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Wildlife Cinematography



Documenting Nature

Filmmakers share their perspectives on capturing the natural world.

By Terry McCarthy



IMAGE COURTESY OF SOPHIE DARLINGTON.

Killer whales, says Paul Atkins, ASC, are “the most intelligent thing in the sea.” That may explain why Atkins is still alive today.

Weighing several tons and typically measuring up to 30' in length — with interlocking teeth as long as 4" lining their upper and lower jaws — these black-and-white creatures are among the most formidable predators. They hunt in packs and are sometimes called “wolves of the sea.”

Early in his career, Atkins decided to get into the water to film these enormous mammals — commonly known as orcas, which are actually members of the dolphin family — with a 16mm Arriflex SR as they swam up to a beach in Patagonia to feed on sea lions. He trusted in their intelligence and fine-tuned senses not to confuse him with their intended prey in the murky water. “They have an amazing type of sonar,” he says.



Previous spread: "A male impala caught in the most incredible natural light, backlit with dust," says filmmaker Sophie Darlington. "My idea of heaven." This spread, left: A killer whale with a sea lion in its sights. Right: Paul Atkins, ASC at the camera.



IMAGES COURTESY OF PAUL ATKINS, ASC.



The resulting footage, shot with his friend Mike deGruy and produced for the 1990 BBC series *The Trials of Life*, was described by series presenter David Attenborough as “surely one of the most spectacular wildlife sequences ever filmed.” It won Atkins a BAFTA and helped establish his career as a nature cinematographer — largely because, as he says, “nobody had ever seen anything like this before.”

Since then, working with his wife and partner, Grace, Atkins has continually sought to capture such previously undocumented moments in nature. He has shot underwater with 2,200°F molten lava pouring into the sea off Hawaii’s Big Island. (Survival tip: heat rises.) He shot the first film footage of a nautilus, a mollusk that lives 1,000’ down in the Indo-Pacific and has evolved very little over the past 500 million years. “You want your films to be unique and to tell new stories,” he says. “Or old stories from a new perspective.”

A Golden Era

Today is a golden era for wildlife cinematography, with a proliferation of unique films telling new stories — from the singular tale of a burned-out filmmaker who “befriends” an octopus in Netflix’s documentary feature *My Octopus Teacher*, to an extended series on matriarchal species (such as hyenas, elephants and chimpanzees) shot entirely by female cinematographers for National Geographic’s *Queens*.

“There is a voracious demand for new content,” says Atkins, who grew up in Mobile, Ala., and studied marine biology before taking up a camera in the 1980s. “When I started, there were very few people in the genre.”

And the films were patchy at best. “Forty years ago, it was enough to just show what animals looked like,” says Mark Linfield, co-founder of Wildstar Films and a former BBC natural-history producer. “You would say, ‘There’s a mandrill!’ It relied on revelation.

“You want your films to be unique and to tell new stories — or old stories from a new perspective.”

Polar bears in colder and warmer temperatures.



IMAGES COURTESY OF SILVERBACK FILMS.



Today, you need to use cinematography to tell stories.”

In tandem with the demand, there is a growing body of talented — and gradually diversifying — wildlife cinematographers around the world. Their knowledge of animals, their camera and lighting skills, their ability to shoot sequences that can tell stories are showcasing nature on a cinematic scale, and audiences cannot get enough of it.

“There is more work than before — more work than there are camera operators to do it!” says San Diego-based Jeff Hester (*The Mating Game*, *Ultimate Rush*), whose specialties include underwater cinematography. Historically the industry has been slow to embrace diversity — however, with mentorship programs for diverse voices from around the world now being promoted by nature-film enterprises such as the Wildscreen Festival and Jackson Wild, the hiring of women and people from less privileged backgrounds is starting to improve. (See “Career Path” profiles on pages 34 and 37).

The expansion of the industry is being powered by an increase in

A cheetah is walking through tall, dry grass. The cheetah is looking towards the camera with its mouth slightly open, showing its teeth. The background is a soft, out-of-focus green and yellow.

RED

| **W** |



Working together to create a
more educated, celebrated and
diverse wildlife cinematography
community around the world.

Courtesy of Wildlife Cinematographer Russ MacLaughlin
SHOT ON RED

Roger Horrocks delves into a jellyfish bloom.



IMAGE COURTESY OF ROGER HORROCKS.

“I had an existential crisis, so I defaulted back to what I liked, which was the ocean.”

financing and distribution networks, as the traditional commissioners of nature films — the BBC, Discovery Channel and National Geographic — are being joined by streamers Amazon, Apple TV Plus, Disney Plus and Netflix.

Evolving Tools

Wildlife cinematographers are also enjoying new technology that enables them to shoot in places and in ways that were not possible before. Rugged, high-resolution cameras with a pre-record function that can capture sudden action shots at high frame rates and with an ability to shoot in low light are now widely available. Red cameras are ubiquitous, but Arri and Sony cameras are favored by some.

“With the new Red cameras — two hours after sunset, I am still [shooting],” says Dereck Joubert (*Okavango: River of Dreams*, *Eye of the*

Wildlife Cinematography: Drones and Specialized Equipment

By Tara Jenkins



IMAGE COURTESY OF WILDSTAR FILMS AND V/SPEED.

A Shotover F1 Rush gimbal rig was deployed for aerial work, including up-close capture of weather systems, for the series *America the Beautiful*.

Innovations in drones, helicopters and remote-operated gimbals have ushered in a new era of wildlife cinematography that offers filmmakers greater access and safer ways to work. It is now feasible for the camera to run alongside a racing cheetah on the grasslands of Africa or follow a wolf pack on a hunt from above the Arctic tundra. The question is which platform to use for the job.

For the 2006 BBC series *Planet Earth*, a laser-gyrostabilized, helicopter-mounted system called Cineflex was deployed to film animals via compact HD cameras and long lenses. This prompted others to think of ways to use these state-of-the-art gimbal systems on the ground.

Jamie McPherson, a 20-year veteran of nature filmmaking, was looking for a way to film African hunting dogs, which can pursue their prey for 3 or 4 miles. After he worked out how to attach a Cineflex gimbal to the side of a Land Rover, he and his crew could follow cheetahs "at 60 miles per hour. You feel you are in their world; you can film the stalk, the chase and the capture — it feels really dynamic and really fast."

Since then, Cineflex (now GSS) and its competitor Shotover have developed gimbals that can be attached to 4x4 vehicles, boats, Jet Skis, icebreakers and even a buggy with balloon tires (for filming penguins on ice). McPherson has even jury-rigged one to the side of an elephant to film tigers hunting.

Aerial cinematographer Erika Tirén utilized the GSS system on

the Disney nature documentary *Polar Bear*. She has worked as an aerial operator since 2011, most recently serving as assistant aerial operations coordinator on the upcoming *Mission: Impossible — Dead Reckoning*.

Polar Bear was shot 650 miles from the North Pole. "We utilized the GSS — equipped with the Red Helium, Revolve KipperTie [lens mount] and [Canon Cine-Servo 50-1000mm zoom] — in the air, on the ice and on the water," Tirén says. "The system mounted on these different platforms allowed us to move through the landscape with the animal, which really helped to tell the story of their journey and how they go about their everyday life in their natural habitat in its simplest form. You can achieve beautiful parallaxes with the help of foregrounds and backgrounds — dolly-esque looks that are otherwise very hard and impractical to achieve in environments as harsh as the High Arctic."

After Cineflex came drones, which "absolutely revolutionized wildlife filmmaking," says Keith Scholey, co-founder of Silverback Films. "You can get intimate behavior by literally being a fly on the wall. One huge upside: You don't have to use helicopters, which are not good for the environment and are crippling expensive [to rent]."

John Shier, based in Montana, has spent much of the last five years filming pumas in Patagonia. "I can have [a drone] in my backpack and use it at any time," he says. "It's so manageable." On one occasion, he came across two pumas fighting. "I shot the cat fight all on my own, with a drone and another camera on the ground simultaneously — I'd

IMAGE COURTESY OF XM2 PURSUIT.



A DJI Mavic 2 drone captures a whale swimming amid glacial waters in Ilulissat, Greenland.

lock one off and go to the other.”

Some caution that there can be too much reliance on drones, particularly noisy models that make some animals anxious. Wildlife filmmaker Dereck Joubert, who works with his wife, Beverly, notes that some drones “sound like bees, and that high-pitched tone can be very irritating, particularly to elephants. Buffalo start moving; big cats get up — hippos, also. A helicopter with a long lens is much better. We use drones, but cautiously.”

Says Tirén, “There are certainly things that drones can do that helicopters can’t, and vice versa. I think the industry still has a lot to learn in terms of which of the two to use when, and I’m hoping we’ll get to a point in the not-too-distant future where helicopters and drones can coexist in harmony. But we’re not there yet. On many occasions, drones are chosen [over] helicopters just to cut costs before researching and comparing the practical aspects. There are [many] examples of where it takes a lot longer, and a lot more crew is needed, to achieve the desired shot or shots [with a drone].”

Drone technology is evolving quickly. Alastair Fothergill, who served as a director and producer on *Polar Bear*, says, “When we started [production] in 2019, the drones — [DJI] Inspire and early Mavics — weren’t high-enough resolution, had short battery lives and were too loud.” The polar bears didn’t like the sound. “Then the Mavic 2 came out — it’s quiet, has longer battery life and better res. Suddenly, we could fly them longer, and the bears weren’t bothered by them.”

Stephen Oh, camera operator and CEO of XM2 Pursuit, has been designing new ways to mount cinema cameras on drones and helicopters, as well as on ground-based vehicles. With a variety of platforms, XM2 aims to give filmmakers an array of tools for different purposes. “They’re each a different paintbrush for a different application,” Oh says. “They can emulate each other, but they can’t replace each other.”

Trial-and-error becomes key as new camera platforms are created, he adds. “You quickly realize we’re entering a new space. It’s not something you can go to school to learn. Drones have only been around for a decade now. [The technology is] still fresh and new, and there are always new ones being developed. It’s opening a whole new world for everyone [in the field], actually.”

“When you start getting long lenses on drones, they will become massive tools,” Scholey says. “And if you look at the quality of these military drones, there is clearly a lot of new stuff coming down the line.”

As for the next frontier, Scholey points to the ocean. “Underwater drones could start to be interesting, pushing the limits. If you have a drone that can move at 20 knots underwater and can dive and follow animals, imagine the results. Most of what marine creatures do we have never seen.”

Cinematographer John Shier filming in Patagonia.



IMAGE COURTESY OF JOHN SHIER.

Leopard). “The technology is allowing us to creep further into the night without impacting the wildlife.”

London-based filmmaker Sophie Darlington (*Queens*, the *Dynasties* episode “Lion,” *African Cats*) says, “I started on an Arri. Reds are brilliant, and I am excited about the new Arri [Alexa] 35.”

Almost every wildlife cinematographer will mention using the Canon Cine-Servo 50-1000mm zoom as their default lens. “It was designed for our trade,” says Darlington.

Drones and gimbals that can produce stabilized footage from the air have also transformed how natural-history films can be shot. (See sidebar, page 28.) For some spectacular sequences in the new National Geographic series *America the Beautiful*, a Red Helium was mounted to the nose of an adapted L-39 Albatros jet that flew long, low passes over the Grand Canyon and Monument Valley, giving a sweeping view of those expansive landscapes.

However helpful new technology can be, “it is the narrative storytelling

Dereck and Beverly Joubert “using the art of the lens.”



that makes the difference,” says Silverback Films director Keith Scholey, former head of the BBC’s Natural History Unit. “That is what elevates the top cinematographers and camera operators. They are incredible people — they have to work out what the subject is going to do [10 minutes before the subject does it]. It’s no good knowing 30 seconds ahead, because you will miss it.”

Nobody has done more to elevate the art of wildlife filmmaking than the famed Natural History Unit of the BBC. Established in Bristol — in southwest England — in 1957, the NHU pioneered the “blue chip” wildlife series, often featuring David Attenborough’s uniquely enthusiastic narration. “Everybody [in our field] looked to the BBC’s NHU to see how they told their stories,” says Atkins.

Planet Earth

The BBC has a rich body of wildlife films, but its 2006 release *Planet Earth* — an 11-episode, five-year production — has become the reference work for the genre.

Planet Earth was the first major nature documentary to be filmed in high-definition video, and it used cinematography to create a look that hitherto was more typical of feature films. Series producer Alastair Fothergill — also a former head of the BBC NHU — instructed the 40 camera operators who were sent to 200 locations around the world to aim for long, lingering shots. The series included extended sequences of birds-of-paradise doing their colorful mating dances, wolves chasing

Career Path: Cinematic Eye

Dereck Joubert moved from his native South Africa to Botswana in 1981 to study lions with his wife, Beverly. “I came across an old Arriflex 16ST and somehow got it working. As I loaded some film and picked up the camera, I felt, ‘Wow, this is me!’ I started getting books, and one of the first was the *American Cinematographer Manual*, Fifth Edition.”

He then discovered AC magazine. “I had hundreds of issues. I would read an article about a film and then watch the film and unpack what the DP was talking about. I must have watched *Blade Runner* 30 times!”

He also spent time in art museums looking at how the grand masters found light. “Usually it was by placing a subject next to a window, and the light was very soft. I do exactly the same — in that I am constantly aware of the [quality and] angle of light.”

Joubert took this experience into his wildlife cinematography, becoming a National Geographic Explorer at Large and producing films on lions, leopards, hyenas and elephants. “Using the vehicle as a tripod, I am filming to edit. I’m working the game plan constantly. I need a close-up here, then a wide shot, keeping the angle for the sun in mind.” Many early nature documentaries “would simply point a camera at the polar bear and see what happened. I realized early on if we used cinematographic techniques, we could do so much more!”



IMAGES COURTESY OF WILDLIFE FILMS.

An Albatross in South Georgia, an island in the South Atlantic Ocean.



"It's about being able to make people feel emotionally involved with nature."

Career Path: Narrative and Emotion

Sophie Darlington was born in England, grew up in Ireland, and spent a few summers in pre-revolution Iran. "It was in Shiraz and Isfahan where I fell in love with light," she says. At 19, she went to Tanzania to work in a hotel, and she became interested in wildlife filmmaking in the Serengeti. But getting hired was a challenge. "It was very hard to break in — it's a real clique."

She persevered and finally established her name by shooting the story of a cheetah and her five cubs for the Disney nature film *African Cats* (2011). Darlington says her experience as a mother helped her to identify with the challenges facing the female cheetah [raising] cubs on her own.

"I am known as a very emotional cinematographer," she says. "I wouldn't know how to direct a load of [electricians] or a big crew, but I do understand how to work with natural light, and I know how to drive a narrative. It is about emotion."

Keith Scholey of Silverback Films, who commissioned Darlington to shoot *African Cats*, says, "Sophie is second to none — when an animal is moving, she can hold a composition on it that keeps working."

Darlington has become outspoken on the need to increase diversity in wildlife filmmaking. There are still very few cinematographers who are women or representatives from less-developed countries

caribou over the Arctic tundra, Bactrian camels walking slowly atop sand dunes at dawn, and a snow leopard patiently hunting mountain goats on steep, rocky slopes. When the series was done, Fothergill said, "I showed it to the bosses at the BBC, and they said, 'It is very slow.' I said, 'Yes, there are half the number of cuts as normal, but every one is a Rembrandt!' I wanted every image to be exquisite."

The most significant technical innovation deployed on *Planet Earth* was the Cineflex, a laser-gyrostabilized camera system that allowed stable, long-lens footage of animals to be filmed from helicopters — and could accommodate contemporary compact HD cameras. "You can shoot polar bears with a long lens from the ground," says Fothergill, who is now a partner in Silverback Films with Scholey, "but you can only understand their lives if you pull out and film the whole expanse of ice and snow, and show how these animals deal with those challenges."

Wildstar Films' Linfield adds that the Cineflex could be perceived as the wildlife equivalent of putting a camera on rails or on a Technocrane on a Hollywood set.

Planet Earth was a huge hit around the world, including in the United States, where it was distributed by Discovery Channel. Atkins, who shot several sequences for the series, notes, "*Planet Earth* came out just as Blu-rays and widescreen televisions were reaching consumers, and it was enormous." Atkins' contributions to the show included manta rays at night in Hawaii, and dolphins and sea lions herding schools of fish in Patagonia.



— where, ironically, most wildlife filming is done. Darlington notes that on one major studio production that involved more than 40 cinematographers, she was the only woman.

TOP IMAGE COURTESY OF SILVERBACK FILMS.
BOTTOM IMAGE COURTESY OF SOPHIE DARLINGTON.



A chimpanzee with its young.

The production won numerous awards, among them Primetime Emmys for Outstanding Cinematography and Outstanding Nonfiction Series, and inspired everyone in the field to push for more cinematic images. “More of my [wildlife] clients have begun quoting feature films as examples of what they want,” says Atkins, who has also shot narrative features himself. “They’ll send me a style sheet with the types of lenses and the depth of field they want. I never got that before!”

Planet Earth has since become a franchise, with a third season slated to debut this year.

Evoking Emotion

As the market has become more sophisticated, producers and directors have become more demanding. “Increasingly, we’re going into the field with storyboards, and it wasn’t that way 20 years ago,” says Roger Horrocks, the South African cinematographer who shot *My Octopus Teacher* with protagonist Craig Foster. “Our job as a DoP is to serve that story, and that requires coverage skills and the ability to evoke emotion.”

Though some scientists push back on the idea that animals experience emotions — and warn against anthropomorphizing non-human creatures — wildlife filmmakers tend to see it differently. “It is all about eliciting emotion,” says Darlington. “It’s about being able to make people feel emotionally involved with nature. Loads of people stopped eating octopus because of *My Octopus Teacher*, even though the film doesn’t ever say anything about that. Beauty is the sharpest tool in the box.”

Career Path: In the Ocean

Roger Horrocks grew up on the east coast of South Africa, where he became “obsessed” with spearfishing. But with no obvious career path, he went to work in the corporate world until, at age 36, “I had an existential crisis, so I defaulted back to what I liked, which was the ocean.”

Through friends, he got a job as a camera assistant on the BBC series *Nature’s Great Events*, doing underwater work. National Geographic photographer Thomas Peschak advised him to find one subject that he liked and learn to do it well. “Mine was dolphins,” says Horrocks.

“As a spearfisherman, getting close enough to a fish requires field craft. Those skills transfer directly to cinematography.”

For the 2017 BBC series *Blue Planet II*, Horrocks filmed a sequence with an octopus in a kelp forest with Craig Foster, who was then a burned-out filmmaker swimming in the kelp as therapy. “We built up a huge archive. In the process of shooting a five-minute sequence for the BBC, we realized we could make a film.” The result was *My Octopus Teacher*, which won an Oscar in 2021.

“My default camera is Red,” says Horrocks. “I have Dragon, Gemini and Helium. The pre-roll on Reds is a critical function, and [the sensor] captures so much information that you can use in post. My default



lens is a Canon CN-E 15.5-47mm, and I also use a Nikon 70-180mm macro — a lot of *My Octopus Teacher* was shot on that.”

TOP IMAGE COURTESY OF SILVERBACK FILMS.
BOTTOM IMAGE COURTESY OF ROGER HORROCKS.

Tania Escobar has filmed drill monkeys in Equatorial Guinea for multiple documentary productions.



"Beauty is the sharpest tool in the box."

Sometimes it is also the most poignant. Joubert and his wife, Beverly, who have lived in Botswana's Okavango Delta since the 1980s, were following a lioness and her cubs for *The Last Lions* (2011) when one of the cubs was trampled by a buffalo. The cub's back was broken, paralyzing his hindquarters. The Jouberts knew the lioness would abandon the cub because he could not possibly survive in the wild.

Dereck recalls, "The question dawned on us, 'Now what do we do? Drive off? Stay there and cover it? Or use it as an exercise in what I hope will be some of my best cinematography? We understood the cub had a broken back and was going to die. What did I want the audience to come away with? My goodness, that lionesses feel sadness, too! So I put the cub in the background, slightly out of focus, and the lioness in focus. She moans, and then has a very slow blink. At that point, the story was about the mother and the decision she had to make to move on. Using the art of the lens — there [you see] an individual going through great pain. And by the way, that individual is a lioness."

Respecting the Talent

Wildlife cinematography poses some unique challenges: The talent won't stand on marks or take direction, couldn't care less about a script, and sometimes they won't turn up on set at all. Filming wildlife often means waiting patiently for long periods of time in intense cold, oppressive heat or some other variety of discomfort — just to get a 60-second sequence.

Career Path: Getting Started

Tania Escobar saw the BBC series *Planet Earth* as a teenager and decided she wanted to film wildlife. "But I didn't know if it would be possible. You see people in the industry, and no one looks like you — there are few women, and even fewer Latina women."

So, she found other role models. "My inspirations were [chimpanzee expert] Jane Goodall and [gorilla expert] Dian Fossey. They weren't cinematographers, but they were women, and they did it!"

Escobar started out doing small jobs for NGOs in her native Mexico, filming flamingos in the Yucatán. After she was accepted into a master's program in wildlife production in Manchester, U.K., she met some filmmakers who wanted to make a documentary in Equatorial Guinea in Africa: *Lost Kings of Bioko*. "I was 27, and I spent three years filming drill monkeys there. It was very challenging, but that's where I really learned cinematography. I had access to good equipment, and I was shooting all the time; I worked as an assistant for other DPs who would fly in. They were like mentors."

She was subsequently hired to shoot the same drill monkeys for the BBC show *Primates*. "Then doors started opening."

Her latest project has been filming in Congo for the National Geographic series *Queens*, which is about matriarchal species and is shot entirely by women.



"My profile is filming in jungles on long shoots in remote areas," she says. "It's an exciting time for wildlife cinematography."

Top: Atkins with another undersea predator. Middle: Erin Ranney on the job in Alaska. Bottom: Escobar in full camouflage.



"It is the narrative storytelling that makes the difference. That is what elevates the top cinematographers and camera operators."

"For me, filming starts with respect for the animals," says Darlington. "If you want to film animal behavior, you don't want them to be aware of the camera. There has been a drive toward reality-TV style filming, which, in my mind, is not respectful. I don't like seeing an animal snarling at a camera because that means you have upset it. It takes real craft to use equipment without interfering with the behavior."

It also takes some skill to shoot enough footage to build entire sequences. "The best wildlife cinematographers have also been in the cutting room — they know how to build a story," says Fothergill. "Often you will only get about 70 percent of what you aimed for, so you need to know how to shoot so you will still have enough for a story."

Wildlife cinematographer Erin Ranney (*Natural World*, *Seven Worlds One Planet*), who grew up on Alaska's Bristol Bay, says she has learned to think days ahead. "If you're trying to catch an animal's behavior, you will probably have to shoot over multiple days, but you need to make it look like it all happened in five minutes, so you are often shooting the same behavior in multiple lights and multiple weather conditions. For example, when shooting a mother bear fishing for salmon with her cubs, one morning it's drizzly and overcast, and then you have a morning with glorious sunlight — so you have to start over and build it out so you have created the sequences the editor can cut in whatever conditions they want."

"We have to stop pretending ..."

As the footage has become increasingly spectacular, concern about the natural world has grown ever more urgent. For years, the blue-chip series avoided discussions of environmental threats and climate change for fear of alienating their audience, preferring to show nature in its pristine form with no traces of human activity. But that became increasingly untenable as animals' habitats shrank, species became endangered or extinct, and climate change was very clearly threatening the planetary ecosystem.

"We have been guilty of 'chocolate boxing' nature," says Darlington. "Commissioners didn't want to screen the conservation themes, but we have to stop pretending that nature is in a great state. I did three shoots this year and came away desperate every time. We are in the midst of a biodiversity and climate crisis, and we have to speak out."

Tania Escobar, a Mexican cinematographer based in Brazil, says, "Every time you're out there, you see how rapidly things are changing and how biodiversity is impacted. You see trash everywhere, plastic everywhere. I did a shoot in the Amazon in November, and we saw fires burning everywhere, all the time."

Escobar understands audiences don't want to be preached at, but she thinks as generations change, young people are becoming more

TOP IMAGE COURTESY OF PAUL ATKINS, ASC. MIDDLE IMAGE BY WILL NICHOLLS, COURTESY OF ERIN RANNEY. BOTTOM IMAGE COURTESY OF TANIA ESCOBAR.

IMAGE COURTESY OF SOPHIE DARLINGTON.

interested in learning about the environment. “By now,” she adds, “you really have to fake it if you want to make everything look pristine!”

Attenborough, the world’s preeminent voice in wildlife filmmaking, made his own “witness statement” in 2020 with the Netflix documentary *David Attenborough: A Life on Our Planet*. He used footage extending across the 70 years of his own career to document the decline in biodiversity and the onslaught of climate change that he has observed. Addressing the camera in a call to action, he exhorted the audience to “rediscover how to live in balance with nature,” and said, “Using your voice is the most powerful way to create lasting change.”

With their increasingly evocative work, wildlife cinematographers stand front and center in this critical conversation about our future. ◉

A lioness walks through a wildebeest herd in a sequence from “Lion” — an episode of the BBC series *Dynasties* — shot by Sophie Darlington.



Wrap Shot

Howard Hall



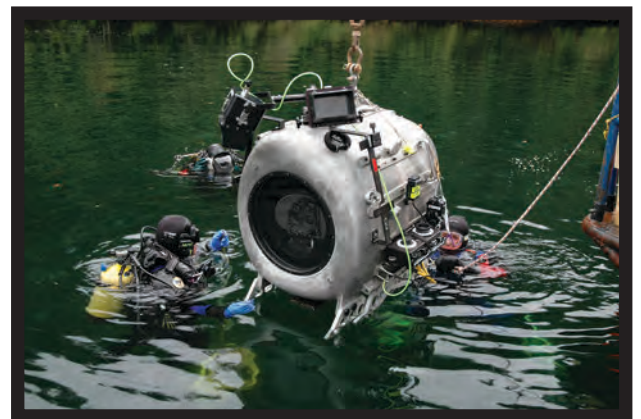
Howard Hall put himself through college by teaching scuba diving before he picked up a camera and started shooting. Inspired by Jacques Cousteau, he realized nobody else was filming animal behavior underwater, "and I thought, I could do that!"

In the early 1990s, he began shooting the first Imax 3D underwater film, *Into the Deep* (1994). This required two 65mm cameras shooting side by side inside a waterproof housing. "The whole rig weighed 1,200 pounds, and we needed a special crane to hoist it into and out of the water onto the boat. And it could only carry three minutes of film!"

The film negative alone weighed 20 pounds, and Hall's crew of 12 included four divers who were underwater with him at all times. "You couldn't do it on a single tank of air, so we started using rebreathers [military-grade breathing apparatuses that recirculate the air after scrubbing it of carbon dioxide]. It took a lot of teamwork." They even designed an underwater-comms system so they could talk to each other.

Fast-forward to 2022. "This year we're releasing an Imax 3D underwater film made with 8K digital cameras, *Secrets of the Sea*. The cameras weighed 30 pounds, and I could shoot for 45 minutes before I had to change the card."

And he could do it all with a crew of two.



PHOTOS BY MICHELE HALL.