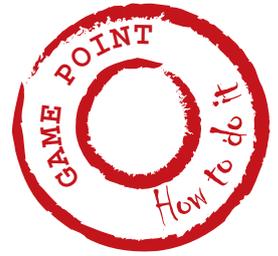


## Feature

# Nose in the wind



Tim Weston investigates how scent travels through the air.

HUMANS PRODUCE BODY ODOUR. IN FACT all animals produce scents of one kind or another. Animals use scents to mark territory, find a mate and even to hide their presence from other animals of the same species.

Human odour is what we are mainly concerned with when we are stalking or sitting out for a fox. It is our body odour that the animal we are trying to ambush can smell, alerting them to possible danger. The formation of body odour in humans is mainly caused by skin glands. Between the different types of skin glands, human body odour is primarily the result of the apocrine sweat glands, which secrete the majority of chemical compounds needed for the skin flora to metabolise it into odorant substances. These odorant substances are what we commonly call 'smell' and can be picked up by the sensitive noses

of our prey. The amount of odour we produce depends largely on the individual and how much recent activity they have been undertaking, for instance stalking into a herd of red deer on the open hill is far more strenuous than sitting in a high seat waiting for a fox to come along. However, that doesn't mean that we need to be complacent when it comes to the latter: humans always have an odour – it is just easier to detect in some people and in certain weather conditions.

From the very early days of ambushing animals for food, humans have been aware of the need to keep downwind of our prey. This should help eliminate one of the animal's senses, that of smell, but they may still hear and possibly see us. Stealth and camouflage are very important when we are out but scent travels further than sound out in the countryside. Being aware of how our prey

sees us, how they pick up on sounds and how they can scent us are all important, and part of basic field craft. Knowing your quarry species is vital as well as knowing your surroundings and how wind patterns are likely to affect a stalk; knowing the prevailing wind is key to anybody on any bit of ground.

Weather conditions also play a huge part in smell. Have you ever noticed how a rotting carcass can smell pretty horrible one day and not be so bad the next? Could it be that the day it smelt worse was because it was hot and humid? Odour is a molecule that is of a greater density than air and when it is released into the world, it travels in the direction that the wind takes it. A smell is not carried by the wave in the air (although it will go mainly in the direction of the wind), but as molecules that evaporate from the source of the smell. These

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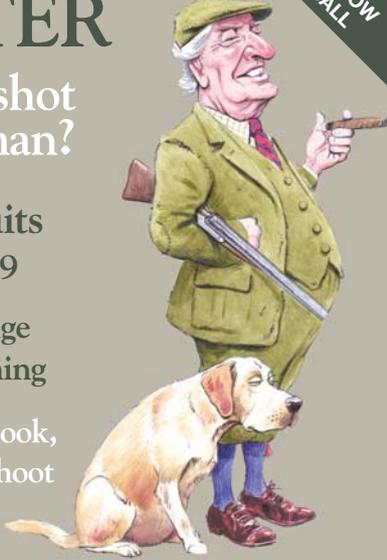
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molecules move around and bounce off other molecules in the air. Each individual molecule bounces around at random, but over time, they spread out, with the greatest concentration near the source, gradually becoming fainter with distance. When the weather is humid, there is more moisture in the air and that helps condense the odour making it seem stronger. So when sitting out for a fox (or any quarry for that matter) you should always take into account the weather and wind direction. Human scent carries further in any concentration on an airy humid day than a day with a strong wind. This is mainly because the scent is more condensed and, although it is travelling more slowly, it is less likely to be broken up by the wind and dispersed. Both rain and falling snow carry the scent particles down to the ground and dilute them; high mist and fog also block scent particles from travelling far. So when we consider stalking a deer or fox, the weather conditions are even more

important because they make a difference to the way our quarry scents us and at what distance our scent can carry.

High seats and other elevated positions can help disperse our scent over the heads of the target species. It seems logical that if we are elevated, then our scent will travel higher than the nose of the animal that we are trying to ambush. However this isn't always the case. In the main, scent molecules are slightly denser than air so eventually head towards the ground. Again the weather conditions affect how our scent falls and how far from the seat.

Using a vehicle can also work well to disguise human scent, especially if the target animals are used to seeing and smelling them. It is worth remembering that there are some legal obligations that you should be aware of when using a vehicle in this way to shoot deer.

When we consider a good place to sit out – be it in a high seat, vehicle or on the ground – we need to think about

the distance that we will shoot from, as well as the usual safety requirements. Distance is not only important for safe and accurate shooting but also because smell takes time to travel through the air. Unlike light or sound, an aroma molecule doesn't take a direct route to your target animal's nose and weather and other conditions affect it much more. Instead, it will bounce off other molecules in the air as it travels. The molecules also spread out in all directions from their source. As they spread out the concentration goes down. Therefore, the time it takes for a smell to travel from the source to your target's nose is proportional to the square of the distance travelled. So the time it takes for the smell to reach two metres is four times as long as the time it takes to reach one metre, but that is in a laboratory. In the countryside things are always different. However, that should give you a clue as to how far away you will need to place your hiding spot.

How far do you have to be to ensure your target animal does not smell you?

