meters or more if at all.) I walked parallel with the fence line in the direction the stag had been facing when he jumped the fence, knowing that was the way he had run because of his smell. The dog too confirmed this by going in that direction. My friend gave up and stayed back. I kept going, knowing that the strong smell of stag meant proximity to the dead or injured animal. Next I came to drag marks and blood. This was where he first
went down. Not more than a few meters away I found him already dead, a double-six (12 pointer) with a shot in behind the shoulder that had punched through into the front of his shoulder near the neck—a good kill shot.”

Why had I been far more confident that I had mortally wounded the stag than my farmer friend and hunting buddy? Because I had laid the groundwork by listening to the local farmer about his observations of the stag’s habits, found where the big stag was coming in from, thus knowing his exit point, understood my rifle and the feel and sound of a kill shot, as well as the noises made by an injured rather than healthy red deer. And why was I confident that I could find a big red stag outside of the roar, when most hunters have given up and gone home till the next mating season?

The answer was that I had experience taking big stags both throughout the relatively short roar and during the longer post-rut period. I know their habits and can predict to some extent what they are likely to do in a given situation, where and what they are likely to be eating at a given time of year. Also, the meat of stags tastes far better pre- and post-roar, which is another bonus of waiting until after the roar to hunt big stags.

This and more is what I want to share with you. Hopefully this hunting story has whetted your appetite for more. It is my hope that some of this passion is captured in what I have written for you.

Skilled hunting.

Paul Rattray
Introduction

This book comes from my lifetime love of hunting and the bush, observing and researching nature, animal and human behaviour. Its design as a hunting guide is so that hunters, or would-be-hunters can use this book as a manual to become skilled hunters of red deer. In the process I hope it will also be a good read and a valuable hunting resource.

In this book three main types of research are used: field observations, anecdotal evidence and peer reviewed research. The field observations come directly from me. Anecdotal evidence comes from other hunters and farmers, most of whom I know personally. The peer-reviewed research is meant to compare or add to the field observations and anecdotal evidence, not detract from them.

This red deer hunting guide is laid out in three parts. The first part is chapters 1-2, which focus on the foundations--hunting basics--what it takes for you to become a red deer hunter. Chapters 3-5, is the second part, focusing on red deer habits and behaviours in the context of three distinct red deer seasons: solitary season, mating season and group season.

The third and last part covers chapters 6 and 7. Chapter 6 deals with red deer management in terms of maximising the sustainability of red deer herds for the hunter. Chapter 7 incorporates all that you have learned in the previous chapters as well as many extra hunting, shooting and relational tips designed to help you become the best red deer hunter that you can possibly be.

This is a work-in-progress, because I am learning new things about red deer nearly every hunting trip. And I know there is much more to learn. By putting the principles in this guide into practice, you will become a skilled red deer hunter. Thanks for taking the time to read this book. Please contact me directly (PaulRattray@CVC.TV) if you have any questions or comments.

Happy reading and skilled hunting,

Paul Rattray

“Add one thing to another to discover the scheme of things.” (King Solomon)
Seven secrets of the red

This book will teach you about seven red deer hunting secrets. Some of these secrets were learned from Dayak tribesmen in Borneo, others from Australian bushman and hunters, and others come from my own personal hunting experiences.

1. Walking and stalking on the balls of your feet makes for more silent movement.

2. “Barking” at fleeing deer can cause them to stop allowing for a first or second shot.

3. Knowing which deer to target in a group allows you to take more deer in one shoot.

4. Using a Deer Calendar gives you the advantage in predicting seasonal deer movements.

5. Understanding the “clan” behaviour of deer helps you find them during the off seasons.

6. Training a ‘deer dog’ to find deer can maximise your hunting success.

7. Knowing where post-rut stags tend to hideout helps you take big stags outside the rut.
Acknowledgements

Many people and experiences combine to make this book possible. My parents calling Kalimantan Barat home and living amongst the Dayak people enabled me to learn from some of the best hunters and tropical jungle experts on the planet.

While names like Matius and Melandang may sound foreign to most readers, they were my Dayak hunting mentors. These men taught to me to have a sense of the jungle and its inhabitants as a holistic living organism.

Having a ‘feel’ for what is going on in the jungle enabled these Dayak hunters to sense what animals are doing, where they may be feeding and when. For those of you who have had the privilege of living amongst tribal peoples, this ‘sixth sense’ about the bush they live in is uncanny.

Despite still being far behind my Dayak mentors’ hunting skills (I am working on it!) I have learned principles about animal warnings and tracks and wind direction that have served me well no matter where I have hunted. These are some of the principles that I will share with you in this book.

Upon my return to Australia, as a cultural hybrid who looked like an Aussie but thought like a Dayak, I had trouble fitting into a new culture. Like many newcomers, I felt that my prior knowledge and skills seemed worthless and unappreciated in my new Aussie culture.

Over time I became more confident and appreciative of my Dayak cultural upbringing, as I was able to advise business people working in and with Indonesians about cultural pitfalls and business risks. As I began to hunt in the Australian bush, I realised that the hunting skills I had learned in Indonesia could be applied to the Australian bush too.

Then, I discovered red deer hunting and met Rex, my most influential Aussie hunting mentor. His knowledge of the Australian bush, hunting and shooting is phenomenal, especially when it comes to red deer. Rex spent hours with me in the bush, coaching me in shooting techniques in particular.

It was Rex who first encouraged me to write this book. So here it is. Thank you Rex and thanks to all my other friends and family--especially my long-suffering wife, Riani. As a hunter’s wife she has had to endure days and nights of me being away in the bush out of phone contact.

Sometimes Riani says jokingly, “Many of my new friends think I am a single mother!” Yet she continues to encourage my
hunting activities and the writing of this book, even urging me to take regular hunting breaks. Thank you to everyone who has encouraged me to write this book, it is as much your book as it is mine.
Overview

Glossary of terms

**Stag** – Mature male red deer

**Hind** – Mature female red deer

**Calf** – Young from birth to six months

**Spiker** – Immature stag under two years of age

**Yearling** – Immature deer under two years of age

**Rut** – Season of increasing sexual excitement in red deer

**Roar** – Period in the rut when hinds and stags are ready to mate

**Harem** – Group of breeding hinds gathered by stags during rut

**Venison** – Meat of a deer once it has been butchered or cooked

Red Deer Seasons

<table>
<thead>
<tr>
<th>Seasons*</th>
<th>Month</th>
<th>Stags</th>
<th>Hinds</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Solitary</strong></td>
<td>October November December January</td>
<td><strong>Cast antlers</strong></td>
<td><strong>Hide away</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Antlers in velvet</strong></td>
<td><strong>Start calving</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Rub antlers</strong></td>
<td><strong>Tend to calves</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Stake territories</strong></td>
<td><strong>Travel with calf</strong></td>
</tr>
<tr>
<td><strong>Mating</strong></td>
<td>February March April</td>
<td><strong>Follow hinds</strong></td>
<td><strong>Come into heat</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Collect harems</strong></td>
<td><strong>Join harems</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Mate with hinds</strong></td>
<td><strong>Become pregnant</strong></td>
</tr>
<tr>
<td><strong>Group</strong></td>
<td>May June July August September</td>
<td><strong>Led by dominant male or female</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Same-sex or family groups</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Hind and bachelor groups</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Stamping and sparring grounds</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Feeding and maternal groups</strong></td>
<td></td>
</tr>
</tbody>
</table>

*Southern Hemisphere, Southeast Queensland

Vital Statistics

<table>
<thead>
<tr>
<th>Details*</th>
<th>Stags</th>
<th>Hinds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>150-200 kilogramss</td>
<td>80-100 kilogramss</td>
</tr>
<tr>
<td>Height</td>
<td>1.2-1.4 meters</td>
<td>1.1-1.2 meters</td>
</tr>
<tr>
<td>Lifespan</td>
<td>7-12 years</td>
<td>12-15 years</td>
</tr>
<tr>
<td>Feed</td>
<td>7-8 kilogramss per day</td>
<td>5-6 kilogramss per day</td>
</tr>
<tr>
<td>Drink</td>
<td>5-6 litres every few days</td>
<td>3-4 litres every few days</td>
</tr>
<tr>
<td>Reproduce</td>
<td>3-7 years</td>
<td>2-12 years</td>
</tr>
<tr>
<td>Offspring</td>
<td>20-25</td>
<td>7-10</td>
</tr>
</tbody>
</table>

*Based on variable averages
CHAPTER 1

Being a hunter

“Hunting basics”

In being a hunter, I learn from myself, from other hunters and from
the animals we hunt. Growing up on the island of Borneo amongst
Dayak tribes people, who lived to hunt, gave me an insight into the
jungle and animals that few people gain first-hand today. Learning
how to hunt from Dayak mentors, who showed me by doing, then
let me have a go, was a great introduction to hunting. Starting
with a slingshot, air rifle, black powder musket, spear and
machete, then moving on to high-powered rifles, I have tried all
sorts of weapons and methods to hunt game.

<table>
<thead>
<tr>
<th>Topics covered in this chapter:</th>
<th>What you will learn:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upbringing matters</td>
<td>1. About your hunting persona</td>
</tr>
<tr>
<td>Hunting mentors</td>
<td>2. Significant others in hunting</td>
</tr>
<tr>
<td>Hunting education</td>
<td>3. Important life experiences</td>
</tr>
<tr>
<td>Bush survival</td>
<td>4. Bushcraft and survival skills</td>
</tr>
<tr>
<td>Local knowledge</td>
<td>5. Benefits of local knowledge</td>
</tr>
<tr>
<td>Hunter or shooter</td>
<td>6. To think more like your prey</td>
</tr>
<tr>
<td>Know your prey</td>
<td>7. To know your hunting style</td>
</tr>
</tbody>
</table>

The first step in becoming a skilled hunter, the ultimate aim of
this book, is to understand what motivates and drives you as a hunter
or to want to hunt. Simply put, being a hunter means getting to know
yourself, your motivations, why you hunt or shoot, your strengths and
weaknesses when hunting and shooting. This self-knowledge actually
helps you understand who you are as a hunter, what aspects you need
to work on as weaknesses and those areas that are your strengths.
Mastering these hunting capabilities contributes to your potential to
be a skilled hunter.

Hunting strengths and weaknesses can be judged by how well
you prepare physically and mentally for a hunt, the strategies, tactics
and choices you make during a hunt and especially your decision-
making when you have a red deer—a really big one—in your sights.
Your willingness to take and avoid risks is another key factor.

What you do following a shot, miss, wounding or kill also says a
lot about who you are as a person and a hunter. Are you cruel or
humane? I am not trying to be mystical or overly analytical here, but intensely practical. Essentially this chapter is about learning the principles that will help you get to know yourself and your prey better.

In this chapter I will share with you how my upbringing contributed to my intense interest in hunting and love of the bush. Specifically, I recall my experiences of learning from my hunting mentors, who educated me in bushcraft and hunting skills, whilst giving me opportunities to apply these skills in the field. Through these fairly unique life experiences of growing up with Dayak tribe people, I learned to respect, value--and use--their local knowledge. I continue to rely on local knowledge to this day.

Next, we consider what defines you as a hunter. Two broad definitions are used to help determine whether you are more inclined to be a hunter or a shooter. Then, we touch on how you learn to think like the animal you are hunting within the wider context of the surrounding bush. Being able to honestly define yourself as a hunter, including your strengths and weaknesses is the main aim of this chapter.

**Upbringing matters**

The best way to explain what I mean about self-awareness, in other words knowing who you are as a hunter, is to start by telling my own story. My family background and upbringing has shaped me as a person and as a hunter. So has yours. Understanding how your upbringing shapes you as a hunter, or will shape you if you are just starting out, is our starting point. I grew up at a place called Nanga Merakai (or mouth of the Merakai River) on the tropical island of Borneo, in the Indonesian province of West Kalimantan not far from the border with Sarawak, Malaysia, to be precise. (See Image: “West Kalimantan and the blue dot where I lived”.)

My parents, Bruce and Annette Rattray went to Borneo in 1967 to help the Dayak people improve their lives spiritually and physically. The Dayak people are known ethnically as Austronesians who originated from Indochina and have come in successive waves to the island of Borneo over thousands of years. Notorious as head hunters, even until recent times, and known as the “Wild Men of
Borneo”, the Dayak, who consist of many tribes, sub-groups, distinct languages and dialects, are united by a culture of growing rice, mostly by swidden agriculture, also known as slash-and-burn farming.

**Wild Boy from Borneo**

Having survived and thrived in the tropical jungles of Borneo for generations, the Dayak have, in the process, acquired local knowledge of flora and fauna surpassed only by the earlier inhabits of Borneo the nomadic Punan or Penan. Dayak men live for hunting except for when the rice wine is flowing freely at their gawai harvest festivals. If you want to read more about the fascinating island of Borneo, “The Ecology of Kalimantan-Indonesian Borneo”, by MacKinnon, Hatta, Halim and Mangalik (1996), gives a comprehensive overview of the flora, fauna and people groups of Borneo.

My upbringing on the island of Borneo amongst the ‘wild men of Borneo’ has indelibly made me who I am today. Dad was a dairy farmer and bush mechanic from Tasmania and Mum a nurse and mid-wife from Brisbane. Two-year old Paul (me) came along for the ride and ended up not wanting to leave. You can read Mum and Dad’s fascinating story in Pioneer, a book about their extraordinary life’s work amongst the Dayak people.

My first memories of hunting and animal life were of a group of Dayak men chasing a rusa deer in their canoes when it tried to cross the 100 metre wide Ketungau River that flowed dark and swift outside our high-set, stilt house. The rusa deer got away. Then we moved downriver to a large rubber plantation. I remember hearing wild pigs cracking and munching on rubber nuts at night and watching my pet dog “Scamp” bail up a huge boar late one afternoon not more than fifty meters from our house.

I became even more excited about hunting as I learned the local language and listened avidly to my adopted Dayak ‘fathers’ telling me their hunting stories. Soon I was old enough to get in their canoes and follow them along jungle trails with their long, black-powder, muzzle-loading muskets slung over their shoulders. Then, I started dreaming of the day when I too would be able to join them in the hunt.

I vividly remember the first time I fired one of these smooth bore muskets at about eight years of age. The kick, flame of fire, thunderous boom and pall of smoke from the musket was a real buzz. It was only later on I learned that firing these guns can end in a life-threatening backfire due to overloading or faulty workmanship.
Sometimes, no more than a click or sputtering misfire occurs, especially in the tropics, where humidity and dampness have put an end to many a potentially successful hunt.

Nevertheless I was hooked! From then on I listened to every hunting story I was told and took every opportunity I could to learn about the jungle and animals, as I followed my Dayak mentors around on their treks through the bush. Eventually I became known locally as the ‘Dayak White Man’. This nickname stuck and close friends use it to this day. It is these life experiences that have shaped me and made me who I am today as a hunter and as a person.

**Hunting mentors**

From this upbringing, one thing I know and understand about myself is that I have an appreciation for the bush, and the animals inhabiting it, that go beyond hunting and shooting itself. Maybe it was because I grew up with tribemen who had an intimate understanding and ‘feel’ for the jungle that bordered on the mystical. It may also be due to the fact that the bush provides so much evidence of an intelligent design, with its incredible synergies and symbiotic relationships, that it becomes a religious experience. Much of this thinking I directly attribute to the input of my Dayak hunting mentors.

The influence of Dayak hunting mentors on my hunting life cannot be understated. Learning from men steeped in a life-time of hunting experience underpinned by generations of oral history passed down from father-to-son is how I was mentored from an early age. As a child and young person I spent minimal time with peers, preferring instead to hang out with mature men who could tell me about hunting then show me how it was done. It was the willingness of tribal elders to spend time with me that was one of the main blessings of growing up in Dayak society.

When not spending time with my Dayak friends, I was voraciously reading about animals and the world by the light of a pressure lamp from the library of books that my parents brought in 44-gallon drums from Australia. Despite growing up in the jungle and doing as little correspondence schooling as I could, by the time I went to boarding school at eight years of age, I was multilingual and could read and write well.

At 11 years of age I was assessed as having a college-level reading comprehension. Even at boarding school, 70 minutes flying time from our bush airstrip, I continued to be an avid bushman, often going ‘out of bounds’ and into the bush for hours by myself or with local Dayak hunters. Learning to listen to others and read for myself helped prepare me for the day when I would take up my own weapons.
and head into the jungle, usually alone, sometimes for days at a time. This sort of preparation is important because you are less likely to make mistakes when you have the combined wisdom of stories and experiences committed to memory.

The importance of mentors in passing on this local hunting knowledge and experience has been an incredible blessing. To this day, I continue to utilise mentors throughout my hunting, work and spiritual life. For their input I am truly grateful. It is highly recommend that you too actively seek out a mentor who can pass on their hunting experiences to you or, even better, hunt with you. Though this book is an important aid, there really is no substitute for a hunting mentor who can help you become a skilled hunter, especially if you are new to a hunting area or country, or a particular type of game animal, such as red deer.

**Hunting life**

Armed with these hunting stories and as an occasional accomplice on hunting trips with the grown-ups, the day finally came when I got my own sling shot then air rifle. I became a crack shot with both and was able to head shoot squirrels and pigeons with my air rifle from quite a distance. Then I got myself a black-powder muzzle-loader, much to Mum’s horror, as she had seen the damage these things do when they back-fire, or when someone is accidently shot.

The danger of firearms was impressed upon me at an early age as Mum treated a young man aged 17 years, Da’ud, who had been accidently shot through the spine and was paralysed from the neck down. He had been blowing a bamboo deer whistle for a Kijang barking deer on a moonlit night and another hunter had carelessly come to the same field and accidently shot him on the basis that the hand movements he was making appeared to be the flicking tail of a kijang.

Seeing a previously healthy young man in agony, needing to be changed like a baby and turned over constantly to prevent bedsores (he subsequently died) impressed upon me the potential danger of hunting and shooting. Observing another man lying in a canoe after being badly mauled by a sun bear and hearing of others killed by wild boars left me under no illusions that hunting and guns are a dangerous, potentially lethal combination.
My best (dog) friend

Nevertheless, I persevered, keeping in mind these dangers. Graduating from shooting squirrels and pigeons to monkeys and other small game like mouse deer, I became a good shot, even winning a local shooting competition against some of the best Dayak, police and military shooters in our area. One of the most important ‘kick-alongs’ in my hunting adventures came when one day I heard the mournful howls of a small dog in pain or lost.

During that day I heard this pitiful howling sound quite a few times. The next morning, I decided to have a look around. We were in a remote area. I hadn’t seen any unusual dogs, and I knew by the howl it was not one of my dogs. After walking around and listening for this soft howl, I finally was able to see a small brown and white dog standing under one of the high-set houses in our company’s complex.

She kept walking around in circles, not running away from me, which was unusual for a village dog faced by a stranger. I wondered why until I got closer and realised that she had snagged her nose on one of the large fish hooks hanging from fishing poles leaning up against one of the house stilts. The fishhook had gone right through the side of her left nostril and out the top of her nose. This probably happened as she sniffed around for food scraps under the house.

As I moved closer, I expected her to start trying to run away or attack, as most village dogs become aggressive when cornered due to being mistreated. To my surprise she let me touch her. I tried to work the hook out, but the barb and her cries stopped me. I decided that if I couldn’t get the fishhook out of her nose, I would have to put her down, as she was in pain and could not eat properly. Then I had an idea. I would ask one of my friends to hold her while I cut off the fishhook with a pair of pliers. He agreed that it was a good idea but did not want to risk being bitten. So holding her between my knees I managed to cut off the fishhook and pull the non-barbed end out of her nose by myself.

From then on I was her friend for life. She never left my side unless I made her stay home. I called her “Dudut” which is the local word used to call hunting dogs. I didn’t realise it then, but she was a valuable hunting dog. She would also become my best dog friend ever. The first inkling I had that she was a good hunting dog was when a Dayak hunting friend, Melandang, probably the best local hunter, felt her large lymph glands, took a look at the spots on her tongue and body, and the way that she panted and pronounced, “This is an excellent hunting dog.”
Indeed she was. Despite being the smallest of my dogs, she was the unrivalled leader of the hunting pack. One morning, I heard the distinctive baying of dogs that have bailed something up not far behind our house. I only had my machete with me, as my spear and musket were at our communal rice field, about a forty-minute canoe ride or walk away. I ran towards the barking and as I got closer could hear the snorting and tusk rubbing of a wild boar.

As I got within sight of him I could see that he was a huge bearded boar, a wild pig species native to Borneo, who had backed himself into the river to escape the barking dogs. Named for the coarse, bristly hair that grows on the snouts of males and females alike, the bearded pig lives in tropical, evergreen forests on Borneo and surrounding islands. Terrific jumpers, bearded pigs can clear barriers up to 7 feet high and can turn and charge in a body length. They have huge heads and tusks (the largest head in proportion to body size of any wild pig) and boars can weigh in excess of 200 kilograms. When bearded boars are cornered they are extremely aggressive. I waded into the water towards him.

As I tried to hack him with my machete he lunged towards me then ran up the bank and along the river’s edge with the dogs—and me—in hot pursuit. Suddenly he turned and jumped into the river and started crossing to the other side. I jumped in too and managed to outswim him getting to the other side first. As he charged out of the water and up the bank towards me, I moved back behind a tree, let him pass and chopped him with my machete in the back. From the blood trail, it was clear he was seriously injured. We chased him. With the dogs leading, followed by me with some older Dayak men farther behind, the old boar bailed up again about 500 meters further upriver.

As he came into view I could see that the machete wound had seriously injured him. The boar was standing in waste deep water to ease the pain and keep the dogs away. Even though we were able to spear him, he started to cross the river again. Then I jumped into the river and grabbed his back legs cutting the tendons. The old boar succumbed. He was too heavy to lift out of the water, so we sunk a four-man canoe, put him in it then bailed the canoe out. I swam down river with the current and the canoe in toe (See Image 2: “Bearded Boar”.)
What a day that was! My first wild boar and one of the biggest ever! We boned him out and took over 100 kilogramss of meat off him. His head alone was nearly 40 kilogramss.

As I trekked further into the jungle, with the dogs and alone, I started to track and, eventually, shoot more wild pigs and rusa deer. With Dudut and my developing hunting skills, experience and confidence, I became a better hunter, helping to provide fresh meat for my family and community. You will note, based on a more recent photo later, that the boy on the right in the bearded boar picture is a much younger version of me! I became quite well known in the area as the white boy who could shoot, hunt and fish better than most of the locals.

*Crisis situations*

What I learned about myself in my early hunting years was that I didn’t scare easily, was determined and persevered. I once carried a whole 70-kilogramsm pig for nearly 10 kilogramsmetres through the jungle. It took me about seven hours, but I did it. Another time I spent hours feeling my way along a pitch-black jungle trail in the middle of the night for my own footprints after my torch bulb blew. Eventually I found the main trail and got back home close to dawn.

Other than knowing how you are likely to act and react in difficult and risky situations, like those mentioned above, knowing how you are likely to deal with a crisis situation when hunting is another important step in becoming a skilled hunter. Because hunting is potentially risky, especially where guns and/or dangerous animals are involved, it is important for you to understand yourself well enough to know how you might act and react in a crisis situation. When I was an 18 year-old, I learned first-hand about dealing with a crisis situation through a near fatal encounter with another huge bearded boar.

“\[I was out hunting with the dogs in an area where I had met up with a huge boar that had eluded me on a number of occasions. I was pretty sure he was camped up somewhere in the thick ferns and bamboo thickets of a knob rising up out of the surrounding river flats. Sure enough, the dogs went straight in on a fresh trail. The big Boar was there all right and within less than a minute the dogs had flushed him out. He exploded out of the bush, snorting and clacking his tusks together menacingly. As he ran past me, I fired my musket. He was hit but not fatally injured, because my musket was on a half-load to keep the sound down, due to firearm restrictions at the time. I chased the boar down to the river and, as he started to cross, I swam after him trying to hit him with my machete. My arm got caught on a vine and I lost my machete. That was it. He swam off and I went home. A week-or-so later I was out]”
hunting at night in my canoe, again with my musket on half-load, when I heard a wild pig eating jungle fruit on the edge of the river bank. I paddled my canoe silently in the dark towards the sound. Sneaking along the riverbank in the dark until I was close, I switched on my torch and fired. This pig was hit too, leaving a blood trail and tusk marks on a tree as he charged up the riverbank. I decided to come back early the next morning with the dogs, as I did not fancy trying to tangle with a wounded pig in thick brush alone in the dark. At dawn the next morning I was out with one of my older hunting friends, Yosia, and the dogs. We only had spears and machetes. As soon as we got to where I had shot the pig the night before, the dogs were off on the trail. Not long after, in the distance, I could hear by the sound of their barking that they had a pig bailed up. It was a long run and I arrived first. In the thick brush on the other side of a creek I could make out a large injured boar—the one I had shot the night before. As I moved around to cross the creek out of the pig’s line of sight, I heard Yosia calling out an urgent warning, “Look out, he’s coming after you!” I looked across towards the pig I had seen and he didn’t look like he was going to charge. Then, looking down into the deeper creek bed itself my eyes met the enraged eyes of another boar, much larger and closer than the first boar. As he charged up the bank towards me, I realised that there was nowhere to run. I was standing out in an open area of saw grass and reeds with no trees to climb. There was no way I could outrun the boar. I had to take him on. Everything went into slow motion. Even though this incident must have only gone on for a few seconds, it seemed like an eternity. Kneeling down, I stuck the blunt end of my spear in the ground and held the blade out in front of me to protect myself. The boar hit the blade of the spear so hard it bent the thick blade back onto the shaft, making it unusable. On the way through it hit me with its shoulder knocking me a few meters off to one side, then ran back down into the creek. Even though severely wounded in the head, we had to spear it about five or six times more, with lengths of sharpened bamboo, from a position of relative safety perched on the buttress (exposed roots) of a large tree as the boar lunged up at us. It kept tearing the bamboo spear out of its body as we speared it. We would re-cut the bamboo and go in again. Finally it was dead. I realised upon examining the boar and finding a bullet hole in its jaw and neck, that it was the big boar I had shot a couple of weeks ago. No wonder it was so bad tempered! This whole episode may have gone on for about 10 minutes. For that entire time and even afterwards, my body was shaking…not with fear, but with adrenaline and excitement! Otherwise I was uninjured. Less fortunate was Dudut. I found her later on with a compound fracture to her front-right leg and part of her intestines protruding from a number of gashes in her stomach. I ran back home with her, fording numerous creeks and rivers to get to my Mum who stitched her wounds up and put a splint on her fractured leg. She healed and lived to hunt another day.”

I learned something valuable about myself that day. I don’t scare easily in the face of danger, which is a positive. On the negative side I realised that I need to be careful about not taking too many risks in dangerous situations. Even though I have grown up and matured somewhat, a recent hunting experience involving two charging scrub cattle, in Australia, reminds me that I still have these risk taking tendencies buried under a bit of maturity.

The reason I have spent time telling you this story is not to show off. Rather, it is to impress upon you the need to know—and be
honest about—how you are likely to act and react in a crisis or high-risk situation. Hunting requires some risk taking, and if you take risks, then a crisis situation may ensue. It is really important to have in mind how you are likely to react to risk and crisis, because if you don’t, you may end up accidently killing someone or being killed yourself because you are careless, overly confident or afraid.

**Bush survival**

Obviously, you really can’t improve as a hunter until you admit your weaknesses and work on overcoming them. When I talk about reacting to high risk or crisis situations and their dangerous even deadly implications, I am not just talking about dangerous animals and weapons. Equally dangerous is the bush itself, be it in the wet tropics of Borneo or the dry scrub of Australia. Having a sense of the bush and its rhythms of life and death goes a long way to helping you avoid danger and become a skilled hunter.

I was blessed because I grew up amongst tribal people whose local knowledge of the jungle and rivers were unrivalled. They taught me the names of hundreds of trees, edible and inedible fruit varieties, what vines held water, which ants and grubs could and could not be eaten, how to catch fish and animals with snares and other improvisations.

Most people do not get this first-hand experience because they never get to live with tribal people, or even if they do, are not sufficiently interested to make such a close connection. For me, connecting with local people—and their local knowledge—was and is paramount, because I can learn things from them that I may never learn from books or take a life-time to learn myself.

Practically speaking, bush craft and survival skills need to be learned and to some extent memorised. There are plenty of books out there to read, but the most important thing is that you actually put them into practice from time-to-time. I have been on survival weekends where much bigger, stronger guys cracked before me because I knew how to survive better in the bush than they with foreknowledge.

Possibly one of the most important bush survival skills is anticipating what may happen. Someone with anticipation knows what to expect. While I will deal with hunting-specific bush skills in the final chapter, four of the most important general bush survival skills I know and put into practice are: 1) Keeping your bearings so you don’t get badly lost, 2) having enough water so you don’t get too dehydrated, 3) knowing your limitations so you have enough stamina
to get back home, 4) making sure that someone, especially locals, always knows approximately where you are.

**Avoid getting badly lost**

So far, in all my years of hunting I have not been badly lost in the sense that I have always known how to get home. God-willing I never will be badly lost, as I know from talking to those who have been lost that it is a frightening, almost soul-destroying feeling. So, how have I avoided getting lost? Most importantly, I always set in my mind’s eye the trajectory of the sun, wind direction if it is constant and topographical features like hills and large trees that I can use as signposts. Then, I deliberately try to remember everything in reverse.

Importantly, I don’t go any further once I start to be unsure about where I am. Rather, I immediately backtrack, following my own tracks until I am back in an area that I recognise. One trick I picked up from my Dayak friends is to break the branches of shrubs and bushes as you walk so that on your way back you can see where you have been. If you do this, you are unlikely to get lost in the bush, though I would not like to have to survive out in the deserts as do the Australian Aboriginals, who I consider to be the ultimate bush survival experts amongst tribal peoples.

These days many hunters rely on Global Positioning Satellite (GPS) technology. The benefits of GPS are incredible, provided you can get a reliable signal and your equipment is working properly. Unfortunately, in deep valleys and on rainy or foggy days, these devices don’t always work as expected and it is important to retain some traditional bushcraft to get you out of tight spots and into good ones. My view is that these technologies are enablers that should not replace good hunting bushcraft.

**Know your limits**

Points two and three are interrelated because you should never go any further than your water supply and energy reserves allow you. Learning to calculate this requires common sense, which one of my work colleagues often reminds me is really not that common. Given the number of people who get lost without enough water or energy to get back to where they started, I must agree. This is another example of what I talked about earlier of how critical it is that you know and factor in your limitations.

Some questions to ask in terms of your endurance levels are: How far is my return trip? How much water do I need to do this trip?
How much energy and stamina do I really have, especially when carrying a 50-kilogram backpack full of meat? I have been out hunting with a number of guys who fancied their stamina and fitness levels but faded much quicker than they expected because they overestimated their endurance levels. It is important not to do this. In my opinion, it is far better to underestimate than overestimate your endurance levels and stamina on a hunting trip.

Finally, let someone know where you are going and how long you are likely to be there. While it is important to let your family know where you are for their own peace of mind, it is more important to tell local landowners where you are likely to be since they have local knowledge of the country and know how long you should be in a given place before becoming concerned about your safety. If you know the country well enough to describe mutually known and recognised landmarks, like certain properties, paddocks, creeks and fence lines, then your whereabouts and directions are easier to ascertain if a search is required.

Local knowledge

One thing that I have mentioned throughout much of this chapter and will devote more time to in the final chapters is “local knowledge”. In fact most of what I share in this book is based upon my own and other’s local knowledge. Local knowledge or indigenous knowledge is much spoken of and written about today in management and scientific literature as the knowledge and understanding that local people have about their locality that is only available locally, usually in oral rather than written form. See Bala and Joseph (2007) for a detailed discussion of differences between indigenous knowledge and western [scientific] knowledge. Local knowledge is usually stored in peoples’ minds rather than libraries.

In this book I define local hunting knowledge specifically as what local people observe about red deer in sharing the same habitat or because they are hunters. Much local knowledge is restricted to a given area but some local knowledge can be applied in other places if you understand the principle behind it. For example, we can learn to listen for or ‘hear the right bird’, which can help alert us to the presence of other large predators and game animals like deer. In the jungles of Borneo, where I grew up, certain birds, such as Babblers and Thrushes alert the astute listener to the presence of predators.

Persistent chattering indicates that a snake, bear, clouded leopard, wild boar--or another human--may be near. Particular types of chattering from certain species of bird can tell the more discerning listener whether a predator is in the trees or on the ground. Being
able to ‘hear the right bird’ helps Dayak hunters choose the appropriate weapon to deal with the predator at hand.

Having learned this local knowledge in Borneo, I was able to apply it here in Australia, even though the birds, animals and country are quite different. Once you are able to apply such local knowledge a number of times it becomes a skill or ability that you no longer need to think about too much, you just remember that when you hear certain bird or animal calls, or conversely the absence of certain bird and animal sounds, large game or predators may be around.

Local knowledge mainly comes through relationships and friendships. Amongst Indonesians and Australians, despite significant cultural differences, I have not found any fundamental differences in how local knowledge is shared. People in direct contact share local knowledge with each other while talking about and doing the things that bring such local knowledge to mind.

So, when they note something that is of interest to you they share their knowledge by volunteering hunting information. In both Indonesia and in Australia I have had other hunters and also land owners come by or phone me to tell me that there are game animals around that could be hunted. Local knowledge is volunteered, first-hand information and is extremely valuable to the serious hunter.

**Hunter or shooter**

Other than gaining and using local knowledge, an important factor in being a hunter is to determine whether you tend to be more a hunter or a shooter. A hunter's thrill lies in the chase and the challenge involved therein. A shooter on the other hand focuses more on the shot and the excitement of shooting. For example, at the end of a hunt is your urge to get a few shots off, or savour the tracks and animals seen?

While both skills and inclinations are essential to hunting, knowing which category you more readily fit into--hunter or shooter--is important in judging your strengths and weaknesses in terms of hunting. How you are reading this first chapter is another good indicator of whether you are more a shooter or a hunter. If you are more a shooter, then you may have found this chapter a bit boring and think, “What is the point of all these hunting and life experience stories? Let’s just get on to the shooting bit.”

If that is you, then you need to change your attitude and learn the attributes of a hunter, since this is the aim of the book and absolutely necessary if you want to take more than a handful of red deer in your lifetime. If you only want to shoot as many red deer as you can, then go ahead and try your best, you don’t really need this
book to do that. Though I can tell you from personal experience, red deer are not as easy to hunt as you may first think.

Obviously, being a good shooter in that you are an accurate shot is a great head start. That is, if you can shoot well at game and not just at a target. The American term ‘buck fever,’ which means you miss or mess up a shot because you are unprepared for the shot or are overly emotional or hyped up about the shot, is something you must get over to become a skilled hunter. And most hunters, if they are honest, have had at least one case of buck fever in their hunting careers. Mine was in Conondale, Queensland.

“We had left before daylight, working our way across a couple of hills up to the top of a creek. Then we started working our way down the other side, hoping to cut off any deer that had come down the creek during the night. Halfway down the creek we came across a fresh path through the dewy grass and some large hoof prints moving in the direction of the creek bed. Not much further on, we heard a large animal crashing through the undergrowth. Next, a huge stag with a massive rack of antlers started making his way cautiously up the opposite side of the creek bank, not more than 200 meters away. He stopped a little further on, his hot breath steaming up the cold morning air. I pushed down the bolt, lined him up and pulled the trigger. Nothing happened. I tried again. Still nothing! I ejected the cartridge and tried again. Nothing! He started moving out of range. Then he was gone. Upon inspecting my rifle, I realised that my safety had been bumped on in the dark, probably in the car. Because I never use the normal safety locks on Mauser actions (I’ll explain why in chapter 7), in the heat of the moment, I had not thought to check to see if the safety was on. It is a valuable lesson never forgotten.”

Being calm when you take a shot essentially means that you do not flinch when you fire because you have taken enough shots with the rifle to feel comfortable firing it. That is the shooting element, especially where large calibre, high-powered rifles are concerned. I will talk more about how to make and take accurate shots in the final chapter. The hunting element is being sufficiently calm and collected so that when you take a shot, the adrenalin and emotion of seeing such a large animal in your sights does not cause you to rush your shot or take so long that when you fire you have lost your nerve.

Because I know I have these tendencies myself and have seen them displayed in others, there is no doubt that all hunters tend to be either more a hunter or a shooter at heart. The main point here is that you will be more naturally one than the other. Are you a shooter or a hunter? For me personally, I think I am more a hunter than a shooter. Though I have worked hard on becoming a better shot by learning the art of shooting, I have only done this to improve my shooting when hunting, so I conclude that I remain a hunter at heart. What about you?
Know your prey

Last and by no means least, to become a skilled hunter you must come to know your prey, in this case red deer. While this book will help you learn a lot about red deer, to come to know an animal, you must start to think like it does and visualise yourself in its position. I learned this valuable insight from one of my adoptive Dayak fathers, Matius, who was an excellent hunter. His ability to stalk an animal through thick undergrowth silently without stirring even a bush or a leaf is still something I have not mastered to his level of ability.

He taught me to think like the animal I was hunting. In other words, to try to think through in my mind’s eye what an animal like a wild deer or pig might choose to do in a given situation. This involves knowing their feeding times and food preferences, bedding habits and likely escape routes, wind direction, their distinctive odours and most likely behaviour if they become aware that they are being hunted. It is important to understand that this skill is more than knowledge in terms of information learned and retained about the animal. It actually involves one imagining himself or herself as that animal by learning to think like the animal.

Another valuable skill I learned from Matius was the ‘look-three-times-before-you-shoot’ rule. The first look is to make sure it really is a wild animal; the second look is to make absolutely sure that what you are planning to shoot is your intended target and the final look is to pick the aiming spot on the target animal and fire. Hunting skills are not easily learned. Rather, hunting skills are developed and refined as hunting knowledge is put into practice then reviewed against the animal’s response behaviours.

Conclusion

Because red deer are instinctive animals, you can learn to know how they are likely to behave instinctively in a given situation. That is the topic of the next chapter of this book. Before we move on, let us review what this chapter has covered. I started with my own upbringing to show you how your upbringing affects the way you develop as a hunter, especially in regards to risk-taking. Then I explained how hunting mentors and experiences have developed me as a hunter and person. Next we looked at some key factors to do with bushcraft and survival skills, with a special emphasis on local knowledge.

Finally we looked at your natural tendency to be either a hunter or shooter and what skills are needed to come to know your
prey, the red deer, better. These hunting basics are the building blocks for our next chapter, which deals specifically with red deer habits and behaviour. In closing, I don’t want you to think that my upbringing was completely idyllic. I did not like everything about Dayak culture. Their apparent cruelty and enjoyment in tormenting helpless animals, or allowing animals that should have been put out of their misery to suffer bothered me.

If my Dad had spent more time with me, I may not have spent as much time with my Dayak ‘dads’ and become so immersed in their culture. Nevertheless this upbringing is one that I would not give up for a million dollars and I am thankful that my parents gave me the freedom to mix so thoroughly with local peoples. What I would like you to do with this chapter is to not compare yourself to me, but to compare yourself to each section covered in this chapter. Think about how your upbringing and life experiences have affected your hunting potential. If you do this honestly, you will have achieved what this first chapter was intended to do: to help you know yourself better in terms of being a hunter. Don’t forget to answer the Self-appraisal Questions in Appendix 1.
CHAPTER 2

Deer behaviour

“Red deer”

Red deer, like all animals, behave in predictable ways. In other words, they rely on instinct. Red deer behaviour is influenced by the sex of the animal, time of year, terrain, hunting pressures, food availability and weather conditions. Once you understand how these physical and environmental factors affect deer, you will know how to predict and pre-empt certain red deer behaviours. This ability to pre-empt or predict likely animal behaviour is what distinguishes a skilled hunter from a lucky one.

Red deer are adaptable and hardy, able to survive with little water in steep, high and rugged country. In fact they seem to choose hilly country over flat terrain because it gives them a good vantage point from which to see predators, especially hunters, rivals and kin. Red deer prefer to be close to thick brush and will only move out into open country to feed at dawn and dusk or when they are moving between territories. Even then, if there is a tree or scrub line to follow, deer will stick to it as much as possible.

A good starting point for understanding red deer behaviour is to know what it is that makes a red deer a deer. Deer are ruminants. This means that deer are hoofed animals that chew their cud.
Scientifically deer are categorised as being in the order *Artiodactyla*, which are even-toed ungulates (animals with two large and two small hooves on each foot) in the family *Cervidae*.

Deer are classified as being of the family *Cervid* because the males have solid deciduous antlers that are cast seasonally. Red deer are classified scientifically as *Cervus Elaphus*. According to the Encyclopaedia of Hoofed Animals, there are more than thirty species of deer, with red deer described as being most similar to Indian sambar and American wapiti or elk.

Though both sambar and wapiti can be larger and heavier in the body, as a rule, red deer have better-looking antlers with more tines and a greater length, breadth and spread, relative to body size. These characteristics make red deer one of the most sought after of the trophy deer species. Essentially, it is the antlers of adult male deer that distinguish them from other ruminants.

Particularly majestic are the antlers of the mature red stag. In fact, the red stag has arguably the most spectacular antlers in the deer family. It is the red stag’s incredible antlers and proud bearing that have fascinated hunters in Europe, where red deer originated, for thousands of years.

In northern Europe the reoccurring theme of the deer as the animal of the hunt, and specifically the chase, revolved especially around the Red Deer (Kendall, 2005). It was the antlered stags that were most prized as large, alert and swift beasts against which royalty, aristocracy and other wealthy patrons could pit their wits.

As a result, strict laws and taboos denied the common folk access to this bounty. Most of you will be familiar with the mediaeval outlaw Robin Hood who risked severe punishments for the taste of venison. The word venison is of French derivation and means the meat of a deer, though its origins come from the Latin word “venari” meaning ‘to hunt’.

From ancient times, antlers were not just kept as hunting trophies. This hard material was also carved to make early jewellery and buttons and agricultural implements. Today, red deer antlers continue to be used to make handles for anything from hunting knives to walking sticks. Red deer antlers, especially during their velvet period, are ground up into a variety of potions and elixirs.

It is this demand for velvet, and to a lesser extent venison, that has led to red deer being farmed in the Americas, New Zealand and other Pacific Islands like New Caledonia, and mainland Australia. Since red deer farming has never achieved its expected economic potential, over the years many red deer have escaped deer farms or have been deliberately released. These factors have contributed to their spread throughout many of these areas as feral animals.
Essentially it is only the terrain in which red deer can survive and reproduce and the degree to which they are hunted or suffer predation that limits the dispersal of feral red deer in new territories. Depending on where red deer are located, a variety of terms are used to describe them. As a rule, a mature male is called a stag and a mature female is called a hind (Blackshaw, 2003). Young, under a year old, are called calves and red deer over a year old are called yearlings. Immature males with single pronged antlers are called spikers.

In the Americas, the more common deer terms buck for a male, doe for a female and fawn for young is sometimes used for red deer. However in the scientific literature the terms are as defined in the “Glossary”. These are also the terms used henceforth in this book. Image 3: “Red Deer” gives a good idea of their striking and graceful appearance.

**Deer anatomy**

Red deer have long, thin legs and large ears, thin heads and faces. Their colouration helps them blend in well with the surrounding country. Deer are sure-footed and can negotiate the steepest hillsides and mountain trails at a gallop. Of interest to the hunter is that due to red deer being ruminants or cud chewers, they are able to eat large amounts of food in a relatively short time, then move back into thicker brush to digest it at their leisure.

As a result, red deer do not tend to feed for long periods out in the open. Instead, they will conceal themselves in thick brush adjacent to semi-forested and open feeding areas, feed quickly then return to cover as soon as they can. If possible, deer will always choose to feed in semi-forested areas using the trees and bushes as cover. This feeding pattern is the norm unless deer are feeding on planted crops that require them to move out into more open areas to feed. Usually deer feed in open cropping areas only at night.

Deer spend about 60% of their time feeding, 30% of their time is spent resting, with the remainder of their time spent travelling between feeding and resting areas (Hester, Gordon, Baillie & Tappin, 1999). Even then, unlike cattle, deer are timid feeders and do not graze for long periods in one spot.
Rather, deer browse or pick at their food, cautiously moving from one spot to another whilst keeping a watchful eye out for danger. The only time deer will feed in one place for extended periods of time is when they are standing behind a tree or bush and feel safe and unexposed. Usually, once deer have fed, they will retire to digest their food under the cover of trees or bushes.

Therefore, in open areas where deer have been feeding, it is well worth carefully scanning the surrounding trees and bushes, since this is often where deer will be resting after feeding, often lying down. Given this behaviour and colouring that blends in with their natural surroundings, red deer are difficult to see.

One of the tell tale signs that deer are in the vicinity is the smell of their pungent urine. Secretions from the lymph glands in their head, neck, shoulders, hindquarters, and especially in their Hock or Tarsal Glands, also emit pungent odours and are rubbed on the surrounding vegetation as red deer walk.

As a result, red deer emit a detectable and obvious odour letting you know that they have been recently about and even whether they are hinds or stags. Despite being large animals, a study of red deer anatomy (see Image 4: “Deer Anatomy”) shows that their vital organs are quite well protected by their ribcage and, apart from the lungs, are relatively well hidden in their body cavity. Relative to their size, red deer have small heads. Both these factors make red deer difficult to shoot other than through the chest cavity.

However due to their heart being low down in the chest cavity, possibly to protect it from puncture wounds from stag antlers, heart shots too are difficult. Stags are well protected in their forequarters by thicker fur and skin, referred to as a ‘mane’ during the rut or roar.

Because red deer wallow in mud to cool down and spread their scent around, this mud layer can further protect red deer from shots, especially from small calibre, high-powered rifles because their projectiles often disintegrate on impact.
Deer appearance

Red deer are actually not ‘red’. Rather, they can be various shades of reddish to orangey-brown to tan on their top half with lighter creamy white fur on their underbelly and around their tails. Occasionally nearly white individuals are seen, such as “Old Creamy”, mentioned later. The ‘red’ appearance tends to come from the outer fur of red deer with the middle part of the hair follicle being greyer. It is the tips of the fur that are darker. The flanks of both sexes are greyish brown. Stags tend to be darker than hinds on their top half, especially on the forequarters, though older animals of both sexes have greying to white hair around their shoulders and rumps.

Dark almost black manes or capes distinguish mature stags from juveniles and hinds, particularly around their necks, which tend to be thick and bushy, especially when they are roaring or stamping to show their dominance. Stags also have a characteristic darker area of fur around their penis that is stained brown to black from their urine, especially during the rut. The older both stags and hinds get, the more their hair starts to thin and becomes sparser. Red deer grow winter coats, then molt and grow new coats in spring.

Mature stags have a shoulder height of about 1.2-1.5 metres and on average weigh about 150 kilograms, though weights vary significantly based on age, genetics and nutrition. I have shot large stags in good condition up around the 200-kilogram mark. Hind shoulder height is around 1.1 metres, not much less than a stag, however I have seldom shot mature hinds much over 100 kilograms. If you refer to the introductory section “Vital Statistics”, note that these averages are highly variable and are particularly dependent on genetics and nutrition. Stags are much heavier in their forequarters than hinds, because this is where they carry most of their extra weight and bulk.

Despite these variations, it should be possible to arrive at an educated guess as to the likely age of a red deer by studying its shape. The young male aged from three to six years has a straight back, balanced body and carries his head erect. As he ages, the body becomes more concentrated in the forequarters, particularly during the rut. Antlers eventually regress with age, showing a less developed outline and shape, often losing the crown. The gait of a healthy, young stag is rhythmic and paced with head held erect. At a gallop, fast run, or under trees, a stag’s head is carried thrown back. The older stag tends be more hunched in the shoulders and his hindquarters become bonier as he ages.

Hinds have fewer but just as recognisable outward signs of aging. Their bodies thicken with age, her coat becomes duller and the
fur more sparse, her flanks are bonier. The skull is also heavier and nose apparently longer, her ears will be carried thrown back, as compared with a younger female, whose pronounced ears will usually be carried forward, especially when alert. The number and shape of teeth, and tooth wear can also be used to assess red deer age.

Mature deer over two years of age have a full set of six molars, three on each side. Because deer only grow one permanent set of molars, the older they get the more worn their molars become. Colouration of red deer can also be an age clue. Calves have spots, whereas yearlings and newly mature deer are a richer red colour. Mature stags develop a dark brown to black coloured mane or cape around their shoulders and neck. Older hinds and stags become lighter (whiter) in colour as they age and their fur becomes sparser, not unlike humans.

Usually healthy red deer in their prime of life are reddish brown in colour when they are clean and have new, thicker winter coats. They also appear a darker red colour when they are dry, so in the late afternoon sun a red deer appears more red than in the morning when its coat is wet from pushing through dew covered grass. Red deer also appear to be darker in summer because they often wallow in mud pools to repel ticks and flies.

**Deer habits**

Based on first appearances, deer appear to be delicate animals due to their long, thin legs, necks, bodies and heads. This could be no further from the truth. While not usually aggressive, except for the occasional stags known to attack cattle and horses (even people on rare occasions!) red deer are extremely tough. A misplaced shot more often than not means that a red deer will run a long way before going down and most of the time you will lose it because red deer run for thick cover when injured.

On balance I have found red deer to be much tougher than wild pigs of a similar weight, needing larger bullets and better-placed shots to bring them down. This is partially due to their instinct. Red deer will choose flight over fight every time, whereas a wild boar has a tendency to want to stand and fight. Despite this flight instinct an injured deer’s flailing hooves and stag antlers, particularly spikers, can injure a hunter.

When I lived in Borneo there was an incident of a hunter hunting with dogs who was badly injured by a *rusa* deer’s hoof that pierced his stomach lining when it jumped on him to escape the dogs. This was no doubt a freak accident where the deer was spooked and jumping madly to escape happened to stomp on the hunter.
Occasionally, stags will go on the attack and when they do so can be extremely dangerous. I have had a downed spiker try to impale me when I approached him and red stags with their flailing antlers can inflict serious injuries on each other and on unwary hunters. When it is unclear whether a red deer is dead it is wise to assume that it is alive and dispatch it with another shot, if necessary.

**Flight over fight**

Once wounded, red deer, like most wild animals will try and get as far away from a predator as they can. When injured, red deer usually seek out cool, shady areas, often in or near water, where they can recuperate. Wallows, creeks and dams are often where an injured animal will go. Once running on adrenalin, especially if they were running or ready to run when shot, deer can travel hundreds of meters before they go down. When they do take off, they can be hard to find unless there is a well-defined blood trail, tracks or drag marks from an injured limb. We’ll talk more about tracking wounded deer in the last chapter in the segments on tracking and stalking.

Despite their flight over fight instincts, the first choice of a red deer that is not panicked is actually to stand still, especially if they are in cover behind a tree or bush. Red deer know that movement signals their presence, so if they remain still, they are less likely to be detected. That is why red deer movement almost always signals that the deer have already detected you, unless they are feeding, or moving between feeding and bedding areas.

Even an injured deer, unless it is so badly wounded that it is no longer in control of its faculties will often stand or crouch completely still in the hope that you will not see it and leave it alone. Red deer are virtually silent movers, only making the slightest sound of hooves on rock or scuffing against pebbles or leaves. As such, you can’t really rely on hearing them before they hear you, unless you are sitting still and quiet in a difficult to observe location.

When spooked, red deer tend to stampede. Stampeding deer can do damage to fences, especially electric fences. The tendency of deer to crawl under fences instead of jumping over them also results in broken fence wires (even barbed wire!) or sagging fence wires due to deer, especially stags, pushing under fence wires with their strong shoulders and backs that are well protected by thick hair and skin from sparring with other stags.

This habit of going under rather than over an obstacle is an interesting one considering that red deer can leap high (up to 3 meters) and long distances in a single bound (up to 15 meters).
Nevertheless, more often than not, unless they are in full flight, red deer, especially stags will choose to go under rather than over an obstacle. This instinct of avoiding danger and keeping a low profile, define red deer, especially stags.

Surprisingly, given their colour, red deer are extremely difficult to see, especially to the untrained eye. One would expect that an animal with red-brown colouration should stand out and be easy to see. It is not. The habit red deer have of standing still for long periods of time in shade or behind trees or other obstacles adds to this difficulty.

One of the ways of picking out deer, other than learning to recognise them against the landscape is to watch for specific movements that red deer make. Even when standing still, red deer move their ears to pick up sounds. Hinds, in particular, also flick their tails.

If you can get up higher than them on a hillside or climb a tree, you can often see their ears moving first. In warmer weather deer often pant too and flick their ears if bothered by flying insects, which is a sign of movement you can pick up from some distance away. Because deer will often lie down, rather than stand up when they are resting, it may take some time of scanning an area before you see them.

**Deer herds**

Other than the above instinctual habits displayed by red deer are their herding or group mentality. This habit of following or looking to the leader is often their downfall, since it can even override their natural tendency to run at the first sign of danger. These group habits are one of the most important deer behaviours to understand and remember when hunting. Even big stags, except in solitary season, follow this group behaviour, and younger animals, in particular, are group-focused and leader-orientated.

Red deer tend to congregate in small family groups or herds depending on the time of year, deer numbers, hunting pressures and food availability. The family matriarch, normally the mother, usually leads small family groups. If the matriarch dies or leaves the group, her young will travel together led by the oldest sibling. Same-sex groups are led by the dominant male or female in the groups. However, unlike family groups, the hereditary family inter-relationship is not as close in same-sex groups.

Because deer are herd animals they will always tend to congregate rather than be solitary, except during the solitary season. The only exception is large stags, which tend to travel alone or
occasionally in small groups of one or two other animals at the most. Less mature stags continue to congregate in bachelor groups until they start breeding, usually at around three or four years of age. Breeding age in stags largely depends on the number of dominant stags in the area.

Where there are many dominant stags, red deer stags will breed a couple of years later than in areas where there is minimal competition, for obvious reasons. All red deer, the big stags included, congregate with other deer during the breeding period known as the rut or roar. As a rule both sexes tend to congregate together only during the rut, unless they are sharing a food source.

Otherwise, groups of young stags and hinds that congregate in a given area are usually inter-related and are not yet sexually mature. Depending on hunting pressures and the abundance of food, red deer in same-sex groups can be quite large, numbering up in the dozens. Usually, however, same sex groups consist of about 10-15 animals. They may stay together during the group season for a number of seasons, mostly until they are mature enough to breed. A red deer hind will normally conceive in the rut of her second year at around sixteen months of age, thereby calving at a little over two years of age. In harsher climates this may be delayed until the hind is three or even four years old.

**Deer seasons**

As mentioned in the previous section, red deer are primarily herd animals. How, when and where they congregate is determined by three distinct seasons. Since the next part of the book and its three chapters are devoted to these three seasons, explaining them in detail, this section and its subsections only refer briefly to these seasons. In eastern Australia, these red deer seasons are: Solitary Season (November-February), Mating Season (March-April) and Group Season (May-October). See Image 5: “Red Deer Seasons” for a more detailed diagram of these deer seasons.

The solitary season, as its name suggests, is when red deer separate into small family groups of non-breeding hinds and their young. Breeding hinds and stags usually spend this season alone. Pregnant hinds seek out solitary and
protected places to give birth to their calves and build up their milk
and energy reserves by moving around far less and feeding on highly
nutritious plants. Similarly, mature stags seek out spots where they
can grow and rub the velvet from their newly formed antlers in peace
and build up their energy reserves for the upcoming mating season.

During solitary season most red deer, except for those in small
family groups, separate and live alone. While red deer the world over
instinctively follow these three seasons, the months mentioned above
apply only to Southeast Queensland (SEQ).

Unseasonal behaviour

Even then there can be exceptions to the rule with stags
starting to roar first in some areas and later elsewhere. In other
instances the concentration of roaring stags will be high in one area in
one year and then quiet in the same area in other years. I have also
heard from a reliable source that shot three
hinds which all had foetuses at a relatively advanced stage, it suggests
that these hinds were impregnated many months before out of the
normal rutting or mating season.

Confirming these relatively fluid seasons are findings that in
areas where red deer seasons are relatively predictable and hinds
congregate in large herds hinds give birth over a three-month period
(Landete-Castillejos, Garcia, Gomez, Berruga and Gallego, 2005).
Obviously stags were mating with these hinds over a similar period of
time. As such, these findings certainly give weight to anecdotal
reports of red deer calf births out of the normal season.

Such reports of roaring, mating and birthing out of season
does not fit with research that suggests that the rut in particular
involves the combined influences of the length of the day, phase of
the moon, weather and seasonal conditions that contributes to red deer
coming into season at virtually the same time every year rather than at
different times. According to Sheret (2003) it is the amount of light,
or lack of it, that most directly affects levels of melatonin in hinds.
Melatonin is a sleep inducer and in deer it stimulates the oestrus
levels for hinds to come into heat, thus dictating breeding time.

While stags may be ready to breed earlier, the conventional
wisdom is that they are dependent on the hinds to come into oestrus
or heat before breeding can commence. There is, however, research
that points to hinds coming into oestrus mainly due to stags roaring,
which is an (McComb, 1987). Again there is anecdotal truth to both
these findings, which suggest that these factors working together may set off the rut and roar.

For example, I have heard and seen stags roaring at each other even though no females have started to gather around the stags to express interest in mating. This was despite the fact that there were plenty of mature hinds around, who were presumably close to being heat. It seemed that in this case the stags were checking hind readiness to mate and their rival’s readiness to respond by roaring.

Mature stags roar to attract hinds to their harems. Based on Sheret’s (2003) research, the more light there is, the less melatonin is produced and this, in turn, causes the hinds to come into oestrus or heat. While this may indeed be a contributing factor in temperate climates, in sunny sub-tropical SEQ, it is unlikely to be the dominant seasonal factor that heralds the rut. My reasoning for this assumption is that the light is decreasing rather than increasing in the southern hemisphere: the exact opposite to conditions in the northern hemisphere.

Obviously, it could be that a specific amount of light producing the right melatonin levels, whether decreasing or increasing, is what starts off the breeding cycle. Given that climactic conditions seem to be no longer as reliable or predictable, climate changes may be a contributing factor to less defined rutting periods. For example, during the rut of Easter 2008 the weather was still warm and no cold snap had been experienced in April.

Interestingly, the stags were roaring pretty much on time towards the March full moon, which is in the last quarter of the month. Different people have a variety of explanations about what sets off the rut and roar. In SEQ, these theories involve the new moon and cooler weather. Interestingly, in the same year mentioned above (2008), the stags roared much longer than in previous years. I could still hear some stags roaring in early May in the Widgee area. According to independent confirmation by some locals, in previous years around the Widgee area stags have roared in October, well before, or after, depending on how you look at it, the normal time of the roar.

While my information is based only on anecdotal evidence, more scholarly research from New Zealand, where the mating season pretty much coincides with Queensland’s also indicates that stags roar out of season. Research by Davidson and Kean, New Zealand Forestry Service Officers circa 1950:298, into the establishment of red deer ranges in the Tararua Mountains of the North Island also reported a less sharply defined rutting season. They noted instances of stags roaring “out of season”, or in more sparsely populated areas not roaring at all.
Lunar cycles

Nevertheless, there does appear to be a definite correlation between the cycles of the moon and deer movement. For example, one of my old hunting buddies, Rex, claims that the roar usually starts during the third full moon of the year in March-April and lasts until the next new moon. Other than during the roar, for the duration of most full moon periods, deer seem to move about less and are seen less often during the day. Rex confirmed these observations because he has kept a deer diary for more than five years.

Outside of the roar, Rex’s detailed diary entries show deer to be less active during the one week or so full moon period. I too have noticed a similar pattern when reviewing my deer hunting records. The full moon period generates the least success in terms of seeing and shooting red deer.

Conversely, it is the new moon and waning moon period that seems to generate the most deer sightings. There are at least two possible reasons why fewer deer are seen during the full moon period. One theory is that, due to ground water being higher during the full moon, feed is higher in protein and nutrition during this time, thus deer feed less. Another reason may be that deer avoid being out in the open when it is light, be that in moonlight or sunlight.

However Wilson (2005), albeit writing about whitetail deer, does not believe that phases of the moon are as critical as many would have us believe. As a rule, he says, deer limit their visible movement and stick to cover more during the full moon. All things being equal, according to this author, outside of this four or five day period, deer movements are generally improved.

Others like Sheret (2003), suggest the opposite, claiming that deer actually move around more on moonlit nights than dark nights. Hence they are seen less during the day, because they have moved around more at night. The claim is that moonlight or the lack of it plays a big part in deer movements. This is especially the case during the rut and that the amount of moonlight tends to sway the peak rutting time. Rex’s meticulous diary entries, mentioned previously, do tend to confirm the importance of lunar cycles affecting deer movement and the rut.

Some of my farming friends also favour the latter theory more than the former. According to farmer friends that study and use biodynamics, a method of organic gardening and crop cultivation based on the effects of planetary and seasonal cycles, feed is highest in nutritional value during the full moon. See Diver (1999) for a
guide to Biodynamic Farming. Thus the need to feed less, as mentioned above, is attributed to the water table being higher due to the gravitational pull of the full moon. As a result, red deer are seen less because they do not need to feed as much.

Cattle, for example, according to these farmers, feed for less time during the full moon period due to these nutritional factors and when the moon is full choose to feed more during the night rather than in the day. Therefore, it goes to reason that deer, also being ruminants, would be influenced in a similar way by the lunar cycle. However I have spoken to other farmer friends who are sceptical about this theory. An equally valid consideration, they say, is that deer stay in thicker cover because moonlight is so bright.

This explanation also stands to reason, because on cloudy, especially drizzly days, deer are usually more active than on bright, clear days. The explanation for this behaviour is that deer avoid the bright light by staying in cover. While it is by no means clearly established exactly how or why lunar cycles affect deer activities, from my experience and that of others, deer are less likely to be seen and shot during the full moon period. Because I have not observed either the phenomenon of moonlit night feeding or light avoidance directly, I am not sure who is right, however I suspect that there may be an element of truth in both statements.

**Solar factors**

Though avoidance of moonlight is open to question, there is no doubt that red deer have a habit of avoiding bright sunlight, in particular direct sunlight. In fact, sunlight avoidance influences where you are likely to see deer feeding during daylight hours. On the east coast of Australia, where the sun rises in the east and sets in the west, deer are more likely to feed on western-facing slopes in the morning and eastern-facing slopes during the afternoon.

Even if red deer don’t always follow this exact pattern or routine, they will vacate slopes where there is direct sunlight much earlier in the morning and enter slopes exposed to direct sunlight much later in the afternoon, when the sun’s rays are all but gone. Slopes that are protected from direct sunlight by other slopes or peaks are where deer will usually start moving to first in the early afternoon, staying in the shadows until direct sunlight is gone.

During the early part of the day, deer will stay the longest in shade covered hollows and valleys, sometimes well into mid-morning. This avoidance of sunlight is mainly to avoid exposure to direct sunlight, which plays havoc with their vision, one of their key
senses. This is one of the topics of our next section. Another reason for avoiding direct sunlight is that red deer have dark, thick coats, so like to remain as cool as possible, moving into thick cover in the hottest parts of the day and year.

**Deer senses**

In order of importance, deer rely on their sense of smell followed by sight then sound. Deer have excellent senses, especially when all three senses combine. Deer can pick up the scent of a person and see them from up to a kilometre away if wind and weather conditions are in their favour. Their senses, especially their acute sense of smell, are determined by their ability to distinguish between what is normal and what is not in a given area. This ability to distinguish between the normal and the unusual applies to all three senses (smell, sight, sound).

For example, red deer can sense the difference between people living in a house and working in yards and those on the move up a hill towards them. Red deer probably make these distinctions through a combination of smell, sight and sound. Deer can distinguish between the smell, sound and sight of certain vehicles that are not the normal tractor or farm vehicle. If they are close to you, they can even detect the sound of different voices. In fact, I believe that red deer get to know and become familiar with certain people and vehicles, recognising them as being non-threatening, whereas unfamiliar people and vehicles are treated with immediate suspicion.

**Extraordinary senses**

When factors such as unfamiliar people and vehicles combine to indicate something out of the ordinary, deer and other animals become suspicious. If they have been hunted before, and recognise these sights and sounds as being associated with hunting activity they become even more suspicious and may vacate the area completely until familiar smells, sounds, sights and activities return to normal. Here is an example of such red deer ‘distinguishing powers’ from one of the properties on which I hunt near Widgee.

“At dawn, after a coffee and a chat with the landowners, I walked out into the house yards with the owner and he pointed down onto the creek flats and said, “There are some deer for you to shoot.” Sure enough, about 400 meters away, I could just make out about 15-20 head of red deer out feeding in the early morning fog. Instead of taking up the easy offer of riding in the farm utility and shooting them from the vehicle, I decided to take the more challenging option of stalking the deer instead. My aim was to cut them off by blocking their escape route across a creek
and up a gulley. Even as I walked through the yard to the first gate I could see that the red deer had noticed something was out of place. Firstly, I was a full head shorter than the lanky landowner and secondly, I was on foot. The feeding herd immediately made their way to the cover of the heavily wooded creek. I knew they would then start making their way through the creek and up a gulley to get above me. I was able to cut them off—only just—and shot one, a large hind.”

The point here is that I did something out of the ordinary to the normal routines of the farm, hence alerting the deer to the possibility of danger. One of my hunting buddies, Rex, attributes his phenomenal red deer hunting abilities (over 100 head in three years) on one particular property in Conondale to his understanding of these deer senses. This property was heavily hunted by many different groups of hunters, before it was sold and closed to hunting. Back then Rex would regularly take two or three deer at a time when other hunters would spend days wandering around never even seeing a deer, or only the sight of fleeing red deer out of shooting range.

**Upsetting routines**

As he explained to me, his hunting success was primarily due to him not upsetting the routines of the property. The farm managers and workers tended to drive around slowly, remained in their vehicles most of the time, and did not venture too far off the beaten track. So, this is what Rex did as well. His reasoning was that if he acted in a similar manner, deer routines on the property were less likely to be upset. Consequently, it would be more likely for them to be out and about as they normally would be without the disruption of visitors.

I learned from Rex about leaving my vehicle out of sight and not driving, riding or walking around in the bush where the farm workers seldom went. By taking his advice, I started to have more success myself. On many occasions I shot deer on early morning and late afternoon trips when other hunters were camping in the area and were travelling around all day for days and had seen nothing. It was very frustrating for them that I came for a few hours and took deer that they had not even seen or known were there.

What they didn’t understand, and what many hunters seem to be unaware of, is that deer are acutely aware of things that are out of the ordinary—the sound of a vehicle when they usually hear a quad bike, the sight of people moving around in areas that they usually don’t, the smell of people and things that are not usually there. For animals that have been hunted before these things combine to make them nervous, alert, watchful and prepared to flee.
Curiosity killed the deer

When something looks and sounds out of place to the norm, deer become instantly suspicious or curious. Sometimes this innate curiosity or suspicion of the unusual can be used to your advantage. That is if deer have not been regularly hunted and are unsure of what you are. Otherwise, ‘gun shy’ deer usually run first.

Occasionally, if they don’t immediately recognise what looks and sounds out of place, they may stop to stare or even come closer for a look, as deer are naturally curious animals. This natural curiosity can occur even when shots have been fired, as the following experience attests.

“One foggy morning in Conondale I was walking up a gulley we call the “Trap Gulley”, because pig traps and dingo traps had been regularly set in this area in the past. In this particular gulley and the adjoining “Flooded Gum Gulley” I had shot more than 10 head of red deer. As I stalked into the lower end of Trap Gulley, I could see a hind feeding in a grassy glen not far from the tree line about 300 metres further up the slope. It was still foggy so I couldn’t take a shot from where I was. I started stalking up and around behind her. Once I was in range she had turned around with her behind towards me. This was a difficult killing shot, but I was in range, so decided to go for it. I shot her. She walked a ways then fell over. Over the rise I saw another animal standing in the high grass, with just his head showing. I shot him in the head and he fell where he stood. I chose a hanging tree in between where the two of them fell and propped my rifle up against it. Here is where I would hang the deer for butchering. As I dragged the large hind through the glen towards the hanging tree, I looked up into the tree line through the mist, and not more than 200 metres away from me, I saw a small stag and least four hinds standing still looking intently down at me! When I moved towards the tree to reach for my rifle, they turned and disappeared into the mist-shrouded trees further up the mountain. These deer probably had been in the same group as the hind and the yearling, feeding over the ridge out of sight. When they heard the rifle shots and commotion they decided to walk up the ridge and stop for a second look. It was only when they saw that I had seen them that they turned and ran. This behaviour is not uncommon as I have experienced it on numerous occasions.”

In situations where you think deer may have stopped for a second look, carefully glass the area with binoculars, your riflescope or naked eye, paying particular attention to trees and bushes. Deer will nearly always stand behind a tree or bush completely motionless watching and waiting for movement, so they can decide whether or not to run, and if so, where to run to avoid bumping into you. However if they smell danger, deer will immediately vacate the area, only stopping to look back and listen once they are in thick cover.

When all three senses confirm danger, there is no looking back and deer will run for miles. I can remember one occasion where I shot a large stag in one gulley and my mate shot a hind from the same group in the next gulley well over a kilometre away. The deer
were still running when they came to him. He was only able to get a shot off at this hind because she had slowed down as she became aware and suspicious of him and his vehicle then stopped behind a tree after he ‘barked’ at her. ‘Barking’ at red deer as a means of stopping them is explained later in chapter 7.

Warning behaviours

With the exception of the rut or roar, deer are almost silent except for the aforementioned ‘bark’ of a hind. Barking is the primary audible warning behaviour of female red deer and occasionally stags. To my knowledge, other than during the roar, stags are normally silent. Some scientists claim, however, that stags do make a noise when alarmed (Blackshaw, 2003). Despite this assertion, no specific sound is described.

Personally, I have never heard wild stags make any warning sound except to occasionally bark when startled during the roar. Occasionally stags will bark a warning outside of the roar. The other main warning sign red deer use is standing stock still whilst looking in the direction of a potential threat. Hinds bark for two main reasons: as a warning to others and to call young. The first type of bark is a warning bark and the second is to call young. A hind’s warning bark is a deep throaty ‘broagh’ sound that reverberates through the hills and can be heard up to a kilometre away.

Once a hind barks, and smells your scent, you can pack up and go home, as any deer in the area will have moved back into cover or run far away. When a hind barks every deer in the area is alerted and stands still to work out the source of the potential danger, then moves into hiding. From a hiding place deer sniff the air and scan the area until they can detect the source of danger.

If they haven’t smelled you, sometimes a warning bark from another deer can work in your favour, especially when hunting hinds with young. I will discuss these skills in more detail in the final chapter in the section on stopping red deer. Other than this loud, hoarse warning bark designed to be heard by all deer in the area, hinds with young also use a bark with less volume to call their young. Though similar to a warning bark, when hinds bark to call their young, it is slightly more drawn out and can be more recognised as a call a bit like the sound of someone clearing their throat.

Red deer calves recognise the difference in each call by instinctively reacting differently, depending on their age. If calves are young (still have their spots) and hear the warning bark, they will usually hunch down and stay completely still until their mother gives
a calling bark. Upon hearing the calling bark the calf will get up and wait for its mother to come or find and follow its mother. Older calves and yearlings will follow the lead of their mothers upon hearing the warning bark. In most cases this behaviour is to stop moving, identify the source of danger, then make a quick exit into the nearest thick cover at the heels of their mother.

One other warning sign, particularly with hinds, is that of foot stamping. Hinds stamp their feet when they sense danger, especially if they are in a family group leading young. Red stags will occasionally stamp their feet, too, during the roar. Foot stamping in red deer is far less common than in rusa deer which are much more likely to stamp their feet when they detect danger. Foot stamping is a sign of aggression in hinds, warning a potential predator away and is usually when hinds have young. I will relate a couple of these ‘foot stamping’ episodes in later chapters.

Knuckle-cracking

It never ceases to amaze me how such large animals as red deer, even when in large herds, can feed and move so silently, yet seem to instinctively know when something other than a red deer is moving around. Keck (2008) explains that in red deer and elk, this apparent forewarning is due to the cessation of “knuckle-cracking”, which is used by deer to distinguish between other deer and the sound made by an approaching predator. Every time an individual red deer walks, its front hoof joints emit an unmistakable click that remains distinct regardless of what substrate the animal walks on. When deer stop moving, the clicking stops.

A grazing companion emits a diagnostic noise in rhythm with its steps that no predator can equal. Thus friend can be distinguished from foe. Knuckle cracking in red deer appears to be produced only by the front legs. The rigid stance, erect posture, deliberate tension, halting gait, termed “warning gait”, unusual side to-side movements of the head, hackney trot when changing vantage points, and barking are all actions strongly deviating from the normal feeding, walking and standing activities of red deer. Once in full flight, red deer tend to be virtually silent.

While Keck’s (2008) observations of knuckle-cracking behaviour were of farmed rather than wild red deer, given that I have seen the other behaviours described, it is highly likely that this same warning behaviour is utilised by wild red deer. Personally I have only heard “knuckles” crack on dead red deer when their front hoof joints
are moved. Other than hearing the cessation of knuckle cracking, deer are always on the lookout for movement and usually keep most of the other animals in the group or herd in sight while feeding.

Also, there is often a sentry animal, normally a mature hind that stands watching, usually from a relatively hidden vantage point. Therefore, even when only one of the animals in the group or herd stops moving and feeding, and takes the ‘danger stance’ of standing stiff-legged and stock-still, looking intently in the direction of the threat, all the other deer are also immediately on the lookout for danger. If they catch a whiff of you at this time, then they will be off and running.

However if deer are only relying on sight, then the first thing they are looking for is movement. Just standing still, especially in front of a tree or bush may be enough for them to not make you out, particularly if you are well camouflaged and wait until they start feeding again before you move.

Deer blind spots

Depending on the angle of the sun, its casting of shadows can further help you to remain unobserved when hunting. Knowing the direction in which the sun rises and sets gives you another advantage in terms of you maximising your chances of remaining unseen or unnoticed. Deer are nocturnal animals. That means that they can see best at night or in poor light and not so well when there is too much light, especially if the light is in their eyes.

Simply put, you are far less likely to be seen clearly by deer if they are looking at you silhouetted against the rising or setting sun than seeing you in half-light or shadows. These deer blind spots due to the sun’s rays give you an advantage when stalking them. I can think of at least four or five occasions where the sun rising or setting behind me has given me a distinct advantage. Two particular experiences stand out, one near Woolooga and one near Widgee.

“One cold winter’s morning high on the hills around Woolooga near Kilkivan, I could see deer spread over a slope and could hear more down below me. There were at least 15-20 stags grazing in open country bordering hoop pines. I knew this was their escape route. As I looked down into the valley where they were feeding, with the sun rising behind me, the deer were aware that something was not quite right. However because the sun was behind me they could not make out exactly what I was, plus I was between them and their main escape route. I was able to take two of them. Another time on a mountain at Lower Wonga I had seen four hinds feeding on legumes above me. As I moved up the ridge back for a better shot, another hind off to my left and out of my line of sight heard me and ran up the slope. This spooked the others who ran further up the ridgeline. Because I was sure that they had not identified
me as a predator, since none of them had barked a warning, I continued to follow their tracks up the fence line. Out of the corner of my eye and off to the right, three hinds ran over the ridgeline. I thought, “Well that’s the end of this hunt.” Then above me not more than 50 metres up the slope I saw two hinds moving across an open area directly above me to join their fleeing group. The sun’s rays started to break through the trees behind me. Because the sun was in their eyes, they could not see me clearly, even though they knew something below them looked out of place. I was able to shoot one easily. She fell on the spot.”

From these experiences I have learned to utilise the sun as an added advantage when hunting deer, because when there is sunlight, especially when the sun is in their eyes, deer lose their sense of depth perception. As a result they are more likely to stand still trying to get a better look at you while testing the wind. This indecision can give you time for a shot when in other cases where the sun in behind them they would have moved off and out of sight straight away.

**Secondary senses**

Deer also use the senses of other animals, mainly birds, as an early warning system. In Australia, Magpies, Butcherbirds, Currawongs and Crows in particular, make specific warning squawks or warbles when predators, especially humans are around. Mickey birds or Noisy Miners also chatter away when predators, like man, are around. Mature deer, and especially large stags, know what these warning calls mean and listen out for them. I have personally experienced the interruption of bird warning calls to promising hunting success. Here is one of those examples.

“One morning Rex and I were following fresh deer tracks around a hillside at Woolooga. We knew the tracks were fresh, as the small weeds crushed by their hooves had not started to stain with sap. That meant the deer were just out of sight over the rise, upwind ahead of us. Both of us were anticipating getting some shots off, as the deer would be out in the open, unaware of our presence with good shooting light and conditions. Then we heard the warning squawks of a group of magpies sitting on a pile of logs between the deer and us. The magpies flew off. We both heard the soft scuffle of hooves on rock as the deer made a hasty exit. As we moved over the rise, there was no sign of the deer. It must have taken them less than a minute to run at least 500 metres to reach thick cover.”

Here in Australia, or anywhere else in the world for that matter (remember my ‘hearing the right bird story in Chapter 1’), deer and other game listen out for “sentry animals”. These animals warn deer of the presence of other large game, and especially predators. You too can listen out for these birdcalls (monkeys and squirrels too in other parts of the world), because they will make warning sounds if they see deer or other large game animals or predators in the area.
When birds start squawking or chattering at you, it is best to stay still until they calm down and get back to feeding. If they continue making warning noises, move away from the immediate area and they will usually end their racket and stop following you once you are out of sight.

**Deer signs**

You will usually see signs of deer long before you see them so knowing the signs that deer leave indicating their presence are important. The main deer signs are their tracks, browsing, droppings, urine and gland smells, rubs, scrapes and wallows. While we will deal with each of these deer signs in more detail in the ensuing chapters, this segment is designed to teach you the basics of recognising deer activity. Deer tracks are relatively easy to see in damp earth once you know what to look for and are quite distinctive. (See Image 6: “Deer Tracks”.)

Note that red deer hooves are much more elongated than those of cattle, which are rounder at the edges. Also, unless, it is a large stag, they will not make as deep an indentation in the ground due to them being far lighter than most cattle. The main ways of telling how long ago a track may have been made is to see if cobwebs have been woven across the hoof marks, or if leaves and grass have blown into the cavities. If so, then in most cases the tracks are at least a few hours old.

Deer feeding signs are another good indicator that this is a feeding area rather than bedding area or transit route. Deer don’t graze like cattle, so their feeding signs are where the tops of weeds and legumes have been browsed. Where the sap is still running or wet on the ends of plants that have been chewed, this is an indicator of recent activity, perhaps in the last half-hour or so. Also, the bite marks on plants that have been recently browsed will not have started to turn brown from the sap and exposure to the air and sun.

Less recent browsing activity is evidenced by plant wounds that have dried out with the leaves are turning up or starting to wilt. If you are hunting in the morning, wilting usually indicates that deer have fed in the area the night before and if you are hunting in the
afternoon, then in most cases it indicates that deer were feeding in the area that morning. Where feeding areas are exposed to direct sunlight wilting will occur in a matter of minutes rather than hours.

**Fresh is best**

Other than fresh browsing signs, droppings, urine and gland smells are especially good indicators that deer are around or have recently been in the area. Where there is more than one clump of deer droppings, also called scat, or pellets, this is a good indicator that the area is a feeding or bedding spot.

Fresh deer droppings are covered with a shiny, mucous-like substance. (See Image 7: “Deer Droppings”). When urine and gland smells are also present, especially if the ground is still wet with urine, then you can be pretty sure that deer have spent extended time in the area and may still be about.

If you are in hunting mode then it is best to vacate the area immediately and get up high enough so that you can see down into the gulley or up the hillside to take a shot or work out the direction in which to stalk. In most cases, at close quarters, red deer will hear or see you long before you hear or see them.

Obviously, fresh signs are the best indicators of an animal’s presence. Deer droppings or urine that is still steaming or warm indicates that the animal is close by, may be only meters away. A strong deer smell and musky odour is the next best indicator that deer are still around or have been in the area recently.

Rubs, scrapes and wallows more often indicate stags than hinds, though hinds do rub up against trees after wallowing to scratch off excess mud or against trees and sticks to remove ticks and other parasites. Wallows that are used by large numbers of deer can be many meters long and wide. As with other deer signs, freshness and abundance of such signs are key to determining how long ago an animal has been in the area and whether they are travelling through, camping or residing in the area.

In most cases freshness can be determined by the degree of moistness in the rubs, beds or wallows. For example, if deer have just visited a dam to drink and the water in the tracks, wallow or drinking
area is still cloudy due to the sediment having not yet settled then
deer have been there a matter of minutes earlier. If they are not in the
immediate area, it is more likely than not that you have spooked them
or they are watching you from the safety of cover. Fresh and
abundant deer signs in good deer country are your best indicators that
deer are around.

**Deer country**

Knowing which area or habitat red deer are likely to choose to live in is important, because you can waste a lot of time wandering around in country that red deer seldom visit other than when they are travelling between feeding and bedding areas. Prime deer country is that which has good green pickings like legumes or succulent weeds and grasses high up in the head of a valley or gulley surrounded by thick brush or trees. These prime deer habitats can be easily distinguished from great distances by having a greener hue and are lusher looking than the surrounding vegetation.

If you are computer-literate, a web-based program like Google Earth (http://earth.google.com/) is helpful for scanning such potential red deer hot spots. The best deer habitats can be described as ‘woodland’ that is a mixture of trees and shrubs. Woodlands give shelter and bushes act as trellises for the legumes that red deer prefer to browse. Good quality grasses also grow in these semi-shaded areas and water can usually be found nearby. (See Image 8: “Deer Country”).

Deer seldom venture out into open country to graze and water until it is dark. Normally, red deer avoid being caught out in the open unless they are hungry or thirsty and need to take the risk because of necessity. Otherwise, reds stick to hilly woodlands and the better the seasons the less likely they are to venture into the valleys and flats.

Once these valleys and hillsides have been identified, the next step is to get closer and glass the area with binoculars for deer tracks and movement through the area. This can be done from some distance with binoculars or a spotting scope, so as not to disturb any
feeding deer and their trails. Deer will share feeding areas with cattle, though they will seldom feed together with grazing cattle.

If deer have been feeding at the head of a gulley in legumes, the main sign of deer are narrow tracks criss-crossing the area and continuing unbroken through fence lines. Red deer tend to walk horizontally around a hillside, whereas cattle are more likely to move vertically up and down a hill. Red deer will also feed on improved pastures and cereal crops, such as corn, especially if not regularly disturbed by hunters.

Evidence of deer activity in these areas is more difficult to distinguish where hoof prints cannot be seen, but a good rule of thumb is that deer leave narrower tracks than cattle or horses and do not trample down the grass as much when they walk. Again the best confirmation of deer activity is an unbroken track through or under fence lines and deer fur on the barbed wire or bushes where they squeeze under fences to get into paddocks and fields.

It is particularly important as a hunter to understand that even in prime deer country with high concentrations of red deer, only three key areas are utilised regularly. They are bedding, feeding and travelling areas. Knowing where these areas are on a given property or in a particular locale can dramatically improve your hunting success and cut down on time wasted looking for deer over the total territory.

In many cases, and especially in arid areas, red deer may regularly and intensively use less than 10% of their range. Unless they are feeding, which is when you will most often see red deer, especially hinds, the second most common sightings of red deer, particularly stags, is when they are travelling.

**Feeding times**

Once you know that deer are feeding in the area, the next step is to find out when they tend to feed. Again this is better done from a distance, because if deer are disturbed on route to their feeding area or while they are feeding, they will vacate the area and may not return for several days or weeks, unless it rains. Usually deer will return to a feeding area only once human scent is gone. This is especially the case if there has been little human activity in the area before.

As a rule, red deer feed at dusk and dawn, though from personal experience, hinds seem to feed more often early in the morning--from first light till sun-up, whereas stags are more likely to feed in the late afternoon from just before sundown until dusk. During solitary season when males and females seldom congregate,
this may be a natural way of reducing contact and competition for the same food sources.

When deer are seen out and about at times other than during the early morning or late afternoon it is usually because they have been disturbed or are moving from one area to another.

The only exception to this rule is when deer come to waterholes in dry times to drink or wallow and during the rut, when especially stags can be seen at virtually any time of the day, even midday. As with any animal behaviour, there are always exceptions to the rule. Red deer are no different. Nevertheless, you will find nine out of ten times that these habits are true for red deer, making them predictable.

Conclusion

After the first chapter, which aimed to help you learn more about yourself as a hunter through me sharing some of my life and hunting experiences, the main aim of this chapter was for you to start getting to know your prey, the red deer. We started with a few of the basics on deer anatomy and their habits, especially the herding instincts of red deer. Then, we looked briefly at the three distinct seasons red deer follow systematically throughout the year.

Next, we looked at the deer’s most acute danger senses of smell, sight and sound, their warning behaviours, as well as their sense of things being out of place. Despite these superb senses, we learned that exposure to direct sunlight reduces the clarity of a deer’s vision and that their natural curiosity can make them vulnerable. Other than that we looked at the signs and smells that deer leave of their presence in country where they feed and rest. The main thrust of these sections was learning to recognise the freshness and abundance of deer signs as markers of deer activity.

Finally, we looked at the country red deer are most likely to inhabit in a particular area due to it being most suitable to their feeding and bedding needs. Understanding the basics of red deer behaviour as presented in this chapter are the foundation for our specific study of red deer behaviour during the solitary, mating and group seasons. These three specific red deer seasons are the topic of the next part of this book, which is laid out in three chapters.
CHAPTER 3

Solitary season

“Physical changes”

The solitary season is the time of year when deer isolate themselves from their normal groups. Pregnant hinds move into quiet, thickly wooded areas to prepare to give birth. Mature stags mark out their territory by rubbing their newly formed antlers on saplings in heavily wooded areas. Only small same-sex groups of adolescents or those related to non-breeding hinds continue to forage together in small family groups. In Southeast Queensland, hunters seldom see deer feeding out in the open at this time of year due to the heat, humidity and good feed in the understory. Solitary season is the time when deer are the most difficult to find.

<table>
<thead>
<tr>
<th>Topics covered in this chapter:</th>
<th>What you will learn:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Casting antlers</td>
<td>1. The amazing antler cycle</td>
</tr>
<tr>
<td>Growing antlers</td>
<td>2. About the birthing process</td>
</tr>
<tr>
<td>Birthing young</td>
<td>3. Small group dynamics</td>
</tr>
<tr>
<td>Raising young</td>
<td>4. Feeding behaviours of the sexes</td>
</tr>
<tr>
<td>Small groups</td>
<td>5. Some of their key weaknesses</td>
</tr>
<tr>
<td>Overlapping ranges</td>
<td>6. Seasonal factors and influences</td>
</tr>
<tr>
<td>Environmental factors</td>
<td>7. Where and when to find deer</td>
</tr>
</tbody>
</table>

During the solitary season red deer seem to disappear from view. This often leads hunters to wonder whether deer have moved out of an area completely. Actually, the red deer are around, however they have usually moved into thickets and thickly wooded glades at this time of year. Other than their natural preference for being secreted in thick cover, there are at least two further reasons for this behaviour. First and foremost are the hormonal changes mature hinds and stags are undergoing, which makes them seek out solitary places.

Secondly, in Southeast Queensland (SEQ) Australia, the environment is usually most conducive to deer staying and feeding in thick cover due to the good feed that grows in the undergrowth resulting from higher rainfall, temperatures and humidity that is common in normal seasons at this time of year. Similar to the findings from research conducted in the Tararua Mountains of New Zealand (Davidson & Kean, 1960), both red deer sexes and especially stags, seldom venture out into open country if there is adequate feed in the understory.
Therefore, the solitary season is primarily driven by the hormonal and climactic changes experienced by red deer in their particular area. The two most obvious physical changes are that mature stags are casting and re-growing their antlers, whilst pregnant hinds are seeking out secluded spots to give birth to, and raise, their young in relative safety. Non-breeding red deer of all ages appear to be primarily influenced by their natural instincts, facilitated by local climactic conditions, to stay in the understory in small family groups.

Interestingly, even though red deer undergo their seasons in different hemispheres, at different times of the year, and where directly opposite weather patterns often apply, they continue to follow similar seasonal patterns of more solitary and group activity. As such it is most likely that hormonal and genetic factors are the primary cause of more solitary behaviour with environmental factors a secondary cause.

Thus casting and regrowing antlers prior to setting up a future breeding territory or seeking out solitary, safe places when preparing to give birth, appear to have the strongest influence on when and where deer congregate and choose to separate. It is the study of solitary behaviours surrounding the casting and regrowing of antlers, birthing and raising young, including environmental factors that influence such behaviours that are the focus of this chapter.

**Casting antlers**

When the antler has attained full growth for the season, the blood supply gets cut off and the velvet begins to peel off in flakes. The animal also helps in this process by rubbing its antlers against rough tree bark. The solid bone gets exposed and the rutting period coincides with the animal being in hard antler. Due to occasional fights, regular sparring, scraping and rubbing during the rut, a stag’s antlers are often damaged towards the end of the rut, and especially near to antler casting time, with tines being cracked or broken. Especially prone to damage from wear and tear are the antler crowns or “cups” (Kennerknecht, 2008). Once the velvet has been rubbed off, the colour of stag antlers primarily depends on the sap of trees and saplings on which they rub their antlers.

Another factor affecting colouration is the age of the antlers. Following the rut, the antlers become lighter in colour as they are rubbed less and start to calcify, in other words become drier and more brittle like dead bone. Eventually, stags drop or cast their antlers. In SEQ, antler casting is usually in early October. Stags start to regrow new antlers almost immediately from what appear to be buds on the top of their heads, called pedicles.
There is little blood loss, with the tops of the pedicles healing within a day or so. After a few days—a week at the most—new buds have started to form at the tops of the pedicles and the stags start the process of regrowing their antlers. See Image 9: “Velvet Antlers”.

Knowing exactly when stags cast their antlers is difficult in the wild because I have not spoken to anyone who has actually observed this phenomenon in progress. One thing is for sure. It happens quickly, maybe in only a day or two, since I have observed a couple of stags with antlers one day, and in the next few days I have seen the same group again and their antlers are gone.

Stags apparently cast both antlers almost simultaneously, since I have never observed a stag walking around with only one antler, unless it was broken off. Then again, I have never found a set of antlers in one place either, so cannot be sure exactly what happens at the point antlers are cast in wild red deer.

Only stags that have started to grow antler tines or points tend to cast their antlers. Usually this is in their second or third year. Spikers do not cast their antlers until ready to grow tines. Other animals sometimes gnaw on cast antlers, though in most cases they remain intact. Often cast antlers are found around waterholes. This may be due to stags loosening them while they are wallowing or because dingoes or wild dogs have brought them there. Finding cast antlers will give you a good idea of the quality of antlers in a given region.

**Growing antlers**

The process of casting and regrowing antlers amongst deer is an amazing, almost miraculous natural phenomenon. Despite red deer having been hunted and kept in captivity for thousands of years, little is known about the physiology of exactly how antlers are cast and re-grown. There is good reason for researchers to be interested in the growth and re-growth of antlers, because better understanding this phenomenon may help with growing and regrowing damaged or even severed limbs in humans.
Recognition of the regenerative properties of antlers is one of the main reasons why there is a market for velvet, the time when antlers are still covered by a thin layer of skin and fur. The Chinese, in particular, acknowledge these medicinal properties and believe that stressing a stag before it is killed will increase the supposed medicinal value in the antlers and genitals even more. Velvet antlers are dried then ground into an aphrodisiac powder that is used by Chinese men to increase their sexual stamina. Whether it works or not as a sexual stimulant is difficult to prove, but there are a lot of people in China.

Amazing antlers

Antlers are amazing structures, because unlike horns, which are keratinised tissue, similar to finger nails, antlers are actually organs in their own right. They have blood vessels, nerves, skin, cartilage and bone, and grow under strict control of the endocrine glands such as the thyroid and adrenal glands (Short, 2007). Antlers are shed each year, providing the only example of organ or limb regeneration in mammals. Furthermore, the correct signals for antler development are only turned on at puberty. Thus antlers are the only example of the development of an organ that is delayed until maturity and continues to develop throughout life. Antlers grow from pedicles or stalks (similar to flowers) that bud or form at puberty and which, in time, become permanent protuberances or tubular structures from which antlers bud and are cast seasonally. Antlers can grow at the amazing rate of two centimetres a day (Gerritsen, 2007). Once antlers are cast, the next generation initiates immediately thanks to resident stem cells on the permanent pedicles.

Mineral deposits then occur on the cartilage scaffolding and bone is formed. As this stage proceeds, the blood supply which is made to the antlers gradually reduces then stops. As a consequence, antlers stop growing and their metamorphosis to bone is completed.

The final touch comes with the shedding of a thin film of velvet skin that coats the appendages. Now the antlers are ready for the rutting season. According to Rajaram (2004), changes in day length and the consequent release of hormones trigger antler growth and development.

During the growth season, the projection increases daily and is covered by velvet at this stage. This covering is very rich in blood vessels and the animal can bleed profusely if there is an injury to velvet antlers, hence a stag’s habit of hiding away in solitary places. Stags take great care in protecting their antlers during this growth phase. This may be why stags appear to seek more open glades to
protect their antlers from snagging on thick brush while they are growing. New antlers take about four months to develop and harden.

Stags in hard antler carry them for about seven months until they are cast and the cycle of growth begins again. This cycle of growing and discarding antlers is controlled by the animal’s testosterone levels. The ultimate size of the antlers is a function of age, genetics and nutrition. Maximum antler growth occurs in the mature adult and there is a small decrease after this peak is reached. Usually, as the stag reaches its prime between about 5-7 years, antlers get more points, then as it gets older, its antlers deteriorate, often losing their crown, the top part of the antlers where the most points grow.

**Antler rubbing**

Stags commonly choose a territory, normally in thick bush, of about one square kilometre in area, usually at the head of a valley, and start rubbing their antlers on saplings. A stag’s core rubbing area is a few hundred square meters in diameter, usually in semi-open, tree-covered bush. They do this for two reasons. Firstly, stags need to rub the velvet off their antlers to expose the hard bone which is then stained by the sap of the saplings. Secondly, stags rub their antlers on trees in their territory as a sign to other stags that this is their territory.

Stags also urinate in wallows, which are muddy indentations in the ground, then rub the mud on themselves and on trees around their wallows. Wallows are usually near pools, dams and creeks. During the solitary season the best sign of a stag are tree rubs. Tree rubs found during the solitary season indicate a stag’s presence in the area.

If tree rubs are consistently fresh and are found in good deer country where there is evidence of many hinds about, then you can be confident that during the upcoming rut, this area is one place where a stag will start collecting his harem early during the rutting period. These are the spots to focus on during the pre-rut period. More often than not these spots are high points on knobs or hillocks that give the stag a good vantage point of their territory.

In most cases, a stag that sets up his territory in prime deer country with lots of feed and hinds will be a dominant stag in the area. Sometimes, even before the roar starts, these dominant stags will have already started travelling around their territory with a group of hinds. I know one particular ridge in Lower Wonga which is a large stag’s territory and he consistently travels around with a group of hinds just prior to the roar. Even before the roar starts he is already
standing high up on the ridges looking around for any potential challengers. Knowing these spots puts you in the box seat for taking the best stag in the area once rutting starts.

**Birthing young**

In SEQ, hinds tend to choose thickets and tree-covered areas, in close vicinity to water and feed about half-way up a mountain or hill to give birth. Here they have a good vantage point of the surrounding country, can browse unobserved and better protect their calf from attacks by wild dogs or dingoes, which tend to hunt in packs out in more open areas. Like many other ungulates, red deer usually produce only one calf. On the rare occasions they do have twins, the weaker of the two will die soon after birth, since it is difficult enough for a hind to look after one young.

Apparently high or low temperatures, especially extreme cold or heat during late pregnancy, can have a significant effect on the birth weight of deer (Sims, Elston, Larkham, Nussey & Albon, 2007). Low birth weight has a detrimental effect on a calf’s chances of survival. After a pregnancy or gestation period of about 233 days or 33 weeks, which is about eight months, the hind gives birth to a calf weighing on average about 6.5 kg. In a given area birthing can continue over a three-month period, with the majority of calves being born in the middle of this period. (See Image 10: “Hind and Calf”.)

A hind will normally give birth in a standing position, and the calf will begin to suckle within 40 minutes. After the placenta or afterbirth has been expelled, the hind will eat it and clean any traces of the birth from the area, to minimise the risk of attracting predators. Calves spend most of the day lying away from their mothers and are visited at intervals. She will also restrict her range and movements as much as possible, feeding in a relatively small area, so as not to attract the unwanted attention of predators.

**Raising young**

A red deer calf is almost odourless during the early weeks after its birth and due to its colouration blends in with its surroundings. So, if it stays still, a calf is unlikely to be smelled or seen by a predator, unless a dingo or wild dog stumbles upon a calf.
accidently. During the first few days the calf will suckle every two to three hours, but the frequency of feeding slowly decreases after that. As with many other animal mothers, during suckling the hind will eat the calf’s faeces and lick up its urine, to reduce the risk of the scent drawing predators.

The highest rate of deer mortality occurs during the first year of life, with approximately 80% of deaths taking place in the week after birth. The main causes are bad weather, especially in colder climates, though extremely wet, dry or hot weather may also contribute to calf mortality in sub-tropical climates, and predation. In SEQ, dingos and wedge tail eagles are the primary predators, with foxes posing a lesser threat, though all are known to take newborn calves. Hinds usually look after their young alone, even if other hinds with calves may be in the vicinity and their ranges overlap.

As is often the case in the natural world, there are exceptions to this rule. Research by Landete-Castillejos, Garcia, Gomez and Gallego (2005) into the effects of birth date and order in lactation performance of Iberian (Spanish) red deer provides evidence for foster suckling by early-born calves in mixed groups of hinds. Foster suckling only appears to occur where there is a high degree of interaction between hinds in a herd that stay in close physical proximity to each other during this period.

To some extent this opportunistic suckling behaviour on the part of calves depends on large concentrations of hinds in a given area due to high levels of good quality feed that can sustain large numbers of deer coupled with low levels of predators and hunting pressures.

Since most red deer habitats do not offer such an optimal environment, these conditions would not occur in the majority of red deer herds. Certainly I have never seen nor heard of such fostering behaviour in SEQ.

Irrespective of the environment, in the first few weeks after giving birth, the mother will leave her calf hidden in thick, shaded vegetation, visiting it cautiously two or three times a day to feed it. When approaching the spot where she has secreted her calf, the hind checks the wind and scans the surrounding area with great care before cautiously approaching her young.

During this time, unless feeding the calf, a hind always moves far enough away from her calf so as to not draw the unwanted attention of predators to the calf’s location. After two or three weeks the mother will start to move around more with her new calf. Especially during the first few weeks, due to the calf not being able to move too far and to avoid detection by predators, both will confine themselves to a relatively small area.
Usually the maternal area chosen is surrounded by thick brush or is dotted with pockets of thick brush. That way, a hind can enter this thickly forested enclave, leave her calf there, survey the area and, if necessary, decide on an exit strategy. If there is danger, she may move her calf into another area or attract attention to herself by leading a predator away from her hidden calf.

**Maternal instincts**

Even though, as mentioned previously, deer behaviour is to choose flight over fight, maternal instincts can override these normal behaviours, as the following amazing experience, recollected by Rex to me attests.

“Glassing a well-used red deer hillside near Lower Wonga with his spotting scope, Rex saw three hinds browsing contentedly. Then, all three hinds raised their heads, standing stock still in the danger pose, staring intently in the direction of something yet unseen by Rex. It was definitely not Rex because he was more than a kilometre away. Next, all three hinds started jumping towards what Rex could now see was a lone dingo. They were chasing it with stiff-legged, jumping-foot-stamping motions. The three hinds continued chasing the dingo until it was well away from their territory.”

My assumption is that at least one of the hinds had young in the area, because on a number of other occasions I have seen hinds in that same area, during the early birthing period, browsing a relatively small patch then retiring back into thick brush. Since these factors are indicators that hinds have young secreted nearby, and Rex also saw these hinds during the birthing season the year before, this unusually aggressive behaviour may have been due to their maternal instinct and the fact that it was a lone dingo.

Support for this aggressive maternal behaviour also comes from Keck (2008) who in an extensive study of elk and red deer behaviours and habits, notes that elk cows use rush threats against coyotes. On the basis of his observations of red deer, it is concluded that hinds grind their teeth and expose their canine teeth during confrontations with each other. Given that red deer and elk are closely related as so-called Old World deer, it is highly likely that the red deer hinds mentioned above would behave in a similar way towards dingos as their elk cousins do with coyotes, which are of a similar size to dingos and wild dogs.

Where dingos are in packs, it is unlikely that a hind would behave so aggressively. Instead, she would choose to run away, hoping that by the dingos chasing her they will miss the hidden calf. Once it is up and running, a calf follows its mother wherever it goes.
On another occasion, I remember watching a hind and her calf at a different property near Lower Wonga displaying this intimate mother-young behaviour.

“Glassing a hillside I spied a hind standing out in semi-open country covered by legume-covered bushes and wild grasses. She would walk a few meters then stop, looking back. The hind was apparently waiting or looking for something. Then, where the grass was shorter, I could make out the spots on a small calf, no more than a month or so old, running in a clumsy, gangling way to catch up with its mum. Mum would walk on ahead and the calf would try to keep up with its stumbling gait. I could see that the hind was making for a clump of trees jutting out from the surrounding forest into the grassland. Not far from the clump of trees she became aware of something or someone (probably me). She hurried for this clump of trees with the calf running more urgently behind her. They disappeared from view. I saw no further sign of them. Even though it was only a small glade of trees they remained perfectly hidden from my view.”

What an awesome experience! They may have headed onward together straight into the surrounding forest, the hind may have left her calf in the glade and headed off by herself or both may have been standing motionless amongst the trees. It was a great disappearing act. This increased vigilance and flight distance from observers is normal behaviour for hinds rearing young calves, especially in the first few months of a calf’s life.

If disturbed close to their hidden calves, hinds are unwilling to approach the calf’s position and will usually call their young and move their calves to a new location in the next 24 hours. Calves select their lying positions with care, preferring to lie in long vegetation in places where they are sheltered from sight and can see the ground in front of them.

Interestingly, it was found that the behaviour of hinds breeding for the first time differs little from that of experienced mothers, showing that the behaviour of red deer at calving time is primarily instinctual (Clutton-Brock & Guinness, 1975). If a one-month old calf like the one in the story above is not killed or injured, it will grow quickly, increasing its weight by as much as 30 kilograms in the first six months.

On average a healthy calf grows about five kilograms a month. A calf has started to lose its spots by three months old, though its spots can still be seen faintly for the next couple of months. Juveniles also have much richer and redder looking coats than their mothers, who are usually in rather poor condition from looking after junior for the last six months or so.
Small groups

A hind begins to wean her current calf after about six to eight months. However, if she has not conceived she may continue to feed her calf until it is 18 months old. And, if she already has a calf, both siblings may stay with her in this small family group until the next mating season. Female red deer tend to stay in the locality where they were born and have overlapping ranges with their mothers. This behaviour is called being “hefted” or bonded to a particular area (Pottie, 2005:3). Unless there is catastrophic upheaval, such as a severe bush fire, flooding or over-hunting, most hinds are unlikely to leave the area of their birth.

During the solitary season, almost without exception, mature, breeding-age stags and hinds are going solo. The only exception is immature young and non-breeding females, who will remain in a small family group led by the matriarch or the most senior sibling.

While the composition and behaviour of such groups will be discussed more in chapter 5, under the heading, “Family groups”, it is important to note that even during the solitary season, some red deer may remain in small family groups. These linear groups may stay intact throughout the rut and group season, in other words, for that entire deer year.

Mortality rates

For the purpose of this chapter, the composition of family groups is briefly explained to point out that even under optimum conditions, a wild red deer hind does not breed every year, especially if she has produced and raised a calf in the previous year. This is probably why in some areas the roar is much more pronounced one year than the next, because if most hinds are mated with the year before, during the next rut they may not be receptive to mating.

Confirming this is evidence from long-running and ongoing red deer research on Rum Island conducted since 1953. The Isle of Rum is a small island in the Inner Hebrides, off the west coast of Scotland to the south of the Isle of Skye. Since 1972 an individual-based study of red deer has been conducted in the Kilmory area in the north of Rum Island.

Based on these findings, even the most prolific breeding and long-lived hinds (“PinkGreenBlue” lived 24 years and produced 13 offspring and “Aldabra”, at 19 years of age produced 10 calves), bred on average, every second year.
Interestingly, only about half of their calves went on to be successful breeders themselves, which is a relatively low percentage considering that the conditions on Rum are better than most habitats due to there being few predator types and low levels of predation. Given that the only predators on these islands are golden eagles and hunting is banned, natural mortality in Scottish red deer is about 3% for adults and 10% for calves.

In the hinterland coastal strip of SEQ, where most red deer are found in Australia, there are significant numbers and types of parasites, predators and, currently, unrestricted hunting. Therefore, the number of successful births and the survival rate of calves and adults in these environments must be significantly lower. Perhaps less than half of the calves born survive. Furthermore, there is evidence from the study of reindeer calves that male calves stray farther away from their mothers and exhibit a higher level of locomotive behaviour in terms of play and walking.

As a result, male young are generally more vulnerable to predation than are female calves (Mathisen, Landa, Andersen & Fox, 2003). Because male calves are bred to increase reproductive success by being more aggressive and taking risks, it is not surprising that male calves exhibit greater risk-taking behaviours, such as higher activity levels and increasing distances from mother, to a greater extent than female calves.

As such, this trade-off between predation vulnerability and investments in behavioural traits important for future reproductive success make male calves far more vulnerable to predation. Consequently, male calf mortality is proportionately higher. Later on, we will see that this trend of higher mortality for males continues into adulthood and is an important factor in stag management.

In terms of predators, SEQ, in particular, has large numbers of scrub ticks, wedge tail eagles, dingoes and wild dogs, who cause significant mortality rates, particularly amongst calves. In fact, McGhie and Watson (1995) who conducted research into sustainable red deer numbers in SEQ, claim that in areas where dingo numbers are high, few red deer calves reach maturity.

Based on these findings, the conclusion is drawn that this combination of climactic and predation factors will exclude red deer from reaching plague proportions in SEQ as they have done in New Zealand. A study by Forsyth, Wilmshurst, Allen and Coomes (2008), confirms that the impacts of introduced deer on New Zealand vegetation is far more detrimental in comparison to the now extinct flightless bird the Moa.

They conclude that similar plant species that were eaten by Moa are now eaten by red deer. Moa, however, were likely to have
been important seed dispersers, whereas red deer are not. Trampling by deer in forests is another major new impact that was not apparently a feature of Moas. As such, serious, long-term environmental damage from red deer in New Zealand is predicted. While there may be less risk of wide-spread environmental damage in SEQ, due to there being large numbers of predators, land owners in particular suffer significant losses from red deer grazing on improved pastures, cereal crops and newly established forestry plots.

Depending on environmental conditions in the field, a hind usually breeds once every two years then may have a break for another year to take care of her one or two young for another year. She then starts this cycle over again. This practice of a hind giving birth every two years or so, at least in the wild, probably gives her offspring the best chance of survival because they are led by their mother for a longer period. Unless the mother is killed or leaves to give birth, these small groups of two or three animals is usually led by the matriarch from year-to-year.

In the absence of their mother, these small groups consist of two siblings, usually led by the elder brother or sister. In most cases they will remain in this small group until the next group season, when they will join same-sex juvenile groups. When red deer join same-sex groups depends to some extent on opportunity and disruption during the rut, especially for females of breeding age and the population density of deer in the area. Where deer are more sparsely distributed hinds probably breed less and spend more time with their young before breeding again.

**Overlapping ranges**

The degree to which red deer mix during the solitary season depends to a large extent on the overlap of their territories, which is primarily determined by the size and composition of local populations. According to Georgii’s (1980) research into ranging patterns of female red deer in the Bavarian Alps of Germany their home ranges overlapped from 18% to 100%. He noted that in habitats with patchy vegetation structures the home ranges were used more uniformly, whereas in habitats with a distinct separation of large woods and meadows, home ranges show diurnal (daytime) and nocturnal (night time) activity centres respectively.

In the more arid areas of SEQ, combined with the higher levels of predation and calf mortality, the degree of overlap between red deer ranges can be estimated at the extreme lower end of the scale, maybe 10%-20% at the most. Thus, during solitary season,
when the degree of range overlap between red deer is at its lowest, in SEQ the extent of range overlap would be negligible or virtually nil.

Even research in areas where far higher concentrations of red deer are present bears out this factor. In the Balowieza Forest of Poland stags in particular used only half of their home ranges in winter and spring compared to more than twice that in summer and autumn (Kamler, Jedrzejewska & Miocicki, 2004). Because this more restricted ranging coincides with the solitary season, it helps explain why far fewer red deer are seen at this time of year irrespective of whether red deer are in the northern or southern hemispheres.

Thus, the degree to which home ranges overlap seems to be mainly due to the population density of red deer being high in a given area, especially in areas where feed is of good quality and in significant quantities. Ranges are more stable during the solitary season than in any other seasons due to red deer moving about less, mainly because there is less competition for food and because the deer are more spread out.

Changing places

That being said the overlap and stability of red deer ranges can change due to a number of factors other than the solitary season. Red deer stags and hinds apparently use their ranges differently depending on the climate and due to differing feeding patterns. Kamler, Jedrzejewska and Jedrzejewski (2007), who investigated factors affecting daily ranges of red deer in the Bialowieza Forest of Poland, noted that females used 12% of their annual home range on a daily basis, whereas males used only 3% of their annual home range daily.

This research indicates that females use their annual home ranges more intensively than males. Nevertheless, even with overlapping ranges, consecutive daily ranges overlap little for each sex. This is primarily because, as mentioned in the previous chapter, stags and hinds tend to feed at different times of the day: hinds in the morning and stags in the evening.

Secondly, especially during the solitary season, red deer naturally avoid each other by constantly moving through different parts of their ranges over consecutive years. Szemethy, Matrai, Biro and Katona (2003) confirmed such cyclical movements in a long-term radiotelemetry (radio-tracking) study of 29 red deer carried out in a lowland forest-agriculture area in Hungary during 1993-2000. Image 11: “Home Ranges” is a good example of the tracking used to trace stag and hind movements.
The authors found that while overall ranges and ranging behaviours were relatively stable, if an animal shifted one year it shifted again in consecutive years and vice versa throughout their ranges. Note how the image shows stags and hinds using their territory differently: The thicker dark line signifies stag movements and the thinner line maps hind movements. Stags make much larger circuits around their territories than hinds. Also, there is little obvious interaction between individuals other than at points of intersection, which usually occur during the rut and especially during the roar.

Thus whilst having overlapping ranges overall, red deer ranges do not overlap much individually on a daily basis, especially during the solitary season as red deer move through different parts of their ranges in consecutive years. This may be a natural way of avoiding each other and reducing environmental pressures, such as overgrazing. It would be interesting to see a similar graph with dates on it so that the times when red deer interact could be better determined in relation to the seasons.

Providing a possible answer, Prokesova, Barancekova and Homolka (2006) considered pressures such as over-population when studying the density of red deer and their distribution. To do this, they studied this factor in relation to different habitat characteristics in a floodplain forest along the Morava River in the Czech Republic. Their research findings suggest that to be sustainable in this rich, riverine habitat, numbers of red deer should not exceed more than 3-5 animals per square kilometre. If this is the case for a fertile floodplain in temperate Europe, arid-in-comparison SEQ would probably only carry one animal per square kilometre, at the most.

Despite their isolationist nature during the solitary season, red deer know what other deer are doing in their vicinity by scent markers such as urine and gland secretions rubbed on bushes. Even if they do browse together for brief periods, during solitary season they appear to largely ignore each other.
Environmental factors

Notwithstanding their natural behavioural tendencies to isolate themselves as individuals or in small groups during the solitary season, environmental factors also have a major influence. Thus, other than seasonal differences due to red deer stags preparing themselves for the upcoming mating season and hinds preparing to give birth, there are also seasonal differences in the use of habitats between winter and summer time. These differing seasonal uses of habitats, other than being hormonal, are primarily due to environmental factors like food availability, types of feed and their nutritional quality.

Pointing to such environmental factors is Szemethy et al’s (2003) Hungarian study, where seasonal changes were identified in population distribution between forested and agricultural habitat. Here, red deer concentrated in the forest during winter and appeared in agricultural areas during the summer period. In subtropical areas such population distribution tends to be in reverse. This study confirms that the availability of food and cover are one of the most important environmental factors influencing red deer distribution.

Two other important factors are seasonal temperatures and hunting pressures. Not surprisingly, similar environmental factors influence red deer in SEQ. Summer is the time of year most conducive to deer building up their energy reserves quickly without needing to feed out in the open. Due to the rain and humidity, grass and legumes can grow in the understory and water can be found in many creeks and waterholes higher up in the hills. Because deer are naturally cautious animals, they will choose to feed under cover if they can and the conditions at this time of year suit this behaviour.

Feed under cover

Food availability in relation to forest cover is significant because red deer naturally prefer to feed in forested areas if they can. Prokesova et al’s (2006) study of red deer population densities found that red deer preferred forest stands with dense (60–80%) cover and a diversified shrub layer of more than three tree species.

Thus if their nutritional needs can be met in forested areas, and there is minimal competition between deer, they will stay in forested cover permanently. You will recall the research from New Zealand mentioned in the introduction, which confirms similar behaviour in the southern hemisphere.
The researchers, Davidson and Kean, conducted studies of red deer movements during the 1950s in New Zealand’s Tararua Mountains. They found that both sexes choose heavily wooded country where there is feed in the understory and in some cases, especially stags, may seldom venture out into open country. Moreover, because red deer are foraging alone or in small groups during the solitary season, they only need to feed in smaller more restricted areas, especially when the nutritional quality of feed is at its highest.

Since a more detailed discussion of sexual and dietary factors influencing foraging and grouping behaviour are discussed in chapter 5, explanation in this chapter is limited to dealing with broad environmental factors affecting red deer behaviour during the solitary season. For example, in SEQ, a variety of high protein and highly nutritious broadleaf weeds, such as milkweed, legumes like Glycine and shrubs like Turkey bush and Cat’s Claw as well as grasses, especially Guinea Grass, can all grow in the understory or along forest verges.

Watering holes are also relatively abundant despite the dry climate. Often an apparently dry hillside will have water in small pools in creek beds from rain run-off or be fed by springs, halfway or even higher up a hill. These small rock pools are often difficult to find, but when you know where they are, you can be sure that deer will hang around the area. One rock pool I know more than halfway up a hill near Widgee is a favourite spot for deer, because even when it is quite dry, this small rock pool holds water for months after other dams and creek beds are dry.

Also, this rockpool is almost invisible from below unless you know exactly where it is, because of being surrounded by boulders above and a clump of trees below. Secretive little watering spots and glades are where red deer will be found during the solitary season and this won’t change unless it is extremely dry and deer are forced into open country to feed and drink from irrigated fields and man-made dams at lower elevations.

Surprisingly, when visiting such open places, red deer do not always come at dusk or dawn. A number of landholders report that the biggest stags tend to water at odd times, such as midday or early afternoon. Since I have heard confirmation of this fact from others, including those using remote sensing trail cameras, in a variety of locations and can confirm this factor myself, this tendency by big stags to water at unusual times is an important behaviour to keep in mind when hunting them.
Temperature and predation

Temperature, whether heat or cold, also plays a key role in red deer movements. Although stags are less affected by temperature extremes than hinds (a bit like men and women isn’t it?), both sexes are unlikely to travel much during extreme weather conditions. In the northern hemisphere it is the extreme cold. In SEQ it is the heat!

Due to heat and humidity, deer only tend to travel, feed and drink early in the morning around daylight and later in the evening at twilight. When forced to travel at any other time of day during this time, deer usually follow covered corridors in the brush between feeding areas.

A final factor is predation, either by humans or animals. Red deer know that they are far less vulnerable to hunters--human and otherwise--in thick cover. It is very difficult to stalk red deer in thick bush, as I have personally experienced, and relate in the next chapter. Dingos too have difficulty hunting in thick bush. They prefer to hunt in more open areas where they can keep a red deer in sight during the chase. Wedge tail eagles can only take calves or carrion in more open country where they can fly in and fly out.

Thus, if deer have been heavily hunted from the air or from vehicles and on foot in more open areas, they will choose the understory and stay in cover most of the time. Given these physical and environmental factors, deer are hard to find during the solitary season. It is difficult to get a shot at deer at this time of year because they feed in and retire to the thickest areas. Most of the time hunters are only likely to glimpse a deer in a small opening in the bush or feeding on the edges of a heavily wooded or thicketed area.

During solitary season, physically, stags and hinds, especially those of breeding age, are in prime condition. Stags have cast their antlers and have just started to grow new antlers. Hinds too, whether they are breeding or not are also in prime condition until the pregnant ones have given birth. This creates a dilemma for meat hunters, because the best time to take deer for meat is during this period, yet hunters run the risk of shooting a stag in velvet with potentially great antlers or a hind in calf.

However because deer tend to be solitary or in small groups at this time and isolate themselves, it is unlikely that you will take so many deer as to upset the balance too much. Besides, the quality of the meat, with plenty of body fat and lower levels of hormones makes for superb tasting meat. One of the main reasons that venison from stags taken during the solitary season is less ‘gamey’ is that gland smells are minimal due to stag hormones being put into the effort of growing antlers. So, even if you can take some deer during the
solitary season, it won’t affect overall mature stag or hind numbers much and will result in you getting the best quality meat.

If you know where these covered corridors are, then they are the best places to watch for red deer movement. Glass these areas with binoculars to see where the deer are travelling. When deer are not feeding and resting then they will be travelling, so if you do not know where deer are feeding and only know areas where they are travelling, it is better not to tramp all around looking for deer as this will spread your scent around. Normally red deer will only be in one of three places: a feeding area, rest area or travelling between feeding and resting areas. Otherwise you can waste time tramping over country that deer seldom visit, wondering why you aren’t seeing any deer.

Nevertheless, solitary season is a good time of year to find where deer are most likely to be active during the upcoming mating season. Glassing hillside thickets for hinds and finding stag rub marks on trees usually indicates where they are most likely to be active later during the mating season. Keeping these places in mind for the seasons when deer become more actively involved in groups, particularly during the rut and roar, gives you a head start on hunters who wait till deer start becoming more active, before going hunting.

Conclusion

The first part of this chapter focused on how and when stags cast and grow antlers and hinds give birth to, and raise, their young. It emphasised the amazing way in which stag antlers grow as limbs so quickly. The high mortality rate of calves, especially in places where there are large numbers of predators, was also shown to be an important factor. Next we studied how red deer, even in solitary season, continue to congregate in small family groups if they are not preparing to breed or give birth.

Of particular interest was that even amongst long-lived and successful breeding hinds, less than half of their calves went on to be successful breeders themselves. This reproductive statistic emphasises that when combined with high levels of predation, only a small percentage of stags and hinds make it to sexual maturity. In our study of overlapping home ranges it was noteworthy that stags used up to a third less of their home ranges than hinds per day.

This is despite the fact that stag home ranges can be up to five times larger than that of a hind. It is no wonder that stags are so much harder to find and see, especially during the solitary season! Environmental factors were also shown to contribute strongly to red deer disappearing from view at this time of year. The main factor
mentioned as causing this seclusion is the natural tendency of red deer to choose forested habitats over open areas to feed.

When environmental conditions are conducive to this behaviour and red deer can feed up on nutritious plants under cover in relative safety they choose to do so. Solitary season prepares red deer well for the next and arguably most exciting season for hunter and red deer alike, the mating season or rut.

What you have read is just the introduction. “Secrets of the Reds” goes on to explain in detail how to hunt red deer successfully in each of the three seasons: Solitary Season, Mating Season and Group Season. If you want to read and learn more, get the book online. By buying an online book you get a lifetime subscription to Secrets of the Reds, because every year I add to its pages as I learn more.

Skilled Hunting,

Paul Rattray