



JEFFREY VAN HOUTEN

With
VariCam
 in the **Veluwe**

Dutch GTC and IAWF member **Dick Harrewijn** has just finished shooting one of the biggest natural history projects ever undertaken in the Netherlands alongside director Luc Enting. The main workhorse chosen for this two-year project was the Panasonic VariCam 35, a choice that worked out well for many reasons.

A dream come true

Ever since I was a kid I have aspired to be a wildlife cameraman and watching natural history programmes on television has always been a great source of inspiration for me. I even had serious plans to move to the UK to kickstart my career in Bristol, but then a chance in the Netherlands came up and I grabbed it with both hands. Now I have the luxury of making a living through wildlife filming. The dream has come true!

Dutch wildlife in cinema

Over the past few years I've worked on many different projects ranging from corporate films to documentaries, but the biggest recent challenges have been three natural history feature films for cinema. Until quite recently no one had made a true feature film about Dutch nature for cinema, but about five years ago EMS Films took the brave decision to undertake a feature film about a relatively new nature reserve

called the Oostvaardersplassen. I was lucky enough to be part of that project as one of the cameramen and, when the film turned out to be a huge success in the Netherlands, eyes were opened to Dutch wildlife and nature. About 800,000 people went to see *The New Wilderness* in cinemas – and out of a total population of 17 million that is a huge number. So, plans to make more such films were soon in place and, in the ensuing years, I've been very lucky that most of my work has been as a wildlife cameraman on different natural history projects for either TV or cinema.

Wild – in the Veluwe

About two years ago I received a call from director Luc Enting about a new project he was about to start, offering to take me along on the adventure. This would be my third big cinema film within Dutch borders, but completely new: different director, different producer, different wildlife... everything was different. The film would be about one of the biggest natural areas in the Netherlands, the Veluwe, and its main characters would be the big, elusive red deer and wild boar, plus the wily foxes.

Luc has filmed in the Veluwe for many years and become one of the main wildlife cameramen/filmmakers in the Netherlands. He likes to work with a small team, so the main camerawork would be done by just the two of us. The rest of

the team included two timelapse specialists, a drone operator and a handful of other specialists and assistants. Coming after two similar projects with much bigger teams, this was altogether a different approach for me but definitely the correct one for this film. The two of us would come to know the place better than our own backyards (and we would certainly see a lot more of it than our own backyards over the next two years!).

All about storytelling

As this film was for cinema, we knew from the outset that we wanted to shoot in a way that would contribute to the storytelling. This involves so much more than just keeping the animals in frame and in focus. In natural history filming, as on a drama, the emotion and narrative can be enhanced by the cinematography. Whether using traditional long-lens, drone, gimbal or timelapse techniques, every shot should add to the story, and we kept this in mind all the time; for instance, moving the camera should never be just to make the shot more interesting – it should also help to tell the story. And the same goes for timelapse and drone footage. Drone shots can give the editor a nice cut from one landscape to another – or they can offer a great point of view from one of the characters such as a buzzard. Timelapse sequences allow parts of the story to be included that simply wouldn't be



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DoP Dick Harrewijn with the VariCam 35 and converted Sigma 150–600 lens



At the end of the production we were able to use the VariCam LT in combination with a Ronin for cable-cam shots

possible any other way as they would take too long; working with timelapse experts Stefan Kuiper and Demian Leendertse enabled us to take full advantage of its storytelling power and ability to convey the passage of time. Experience from previous productions also told us that the most used shots in the edit would be the very wide and very close ones.

Deciding on VariCam

Choosing the right camera for this kind of work can be difficult. Extreme weather conditions, long hours, filming from boats and 4x4s, long hikes and placing cameras up trees are not the best treatment for high-value broadcast cameras – and none of the cameras I had worked with before had proved suitable in every regard.

The process of finding the right camera for a project is always interesting. The choice can be particularly tricky for natural history shoots. On previous projects we had used many different cameras, from small DSLRs and GoPros, to ARRI, Sonys and REDs. These days there are so many different digital cameras to choose from and each one has its own qualities.

In this case, the first question was: 'Do we need 4K?' Most of the newer digital cameras are able to film in UHD, but not 4K at higher frame rates. The producer took the decision early on to deliver the film in 2K, so 4K was not a necessity; however, early tests proved that the higher resolution did in some situations give more detailed images, even when rendered to 2K for delivery. So 4K capability became a preferred option although not a dealbreaker.

One thing that is essential for wildlife films though is slow-motion, especially since in this case some of the characters would be birds such as buzzards and ravens. So, higher frame-rate capability became one of the main selection criteria.

Something I've really missed on other projects has been internal ND filters. For me, ND filters are an essential tool for creativity and flexibility, and not having them built-in adds time and extra weight to carry. Also, especially when working with macro lenses, NDs can be problematic to fit between the lens and subject.

So, our preferred list of features was becoming quite long! The main priorities were UHD/4K, s35 sensor, high frame rates, internal NDs and a build quality that would suit our adventures in the field. However, most important of all was the image quality. How did the camera handle highlights? How did it render colours? How did it perform in low light?

Bearing all the above in mind, we narrowed the choice down to two: the VariCam 35 and ARRI Amira (the VariCam LT had not yet been announced). Extensive testing proved both the VariCam and ARRI to give outstanding images, especially, for example, in rendering highlights in skies and landscapes, but in our tests we slightly preferred the colours of the VariCam over the Amira. This was nothing that couldn't have been changed in grading but we reckoned the closer the recorded image could come to our desired end look the better.

The Amira did have a few advantages over the VariCam 35, such as the ability to shoot at more than 100 frames per second (fps) and the ease of switching to those higher frame rates. The VariCam requires a frustrating restart and we are hoping this will be amended with future firmware upgrades.

In the end though, the decisive factor was the outcome of our low-light test shoots. With its dual native ISO, the VariCam brings the ability to shoot at 5000 ISO without any concessions. This was a game-changer and crucial for this shoot.

Over the years, we filmmakers have been clamouring for less compression and higher data rates, but now we're shooting 4K and, especially at higher frame rates, the amount of terabytes can escalate very quickly. We did various tests ahead of the shoot to see if we would need the raw codecs other cameras offered but when we tested the VariCam's AVCIntra codecs in a grading suite, even our colourist was surprised. Even with just two cameras in the field, we've shot more than 120 terabytes over the two years – and that means not just 120 terabytes to store and process, but also backups, shuttle disks for transport, and so on. I'm so glad we didn't go down the road of raw codecs as it would have been a data management nightmare for our small team.



The Bradley (BR Remote) CamBall 3 was used for filming buzzards on their nest. On the right is the original camera, on the left the 3D printed dummy camera

Special cameras for special tasks

With foxes, deer and wild boar being our main characters, most of this film would be shot on the VariCams, but the director also wanted to include some of the flying creatures. We're both great fans of kingfishers, so we decided these couldn't be left out of the film. For most of the kingfisher shots we used a Phantom Miro. The Miro shoots at HD resolution but is so small we were able to place it in unique positions. With the help of photographer Ernst Dirksen, we built special underwater boxes for the camera to capture diving shots in the river rather than setting up shots in an aquarium.

The director Luc also wanted to film a buzzard's nest during the nesting season by placing a camera close to the nest. We did tests with various cameras but eventually one stood out: the Bradley (now BR Remote) CamBall 3. This is often used on natural history projects, especially by the BBC, but at the time it was a first in the Netherlands. To ensure the buzzards would be fully comfortable with the camera being so close to their nest, we developed a 3D-printed copy of the camera and placed it there months before the buzzards would return to the nest to breed. Once the nest had been accepted we just had to swap out the dummy camera for the real one and the buzzards had no idea they were being filmed.

Longer longer longer!

As the VariCam 35 only comes with a PL mount, our lens choices were a bit limited.

The Veluwe offers incredible landscapes, so we started our search with the wide angles. At that time there wasn't much choice of lightweight wide-angle PL mount lenses, so we added a Duclos 11–16mm and Canon 17–120mm cine zoom to each camera kit. Since most of our subjects are elusive camera-shy animals, a long tele lens was also going to be crucial. We soon spotted the new Canon 50–1000 cine zoom but, as budgets in the Netherlands are nothing compared to those in some other countries, this was never a serious option for both camera kits. Also, the weight of the camera with a 50–1000 would be tricky to handle without an assistant in some circumstances. So, for the second kit, we went for the new Sigma 150–600 sport lens, converted to a PL mount and cine-style iris by Etikon in the Netherlands. In testing, the Sigma seemed to hold up very well compared with the Canon 50–1000, offering a budget-friendly, lightweight tele lens for the second camera.

Dynamic range

I love to film with backlight and, luckily for me, the dynamic range (DR) of modern cameras such as the VariCam 35 makes this much more achievable. Also, as a one-man band, I often have to work quickly to catch sunrises or sunsets without grad filters to hand. The DR of modern camera sensors allows so much more than was possible before. With older cameras it would have been very hard to film the dark grey wild boar backlit in a forest without their becoming silhouettes, or to film a black raven in bright sunlight and still be able to resolve that their feathers boast a beautiful complex pattern of colours not just black.

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Director of the film, Luc Enting, shooting with the Canon CN20x50 lens

Panasonic GH4 as B-cam

The VariCam 35 proved a great choice on many levels, but the narrative of the film cried out for camera movement for some sequences, and its weight and size would limit quite a few techniques. But then we discovered the Panasonic GH4 as a B-cam, which worked very well for us. We would use the GH4 on sliders, jibs, gimbals and cable-cam setups, and we even built motion-triggered camera traps using the GH4.

Best of all, we regularly used the GH4 as a second camera for the 'all-containing wide shot' when filming from hides. Animals like red deer and wild boar live in big groups and with a telephoto lens following one individual you can often miss interesting action just out of frame. Having the GH4 on a tripod constantly offering a wide shot was particularly valued by the editor as something he could cut back to at any time. To match the quality and look of the VariCam we used the V-Log setting in the GH4. We recorded a 10-bit stream from the HDMI output to an external recorder such as the Atomos Shogun or Sound Devices Pix-E5. Right at the end of filming, the Panasonic GH5 became available and this new camera removes the need for an external recorder as it records 10-bit 422 files internally, making this a brilliant B-cam for use with the VariCam family.

Low-light beast

Shooting wildlife almost always throws up issues with availability of light, with slow tele lenses and high frame rates only compounding the problem. The native 5000 ISO option gives so much more freedom to wildlife filmmakers, especially

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on a film like ours in which most of our characters, such as red deer and wild boar, only come out at dusk or dawn. With the VariCam, I regularly found myself able to shoot with long tele lenses, starting at f8/f11, sometimes even half an hour before sunrise or after sunset – something that just wouldn't have been possible with other cameras.

It's not only with long lenses and faster frame rates that the extra sensitivity comes in useful either. Some of our scenes, for example involving insects, are shot in the controlled environment of a studio. The extra sensitivity allows us to use considerably less light (and therefore generate less heat). Also, with macro lenses we can shoot at higher apertures, offering a greater choice of depth of field.

Another example involved common toads leaving the forest and migrating to a local lake to find other toads with which to mate. This happens at night and on a previous shoot filming this process had involved bringing in several HMI lights and a generator. With the VariCam 35 at 5000 ISO, I was able to shoot the complete scene with just two 1x1 LED panels, making it a lot easier to follow the toads on their journey.

The dead fox

One thing we were really keen to film was a fox's den – not in captivity but in the wild. So we built a special den, using concrete tunnels and chambers, in an area frequented by a fox who wasn't too afraid of us. Most previous footage of this for other films had been filmed with infrared settings, so was black and white, but our den was fitted out with a Panasonic X1000 4K camera and daylight LEDs. All was going well and our den had been inspected by several animals, including the fox. However, just two days later, our fox was sadly killed by a car. It was two years before another fox discovered the den and, just as the edit was locked, we began to get footage

of a fox inside the den again! So, as much as you plan and prepare, it's always up to nature to do the rest. Luckily we had invested in a backup option with another (wild) fox den and we were eventually able to capture incredible (black and white) footage of the birth of young foxes and their first days.

The extra mile(s)

In the course of the two years, we've driven over rough terrain with the camera bouncing in the back of a 4x4, shot in extreme cold temperatures and snowstorms, spent long days in hides with temperatures rising to 45°C and filmed in pouring rain, including thunderstorms during which we tried to film the lightning. We've done all sorts of crazy stuff for this film, but I don't have any regrets. For a project like this you need to be flexible and to go that extra mile: not just for one day, but every day. It's in those extra miles that we captured our money shots for the film. And, surprisingly, as much as we may have tried with our adventures, both cameras worked like a charm throughout and never gave any problems.

The VariCam 35 is a relatively heavy camera, meaning you are a little less mobile and this might be a reason to choose a different camera for some wildlife shoots; however, much of this shoot was filmed from hides, so mobility wasn't a primary concern. On the plus side, when using long lenses, the greater weight of the camera brings stability, so on balance the weight was more of a positive than a negative. In fact, I'd go as far as to say that after two years I've got quite used to the weight of the kit – tramping through forest and across moors saved me the cost of a gym membership!

After filming with the VariCam for such an extended period, I've become really accustomed to it – and especially to its images. Its natural colours, brilliant rendition of highlights and outstanding resolution in 4K make this camera close to the ultimate for our line of work. I fell in love with the new VariCams and now most of my small niggles have been answered with the introduction of the VariCam LT – so much so that I've ended up buying a VariCam LT (but only after the end of the *Wild* shoot).

Fact File

The film *Wild*, directed by Luc Enting, will hit Dutch cinemas all over the Netherlands this winter.

Dick Harrewijn has been working as a professional cameraman for over 8 years. He has worked on many different projects from corporates to documentaries. In recent years he has been able to combine his love for film and his passion for the natural world through working on various wildlife TV programmes and feature films for cinema.

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Dick Harrewijn using the VariCam 35 for filming the sequence about toads mating

Panasonic



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