Biodiversity MAG

The Media Plateform ot The International
Conservation & Biodiversity Team (ICBT)
An International Exchange Space to preserve our Planet

Humans, Animals & Biodiversity
The impact of the Russian Ecocide on

UKRAINE

Editor: Laurent Dingli, Paris, France — ISSN 2967-0411

10
April/June
2024

Biodiversity MAG 10

Expert Members
& Mission
of The International Conservation &
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President & CEO, International Fund for Animal Welfare (IFAW)

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CEO, Compassion in World Farming

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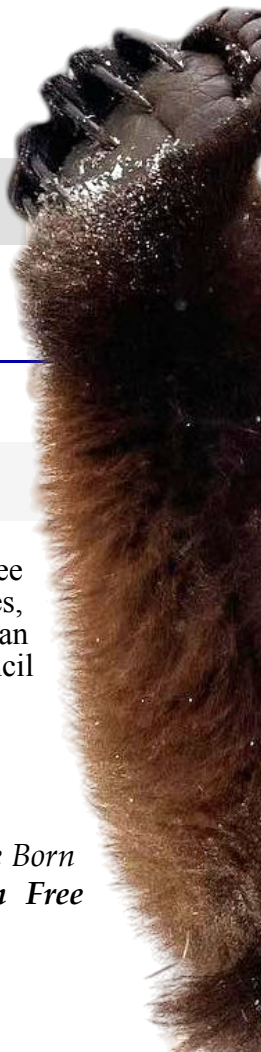

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❖ **Yuliia Ovchynnykova**, Member of the Ukrainian Parliament, Chairman of the Committee on Environmental Policy and Nature Management, Head of the Subcommittee on Forest Resources, Biodiversity, Natural Landscapes, Nature Reserve Fund Objects and Adaptation of Ukrainian Legislation to EU Law. Member of the delegation to the Parliamentary Assembly of the Council of Europe.

❖ **Dr Jaco Cilliers**, Representative UNDP in Ukraine.

Photo of cover: *Tsar the lion rescued with his brother from war-torn Ukraine on arrival at the Born Free Foundation's sanctuary at Shamwari Private Game Reserve, South Africa* © ***Born Free Foundation/Lyndon Brandt — All rights reserved.***

❖ **Jojo Mehta**, co-founder and Executive Director of Stop Ecocide International.

❖ **Drs Yegor Yakovlev & Maryina Shkvyria**, zoologists, Save Wild & White Rock Bear Shelter, Kyiv, Ukraine.

❖ **Dr Pavel Gol'din**, Full Professor and Leading Researcher at Institute of Zoology NAS of Ukraine.

❖ **Dr Bohdan Vykhor**, Executive Director WWF Ukraine, Kyiv, Ukraine.

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❖ **Dr Oleksii Marushchak**, researcher at I.I. Schmalhausen Institute of Zoology of National Academy of Sciences of Ukraine.

❖ **Dr Roman Svitin**, research scientist, Institute of Zoology NAS of Ukraine, expert on amphibians and estuaries, Kyiv, Ukraine.

❖ **Olga Chevganiuk**, head of the international department of UAnimals, Kyiv, Ukraine.

❖ **Anton Ptushkin**, documentary filmmaker, « Us, our pets and the war », Kyiv, Ukraine.

❖ **Joshua Zeman**, film director, « Checkpoint Zoo », New York, USA.

Above: A protester in New York City on 27 February 2022, holding a sign that reads "Glory to Ukraine! Glory to the heroes!". Credit Rgm38/Wikipedia — Transport cage used during the transfer of 5 lions abroad in June 2023, organised by Natalia Popova's Wildlife Rescue Center and UAnimals with the support of IFAW *On the left: Popeye the bear in the White Rock Bear Shelter near Kyiv, a few days before the full-scale invasion of Ukraine by the Russian troops — a brief moment of laughter and insouciance before years of fear, suffering and grief*

Dr Laurent Dingli, French writer, Historian, environmentalist and animal rights activist, chairs an NGO dedicated to the protection of the coastline and its biodiversity in Brittany. He founded The International Conservation & Biodiversity Team in 2021 and the Biodiversity MAG in 2022. He's also one of the International Advisors of the China Biodiversity Conservation & Green Development Foundation (CBCGDF).

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EDITO

THE RUSSIAN ECOCIDE IN UKRAINE

By Laurent Dingli

Photo credit: ministry of Defense of Ukraine

A CRIMINAL STATE

They have caused the death of a million Afghans, wiped out a quarter of the population of Chechnya, razed towns to the ground, deliberately and systematically bombed hospitals in Syria, sown death and desolation in Ukraine. 'They' meaning the leaders of the Soviet Union and then the Russian Federation and their accomplices.

For generations, the Russian people have been bathed in violence: journalists murdered, opponents poisoned, young recruits to their army hazed, beaten, humiliated, sometimes raped and killed. What can we expect from a country that kills its own citizens without batting an eyelid when they are taken hostage, as in the Beslan tragedy? What humanity can we expect from a government that abandons to certain death those who chose to defend their country and ensure its safety, like the crew of the Kursk submarine? What can we expect from a government that has pushed its criminal cynicism to the point of using the lists of Syrian hospitals provided by the UN, not to spare them, as was the international organisation's objective, but to target them more effectively?

We all remember the terrible images of Bucha, Borodyanka, Mariupil and, more recently, the children's hospital in Kyiv hit by a Russian strike.

Faced with this criminal regime and its army, a courageous and free people are standing up: the Ukrainians. Since the beginning of the massive invasion of their country by the Russian aggressor, they have shown the whole world that, even in circumstances of war, it is possible to behave humanely, to respect prisoners and civilian populations, not to engage in a struggle for extermination based on delusional propaganda, as is the case with their enemy, but to fight in self-defence.

Let us be clear, in writing this, we have no intention of idealising the Ukrainian people or embellishing reality. Like all countries, Ukraine has its shortcomings and flaws. Corruption, among other things, is recurrent and the country is the scene of trafficking of all kinds, particularly of wild animals. In addition, intensive livestock farming, sometimes in its most disrespectful forms for animals, is still practised on a large scale. As everywhere else, there are individuals and lobbies more concerned with doing business than preserving the country's natural heritage.

Nevertheless, many of us are impressed by the collective attitude of the Ukrainian people in the face of the tragedy that is unfolding, and by the spirit of solidarity and self-sacrifice they have shown despite the refusal of some of their young people to join the army. How many of them risked their lives and lost them, or returned broken in body and spirit to defend freedom? Yes, Ukrainians have faults like all human beings, but what has always impressed me about an individual or a community is not so much its qualities as its ability to overcome its limitations and faults. And in this area, Ukraine offers us a wonderful example. As I have said several times in these interviews, I am convinced that Ukraine will one day — and I hope as soon as possible — become one of the spearheads of the European Union. Our community of states needs its resilience, its dynamism and its incredible ability to adapt.

AKNOWLEDGE THE ECOCIDE

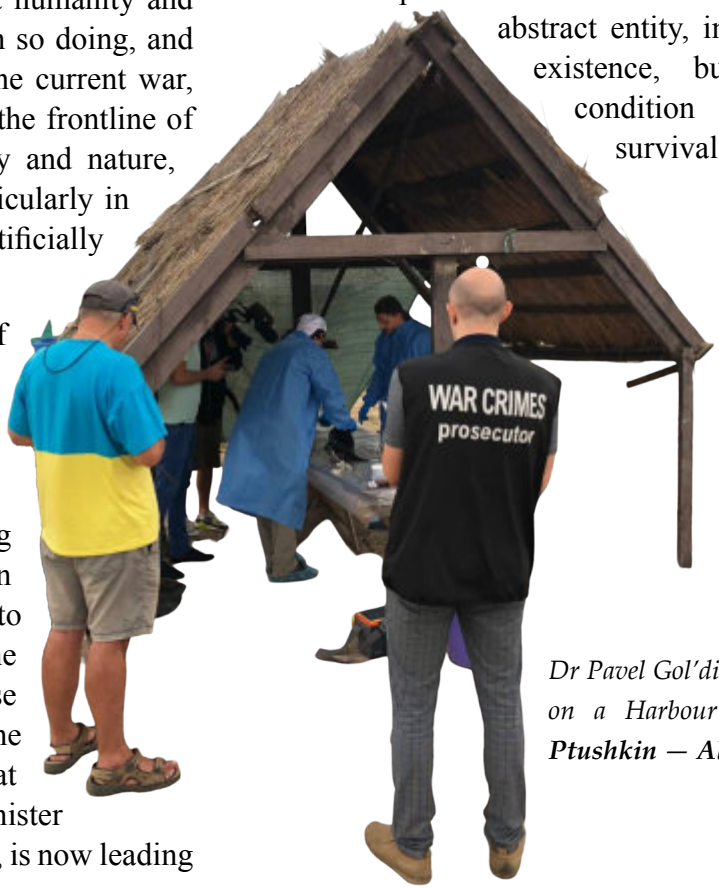
One of the pillars of the country's current struggle is justice. The aim is to recognise the crimes of the Russian aggressor so that one day it can be held to account before an international court, just as there were the Nuremberg trials in the past and just as there should have been a trial to judge Stalin's monstrous crimes.

But where Ukraine is revolutionising our approach in this field is in its firm determination to take account not only of crimes against humanity but also of crimes against nature. To put it more accurately, this nation at war is reminding us that crimes against humanity and crimes against nature are intertwined. In so doing, and even beyond the appalling context of the current war, Ukraine is deliberately placing itself in the frontline of the struggle to finally reunite humanity and nature, which certain visions of the world, particularly in the West, have arbitrarily and very artificially separated.

Of course, the notion and the reality of ecocide are not new, but when the French and then the United States air forces burnt down Vietnamese forests with napalm in the 50s and the 60s, with the utmost contempt for all the living beings that might inhabit them, human and non-human alike, no one seemed to really care. The famous Swedish Prime Minister Olof Palme was the first to use the term and defend the concept in the early 1970s. It is no coincidence that Margot Wallström, a Swede, former Minister of Foreign Affairs and UN representative, is now leading this fight with members of the Ukrainian government. One of the major steps in this process of taking account of ecocide was President Volodymyr Zelenskyy's ten-point peace plan of November 2022.

The environmental disaster wrought by the Russian aggressor over the last two and a half years is gigantic, and the devastating destruction of the Kakhovka dam is only the tip of the iceberg. As stated by the ***Commission on Security in Europe***, Ukraine estimates that, in ten years of war, Russia has inflicted some $60 billion in damages to Ukraine's natural and man-made environments and pushed the country to the brink of ecological collapse. 'Vast swaths of Ukraine are contaminated with landmines, toxic chemicals, and heavy metals. Hundreds of thousands of square miles of agricultural lands are decimated, groundwater contaminated, and nature reserves consumed by fire.'

And yet, despite this catastrophic record, there are still reasons for hope. The whole world has seen the way in which so many Ukrainians have behaved towards both their domestic and wild animals. Here again, they are giving us a lesson in inclusion. No one is left by the wayside. The Ukrainians want to defend all the inhabitants of their territory just as they want to preserve their natural, human and cultural heritage from the will to annihilate of the Russian criminal who sits in the Kremlin. I may be too old to believe in a change in human nature and its propensity for destruction, but Ukraine and all those who support it are giving us real reason to hope that nature will no longer be seen as an abstract entity, independent of our existence, but as the very condition of our own survival.

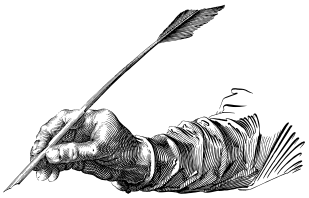


Dr Pavel Gol'din performs a necropsy on a Harbour porpoise © ***Anton Ptushkin — All rights reserved.***

Philip Lymbery

Global CEO

COMPASSION in world farming



HOW TRANSFORMATIVE CONSERVATION BEGINS WITH SAVING OUR SOIL

It was early morning in a field near home, England, and a tractor was pulling a plough. Back and forth it went, ploughing its lonely furrow. Behind the tractor, dust clouds spiralled and caught the sun, creating an aura. A timeless symbol of the season. Only, something was missing: there were no screeching gulls following the plough in search of worms.

I took a closer look. The tractor was ploughing across a footpath, giving me a bird's-eye view of the newly upturned soil. As I stared down, do you know what I saw? Nothing. There were no worms, beetles, or bugs desperate to get back into the newly upturned earth. The soil was lifeless. It was like sand. We could have been walking on the moon.

That field should have had millions of worms in every hectare, in every patch the size of a football pitch. There should have been 13,000 species of life with a collective weight of an elephant: five tonnes.

But instead, there was nothing.

That field was about to be planted again with maize (corn); a crop commonly used as animal feed. It was grown with chemical pesticides and artificial fertilisers. No wonder the soil was dead and washing into the nearby river.

It reminded me of seeing great green oceans of monoculture maize corn in the American Midwest of Nebraska, much of which was destined for the feed troughs of industrially reared chickens, pigs, and cattle. I remember seeing feedlots. Hundreds of cows and calves standing in barren pens, not a blade of grass in sight. Despite the hot summer sun, they had no shade. I watched as they jostled in the searing heat for respite, trying to get into each other's shadow.

It was a potent example of industrial animal agriculture, a regime that now ravages the planet.

It hasn't always been like this. In fact, it was but a single human lifetime ago when we started removing animals from the land to be caged, crammed, and confined. Vast acreages of cropland elsewhere were then devoted to growing their feed. The age-old practice of replenishing the soil naturally through rotating various crops and animals round the farm was replaced with fields that became sterile, prairie-like areas of a single crop.

Fallacy

This new way of farming was built on the lie of 'feeding the world'.

Far from making food, industrial animal agriculture wastes it. This is because animals are hugely inefficient at converting crops into meat, milk and eggs. They waste most of the food value in terms of calories and protein in the process. In this way, we squander enough food to feed four billion people – that's half of humanity alive today.

Consequently, the industrial rearing of animals is now the biggest single cause of food loss on the planet. It is also the biggest cause of animal cruelty, and the major driver of wildlife declines worldwide.

It also undermines the very thing we need for food in the future: soil.

Gabe Brown's son Paul, and Gabe on Brown's Ranch

Which is why the UN has rightly warned that, carry on as we are, and we have just sixty harvests left in the world's soil. No soil, no food. Game over.

It's the elephant in the room.

Addressing the elephant in the room means moving away from this failed industrial model, instead embracing farming based not on cruelty, extraction, and decline, but on putting back into nature's bank account. Working in harmony with Mother Nature. Respecting the welfare of animals; their wants, needs, and feelings.

Bringing back the elephant

Addressing the elephant also means bringing back the elephant's weight of biodiversity that should be under each football-pitch-sized patch of healthy soil.

In the US, Gabe Brown is making waves for doing just that; Brown's Ranch in North Dakota is leading the way in a new wave of regenerative farming.

Ironically, soil is the one thing that you'd struggle to see there; as I learned from the man who runs this extraordinary setting, the best way to look after soil is to keep it covered up. And in contradiction of the hymn that we'd sung in my church school – 'we plough the fields and scatter the good seed on the land' – the last thing you'll find on his ranch is a plough.

To see the soil here, you must dig into it and bring to the surface a hidden world, bound by complex root systems that connect this living landscape and hold it fast. Breaking open a clod would reveal worms wriggling in protest – and plenty of them.

And the secret to this richness? – farming in a way that reconnects with nature.

His cattle and sheep feed only on pasture – no grain feed at all. They are an essential part of the biodiverse crop rotation that is a hallmark of regenerative farming. He has laying hens too. They follow the cattle, roaming free and laying eggs in portable 'eggmobiles'.

Keeping cattle and other animals in this way keeps them healthier and turbo-charges soil regeneration. They deposit dung as they go, adding to the soil and supplying nutrients to subsequent crops. They also help bring back a myriad of insects, birds and other wildlife in what Brown describes as a "very healthy, optimally functioning ecosystem".

Bringing it home

Inspired by Brown's approach is English Fenland farmer, Charles Shropshire, who's family have embarked on a regenerative farming project. It's a huge undertaking across 13,000 hectares of land, on which they grow three-quarters of the celery and radishes sold in British supermarkets, as well as two-thirds of the beetroot and nearly half the lettuce.

Shropshire's foray into regenerative agriculture is led not by ideology but by necessity: "We're losing up to half an inch of peat soil a year," he told me.

Keen to turn this around, soil is now at the heart of every decision taken on the farm.

One of the leading regenerative pioneers in Britain, the Shropshire's aim to use artificial fertilisers only as a last resort and to restore farm animals to the land in ways that enhance animal welfare and soil fertility. And they also plan to stop ploughing altogether, as it disturbs the soil ecosystem and releases carbon into the atmosphere.

Following in Brown's footsteps, re-introducing free-roaming animals is a big part of the Shropshire's plan to preserve their soils for future generations.

"We're really keen to get diversity back on the land," Charles explained. Three and a half thousand sheep now graze the cover crops that protect the soil in winter. Chickens are also in the family's sights; hens in 'motorhomes' may soon join cattle and sheep in their farm's procession of life.

Inspiring the future

Bringing farmed animals back to the land is all part of what I see as a portfolio of beautiful, life-affirming, compassionate solutions that can save the future for our children.

I sum them up in three 'R's: Regeneration, Rethinking Protein, and Rewilding, not least of the soil. Regeneration of the countryside through high-welfare, nature-friendly farming. Rethinking protein by reducing our consumption of meat and milk from animals. And Rewilding the soil by returning animals to the land regeneratively as part of mixed rotational farms.

So, whether in conservation, farming, or animal welfare at local or national level, we can all get behind transforming the countryside by saving our soil and bringing about a bright new dawn for animals, people, and the planet.

Philip Lymbery

Philip Lymbery is Global CEO of Compassion in World Farming International, a former United Nations Food Systems Champion and an award-winning author. His latest book is Sixty Harvests Left: How to Reach a Nature-Friendly Future.

Philip is on Twitter. You can also visit his website.

AZZEDINE T. DOWNES

President & CEO, International Fund for Animal Welfare (IFAW)

IFAW

BIRD CONSERVATION: HEALING NATURE WITH MUSIC

Birds are essential to our world, enhancing biodiversity and enriching our lives. They fill our parks, streets, gardens, all natural beauty sites, and skies with their presence, creating a connection to nature that boosts our mental well-being. Countries located along major flyways: the geographic route along which birds customarily migrate— benefit greatly from birds' ecosystem contributions, which include pest control and pollination.

The Serbian-American inventor ***Nikola Tesla*** once said, 'If you want to find the secrets of the universe, think in terms of energy, frequency, and vibration.' Science supports this, showing that plants have an 'ear' for music. Birdsongs, acting as 'acoustic fertilizer,' demonstrate the intricate relationship between fauna and flora within ecosystems. The vibrations from birdsongs can stimulate plant growth and resilience, showcasing an elegant symbiosis in nature.

At IFAW, we recognize that every species plays a critical role in maintaining the balance of nature. When a species is lost, the ecological tapestry begins to unravel. To address this, we launched the ***Levant Operation for Bird Rescue*** (LOBR) in Lebanon, in close collaboration with our local partner, the ***Lebanese Association for Migratory Birds*** (LAMB) which has been officially rescuing and treating birds since 2021.

Why is IFAW Focused on Rescuing Birds in Lebanon?

Lebanon's unique position on a key migratory flyway is crucial as the second most important flyway on earth, connecting breeding grounds of Central and Eastern Europe to the wintering areas in Southwest Asia and Central and East Africa. This bottleneck funnels the migration southwards and vice versa. While this geographic advantage offers great benefits, it also poses significant challenges, particularly the widespread practice of hunting across the country.

Regulated bird hunting in Lebanon began during the French mandate in the 1930s-1940s as a form of recreation and enjoyment by the elite, targeting certain species of game and edible birds in limited numbers. However, by the 1970s and 1980s, this practice devolved into unregulated and unethical shooting as more people joined without proper training. This indiscriminate shooting became a symbol of social status leading to widespread poaching.

A Birdlife International study in 2014 ranked Lebanon fourth in the Mediterranean for illegal bird killing, averaging of about 2.6 million birds killed annually, and ranking third in the intensity of illegal killing per area unit at approximately 250 birds per 100 hectares. Many shot birds are left to die, making their rescue an act of mercy and an opportunity to give them a second chance to thrive in the wild.

Lebanese Association for Migratory Birds | الجمعية اللبنانية لطيور المهاجرة

How the Levant Operation for Bird Rescue is Creating Change

The challenges in Lebanon are significant driven largely by inflation straining resources and law enforcement prioritizing other issues. Despite this, LOBR has made remarkable strides by treating over 300 birds and releasing 103 back into the wild from spring 2022 through the entirety of 2023. Common species rescued include the White Stork, European Honey Buzzard, and Common Kestrel, as well as threatened species like the Imperial Eagle and Egyptian Vulture, listed in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

However, rescuing and releasing injured birds alone is not enough. To truly save these birds, we must prevent their injury in the first place. Thus, we focused on engaging the local community with our mission, holding bird release events and school field trips to allow the local community — especially the young generation — to witness the joy of seeing these birds fly again after enduring a period of suffering followed by treatment from shooting injuries.

Through education and awareness, we have helped change behaviors, turning hunters into conservationists. Many who initially disagreed with us have become our strongest advocates. As IFAW is committed to engaging those who do not agree with us and inviting adamant hunters to our awareness discussions, we have seen a significant portion of the community turn against poaching and spread awareness to others. In some cases, former hunters have become informants, helping our team respond to urgent rescue operations.

But our critical work does not stop here. Based on our experiences, we understand that an adamant hunter will not refrain from practicing illegal hunting unless the law is effectively enforced. Hence, LOBR is working closely with local authorities on tackling poaching activities in conjunction with investigating the breaching of hunting laws as a means of disrupting a larger wildlife crime network.

The Challenges that Come with the Work

The ongoing conflict and inflation in Lebanon have increased stress upon limited resources, pushing nature protection down the priority list. Therefore, The LOBR team must take extra safety measures while dealing with dangerous wildlife crime networks, often without support from police or authorities. Consequently, the team must gather information and collect evidence to disrupt crime networks, working covertly until they have a substantiated case to present to the authorities.

Corruption further complicates our efforts. In some cases, crime reports are dismissed, allowing smuggling cases to go unchallenged.

A member of LOBR is about to release a lesser spotted eagle into Ehden Nature Reserve.

Despite these hurdles, and due to the increasing number of injured birds in our rescue facility, LOBR has expanded to accommodate even more birds, transforming from a small, primitive cage setup to a developed center with several cages, a clinic, and first aid materials.

The Bright side

The LOBR project has garnered significant attention to the point that people from other governorates across the country began reporting poaching incidents directly to our partner LAMB. This increased visibility has enabled IFAW to save more birds and expand our network, effectively combating wildlife crime on a regional scale.

Moreover, as migratory species travel vast distances beyond human borders, bird conservation in Lebanon has broader implications. Through LOBR, we are connecting our efforts to ***Room to Roam***, IFAW's ambitious conservation initiative in East Africa. Many bird species migrating through Lebanon spend the winter in Africa, highlighting the interconnectedness of our global ecosystem. Helping us save an elephant in Africa, in turn, helps save birds in Lebanon, ultimately supporting ecosystems in other corners of the globe.

We Must Work, But we Must also Retain Hope

Protecting birds is vital for our planet and our well-being--- studies are showing that being around birds is linked to lasting mental health benefits, "Feeling Chirpy: Being Around Birds Is Linked to Lasting Mental Health Benefits", a new ***research*** from King's College London has found that seeing or hearing birds is associated with an improvement in mental well-being that can last up to eight hours. Therefore, protecting birds and protecting our planet ultimately means protecting ourselves. And while the news may suggest the world is heading towards demise, proactive efforts and hope can lead to a flourishing world where animals and people thrive, and nature bounces back---as long as we let it.

As Nobel Prize winner and Bengali poet-writer, Rabindranath Tagore put it beautifully, "Faith is the bird that feels the light and sings when the dawn is still dark." We have much to learn from our fellow animals on this planet.

Azzedine Downes

Releasing the lesser spotted eagle into Ehden Nature Reserve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ECOCIDE I

N UKRAINE

Burning forest, one of the powerful pictures featured during an exhibition in Berlin, organised by UAnimals on the ecocide in Ukraine © Photographer unknown.

Margot Wallström

***Margot Wallström** is a Swedish politician, member of the Swedish Social Democratic Party. She served as Deputy Prime Minister of Sweden and Minister for Nordic Cooperation from October 2014 to 2019. She previously served as the Minister for Foreign Affairs for Sweden from October 2014 until she resigned on 5 September 2019. She previously served as the first United Nations Special Representative on Sexual Violence in Conflict from 2010 to 2012, as Vice-President of the European Commission and European Commissioner for Institutional Relations and Communication Strategy from 2004 to 2010, European Commissioner for the Environment from 1999 to 2004, Minister for Consumer Affairs from 1988 to 1991 and Member of the Riksdag (MP) for Värmland from 1982 to 1999.*

Margot Wallström

Laurent Dingli. — Among many other things, you are a former deputy Prime minister, Foreign affairs minister of Sweden and co-chair with ***Andriy Yermak*** of the High-Level Working Group on the Environmental Consequences of the War in Ukraine.

Before we hear what you have to say about Ukraine, I'd like to talk about 'feminist diplomacy', a concept that you put forward on the international stage in 2014, when you were Sweden's Foreign Minister. Several countries have since officially claimed it among which Canada, France, Mexico, Spain, Luxembourg, etc. I think that currently 16 governments have formally adopted feminist foreign policies. According to the ***New York Times***, 'it has become an increasingly global tool for governments to articulate their commitment to prioritizing people and the planet over battles for economic and military dominance, to focus on collaboration over competition and on power together rather than power over.' How would you define 'feminist diplomacy', and assess the current situation in this area?

'There cannot be lasting peace if women are not around the table where peace is negotiated.'

Margot Wallström. — Well, I was very inspired by my experience being the first special representative of the UN Secretary General on conflict related sexual violence because I met with survivors of sexual violence, conflict and post-conflict, of course most of them were women, because the big majority of victims are women. I met with them and it was very clear that they don't want to be seen only as victims. They want to play a role in their families, in their villages, in their countries and in the world; they want to be heard and of course our main goal was and still is to make sure that we end impunity for these types of crimes. These women were very strong and impressive. What I learned from this was that there cannot be lasting peace if women are not around the table where peace is negotiated, where peace deals are being made, where the future is being discussed. So, for me, more women in the process means more peace; that's my conclusion.

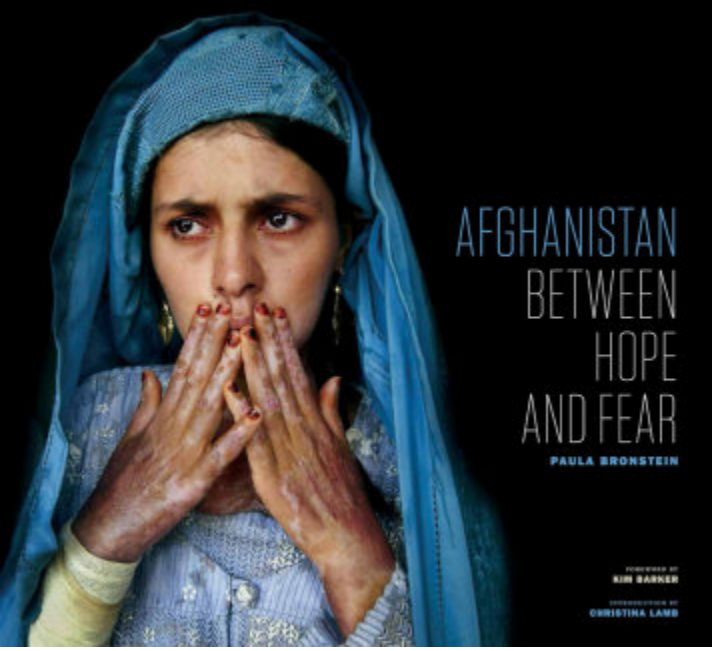
If we look at the different peace agreements, we see that those in which women have been involved have brought more options to the table; the peace negotiations have a somewhat different perspective and these agreements last longer where women have been involved because they represent half the population. How do you achieve peace if you exclude half the population and focus only on those who already have a gun, a uniform or power?

So that was my starting point as Foreign Minister, and I decided that this particular understanding should be part of what we do in the world, and I called it a feminist foreign policy. Why choose such a controversial concept? First of all, it gives you the opportunity to define the concept and answer people's questions. Secondly, you create expectations and curiosity and, thirdly, you have to fill it with content and that make you accountable, so, in the end, people will ask you: you say that you pursue a feminist foreign policy, so what have you done exactly? And of course, it gives visibility to that policy. It must be practical. It wasn't about getting to the root of identity and I didn't make it a theoretical exercise. In my view, it was about practical policies and I immediately understood that I had to provide a certain number of parameters that would guide what I expected from our diplomats and the objective to be pursued. This policy is defined by the three "R's", the three main axes of this new approach: firstly, rights, meaning that women should enjoy the same legal and human rights as men. Secondly, representation: they must be at the negotiating table. They must have a seat whenever decisions are taken that will affect them as much as men. Thirdly, resources must be allocated to meet the needs of women and girls.

So, those were the guiding principles and I'm a bit surprised that it actually took off the way it did, that now there are so many countries that want to pursue a feminist foreign policy but I want to see it being more practical. For example, I would suggest that this group of countries take steps that really make a difference for women, like giving refuge to 200 women journalists from Afghanistan because there is no other country where there is gender apartheid like Afghanistan today. So, they could come together and say we, as countries that pursue a feminist foreign policy, we will make sure that women can continue to tell their stories about life in Afghanistan. They could take other initiatives of that sort or just protecting women's sexual and reproductive health and rights because now the right to abortion is threatened in many countries. So, they have to come together and show that there is a practical content to the "la diplomatie féministe" [feminist diplomacy] to say it in French. I think that this is where they have to take initiatives that really make it very useful and they could use those three 'Rs' as guiding tools for doing so. Of course, it was completed by a fourth "R" — Reality check —, where you start looking at reality, how many girls are married when they are not even 16 years of age. What exactly is life like for women and girls in this particular country. I think that's what caught the attention of our diplomats. If they were a bit sceptical at first, we got them on board in a pretty fascinating way, and I'd say they also made a massive contribution in terms of ideas.

They could also say that they will be active in advocating for parental leave in countries that still do not allow men to stay at home with their children. This was one of the unexpected results of an event, a photo exhibition we organised called 'Swedish dads'. It was simply large photos and stories of men staying at home with their newborn children or children a few years old, and photos showing how it worked. The exhibition then travelled to a number of countries, and in each of them the organisers asked local people to send in photos, with men being able to send in photos of their own stories. The event was a huge success and, in some countries, it sparked such a debate that they subsequently introduced paternity leave.

With Gynecologist and Nobel Peace Prize Dr ***Denis Mukwege © Margot Wallström — All rights reserved.***



I think these are very practical things that should accompany the announcement of the pursuit of feminist diplomacy. So for me, it's not a question of identity at all, but rather a question of the practical difference you can make.

L. D. — It's quite easy to make the transition from this subject to that of Ukraine, since at the beginning of the High-Level Working Group's report entitled 'An environmental compact for Ukraine' you mention the need for inclusion. Why these concept and reality are paramount?

M. W. — This is also what emerges from an examination of the situation in Ukraine. The war forced people to get involved because they had to try to rebuild their lives from the rubble. While there used to be a kind of look down from above and a rather hierarchical order, I think that at local level, people have shown their power, their ability, their willingness to contribute in any way they can. They have assumed their responsibilities. What's more, if people want to take effective action on environmental issues and on everything that today has an impact on their health, their livelihoods and their ability to stay where they are, they too have to change the way they do things. They need to get involved and they want to. It's also through them because, as I often say, this war is both archaic and the most modern of wars. Modernity, in this case, is linked to the fact that evidence can be gathered. Ukraine is very far-sighted in this respect, asking its citizens to report any environmental crimes they see being committed, as well as war crimes or crimes against humanity. They are asked to send videos of the damage caused and to report it to the Ministry of the Environment, to ensure that this evidence is collected and that it provides a more complete picture, particularly in the context of any legal proceedings and accountability. Everyone needs to understand both the dangers they face and the kind of contribution they can make.

It's really about their health, because a lot of people say, 'Why are you looking after the environment?' They see it as an additional element that should be dealt with after the war. I say these three things are wrong. It's happening now, it's now that we need to deal with it. And now is the time to be accountable. It's about their health and their ability to live in Ukraine. The damage is obviously devastating in many ways, not only because of the infrastructure — everything has been bombed and destroyed, generating dangerous waste —, but also because the air, soil and water have been contaminated and a lot of sulphur, lead and oils have been released into the environment. A tragedy for this country, its natural beauty and biological richness — it is estimated that 35% of Europe's biodiversity is found in Ukraine. From dams to dolphins, from oil to soil, that's what we're dealing with.

L. D. — Another very important point is corruption. You talk about it very directly in the report. This is an imperative and, to succeed, the process of rebuilding Ukraine must be based on trust.

M. W. — Ukraine has a reputation for being a very corrupt country and this is a wake-up call for potential investors, for those who are politically involved, that they need to be careful and look upwards. I think it's important for Ukraine to show that it's serious about this so that the strategy is pursued and that it takes all the measures to clean up the situation and make sure that it's done properly and legally. The fact that Ukraine has ambitions to join the EU is a powerful motivator.

L. D. — Regarding the first priority, the environmental impact of the war, there have been many reports from the EU, the World Bank, NGOs and of course boots-on-the ground research led by Ukrainians scientists. Based on a preliminary assessment the war has inflicted USD 51 billion in environmental damage in both territories. According to a report by the Yale School of the Environment, some 687,000 tons of petrochemicals have burned as a result of shelling, while nearly 1,600 tons of pollutants have leaked into water bodies. Around 30% of Ukraine's land is now littered with explosives and more than 2.4 million hectares of forest have been damaged. And these were last year data.

Top page: cover of the book of multi-awarded and renown photojournalist Paula Bronstein (click on cover to visit her website).

*Photo from 'Sweedish dads' © **Johan Bäveman — All rights reserved** —Click on the image to visit Johan's website*

Can you tell us first how did you get involved in these issues with the Ukrainian government and what have you learnt from your various visits to the country?

M. W. — I think it is a courageous, far-sighted and unusual act on the part of the Ukrainian President to mention the environment and make it one of the ten priorities of his peace formula, because nature is generally considered to be the invisible victim of war. It is very important to continue to mention the environment and to give it priority. You'll have to ask them how they came across my name. Of course, the fact that I was Foreign Minister and that I have a background as Environment Commissioner for the European Union, albeit a few years ago, may have played a part in this decision. Sweden is also committed to Ukraine and, as Foreign Minister, I have visited the country on many occasions to ensure that we continue to support it.

This was a very important step to make the environmental impact of the war a priority issue and then be able to follow up. We call our report a compact and Ukrainians have insisted on calling it so, which expresses their deep commitment. Several ministers participated in the work of the group, meaning that they take on themselves to then follow up and implement what we recommend — we have 50 recommendations. So, we are now asked to continue also with the implementation phase. And visits mean a lot. The fact that we've been able to discuss first with the President when we were appointed and then hand over it to him and to travel, including that we went to Chernobyl just to see how the situation was evolving on the ground. I would like to go back and see more of what happened after the blowing up of the Kakhovka dam because it is an example of ecocide. The accountability part is very important for them to make sure that we can find ways to make Russia pay for what they have destroyed. Ukrainian legislation forces also the ministries to put a price tag on this environmental destruction and that is of course helpful in one way. But what exactly does these figures represent? The cost of reconstruction is obviously immense and it's a good thing to say that at least we can use the Russian frozen assets and start to make Russia pay and, step by step, find ways to create a legal path forward. So, that's where we are. It has been fantastic to work with the Ukrainians but also with the help of people like Mary Robinson [former president of Ireland] or Heidi Hautala member of the European Parliament. The fact that the Ukrainians aspire to become members of the EU is the first framework that guides much of their work.

Margot Wallström and president Volodymyr Zelenskyy in Kyiv © ***Presidency of Ukraine***

The first meeting of the working group © Presidency of Ukraine [Click on the image to visit the website].

The broader framework is that of global borders, where all the biodiversity issues that matter to you come into play.

L. D. — And this aspect is again a question of inclusion, a dimension that is very important and, in the report, you constantly plead for international collaboration, emphasising that this is really the key to success. As far as the Russian assets are concerned, I have heard experts say that it is not easy, from a legal point of view, to confiscate this money, but that the profits from it can be seized.

While putting this contribution to Ukraine into perspective — the expert pointed out that a single Patriot missile costs around 1 billion dollars and that the total amount of profits to be confiscated from Russian assets would be no more than 3 billion dollars —, he added that this was not a negligible sum and that it was above all a question of sending a strong signal to Russia, in other words that it would have to pay.

M. W. — That's correct and that's part of this accountability track as well.

L. D. — While we have an overview, it's obviously very difficult to collect data in wartime to get a more precise and global view of this impact. Could you tell us more about the process of gathering evidence (using satellites, drones and new technologies, for example)? How does it work in practice?

'We think that the Global Compact for Ukraine can be an example of standards for the rest of the world.'

M. W. — It's a kind of advantage of this modern warfare to use satellite images, drones, live video material, and to ask and encourage citizens to send evidence of these environmental crimes that are being committed, which is also the case. So they have this kind of model and the information is collected. Of course, the Prosecutor General is providing valuable assistance by ensuring that the files are compiled with the help of other countries and governments, but also, for example, UNEP (United Nations Environment Programme), which is also collecting evidence and ensuring that it is stored and can be used. This is something that we recommend and are currently working on. We believe that the Global Compact for Ukraine can serve as an example of standards for the rest of the world, because there are no agreed standards for the collection of evidence in environmental crimes.

Good practice exists and we recommend that it be used for the time being. We've also made contact with UNEP, which I know is also working on this, and of course if the focus on the war in Ukraine can help this process along and speed it up a bit, that would be fantastic, but we will certainly need to be able to consider ecocide as a fifth crime under the Rome Statute. That is our hope.

L. D. — In 1972, at the United Nations Conference on the Human Environment, your compatriot, Swedish Prime Minister Olof Palme, described the damage caused by the defoliant Agent Orange during the Vietnam War as ecocide and called for it to be made an international crime. 48 years later, in December 2020, at the Assembly of States Parties to the Rome Statute, the De Croo government of Belgium, through minister Sophie Wilmès, asked the members to examine 'the possibility of introducing the crimes of ecocide' into the treaty, and therefore into international law. In mid-April, the European Union officially adopted the final act of a directive designed to combat environmental crime. But some experts say it is not a revolution in environmental law. You have a special recommendation on this particular point. Could you tell us more about it?

M. W. — We discussed this issue at length, and it was clear to our working group from the outset that the Ukrainian government's priority was to ensure that there was a route to accountability. Of course, the first thing was to assess the situation to make sure that we map the damage and then look at accountability because they have to collect the evidence now; when the war is over, it will be much more difficult. You need a baseline and you need to be able to follow it up. So, ecocide is already existing in the National legislation in Ukraine as well as in Russia and Belarus actually and there is an international discussion already going on about ecocide and attempts to find a proper definition and to make sure that this can be used. We actually argue for this being identified as a crime. Collecting evidence is very important, looking at the possibility to create cases with the help of Ukraine but also other extraterritorial jurisdictions and make sure that other countries can support, but you also need information, you need training, you need the judges, you need to make sure that all of that is happening as well. I therefore believe that this will happen and that it will happen more quickly thanks to the attention paid to what is happening in Ukraine, the fact that the Prosecutor General and the government are giving priority to amending the Rome Statute and including ecocide. It is already a war crime, and that is under article eight in the in the Rome statute, but it's very hard to prove because it must be clearly excessive in relation to the military advantage; it must be widespread, severe and long-term and it is limited to International conflicts and no defined thresholds, all of it taken together means that it is very difficult. And we also say that they should use the ICJ [International Court of Justice] to see if that can also help the situation. So, this is definitely an area that we think is an important one from now on as well. And other countries can come in and help to give more visibility, more information about it, help with training, make sure that this the process can start. So, I think they will themselves also give this high visibility from now on the Ukrainians.

President Zelenskyy met with members of the Working Group: with Margot Wallström, Vice-President of the European Parliament Heidi Hautala, President of Ireland in 1990-1997 Mary Robinson and environmental activist Greta Thunberg © Presidency of Ukraine.

L. D. — One very interesting point I would like to talk about is your recommendation 11 to build the capacity of investigators and prosecutors. This is one of the pioneering aspects you're raising among many others. Do you want to say a few words about it?

M. W. — Many of these recommendations have to do with increasing their capacity to building knowledge but also to make sure that they have everything for the environmental inspectors. They need help to finance that and to train them. So, I think in all of these three areas they need more capacity and they also need more knowledge and sometimes very practical stuff like equipment so that they can do the job as well. This is where all those countries that want to help Ukraine can come in. They have to look carefully at how do we make sure that it is spread maybe more evenly. Some of the money also has to go to these rather kind of boring and not so visible projects but that will really help them to build their capacity. A lot of countries say that they want to help with clearing of landmines because everybody understand what does it mean and it's sounds like hands-on. We have insisted that they need to have a strategy that take into account also environmental considerations because a method where you simply scrape off the top layer of soil could be the quickest way but, obviously, this is not a solution for Ukraine where they live from that soil. So we talked to them about how to design a strategy and how to emphasise the environmental aspect of this strategy.

L. D. — Yes, it's really crucial to prepare things well in advance as you say in the report to learn from the errors of the past in order not to repeat these mistakes even in time of peace and I think this is one of the very important aspects of it.

I was particularly struck by the fact that you said last month to Isabel Hilton during an interview that you wanted ‘to give a voice to the voiceless like animals and trees and all living Nature’. It made me think that while the environmental pact for Ukraine is unprecedented, it is also part of a long process of recognising the rights of nature.

M. W. — Yes, 20 years back, when I started as Environment commissioner these are some of the things that since then I've carried with me. I understood that we have to make peace with nature as well and I think that the Ukrainians have the same kind of love of nature as we have, as people living in the Nordic countries where we are so dependent on what nature can give. So, I think it is also important legally

to have processes where nature is given a kind of voice or value that is visible. This is what is going on in Ukraine at the moment because there is also a price tag put on the destruction of nature. The dominion of nature just has to end; we have to understand that we live from what nature gives. So, it's part of that bigger picture and bigger understanding.

L. D. — Regarding reconstruction you pointed out that it has already began even though it will be obviously a long process. Will it be also a way to correct some mistakes of the past and to improve environmental standards? You mostly responded already to this question. Do you want to add something?

M. W. — They need new systems, new electricity, energy systems; they need better materials for building and construction and they need a new thinking of making it sustainable. We are trying to send a signal to all those potential investors that if you are all interested in making quick money then this is not the place for you; you should really help Ukrainians to build a better society, a greener, peaceful and democratic society and country.

Yuliia Ovchynnykova

Yuliia Ovchynnykova is in particular Member of the Verkhovna Rada — the Ukrainian Parliament, Head of the Subcommittee on Forest Resources, Biodiversity, Natural Landscapes, Nature Reserve Fund Objects and Adaptation of Ukrainian Legislation to EU Law of the Committee on Environmental Policy and Nature Management, Member of the delegation to the Parliamentary Assembly of the Council of Europe. Co-chair of the group on interparliamentary relations with the Republic of Lithuania.

Member of Inter-parliamentary Alliance for recognition of ecocide. Member of the delegation of the Ukrainian part of the EU-Ukr

Laurent Dingli. — I know that you have a special bond with nature and animals. Did this start when you were a child?

Yuliia Ovchynnykova. — Thank you, Laurent, for your question. I was born in the East part of Ukraine. As you know, this region, with its many factories and mines, has a very dense industrial fabric and, as a result, has always encountered environmental problems. When I was a child, I was constantly telling my parents that I wanted to protect the planet and animals. And, of course, biology was my favourite subject at school. I took part in biology olympiads and many environmental competitions, which were often very interesting. I graduated from the University of Donetsk, which is now called ***Vasyl' Stus Donetsk National University***. By the way, it is the first displaced University in our country. I have a PhD in biological sciences, and my doctoral thesis is dedicated to the environmental protection and ecological policies in Ukraine. I worked with the natural protected areas as well. At that time, we were also organising Europe Day and initiating several environmental actions in the Donbas region. But in 2014 with the beginning of war in our country we relocated from the East part to the central part of Ukraine, in ***Vinnytsia***, where we continued our work. I was elected ***Acting Dean of the faculty of biology*** in the first displaced University.

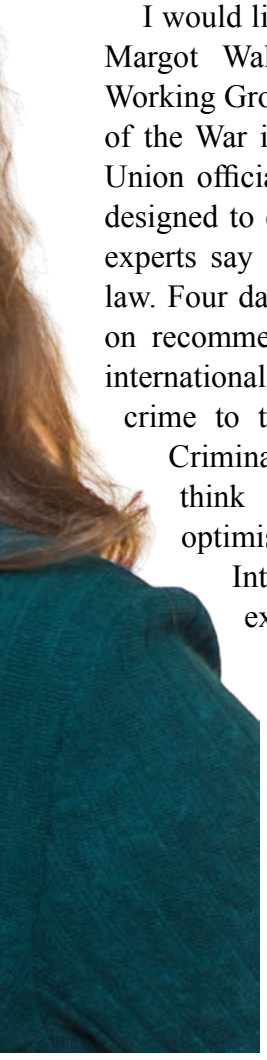
L. D. — It must have been very difficult emotionally, culturally and in many ways, to be away from your home region, but I know that you still have a strong link with it. You are convinced that this is a temporary occupation and that this region will be liberated in the future.

Y. O. — We have a unique steppe landscape, but it now covers only 5% of the eastern part of the country, which is particularly worrying. Ukraine is essentially an agricultural country. We know that the European Union has adopted the Nature Restoration Act, which changes the requirements for agriculture.

As candidates for integration into the EU, our agricultural system must also evolve in this direction because, once again, the fact that only 5% of our landscape is in the form of steppes is very worrying. These natural areas continue to be destroyed, not only because of the war, but also because of our agricultural production methods.

L. D. — Yes, we will say a bit more about these critical issues.

I would like to ask you the same question I asked Margot Wallström, co-chair of the High-Level Working Group on the Environmental Consequences of the War in Ukraine. In mid-April, the European Union officially adopted the final act of a directive designed to combat environmental crime. But some experts say it is not a revolution in environmental law. Four days ago, you yourself draw the attention on recommendation 15 on codification of ecocide internationally and inclusion of ecocide as a separate crime to the Rome Statute of the International Criminal Court. So, my question is: what do you think about this evolution and are you optimistic that the jurisdiction of the International Criminal Court will finally be extended to cover the crime of ecocide?



Y. O. — I represent our country within the ***International Parliamentary Alliance for the Recognition of Ecocide***. As specified in the platform, the Ecocide Alliance, which has been initiated by ***Marie Toussaint***, a Green Member of the European Parliament, aims at constituting a network of elected representatives willing to work together towards the recognition of ecocide from regional to international level. I began my work for the recognition of ecocide in 2017 when I was at university analysing the impact of the war on the Donbas, a region that was undeniably the object of ecocide, and we continue to work for an international recognition of ecocide.

As far as the directive you mention is concerned, it can have a major influence on the work carried out by the 46 members of the Council of Europe for the ***Convention on the Protection of the Environment through Criminal Law*** — equivalent to the EU directive but at Council of Europe level —, that was signed in November 1998 but never came into force. After the EU adopted this directive, the representatives of the European commission stated that they won't include the definition of ecocide into the convention under the pretext that their definition was close to the one of ecocide and for different other motives. I had a speech on this because I'm a member of the Committee of experts in this convention. Most of the members are representatives of the Ministries of Justice of the 46 member countries. I'm a politician and an environmentalist, and my political discourse has no influence on people who essentially work on draft legislation and analyse and compare the legislations of these 46 countries. But I can give the example of Ukraine. The Article 441 of our Criminal Code, entitled 'Ecocide', reads as follows: 'Mass destruction of flora and fauna, poisoning of air or water resources, and also any other actions that may cause an environmental disaster, — shall be punishable by imprisonment for a term of eight to fifteen years.' We have a lot of exchanges with the Prosecutor General's Office and I'm convinced that Ukraine is very close to ratifying the Rome Statute. Each country can incorporate ecocide into its legislation as a separate crime; this would be a significant step towards recognising responsibility for environmental crimes. So, the European directive is not a revolution because it does not yet use the term ecocide, and it is essential to incorporate the term and its definition into the Rome Statute. Including ecocide in the Rome statute would be the real revolution. I believe that our President Volodymyr Zelenskyy's ***10-point peace plan*** is a crucial step in reshaping the geopolitical landscape and that it is essential to adopt this formula for environmental security and defence issues. Environmental security and recognition of ecocide (point 8) are part of this peace formula.

And the next step in the umbrella which help to adopt this 8th point is the ***Environmental Compact for Ukraine***. We are very grateful to ***Margot Wallström*** and ***Andriy Yermark*** for leading the movement to adopt this Environmental Compact. And I'm working myself on this 8th point within the Ukrainian Parliament. In the Committee of experts, I also have the really powerful support of ***Wild Legal***, a French organisation dedicated to the recognition of ecocide. We had a meeting between representatives of our general prosecutor office, myself and the representatives of Wild Legal.

L. D. — The next question is related to the previous one, and you have partially answered it. A year has passed since the destruction of the Kakhovka dam. The recommendation No. 14 of the Ecological Treaty for Ukraine refers to the application of Article 8 of the Statute of Rome, which provides for the prosecution of crimes that deliberately cause serious environmental damage. Ukrainian authorities want to involve the Office of the Prosecutor of the International Criminal Court. It is obviously paramount in order to give a powerful signal of international justice. Can you tell us what is precisely at stake here and what are your expectation in this regard? Do you think for instance that it could serve as a model for future conflicts?

Y. O. — President Zelenskyy's 10-point peace plan invites us to rethink our approach to global security and defence. We are presenting this formula so that a global model can help prevent future conflicts. The Kakhovka tragedy was, in my view, a powerful signal showing that countries could and should have an open discussion not only to change legislation at international level and rethink the mandate of the major international organisations, but also to do so by including all the major issues of our time, the climate crisis, security issues, environmental protection, in other words to always bear in mind that the synergy between these different elements will determine the future c planet. The challenge is to create an international coa based on the 10 points of President Zelenskyy's peace in particular point 8 on environmental protection. Al 23 countries and international organisations support pe the three most active countries being Germany, Finlan Bulgaria. Furthermore, Ukraine represents 6% of Eur territory but is home to 35% of its biodiversity. Theref is an essential element in the process of restoring natu preserving biodiversity, to which the European Un committed, notably through the Green Deal. Ukrain rest of the European continent and even the worl interdependent in terms of safety and environmental h This is a crucial point.

L. D. — Absolutely, and the Chernobyl blast w perfect illustration of what you just said.

Y. O. — Yes, radiation and nuclear safety are th point of president Zelensky peace formula and you how dangerous is the current situation of the ***Zaporiz Nuclear Power Plant***, the biggest one in Europe, wh under Russian occupation and constantly threaten bombs and missiles. So, I think it's also very import think how to protect this territory which is very dang for the whole world.

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'The Council of Europe must be a leader in the process of recognition of ecocide.'

Yuliia Ovchynnykova
Photographer unknown

L. D. — Absolutely. You have written recently that the further fate and the decision on the restoration of the Kakhovka hydroelectric power plant 'must be joint, agreed, balanced, based on European green principles!' There is a debate in Ukraine about whether the dam should be rebuilt. Some people point out that a forest is growing in part of the area and that this natural process should not be hindered. What are your views on this? And isn't the fact that a democratic debate is taking place on these issues a very encouraging sign in itself in spite of the tragic context of the war?

Y. O. — It's probably one of the more difficult open question for our society because, as you know, I cooperate with the biggest environmental NGOs. I have the honor to work as an advisor with the head of these organisations and I'm constantly trying to cooperate and to have the open discussions with their representatives. I know that we have a lot of research now on this territory. Several organisations such as the WWF-Ukraine, research institutes of zoology, of botany, and the highest academia of science as well try to analyze the situation, the impact of the Kakhovka dam explosion on nature because it is a unique case. Of course, we are regularly meeting with the representative of the Ministry of Energy and other government's representatives asking them why they want to rebuild the Kakhovka dam without assessing its environmental impact, in accordance with our legislation. For the moment, we do not have the results of research carried out by NGOs. On 6 June, the day of the commemoration of the Kakhovka disaster, at a meeting with Environment Minister ***Ruslan Strilets*** and other government representatives, I asked what the next step would be because we need to discuss with the representatives of international organisations, NGOs, research centres and government in order to decide what is necessary to do after this territory will be liberated. Now it is too dangerous because of the land mines and the constant bombing. At the same time, we need to set targets for the period following the end of the occupation and the clearance of landmines. From now on, It think it is critical to set up an open and transparent national discussion on these issues with all the stakeholders.

L. D. — This two-pronged approach — based both on scientific data and a democratic decision — is particularly interesting given that this type of approach is often lacking, even in countries that are not under the pressure of war and its very serious consequences.

Y. O. — Yes, and to tell the truth, finding political solu is currently very complicated, whether in terms mobilisation, rebuilding the country or other issues; ther no simple solutions and discussions on these subjects are difficult. This is probably the worst period in this regard. said, I'm very proud of my country, which I consider to truly heroic nation. But we still have a number of milest to reach, several political definitions to add.

L. D. — Well, you answered the next question but I ask it anyway in case you would like to add something. reconstruction process could be a way to correct s mistakes of the past and to improve environmental stand as underlined in the recent report by Margot Wallström Andriy Yermak. But the economic pressure to environmental requirements could be very strong in the war context. In your opinion how can you collectively pre this pressure?

Ukrainian delegation at the Council of Europe — Photographer unknown

Some will most certainly say that the economic and financial reconstruction is a top priority compared to environmental issues.

Y. O. — Laurent, you're asking a very difficult question for us because I'm a politician and I always try to find, not a compromise, but a balance and it's very difficult to find this balance in all issues such as ecocide but, we have committee hearings on green reconstruction; we had a lot of communication on that subject. Today, for instance, starts the ***Ukraine Recovery Conference*** in Berlin. During the first conferences, the green recovery was not really taken into consideration, but after that questions were raised by our civil society's organisations, the situation changed step by step and we put the issue of green recovery at the agenda. Of course, we understand the importance of economy which is an essential condition of progress for all nations. We can and we need to rebuild our infrastructures but restoring our biodiversity will take much more time, not 20 years but maybe over a century. Restoring our nature and reconstruct our infrastructures are two very different things. I think that, regarding this issue, we need to collect more supports and invest in our nature. We are currently planning to create an endowment fund so that civil society can partner with government to support the environment, for example the natural protected areas, national parks, biosphere reserves which are recognised internationally by the ***Bern Convention***, the ***RAMSAR convention***, etc. I analyze the situation in all countries.

For example, in Netherlands, environmentalists never have the majority in Parliament, but they are always setting up what we could call the three 'Cs' — Coalition, Consultation and Consensus —, I think it's the right formula, the one that is necessary for our society, to create a coalition between business, government, environmentalists, and try to find the best solution for our country. We also need to continue working with environmental culture and environmental education. One of my greatest dreams is that we continue to reform and develop environmental education, from birth to the highest level of education. As Ukraine is essentially an agricultural country, we see it almost exclusively in terms of resources, rather than natural wealth, with our unique steppe landscapes, the Carpathian Mountains, our unique forests, our endemic species, etc. We can create this great coalition and consensus by starting to develop an environmental strategy in Ukraine, a green strategy, at both regional and national levels. The entire reconstruction process must be supported and analysed through the prism of the European Green Deal and, with this vision, this green line, which will drive all our reconstruction policies, we will be in a position to join the European Union.

L. D. — Yes, and you're making a very important point. I often observe that the involvement of all stakeholders is key for success in particular in species conservation. I've seen that in very different context, in India for instance when they have success stories in conservation, it's because the government, the NGOs, the corporates are all working together and have the same motivation to succeed, and they do. Unfortunately, in France we rather have a tradition of conflicts.

Y. O. — We too, in Ukraine! We always have revolutions, but it's a step, in order to find a balance. At least, I hope so. I think that we are very much like France because we have a very hot democratic spirit, a very lively democratic temper.

L. D. — Regarding the corruption and the internal threats to nature, I've read for instance that some environmental organisations such as the ***Ukrainian Nature Conservation Group*** are denouncing the risk of massive deforestation that could result from bill 9516. Could you explain what is at stake if this bill passes and secondly why it is very important to adopt the bill 4461 'on the territory of the ***Emerald Network***' in the perspective of joining the EU and the Natura 2000 network? You partly answered the second part of the question but regarding the current and internal threats on forests would you have something to comment?

Yuliia in Vilnius, Lithuania, at a demonstration in support of Ukraine on 24 February 2024, exactly two years after the start of the full-scale invasion by the Russian aggressor

With MP Mariia Mezentseva-Fedorenko, deputy chairperson of the Committee on Ukraine's Integration into the European Union and chairperson of the Ukrainian delegation to the Parliamentary Assembly of the Council of Europe

Y. O. — I represent the majority of our Parliament but I'm in opposition with some representatives on forestry management. We have a unique mandate to protect our environment and a special strategy to protect forests. Our team is involved of this process. We have also adopted very good laws to protect forests but certain initiatives within our Parliament could put them at risk. Together with NGOs, we have an open dialogue with other stakeholders, in particular with the ministry; we have a special working group which assesses and informs about this risk for all the society. I hope that we'll have an understanding in our Parliament that we must not adopt such a draft law which would have a great influence on the future stages of our integration into the EU. I'm the first author of the draft law on Emerald Network which has been very difficult to set up. Three years ago, we organized in our Parliament the first environmental day. We had nine draft laws, three of which were very important.

We had a meeting with our president who said that it was necessary to adopt this European draft law but, to tell the truth, the two draft laws which were not adopted were referring to industrial pollution. In other words, these are very difficult topics. I think it's really necessary for parliamentarians to have more communication on these points to counter the lobbyism of the agribusiness, industrial and hunting sectors. So, these are EU integration's draft laws and our country must adopt them. The next step will be to carefully study the points in this draft law, because every time we add points, it doesn't necessarily comply with European regulations, and this is a way for some people to make the draft law ineffective. It is therefore important to remain vigilant on these issues and to ensure that the meaning of the law is truly in line with the process of integration within the EU.

To sum up, despite the difficulties I have mentioned, we are continuing to work on this essential issue because we are in a period that opens up a whole range of possibilities that will also need to be included in the plenary sessions. As you know, we are cooperating with the European Commission within the framework of the ***LIFE programme***, and in particular with the Czech Republic, as well as within the framework of the Emerald Network, and I hope that this cooperation with other European countries will provide us with the information and analysis material we need to defend this draft law more professionally.

L. D. — It's fantastic because you anticipated once again the following question! I will read it anyway: I would like to know more about your work and expectations within the steering committee of the Czech-Ukrainian Project '***Conservation of Natural Heritage for Life in Ukraine***'.

Y. O. — I hope that we will have very professional material, information, documents as very high-level researchers are involved in this project and that is a very powerful argument for our discussions with the representatives of the government and the Parliament. It will give us a more powerful position in order to advocate this very important draft law.

L. D. — Could you tell us a bit more about the recent report you submitted to the Committee on Social Affairs, Health and Sustainable Development which is entitled '***Towards Council of Europe strategies for healthy seas and oceans to counter the climate crisis***'? It is a huge document and we can't obviously mention all the recommendations but if you had to give a few examples in order to summarize the spirit of the draft resolution what would you say?

Y. O. — Thank you very much for your question. Yes, I think it's very important for us. We worked on this resolution for three years in the Council of Europe and I must say that it is really a big step to speak about the concept of healthy seas and oceans. We have the Kumning-Montreal Convention to protect biodiversity and the goal to have 30% of nature protected areas on land, but we don't think as much about the seas and oceans. It's very important to do this. So, the first concept is healthy seas and oceans. Secondly, we have a lot of communication with international maritime organisations which were not cooperating previously with the Council of Europe.

We had big hearings with eight departments of these organisations and we start to communicate to include the human rights in their work. Of course, we already have a lot of data on ships, marine infrastructures and fisheries but we needed also to include the human rights dimension and the right for a healthy and clean environment. It's very important that international maritime organisations take these parameters into consideration. Thirdly, we continue to work for the recognition of ecocide which is also included in our resolutions and recommendations. And, very importantly, this report is part of the ***Reykjavík process***. As you know, last year the Council of Europe held the Reykjavík Summit, the main theme of which was the protection of human rights for a healthy environment. A separated department for the protection of the environment will be created within the Council of Europe. This is very positive because it gives us the green light to continue working on these issues. The Council of Europe must be a leader in the process of recognition of ecocide. The Council have created a registration of damages on its platform which includes environmental damages. And this is a first. We have created an office of registration of damages in Kyiv as well and I hope we'll see some results in this area by the end of June.

We have also included recommendation n° 6 of the Environmental Compact which aims to protect the Black Sea and to create a coalition of countries bordering the Black Sea in order to maintain constantly a communication between us on these environmental damages and on the environmental security as well.

I remember that when the full-scale invasion of Ukraine started in 2022, we had a big press conference in Paris and I said that nature was a silent witness and a victim of this war, but now, nature is not anymore the silent witness because we raise our voices, the voice of our politicians, the voice of our non-governmental organisations, the voice of our youth, of our children, and I'm very happy that we have powerful advocates all over the world who protect our nature. It's really a very good step to have this synergy, to work together in order to protect our environment and to protect our lives.

L. D. — Absolutely, and we can feel already that, in spite of the tragic context, Ukraine will become one of the leading countries in Europe. Europe is quite an old continent and we need your strength, your appetite for life, for a positive change and for victory. It will be an asset for Europe and even beyond our continent.

Y. O. — It's been a great pleasure to meet you and I thank you for the very interesting questions you asked. It's been also a source of reflection for me.

L. D. — And both a pleasure and an honor for me, thank you very much Yuliia.

Jaco Cilliers

Jaco Cilliers assumed the role of Resident Representative of the United Nations Development Programme (UNDP) in Ukraine on 9 November 2022. Previously, from August 2019, he was Manager of UNDP's ***Bangkok Regional Hub***, and prior to that, from September 2017, he served as UNDP's Chief of Regional Policy and Programme Support for Asia and the Pacific. Simultaneously with that position, Cilliers was also Senior Advisor for Innovation and Business Development at UNDP's Bangkok Regional Hub. Between April 2011 to August 2017 Jaco was the Country Director of ***UNDP India*** and before that the Deputy Resident Representative for ***UNDP in Uzbekistan***. In these roles, he was responsible for the management and coordination of UNDP Programmes and Operations. From November 2005 to March 2011 he worked with ***UNDP Cyprus*** as Peace and Development Advisor (PDA), and Senior Programme Manager/Head of Office.

Before joining the United Nations, Cilliers worked for ***Catholic Relief Services*** (CRS) as Deputy Regional Director for Southern and Central Africa, and was the CRS's senior advisor for conflict, peace, and reconstruction. He has held management positions for other international development organizations in various parts of the world, including in Bosnia and Herzegovina during the Balkans War. He also worked as an Adjunct Professor at the ***Institute for Conflict Analysis at George Mason University*** in the United States, and taught seminars and courses in conflict, reconstruction, and peace at ***Sabanci University*** (Turkey), ***Nelson Mandela University*** (South Africa), and the ***University of Notre Dame*** (United States) .

He completed his Ph.D. and Master's Degrees in recovery, reconstruction, and peacebuilding at George Mason University, and his Bachelor of Arts (cum laude) and BA Honours (cum laude) degrees at Nelson Mandela University in South Africa. He is passionate about mountain biking. He is married and has two children.

Laurent Dingli (L. D.) — I usually start by asking my guests a question about their vocation and career. In your case, I'd like to know about your motivation to help people, your heritage and experience, your training and, in particular, your interest in the origins and resolution of armed conflicts, I'm thinking in particular of Bosnia and Ukraine, of course, but also your overall vision of this subject.

Jaco Cilliers (J. C.) — Thank you very much for your question. It's always interesting to look back on a career and understand how the passion that drives you was born and developed. In my case, it was certainly the fact that my mother, who was a social worker, was always concerned about people and constantly worked with them and for them; that was certainly a source of love and passion that led me to get more actively involved in helping people and seeing how I could help them. I have an interesting background, working primarily for civil society and NGOs, so I was very active in advocacy work, but also working through civil society at a different level, in different parts of the world. And then, eventually, I had the opportunity to work for the United Nations, which was a new privilege. It's a really interesting organisation, a kind of government for the world, helping and serving the people and planet on a global level. And it's also what inspired my interest and commitment, not just to conflict, but to many areas of development, including biodiversity.

You know, I'm also lucky enough to have worked in a lot of places. As you mentioned, before I joined the United Nations, I was in Bosnia in the mid-1990s, and I thought I'd never see another conflict in Europe. But in fact, 30 years later, unfortunately, you have a devastating situation in Ukraine, where a European country is under attack, undergoing a full-scale Russian invasion. The speed with which things can change, and the fact that we can't always guarantee security in certain countries and areas of the globe, are major sources of reflection and concern for me.

The war has obviously had a huge impact on Ukraine. That's why it's a great privilege for me to work and serve the people here, and also to see how much we can help this country, not only as the United Nations, but also as the international community, in the struggle that Ukraine is going through.

L. D. — So, there are two aspects to your work. The first is to act on the consequences of conflict, and the second is to prevent the emergence of these conflicts as far as possible.

J. C. — Yes, prevention is a key issue, and we've learned that it concerns not only the overall situation of the war and the country, but also environmental damage and damage to the country's biodiversity. How can we anticipate and prevent this? The war is having a major impact, not only on the population of Ukraine, but also on its nature and biodiversity. It's therefore essential to identify ways of preventing further losses to the environment. We have long known that investing in prevention is far better than working on recovery and reconstruction after the event, which is always very expensive. In Ukraine, a report drawn up jointly by the World Bank, the European Union and the United Nations, with the Ukrainian government, estimated that around US $486 billion is needed to meet the country's restoration and reconstruction needs. That's a huge amount. And it's the result of the war and devastation that the country has suffered.

So, in our language, the language of development, 'investment in prevention always helps.' In fact, we know that the amount of aid that needs to be provided after a war to support the population and enable a country to recover and regain its initial prosperity is quite simply gigantic.

L. D. — You've already said a few words about this, but could you describe when you first came to Ukraine during the war, in November 2022, a country that you already knew.

I think that this year-and-a-half has been very rich in contacts and human experience for you. It's often said that Ukrainians are resilient, even if this is a general statement that needs to be qualified, lots examples have illustrated this since 2022 and more specifically since 2014. Can you tell us more about your personal experience in this respect?

J. C. — Yes, it's really been a journey and an experience. As I've already had the opportunity to say, if I look at the word 'resilient', I can add the word 'Ukrainian' next to it and that, for me, sums up the incredible determination, but also the will of Ukrainians to overcome challenges. This has been evident throughout this year-and-a-half of work. I could cite many examples of the challenges we've faced as a result of Russian attacks on the country's energy infrastructure. Among other things, I had the privilege of meeting Yuri, an engineer whose power station has been attacked three times and who, despite the enormous risks to his own life, continues to put his heart and soul into helping people and restoring the electricity network as quickly as possible. Despite the destroyed equipment and all the challenges he's encountered, he's determined to help, to recover and to enable the population to have electricity.

In terms of leadership too, when you see, for example, what the leaders are doing to try and secure investment in energy infrastructure, and how communities are working on these issues on a daily basis, you can't help but be impressed by this resilience. In particular, I remember the joy and gratitude of an pensioner in Dnipro when she finally had water and energy again after being without it for a long time. I think people are aware of the challenges. They understand how to deal with these challenges, but they also know how to overcome them. They are incredibly resilient in terms of their determination and willingness to overcome challenges.

L. D. — As regards the general presentation of the mission and work of the United Nations Development Programme (UNDP) in Ukraine, what is the spirit of this branch of the international organisation? How does it work in practice? Can you give some concrete examples?

J. C. — The UNDP is the development arm of the United Nations. We have two unique features.

Damaged energy infrastructure © ***Oleksandr Ratushniak — All rights reserved.***

Innovative demining © ***Nazarii Mazyliuk — All rights reserved.***

We're an international organisation that believes that development in all spheres must be carried out using a holistic and integrated approach. If you want to tackle certain areas such as biodiversity, you can't do it in an isolated way, you have to do it in a holistic way. What is the impact on the environment? How does climate change affect it? What financial flows are invested in biodiversity? What impact do economic development, tourism and infrastructure such as roads have on biodiversity? How can we ensure that the ecosystem is sustainable and at the same time a resource for the country?

None of these questions can be considered from a single perspective and from a narrow angle – you have to take into account a number of different areas and involve a range of ministries and departments. This is how we approach our development work. Everything we do in Ukraine, whether it's in ***mine action***, energy, or for people with disabilities, we do in an integrated way that provides many elements to a solution, thus helping to meet the challenges of development. We have a broad mandate. We work in different sectors and we try to integrate this unique approach into the solutions we provide for specific sectors that we actively support, whether it's the environment, biodiversity, energy or democracy.

'What makes us different from other organisations and institutions is that we believe in national capacity.'

The second thing is that UNDP also has a unique structure, through which we work not just with national partners, including governments, civil society, and academia, but also the business sector. We believe that by strengthening national capacities and working deeply with these capacities, we can create conditions for them to respond with their knowledge and expertise in the best possible way. We bring a lot of international experience to the situation, but it has to be contextualised for the national players, who really know and understand how best to apply that experience to create solutions. What makes us different from other organisations and institutions is that we believe in national capacity. Our aim is to look at ways of boosting that national capacity and then we build our initiatives around that.

L. D. — When I think of you, I have the image of a bridge builder, bridges that connect different nations and cultures, actors of different professional backgrounds, ages, genders, etc.

Without falling into idealism or cliché, it has been proven that it is often when all the stakeholders in a given process collaborate and are determined to do so together that success is achieved. Based on past and present experience, what are the advantages, but also the limitations, of this concerted approach to managing the enormous challenges facing Ukraine?

J. C. — The metaphor of a bridge builder is quite a powerful one! For me, it means two things. The first is that you don't start building a bridge from the middle – you have to start on the other side. You build a bridge to connect, but you have to have people, partners, diversity. These come from different sides. The more this diversity and these perspectives are taken into account, the better it is for achieving solutions. At UNDP, we have a very diverse workforce, whether it's gender, whether it's different areas across the world, but also in the oblasts of Ukraine. We have people with different education backgrounds, people with different experiences. This richness of diversity really creates a team and an opportunity to design solutions and work together. We all bring different perspectives. You can't just have like-minded and like-thinking people in the room, you need different perspectives to create solutions. This diversity and these different perspectives are very important.

The second part of the bridge metaphor is that you create a bridge so that people can walk or drive on it. You need practical examples and practical experiences. I think that's often a challenge for us in the development community. We can design very beautiful bridges, but if people can't walk on them and it's not practical and doesn't help them achieve their development objectives, it's no use. It's about making sure that people can use it and it also helps to connect the development challenges that we face in a country like Ukraine. It's very broad, but it can be applied to any sector, including the ecosystem.

L. D. — Of course, we're not referring to Putin's bridge! [laughter] I would say that Putin is doing the exact opposite of what you're trying to do. *(N.B. Russian President Vladimir Putin ordered the building of a road and rail bridge connecting Russia with Ukraine's Crimean Peninsula, which has been under Russian military occupation since 2014).*

J. C. —I'm not saying that a metaphor can be adapted to everything, but there are different examples for different experiences!

Ukrainian deminer exploring the new equipment © ***Ksenia Nevenchenko — All rights reserved.***

L. D. — Absolutely. By the way, I'd like to hear your views on the Environmental Compact for Ukraine, which has been supported by UNDP – particularly in terms of logistics. I spoke about this in particular with Margot Wallström. She mentioned your work during the interview. When the report was released, you said that it was 'imperative that the international community grasps Ukraine's urgent needs for post-war restoration and that cutting-edge green technologies and environmental solutions are integrated into this restoration. In collaboration with our partners, we remain steadfast in our commitment to help Ukraine to maintain its trajectory towards sustainable recovery.' How, concretely, will UNDP help Ukraine to follow this trajectory?

J. C. — This Compact comes from a project we have been carrying out with financial support from Sweden. It's called the ***Environmental Damage Assessment Project***. It has determined a number of priorities in three areas. The first two concern the damage and needs caused by this conflict. We're mapping all the environmental and other challenges created and exacerbated by the conflict. This kind of mapping helps us to understand the impact, but also to hold people accountable for the damage they've caused. There has been damage to the forestry industry. There has been contamination of mines, destruction and unexploded ordnance. The land has been contaminated. Farmers cannot cultivate it and therefore can't produce food and generate income. There has been a huge environmental impact and damage. So it's about mapping the damage and what needs to be done to repair it. It's also about how people should be made responsible for repairing it. The environment in Ukraine will take time to return to the richness and incredible diversity it once had.

Secondly, we need to establish a map and an environment in which we can see what needs to be done. Ukraine is on the road to accession to the EU. It's seeking to integrate its policies and legislation, but also its actions, into the EU's green restoration programme, which focuses on green development and many other areas. During the war, it's difficult to address this subject and put it at the forefront, because people are losing their lives and there are other priorities to invest in. Despite the challenges, Ukraine is still at the forefront and realises that when it comes to restoring certain things, rebuilding or investing in certain areas, including biodiversity, nature and the environment, it needs to think about the most sustainable way of doing so. The Ukrainian authorities are always aware that this is part of the plan to join the EU and realise that it is something they need to push forward. The Compact is therefore about understanding the damage, the needs, and how people can be held accountable for this and, finally, what are the best priority interventions that can help Ukraine on the road to this sustainable recovery.

L. D. — Do you feel that real progress is being made on internal issues such as, for example, the fight against corruption, which was identified as a real problem some time ago? You get the feeling that the Ukrainian government has a real desire to fight this scourge.

Yurii, electrical engineer © ***Oleksandr Ratushniak — All rights reserved.***

J. C. — At UNDP, we've learned from our work across the world that corruption, transparency and accountability are among the most important issues for development, but also for reconstruction. As you mentioned, it's very encouraging to see the government's determination to fight corruption. I think the government is aware of the efforts made by many countries around the world to help Ukraine. They don't take these funds and resources for granted. They realise that these are dollars paid by countries and citizens. Therefore, they want users to be held accountable for these funds and to ensure that they're not misused. And this determination emanates from the top of the hierarchy and permeates through all levels of society.

We're also working with the government on a lot of anti-corruption initiatives. For example, we train journalists on how to highlight controversial or contentious issues. We also work with people in the construction industry and in the recovery fields to educate them about laws, legislation and good policies. We launch all our procurement processes in a transparent and open way.

The government is very active in supporting this process. For large investment projects, they often ask UNDP for help with quality assurance, monitoring and ensuring that these projects are carried out in a transparent and open way. It's a high priority in development and it's also something that the government takes very seriously and approaches as constructively as possible.

L. D. — Yes, of course, trust is the key to this process.

I know you're interested in psychology, and I am too. Even if Ukrainians are resilient, they go through ordeals from which even the toughest people don't come out unscathed. One of the aspects that really interested me during the interviews I've already had for this dossier is the question of trauma and more specifically PTSD. Ukrainians have touched a large part of the world not only through their ability to resist the Russian invasion, but also through their individual behaviour towards nature and animals, particularly during the evacuation of combat zones. Traumatised together by war, it's also sometimes together that humans and animals, and more broadly nature, can heal their wounds. Isn't looking at nature and animals in a more inclusive and respectful way at the heart of the resilience process, and isn't this one of the elements that could make Ukraine, along with other assets such as its economic dynamism and great capacity for adaptation, one of the leaders of the European Union in the future?

Click on the image below to visit UNDP Ukraine's website

Installation of electrical equipment in the Transcarpathian village of Yasinia following the delivery of two autonomous solar power plants as part of the 'Strengthening Community Resilience in Ukraine's Regions' project, implemented by the UNDP in Ukraine with financial support from the British government

J. C. — Yes, certainly. Once again, that's a very interesting question. I sometimes joke with my children about psychology. When my children were a bit younger, they also wanted to study psychology. I always told them that it would enable them to understand their parents a bit better! That's probably one of the main reasons why they wanted to do it (laughs). It's always an interesting field. What we see, in fact, is first and foremost the human component and the impact on Ukrainians, even those who work for us at UNDP or other UN agencies. They're in danger all the time. There are constant air-raid sirens. They lose friends, brothers, sisters, parents. There's a huge psychological impact on people, which is really hard to see. We at UNDP do everything we can. We have various psychological support lines. We have victim assistance programmes, for example, for people who have disabilities caused by landmines or unexploded ordnance. We help them through various processes. We also look at social integration, how to help people. It's very difficult for people if they don't have a job, if they can't look after their families, if they don't have any money. How can we ensure that people have jobs so that they can look after their families?

The second part of your question concerns the example offered by Ukraine. Ukraine is one of the most important countries, particularly in Europe, in terms of biodiversity, forests and other ecosystems that it has in the country. I think it very much values these areas and realises that this is a very important part of the EU accession process, for enhancing the integration process. I think the commitment that the country has shown to ensuring a prosperous future for its nature, for its animals, for its diversity, for its ecosystems, is really very important, and the country is really committed to these areas. There are projects where biodiversity initiatives are being launched and where people are protecting large parts of the country's ecosystem. These are really areas in which the government is very committed, despite the challenges the country is facing.

Jojo Mehta

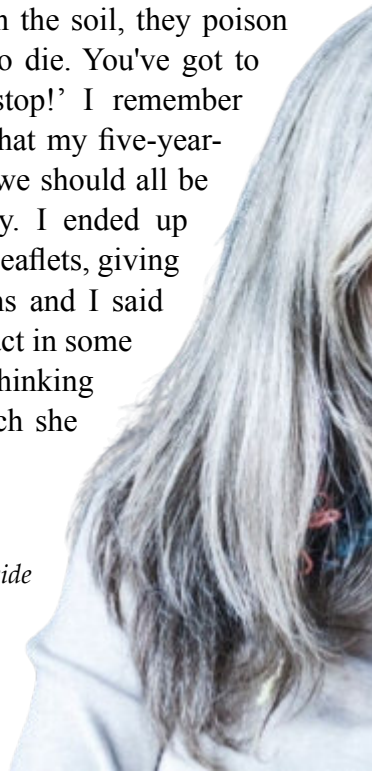
Jojo Mehta co-founded Stop Ecocide in 2017, alongside barrister and legal pioneer the late ***Polly Higgins***, to support the establishment of ecocide as a crime at the International Criminal Court.

She is Chair of the charitable ***Stop Ecocide Foundation*** and convenor of the Independent ***Expert Panel*** for the Legal Definition of Ecocide chaired by Philippe Sands QC and Dior Fall Sow. The resulting definition, launched in June 2021, has catalysed legislative developments, recommendations and resolutions at national, regional and international levels.

Jojo is a graduate of Oxford and London universities and has a background in communications, entrepreneurship and on-the-ground environmental campaigning. She has contributed to UN conferences, diplomatic events, law and business summits as well as podcasts, interviews and articles for publications and broadcasters ranging from TIME Magazine to the New York Times and from The Guardian to the BBC.

Laurent Dingli. — I know that you've been asked this question hundreds of times but I'd like to start by going back over your background, the connection you had with nature before you co-founded your organization? I believe both your mother and young girl have played a role in this respect?

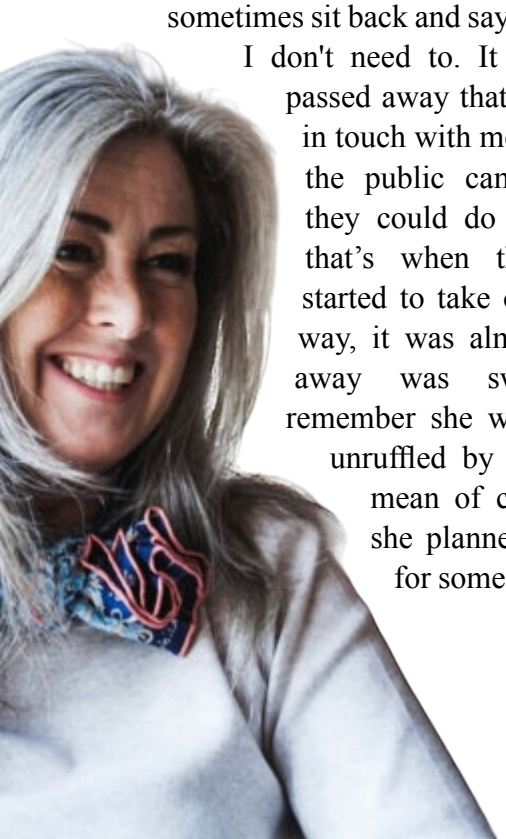
Jojo Mehta. — Yes, absolutely. My mother is a singer and a songwriter and her inspiration has always been nature and the earth, the kind of spirit and energy that emanates from the landscape, in particular the area that I grew up and where I returned with my family, Stroud in Gloucesteshire, in the west of England and I think that this deep attachment to nature was instilled in me as I grew up. As a teenager and young woman, I just wanted to get to the city and do exciting things, but it started to reemerge I guess in my 30s and I became what you might call an armchair activist, meaning that I was concerned about environmental issues. This period also corresponds to the first years of my marriage, and I was interested in issues related to health, the future of children and the environment. So, I'd be sending petitions or writing letters to MPs but it was actually when I discovered ***fracking*** that I had a wakeup moment. I think if you speak to anyone who's been in the activist arena in some way, there's always a point of outrage, there's a point where something feels so wrong or so unjust that it gets you on your feet and much more active, and that's what happened with me with fracking. I remember thinking, when I read this news, that it was insane, that it made no sense, not even in economic terms. I remember telling my friends and family about it, as well as my little daughter who was five at the time - it must have been 2012, 2013 maybe - and she burst into tears and said: 'Mummy, I don't understand, if they poison the soil, they poison themselves and they're going to die. You've got to call them and tell them to stop!' I remember thinking that this was insane, that my five-year-old child understood this, that we should all be able to understand it so easily. I ended up doing a lot of research, writing leaflets, giving talks, organising demonstrations and I said to myself that I really had to react in some way to this situation, while thinking that this was the world in which she was going to grow up.



Polly Higgins © Ecocide International

That's how I got out of my chair, so to speak, and it was through this work that I met Polly Higgins, who had already made a name for herself defending this very specific solution. To me it seemed terribly simple because she said: here's a word for mass damage and destruction, 'ecocide'; let's make it a crime! I thought: it's obvious, let's do it! In any case, half an hour after we met, we had one of those moments when you feel like a kindred spirit and we felt that we were obviously going to work together, but at the time it was in parallel. She was a lawyer and didn't want to be seen as an activist. I was very much on the ground with placards and all of that stuff. So, for the first few years, we worked together but not so much visibly. I was advising her on communications and she was advising me on legal issues, but it became clear that what she was trying to do was still considered as quite extreme. People saw the law on ecocide, i. e. judging damage to nature as a serious crime, as a step too far. Therefore, it was very difficult to get funding. In the end, we decided to club together and actually co-found what is now Stop Ecocide International. We converted what she was following personally into a membership and were thus able, at least to some extent, to finance the diplomatic work that was just starting to take off at the time; for example, the early connections with the Pacific island Republic of Vanuatu who has continued to be a strong ally ever since. So, that's what kicked it off.

But, as you know, Polly's no longer with us. And it often happens, when somebody is a very strong figurehead in a particular area, that other people sometimes sit back and say, well she's doing it so I don't need to. It was only when she passed away that people started to get in touch with me as the co-founder of the public campaign, asking what they could do to help. In a sense, that's when the campaign really started to take off. In a really tragic way, it was almost like her passing away was switching things. I remember she was so pragmatic and unruffled by what happened — I mean of course it wasn't what she planned but she'd certainly for some years had a sense that she might not stick around, partly because she actually received threats because of what she was doing. I remember that when she told me about her cancer, which wasn't diagnosed until very late, she said: "How are we going to use this? It was extraordinary!

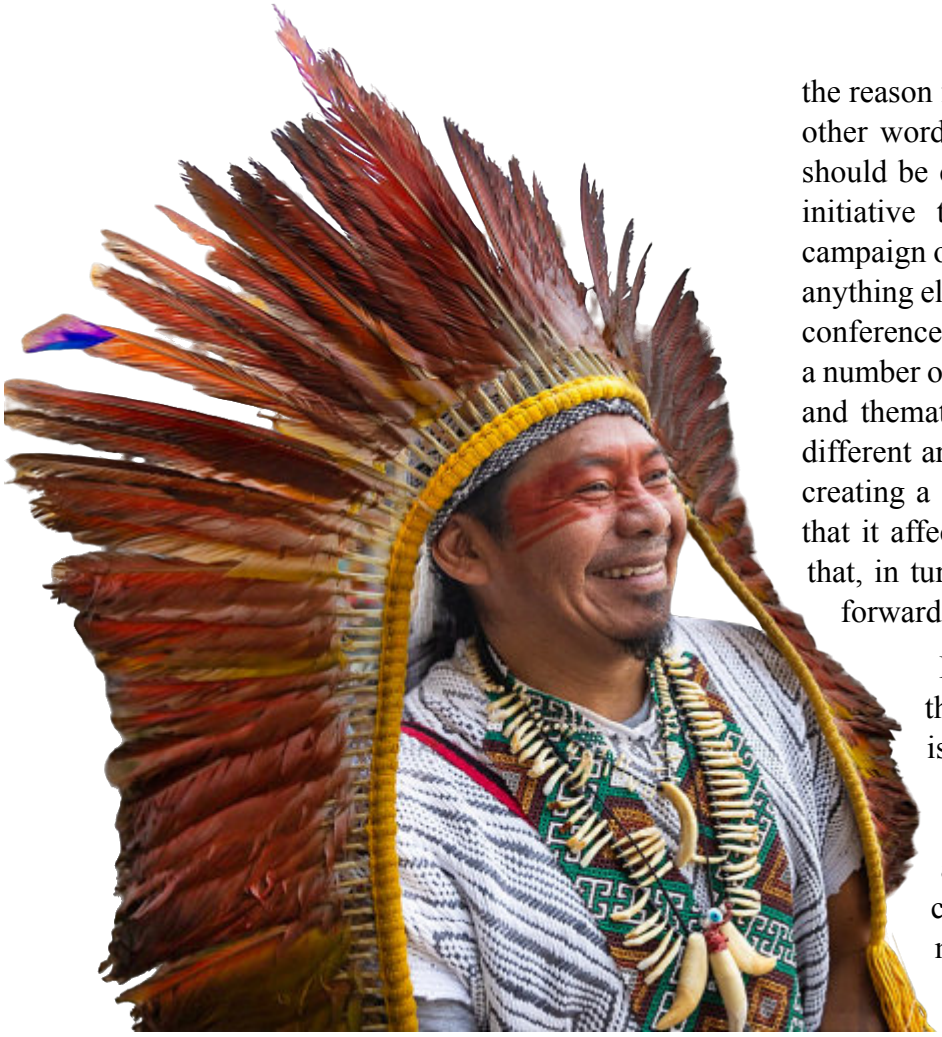


We changed our name to Stop Ecocide just as ***Extinction Rebellion*** was launching their big rebellion in April 2019. We knew them all because they all came from the same place. I mean, they're all from Stroud (1) where I live and Polly was advising legally for them. They told us that they were starting the rebellion with an event themed around ecocide and it was the last work meeting that Polly had. I remember looking at her and saying: we're going to have to rebrand now, aren't we? And she said, yes. So, in that last couple of weeks of her life, we created a whole new website and placards which ended up right across London during the rebellion. I remember Polly, who was literally on her deathbed at the time, seeing this happening on Facebook and on social media and saying, it's all going to happen now, and she was right; it was the beginning and since then, it's just accelerated in the most extraordinary way.

L. D. — Like many historical figures, she thought about her legacy, about what she would leave behind, probably even before she became ill. So, you and Polly were very complementary from the outset. How did you handle the legal side of things after her death?

J. M. — When she died, I initially suffered, as you can imagine, from a terrible impostor syndrome, but many of the people who came forward and offered to help were also lawyers, professors and people working in these fields. Obviously, from a communications point of view, which is my area of expertise, I didn't have a problem with this, because I was used to communicating with politicians, managers and other high-profile people. As for the legal aspect, I'm not a lawyer by training but, having worked with Polly for five years, I probably have more knowledge than most people who aren't lawyers. But the most important thing is that it's become an exercise in joining the dots and connecting people and, of course, communicating.

(1) See for example the article in *Le Monde* in French: '***Stroud, le berceau anglais des activistes écologistes***' (Stroud, the English cradle of environmental activists).

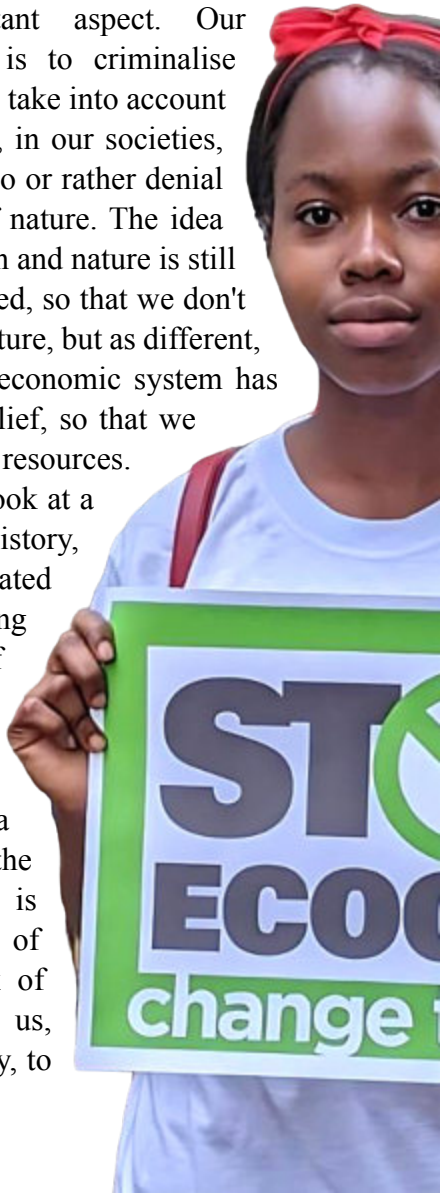


The cacique Ninawathe Huni, hereditary chief of the Kuí people (Brazilian Amazon), in Brussel where he attended with Jojo Mehta and Princess Esmeralda of Belgium the screening of the documentary 'Amazon: the Heart of Mother Earth', June 2024 — At the centre: young activist © ***Photographer unknown/Stop Ecocide International — All rights reserved.***

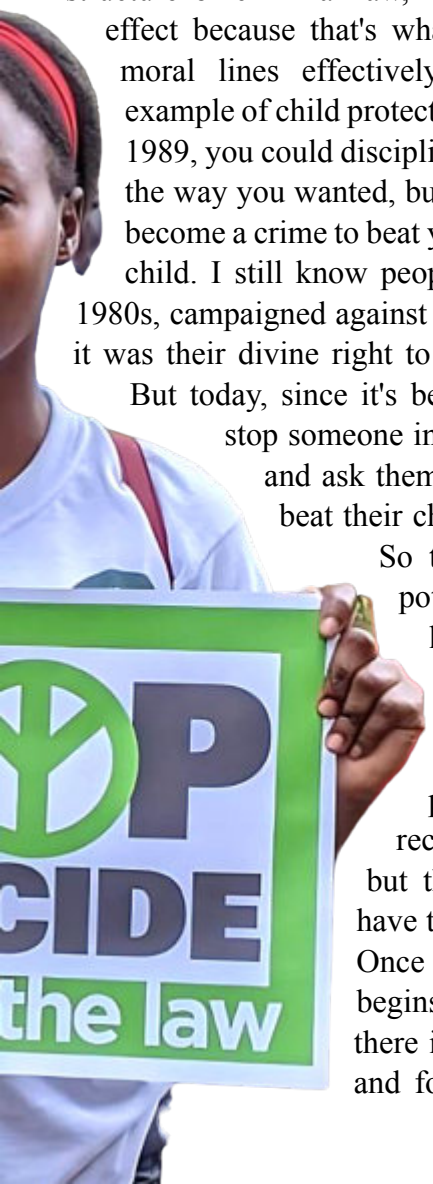
At the time, we had to talk to anyone who would listen, because we didn't have the means to do anything else. There were literally two or three of us, a lot of volunteers, a few interested lawyers and we had an embryo of diplomatic relations, and that was it. But over time, this strategy became very concrete. We realised that legislators, politicians, never want to be the first person at a party; they want to feel safe walking into a room and it's the same in political debate. As a result, we brought into this debate many different areas and profiles — lawyers, academics, politicians, activists, religious leaders, youth leaders, so many different areas that decision-makers could actually relate to, and that synergy made a big difference in how quickly the debate progressed. To be highly collaborative, highly interactive has become something of a trademark of our work. I think part of the reason for that is that this particular initiative — in other words, saying that the worst damage to nature should be considered a serious crime — is in fact an initiative that supports every other environmental campaign on the planet. So, it's not in competition with anything else. For example, we organise a lot of events, conferences and gatherings and we always work with a number of other organisations, building on each other and thematising what this law can bring to all these different areas. I think this has been quite effective in creating a sense that this is such a fundamental issue that it affects virtually every conceivable sector. And that, in turn, has helped to move the political debate forward.

L. D. — You have said on several occasions that ecocide also raises a cultural issue. There is often a kind of dissociation between knowledge of the degraded state of nature and actions. Can you tell us more about this and, in particular, how do you think criminal law can contribute to a change in mentality?

J. M. — Yes, I think that's a very important aspect. Our specific legal objective is to criminalise ecocide. But we must also take into account the cultural aspect which, in our societies, has created a kind of taboo or rather denial around the destruction of nature. The idea of separation between man and nature is still very much culturally rooted, so that we don't see ourselves as part of nature, but as different, as outside it. Our entire economic system has developed around this belief, so that we treat nature as a bank of resources. In the same way, if you look at a large part of colonial history, you see that we have treated other peoples as also being part of this bank of resources, and it is this distance, this feeling of superiority that is at the root of the emergence of a taboo or a denial around the destruction of nature, it is this distance, this feeling of superiority and this lack of connection that has led us, culturally, in a logical way, to where we are today.



So, I don't think there's some kind of cabal of super-villains deliberately trying to destroy the planet, but the logical result of a state of mind that's been going on for a very long time and has enabled us to reach a situation where, intellectually, we can fully understand what's going on. Politicians, NGOs and other very well-established people are not stupid; they understand intellectually what's going on, but there seems to be this strange disconnect between what we understand and what we actually do, and I think that's a deeply cultural thing and culture can take a long time to change. In a sense, criminal law is one of the few areas where an intervention in the system can be accepted by the system itself and still have a very strong cultural effect, because in criminal law we are dealing with moral boundaries. For example, there are already many environmental laws in the world, but they are not well respected. Yet existing crimes, such as wildlife trafficking, have already reached a level comparable to drug trafficking in terms of lucrativeness for organised crime, but they are simply not investigated, reported or prosecuted to the same extent. But once you can insert an element into the structure of criminal law, it has a potential cultural effect because that's what we use to draw those moral lines effectively. I sometimes use the example of child protection law in the UK. Before 1989, you could discipline your child pretty much the way you wanted, but since then you can't; it's become a crime to beat your child or anyone else's child. I still know people whose parents, in the 1980s, campaigned against this law because they felt it was their divine right to discipline their children. But today, since it's become an offence, if you stop someone in the street in this country and ask them if they have the right to beat their child, nobody will say yes. So that's an example of the potential effect of criminal law. What's really interesting is that the general consciousness has to reach a certain point for people to recognise the need for a law, but the whole culture doesn't have to have reached that level. Once the law is in place, it begins to have that effect. So, there is a kind of turning point, and for child protection in the UK, that was in 1989.



As far as ecocide is concerned, we firmly believe that in recent years awareness has grown to the point where there is now a legal direction to follow. I think that within the next two to five years we will see this crossover start to happen. We're already starting to see it in the sense that the conversation about ecocide is now a hot topic in both law and politics, and that's precisely what we've been encouraging.

L. D. — Yes, you raise a very interesting point. You were referring to a law in Great Britain, and I also have an example from France. For example, in 1981, as I'm sure you know, the death penalty was abolished, which was rather late for the so-called country of human rights! At the time, a large majority of French people were against the abolition, but since then the law has really accelerated the change in mentality. A similar process occurred, for example, when gay marriage was legalised in France.

You mostly answered the following question but I'll read it anyway in case you would like to add something: how things have gone since the foundation of Ecocide International, the support but also the pitfalls that you, the late Polly Higgins and your team have encountered at the beginning and over the last seven years, the progress that has been made over that period, in particular the progress within the EU. An also last February, the ICC Office of the Prosecutor launched a public consultation on a new policy initiative to promote accountability for environmental crimes under the Rome Statute. So, it looks like we're closer than ever to your goal. What are your views and expectations on this? A number of steps have been taken, such as the intervention of the State of Vanuatu, the meeting of international jurists, etc.

'The question is not how many people we put in prison, but how we change practices so that ecosystems are really protected.'

J. M. — Yes, absolutely. I think there were three or four really important milestones. The first, as I've already described, was Polly's death, which was tragic but nonetheless a key point in this work; then, yes, Vanuatu was the first sovereign state to seek recognition of the international crime of ecocide and they did so at the Assembly of States Parties to the ***Rome Statute***, which is the annual assembly of the international criminal tribunals, if you like. This assembly takes place every year and in December 2019, in The Hague, the government's official statement urged all member states to seriously consider adding a fifth crime, ecocide, to the Rome Statute which, as your readers will know, includes genocide, crimes against humanity, war crimes and the crime of aggression. The latter was approved in 2010, but was not adopted until 2017. This is one of the reasons why Polly Higgins and our global initiative generally focus on the Rome Statute, in that there is a treaty that can be amended and has been successfully amended in the past.

But, as you said, the biggest step was perhaps the international definition. There have been definitions at different times in the past. The word itself goes back to 1970, it was first used on the diplomatic stage in 1972 by Swedish Prime Minister Olof Palme and over the years a number of people have worked on its definition, whether it's a lawyer, a group of lawyers or Polly herself — I mean her definition was the one we used as a campaign definition for a few years - but it's one thing for a lawyer or a small group of lawyers to say: 'We think ecocide should look like this', and to have something that has the gravitas to make governments take it seriously. That, I think, was the difference in the independent panel.

In fact, we had a charitable foundation, a well-established international team, but also a growing number of national teams, so we were the longest established organisation in this field. We were approached by Swedish parliamentarians. They came to see us and asked if we could indeed draw up a draft international crime of ecocide that would have the necessary credibility for their government to consider proposing it. On the basis of that request, we were able to bring together leading lawyers from around the world, including the very famous British and French lawyer ***Philippe Sands***, who is both a renowned international lawyer and has represented states before international tribunals on numerous occasions, but who is also an expert on the origins of international crimes, his famous book ***East West Street*** examining the history of genocide and crimes against humanity as international crimes ; We also had a wonderful Senegalese jurist, ***Dior Fall Sow***, who was the first female prosecutor in Senegal and who has also worked with the International Criminal Court, so very much in in the right ballpark. And then, of course, we had 10 other lawyers, all from different countries around the world, but also with different legal backgrounds. So, it was interesting to bring together lawyers specialising in the environment, climate, humanitarian law and international criminal law to work out this definition, because ecocide actually touches on all these areas. We discovered that if a country wants to legislate on ecocide, it has to discuss it with the Ministry of the Environment, the Ministry of Justice, the Ministry of Foreign Affairs and even the Ministry of Defence, as all these different areas actually contribute. These lawyers spent six months working out this remarkable definition, which is actually several paragraphs long, but the gist of which fits on the back of a business card.

It's really short and simple:'unlawful or wanton acts committed with knowledge that there is a substantial likelihood of severe and either widespread or long-term damage to the environment being caused by those acts.' In fact, this definition draws heavily on legal precedents, such as the Geneva Protocols, the Convention on Environmental Modification of the 1970s and other parts of the Rome Statute. Everyone who works in this field is familiar with this language. At the same time, it's really very simple to understand for you and me.

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The fact that you can stick it on the back of a business card is very handy when you're dealing with a busy politician, for example. Most politicians don't have time to sit down and read a 20-page report. For that reason alone, it has had considerable influence.

I think there is also something in the balance of this definition. There is this way of bringing together the criminal law aspect, the environmental law aspect and there are these two thresholds: the crimes have to be serious and widespread or long-term, which puts them in the category of international crimes, it's not just a case of cutting down trees in the village square, but there's also this second threshold of illegality or unreasonableness, so these acts must already be in breach of an existing law, which is also how international crimes work; they don't tend to invent new crimes, they reinforce existing ones.

Then there's this other aspect of unreasonableness, which is a term previously used in law and essentially means that if what you're doing is permitted, but the damage it creates is disproportionate and you're doing it without thinking, then it's conceivable that it's also ecocide. I think this definition has been a very good diplomatic balance because you don't want to create something that goes against all the existing laws and say everything you had before is no longer valid because it embarrasses everyone and is actually quite difficult to implement, whereas what this definition allows is to improve and strengthen the laws that already exist. Much of the worst damage to nature is already illegal.

In fact, the definition of ecocide reinforces the attention people pay to their environmental obligations. There's no real moral stigma attached to breaking a regulation, but once you bring a serious crime into play, you get a very different level of deterrence, but also - and this is what really excited me when I heard about it - by talking about 'illegal acts', you imply that as the law improves, so will this definition. This is both respectful and encouraging for the many organisations, campaigners, experts, academics and lawyers who are working to improve environmental regulation in particular areas, because they can then move forward in the knowledge that everything they bring to this legal framework is going to make the definition of ecocide more effective, which I think is also extremely important.

The other key element is the developments we have seen since then in various jurisdictions, but also in Europe with the European directive on environmental crime, i.e. an approach consisting of describing the worst damage as severe, widespread, long-term, in other words, emphasising the seriousness rather than the exact nature of the facts. This is essential because much environmental legislation and regulation is based on what can or cannot be done, and in great detail. It defines, for example, the exact amount of a certain toxin you can use in a certain context, and this creates a temptation, as we frequently see in cases of breaches of environmental regulations.

Companies and their expensive lawyers and legal advisers are looking to see which category they fall into and how to ensure that their actions don't fall into that category. It's a kind of gaming of the system that I think happens a lot in the environmental field. But if you move from exactly what you're doing to the scale of the damage you're creating, the mindset changes fundamentally because, at that point, risk managers and legal advisers are no longer trying to move from one category to another; they're talking to their operational staff and asking what's actually happening on the ground. Are we in danger of creating this level of damage and, if so, what should we do about it? And that's the real objective of this law: to get people to check reality and ask themselves: 'Are we actually creating this level of damage and, as a result, what practices should we change? Obviously, once this law is in place, and there are a few places where it is, it won't be long before people are accused of ecocide, which will put everyone on notice. But in reality, the question is not how many people we put in prison, but how we change practices so that ecosystems are really protected. That's what it's all about, and the proposed international definition includes a fundamental element that goes in this direction.This definition was published three years ago, on 22 June 2021. I can literally trace a before and after to that date, especially considering the incredible number of emails I received after that date. It was a kind of accelerating, snowballing event in the sense that, within a year, this definition was the de facto starting point for legal, academic and political discussions and really galvanised the whole arena.

I think that led to another important step over the past year, which was only formalised last month in the EU in the form of a directive on environmental crime. This directive does not go as far as we would like in defining ecocide, but it is the first time that the word 'ecocide' has been used in European legislation. The preamble or recitals of the directive actually state that it will deal with behaviour comparable to ecocide that is discussed in international forums, which is very interesting, it's a very important step and it also covers a very wide range of crimes. It is not yet a totally generalised definition, which would be preferable, but it covers a large number of activities and specifically provides for what it calls a qualified offence. If you commit one of these crimes and it has a serious, widespread, long-term and irreversible effect, then you move on to another level of sanctions, of implications in terms of penalties, of seriousness. It's a big step in the right direction and, in return, it has shown the International Criminal Court that this is an established direction, a legislative initiative that is gaining momentum and has been taken very seriously. Most European countries will have to harmonise with this over the next two years.

L. D. — Why in your opinion the EU legislators didn't use the word ecocide?

J. M. — They only used it in the preamble but not in the operational part of the text. I think this is partly because, although there is a very well-known definition at international level, which is the one proposed by the group of independent experts, there is no convention or exact agreed definition, and so I think there has been a slight retreat from the desire to use the word, perhaps because of this. But also, some states and perhaps companies — we always imagine that they interact and have an influence on each other — may have been frightened by the term ecocide; people think it sounds too much like genocide and implies things as radical as that.

Even though, of course, the intention is different. I mean, in the case of genocide, you have to intend to destroy a people in whole or in part. In the case of ecocide, that's almost never the case. The mindset is different. But if you look at the consequences, it's easy to see why ecocide should be taken very seriously. It's not just a question of a people or a part of a people, as with genocide, but potentially human civilisation as a whole, and it's no exaggeration to say so. Be that as it may, some people shy away from the term.

However, the legal shift between the act and the consequences of the act is, in our view, the most important element.

For all that, this initiative or movement, as it stands today on a global scale, would never have got as far without the word ‘ecocide’, because the effect of this word is powerful and intuitively understandable. Think, for example, of certain legally binding treaties or conventions on transnational corporations, human rights abuses and environmental damage that are still under discussion, the whole title of which you can't even remember because it's long and sometimes convoluted, whereas when you say the word ‘ecocide’, people easily understand what it means. Of course, it can be used and abused, but the whole concept then enters the lexicon and the sense of the gravity of the situation is almost contained in the word. One of our supporters in the United States, one of our wonderful advocates, said an amazing thing that stuck in my mind: ecocide is a kind of composite word from Greek and Latin that means to destroy your home. It's a brilliant word to describe what's happening to the planet! We're in the process of destroying our home, so there's something very powerful in that word.

Jojo Mehta (second from the right) at the event ‘Global environmental challenges: lessons from Ukraine’ held in London by the Ukrainian Institute © ***Ecocide International — All rights reserved.***

L. D. — I'd like to mention the particular case of Ukraine, the environmental impact of the war and the drive to hold Russia accountable for its crimes in this area. How can this set a precedent and help achieve your organisation's goal?

J. M. — Yes, it was very interesting and, for me too, it was a personal journey. As an organisation, Stop Ecocide International avoids taking political sides as much as possible. For example, with regard to the situation in Ukraine, we didn't make any comments until Ukraine itself started talking about ecocide and President Zelenskyy made it very clear, particularly about the Kakhovka dam incident, that this was ecocide. Of course, if you look at the proposed definition and what happened, it's almost a textbook example of what ecocide could mean.

In fact, Ukraine has been very supportive of international dialogue and the idea of making ecocide as a standalone crime. It has been very insistent on this point within the Council of Europe, where more than one resolution has been adopted along these lines. They have approached the public debate with a great deal of frankness. It makes a lot of sense for us to take part in diplomatic conversations with them, because it advances the debate on ecocide at a global level.

It's interesting to note that there is a parallel, but in a different context, with the Republic of Vanuatu, which has always been a very active leader in this field. These are obviously two victim states: Vanuatu is a victim of the effects of climate change and Ukraine is a victim of conflict, but in both cases, we see that there is an element of law missing, namely the law on ecocide. So, it's almost as if the two greatest challenges facing the world today are coming together in this particular legal vacuum, and that's really fascinating. There's no doubt that the situation in Ukraine, and in particular the discussion around the Kakhovka dam incident, has definitely opened up the debate at a political level with a number of countries that might not otherwise have been as interested, whether they be Eastern European countries or Central European countries, who clearly haven't had a conflict on their doorstep for decades. So, that definitely opened up this conversation; it introduced the context of conflict as ecocide in itself because, of course, it's impossible to have a conflict on the ground without creating serious environmental damage. Legal provisions in this area have tended to be a kind of parenthesis or afterthought to the human and infrastructural damage. People die, hospitals are destroyed and it's not surprising that you focus on that in the first instance, but what people then forget — and this is something that the voices from Ukraine have really said very clearly and very loudly —, is that the silent victim is always nature.

And, ultimately, it comes down to the same thing because the environmental consequences impact on our very survival, how we live, how we grow our food, how we breathe, what we drink. It also has to do with the fact that environmental damage often goes beyond the limits of a conflict zone and is not just spatial, but also temporal. When, God willing, the war is over, the effects on the environment will continue to affect the population of that region and other regions, perhaps for generations, which is really serious and which has not been taken into account in the context of war crimes and the whole context of the damage that occurs during war.

Of course, this issue has been raised a number of times in the context of Ukraine: the Rome Statute contains a clause that should apply to environmental damage in wartime, but in reality, some NGOs that focus specifically on this issue in Ukraine have tried to apply this clause to the Kakhovka dam incident and found that it was very difficult to use, legally speaking.

Establishing an autonomous crime of ecocide would have a very broad effect where it's not so much the context or the exact thing that's being done, but the seriousness of the effect, where it's happening, when and where it's happening. So, yes, the whole situation in Ukraine has definitely emphasised this point.

We're sometimes asked why we haven't made big statements about what's happening in Gaza. The answer is simple: we are concentrating on a very specific thing, namely the criminalisation of ecocide; we are not in a position, nor do we wish to put ourselves in a position, to make political comments on existing conflicts or even to say that the Rome Statute is being used in one way or another and that it should be used in a different way. Once again, that is not part of our remit. I think that part of the reason why we have succeeded in promoting this debate is precisely because we don't take political positions and we focus on a specific matter: the recognition of ecocide as an international crime.

L. D. — Yes, this is a decisive guideline. There is also an important point that environmentalists and Ukrainian politicians are insisting on: as you just said, we must never forget that the environmental consequences of the war are a global problem, that they do not only concern Ukraine. Even if precise scientific data is not yet available because of the context of the war, we can nevertheless say that the effects of the war are enormous in environmental terms.

J. M. — Yes, this actually brings me to another point that again, has a kind of affinity with Vanuatu, is that both of these victim states are thinking beyond their own borders. Ukraine is showing what we consider to be a form of political generosity. They are not saying that we must help them because they are victims of this awful situation but also that we should put something in place that will help prevent other people from suffering from this kind of situation. Nobody should suffer from the impact of the war. And Vanuatu has been very similar about the climate situation. They said we are on the front lines but it's going to reach everybody and we need to put the right frameworks in place to protect globally not just locally.

L. D. — What do you think about ecocide being an imprescriptible crime, i.e. having no limitation in time?

Indigenous activists during a demonstration outside of an EU summit in Brussels, October 2022

‘Revolutionary’: EU Parliament votes to criminalise most serious cases of ecosystem destruction

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J. M. — What we're really working towards at the moment is encouraging, facilitating and supporting an initial group of states that would be interested to table an amendment, in other words to make a proposal, saying we think this is important enough that we should be having this discussion and therefore we're going to put a proposal on the table so that states can talk about it. However, it wouldn't surprise me if this would be the direction that it could go in. **L. D**. — I'm sorry to interrupt you, but we could use Ukraine as an example. We know that there are millions of landmines in the ground and that this will of course be a problem for decades to come. It therefore seems logical that the perpetrators of this crime should be held accountable, even after decades.

J. M. — Generally speaking, laws don't work retroactively. So, if ecocide is put in place tomorrow, you can't go back two years and say you committed ecocide then, because that's not the way the law works.

L. D. — Yes, but in the case of the genocide discussed in Nuremberg, it was the case, it was retroactive.

J. M. — Yes, that's the only time it's ever been applied; in terms of legal history, it was exceptional. I don't know if the same thing could be applied and, from our point of view, we would never assume that it would, not least because what we're looking for is to change behaviour and most decisions are taken in peacetime. What we want is for companies — and this is starting to happen for companies, investors, insurers — to ask for a law on ecocide because it provides a protective framework for them to know where their investments will be safe, what precautions to take — it's all about safety —, what things to put in place, what practices to change and, of course, if you say that a law is retroactive, you have a real problem because nobody will want to put it in place and in fact you need these companies, these financial and political players to see it coming so that they can say from this date onwards they will have to comply with it, whereas if you were to say that what you are doing is suddenly going to become a crime, that is actually very difficult to navigate and probably wouldn't work.

Among the thousands of environmentalists murdered over the last decade, Berta Cáceres, founder and general secretary of the Civic Council of Popular and Indigenous Organizations of Honduras (COPINH)., winner of the prestigious 2015 Goldman Environmental Prize, was killed on March 3, 2016 by armed men who broke into her home in La Esperanza, department of Intibucá, Honduras © ***Goldman Prize — Photographer unknown.***

L. D. — I've always been shocked by the number of crimes committed against environmentalists around the world, particularly in Latin America. How can the international community better protect these people who risk their lives for the common good? By giving them greater status at international level?

J. M. — In Latin America, we have the ***Escazú agreement***, which is the first international agreement to do something of this kind, and we think that the criminalisation of ecocide will have a very complementary and favourable effect to the Escazú agreement. One of the main things it does, as well as supporting frontline indigenous defenders and local communities, is provide a legal tool that doesn't currently exist, and it could do that at a national and international level. Of course, in some countries the national systems may not be as reliable as we would like and having an additional remedy to hold those at the highest level to account will be useful and certainly a kind of deterrent that is very important. Ecocide law can have a double deterrent effect, which is not the case for genocide or war crimes, because the perpetrators of these crimes are mostly ideologically motivated and don't necessarily care about their public relations, whereas corporate activity and most ecocides are the result of a kind of side effect of corporate activity. If you create individual criminal liability, which the ecocide law would do, first of all you create a personal deterrent, because no CEO is going to want to be described as a criminal, but you also have a corporate deterrent, because it's not just personal reputation that's affected, it's also the reputation of the company and therefore, more directly, the value of the company's shares. At present, many of these environmental activists are regarded as criminals and are sometimes arrested for criminal activities that interrupt 'legitimate' commercial activities. Now, if the question is asked whether that commercial activity is itself legitimate, given the law that is coming into force, then of course the situation changes completely and these environmentalists become the defenders of the law rather than the law breakers. So, there's a very strong and powerful narrative aspect that the Ecocide Act could provide in support of these environmental defenders, as well as providing a potential additional level of legal recourse.

L. D. — Recognition of nature or some part of the natural world as having legal personality is emerging around the world and various 'rights of nature' have been incorporated into the constitutions of several countries. A growing number of lawsuits and other projects are seeking to have non-human primates and other animals declared legal persons, while in New Zealand a river has been recognized as a person. How could this process contribute to achieve your goal?

J. M. — It's interesting. It's very complementary. We think of it as two sides of the same coin, I mean the kind of relationships between the right sphere and the criminal law sphere.

My usual example would be something like we have a right to life but that right to life is protected by the fact that murder is a crime. If murder was not a crime, your right to life might not mean all that much.

So, effectively what we're saying is that ecocide law is the protective complement to rights of nature and the fact that the rights of nature movement and the cases around it have been growing a lot in recent years — I think there's over 30 jurisdictions now where there have been successful cases protecting either particular landscapes or particular features of landscape or rivers or so on —, helps a lot to create a change in mentality.

We also think that the legal shift toward rights of nature is actually much more fundamental than ecocide law. It's shifting the whole legal system to incorporate considerations of nature and that's quite a long-term process. We actually see ecocide law almost as a bridge towards that. It's a quite a simple thing that you can insert into an existing system.

L. D. — What are your expectations for the coming weeks or months. I guess you're quite optimistic regarding the acceleration of this process, the recognition of ecocide?

J. M. — We're always optimistic. I don't think you can achieve something if you don't believe in it. As a human civilisation, we live in the reality created by those who came before us. I mean, with the exception of Mother Nature, human intention is the most powerful force on the planet. So, we absolutely predict that this law will come into play, which it is already doing, and we think that this is a direction that is very strongly established. Over the coming weeks and months, we expect to see a more engaged conversation at the level of the International Criminal Court, at the level of the UN/ICC, with more and more countries joining that conversation. It's clear that at the moment there are some very interesting conversations taking place around international law as a whole and the International Criminal Court. This shows how important and relevant it is to have international law that applies to everyone, and the law on ecocide is in some ways a fundamental part of that law. It's hard to imagine that it won't be included in the future, because obviously the whole landscape of the rule of law is about enabling us to live with each other and in society, to protect each other and to create that kind of framework of security.

At the same time, our existence depends entirely on the natural world, the living world. So, it makes sense that the most fundamental element of this framework is in fact the protection of that which gives us life. When we deal with indigenous spokespeople, who fully support us in our work, we feel that we are respecting this basic rule: don't destroy Mother Earth! We can see that progress is continuing apace. People often ask what the biggest obstacles are and I have to say that, on the one hand, it's the easiest campaign in the world because it's obvious that we have to protect nature, but, on the other hand, there's a major challenge to change people's perception of what crime is — people mostly equate it with a man running down a dark alley with a knife. So, we often have to change the perspective to make people understand that criminal law is in fact a protective law. Again, we are safer because murder is a crime. I think communication is our biggest challenge, but it's getting easier as the conversation develops at a legal, academic and political level.

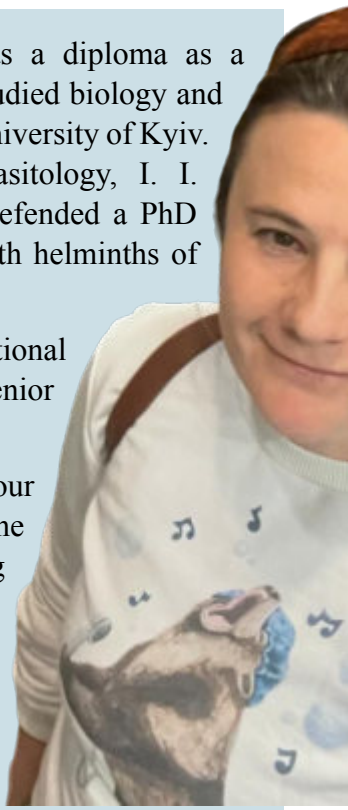
L. D. — I've seen that you've been attending the World Economic Forum and you've observed a change also in behaviour and mentality.

J. M. — I think it's a work in progress [laughs]! It was very interesting in the sense that this audience needs to hear about ecocide because it's happening and, legally speaking, this process is already further advanced than most people know. A large part of the business world and even the political world is not aware of the speed at which things are moving. So a big part of what we do is to step in and say: 'Hey, guys, look what's coming; you've got to be careful!' In a way, that's what I felt I was doing at the World Economic Forum. One of the WWF board members was on the panel I was on. He was a bit shocked by the criminal law aspect and ended up arguing with me about it, which was obviously very good from my point of view because I was able to explain what I was doing. At the end of the meeting, the WWF representative's assistant got in touch with me so that we could talk. So, there's an interesting change taking place, and we're also seeing it in the financial world. The ***International Corporate Governance Network***, an association of all the major banks and asset managers, has asked governments to criminalise ecocide. The question is how to stabilise the economic world in the future and how to do it if we have no safeguards to know what can be done.

'When we saw Lyuba for the first time, she was constantly screaming and jumping in the enclosure. And even after years of living in White Rock, we observe stereotypical behaviour disorders'


VHITE ROCK
Bear Shelter
&

Yegor Yakovlev Mary



Dr Yegor Yakovlev, born in Ukraine on 04/07/1988, has a diploma as a Laboratory assistant from First Medical College of Kyiv, then studied biology and zoology on the Biological faculty of Taras Shevchenko National University of Kyiv. From 2008 to 2020, he worked at the Department of Parasitology, I. I. Schmalhausen Institute of Zoology NAS of Ukraine, where he defended a PhD thesis as helminthologist of invertebrates—but also worked a lot with helminths of carnivores.

Since 2015 working at the Department of Scientific Work and International Collaboration of Kyiv Zoological Park of National Importance as a Senior Researcher.

Since 2012, he has been volunteering to rescue large predators at Four Paws International, and for a long time, he was a safety instructor at the Bear Rehabilitation Centre Nadiya. Since 2017, he has been rescuing large carnivores as part of his Charitable Organization 'International Charitable Fund Save Wild'. Now he is the Chief of the Wildlife rescue and rehabilitation centre 'White Rock Bear Shelter'. ***ORCID***.

Dr Maryna Shkvyria, born in Ukraine on 28/01/1982, studied biology and zoology on the Biological faculty of International Solomon University. From 2004 to 2018, she worked as a Researcher at the Department of Fauna and Systematics of Vertebrates, I. I. Schmalhausen Institute of Zoology NAS of Ukraine, where she defended a PhD thesis in the field of distribution, ecology and behavioural features of the wolf in Ukraine.

Since 2015 working in Kyiv Zoological Park of National Importance. Now she is a Chief zoologist of the Kyiv Zoo.

Since 2011, she has been volunteering to rescue large predators at Four Paws International, and in 2015 became their official Project Support in Ukraine. Since 2017, she has been rescuing large carnivores as part of her own Charitable Organization 'International Charitable Fund Save Wild'. Now she is the Project Manager of the ICF 'Save Wild' and also manages the welfare of rescued animals in Wildlife rescue and rehabilitation centre 'White Rock Bear Shelter'. ***ORCID***.

Laurent Dingli. — Can you tell us about your passion for wildlife and your career?

Yegor Yakovlev. — We're both academics with PhDs in biology. I have a doctorate in helminthology and Maryna has a doctorate in zoology focused on carnivore ecology. For a while, we worked at the I. I. Schmalhausen Institute of Zoology NAS of Ukraine in Kyiv, me for 13 years and Maryna for about 15. Then we worked at Kyiv Zoo and as external volunteer zoology consultants for Four Paws International. We started saving bears. Over the last 12 years, we have been involved in more than 50 large carnivore rescue operations.

Maryna Shkvyria. — My two passions are different and complementary. On the one hand, a passion for science, for field research into carnivores and other scientific issues, including laboratory work. On the other hand, a passion for the conservation of endangered species. We realised that we couldn't solve the problem of conservation without solving the problem of illegal captivity. That's why we set up our own foundation and started building a bear sanctuary, not only because we are animal welfare campaigners, but also because we are conservationists and we want to help solve this problem at different levels.

Laurent Dingli. — When did you create your foundation?

Yegor Yakovlev. — We independently started rescuing bears in 2017 and our foundation Save Wild was officially registered in 2018.

yna Shkvyria

Laurent Dingli. — Can you tell us more about the very moving story of Chada the bear? I think she kind of epitomises what happens to many wild animals kept in very poor conditions, but the good news is that, thanks to your sanctuary, you've given her a new life. Can you tell us Chada's story, what she went through and what happened to her after her rescue?

Maryna Shkvyria. — Chada is a unique case. In fact, most of our bears don't have any genetic or conservation value; they have more of an educational value. We rescue brown bears and try to explain to people why they shouldn't be approached in the wild or why genetically different populations shouldn't be mixed in captivity. But Chada's case is different.

She is a Himalayan brown bear [Ursus arctos isabellinus], a subspecies of brown bear that lives in the western Himalayas. We know exactly what her story is: her father and her grandmother (sister of her father) were born in the wild in the mountains of Kazakhstan. It's a sad story, because this bear could have been very valuable for conservation breeding programmes, but Ukraine only used her for circus shows and, after many years of exploitation in circuses, she was abandoned without any care in a garage among the cars.

L. D. — What is the state of legislation in Ukraine regarding captivity. What is permitted and what is prohibited?

M. S. — We have a lot of good laws, but there is a gap between the laws and their application. For example, there are many restrictions linked to the Ukrainian Red Book of endangered species. Theoretically, you can't keep a brown bear without a special permit, because it's a species in the Red Book, but in reality, these permits don't exist. There is therefore a gap between the standards imposed by the Ministry of the Environment and the actual practice of private individuals, zoos, rehabilitation centres that keep bears or breeding facilities that exploit the animals for show purposes. We personally had the minimum size of enclosures changed in 2020. It took us seven years to increase the minimum size from 30 to 200 square meters, and we pushed through changes in the law for three taxa, wild cats, wolves and bears. These new standards concern medium-sized and large wild carnivores such as the serval [Leptailurus serval] and the Eurasian lynx [Lynx lynx], but not the ferret.

Y. Y. — You meet resistance from the government structures because they don't want to make any changes; they are quite conservative, even regarding stupid things.

M. S. — In addition, we had and still have a lot of problems with private zoos and fake refuges. With other organisations, we defined a list of rules for the creation of rehabilitation centres, what you have to do if you want to be a rehabilitation centre. It doesn't solve all the problems, but at least we've created a sort of guideline, a blueprint for new NGOs that want to save wild animals. We're trying to do the same thing with zoos, but it's much more difficult because there are no real professional associations in Ukraine. Either you join a European association or you're a local zoo with no real regulations, just management.

We also had a huge problem, especially in previous years, with ‘baiting bears’ — actually, we don't have dancing bears like in Balkan countries or in Russia. In Ukraine, it was more a problem of baiting bears stations, bears exploited to train hunting dogs. It was a huge business. In 2015, we contributed to the process which led to the ban on the use of brown bears and gray wolves. So, even though it can be illegally practiced, it's almost over. Unfortunately, it is still happening for other species such as fox or badger.

L. D. — I'd now like to talk a little about the consequences of the war, of Russian aggression, which are of course tragic. What can you say, firstly in general terms, what do you think the overall situation is, and secondly, more specifically with regard to your own experience, what has happened to your sanctuary? I know that you had to move when the Russian troops were close to Kyiv and that you returned after they were expelled by the Ukrainian army.

M. S. — Looking at the overall situation, there are two main aspects. Firstly, the damage caused to wildlife and to nature as a whole is considerable and has yet to be assessed, because the areas, types of damage, habitats and species involved are very diverse: marine mammals such as dolphins, soil contamination, forest fires, mined fields, closure of ecological corridors, migration from Europe and between Ukraine, Russia and Belarus. The impact is manifold: psychological, biological and political. War is obviously no respecter of the environment and is a disaster for our wildlife and for nature in general.

If we talk about people, there are also two main aspects. There is a huge problem with abandoned pets, stray dogs and cats, which were already numerous before the conflict and whose numbers have obviously increased considerably as a result of the war and the number of refugees it has caused. Today, the problem is getting desperately worse. Hundreds of thousands of dogs and cats are abandoned. They kill wild animals, can spread rabies and, of course, die. So, this is both an ethical and a conservation issue.

What's more, zoos, eco-parks, sanctuaries and all the structures that keep animals in captivity are very vulnerable. There are no real regulations in this area, and people used to leave their bears and lions in towns when they fled the fighting. This is obviously a major problem for the military, for the safety of the general population and, of course, for the animals themselves, many of which have died. We've heard of many heroic rescues of animals, but many things simply shouldn't have happened. Because there is heroism on the part of some people, but also incompetence on the part of others. Of course, the situation is catastrophic for both large state zoos and urban zoos, because it's not that easy to rescue and evacuate, for example, 5,000 animals of different species, particularly large animals; it's almost unrealistic. We know that you had a fire in France a few years ago when you evacuated animals from a zoo. So, you can understand how difficult an evacuation is to carry out, even in peacetime, so imagine if you had to carry out such an operation in a country at war, with all the difficulties that entails — material, technical, energy and financial. On the other hand, state zoos benefit from the help and support of municipal authorities. As far as private sanctuaries are concerned, the situation is different because we have to solve many problems at the same time: ensuring the safety of the animals, evacuating them and finding money to feed them, but also ensuring the safety of our staff and the local population, doing everything in our power to deal with this emergency situation.

L. D. — What about the support of international organisations such as IFAW?

M. S. — International support was critical and really very valuable, especially during the first year. Unfortunately, the war in Ukraine is not the only conflict in the world and of course people's interest is waning. And now, the situation is getting harder. The first year, many organisations and people donated; volunteers visited Ukraine and there were different projects for animal welfare, for rescuing animals and helping people who work with animals. But now it's much harder to work with NGOs, with foundations and also to crowdfund, to get financial support because Ukrainian people are exhausted and our financial situation in Ukraine is really bad. The attention of the Western world has also diminished because it has focused on other conflicts that have broken out elsewhere in the world. It's understandable that you can't get actively involved in a ten-year conflict. So, we coped with the situation and we got support but now we need to find other solutions, we need to think about the projects' sustainability.

Brown bear Synochok enjoying his feet — Left page: Maryna scans the transponder implanted into polar wolf Jah during a vet check © Save Wild/Darina Matasova — All rights reserved.

Emergency is one thing and we could make it thanks to all organizations and people who donated but now we need to find something new in order to develop sustainable relations with NGOs. But this raises another issue because it's very hard to work with Ukraine. It was problem before the war — I mean the large-scale war [i. e. since 2022 and not since 2014, editor's note] —, and it's a problem now. For example, IFAW had an emergency program but they were not planning to intervene in Ukraine every year.

L. D. — I hope that our magazine can help, however modestly, to remind us that the situation is still very difficult in Ukraine and that there are many needs.

M. S. — Yes, it's not about having new interviews saying 'please help Ukrainian children and animals'. We want to show the rest of the world that we are a normal country, that we also want to develop standards, that we are working at this level and that we are capable of doing it. In fact, there are two different aspects. On the one hand, the desire to help the children and animals you love and, on the other, the fact of helping a country that wants to develop and improve the situation in terms of animal conservation and welfare at a normal European level and as a major European country.

L. D. — So, you've given us a quick overview of the situation. Now, what can you tell us about the various problems you had to face at the start of the war, when you had to evacuate the animals from your sanctuary, and what is the current situation and what are your expectations in this respect?

M. S. — We began preparing for a full-scale war as early as November and developed protocols for our staff and ourselves. We planned for extra supplies of food, water, petrol and certain behaviour patterns. But we didn't expect war to break out so quickly and on such a scale. In an emergency situation, you have to make a lot of decisions and you can sometimes make mistakes that have serious consequences. We think we got away with it because, in the first few hours, we moved all our pets to a bear sanctuary where we lived for over nine days. We had to do all the feeding and cleaning ourselves, as our staff couldn't join us for safety reasons. Our first plan was to stay in the sanctuary and ensure the safety of everyone there.

But when we saw that huge columns of Russian troops were moving into the area, that there was significant military activity, including artillery fighting in a nearby village, that our district was destroyed, and that we couldn't even predict what would happen the next day, we decided to evacuate all the bears. However, we had to solve a major problem: as we had helped to evacuate the animals from the neighbouring refuge — around 30 animals, including lions and tigers — and had provided them with our crates, we no longer had enough crates and sedatives for our animals. We asked for help from our colleagues at the ***Domazhyr bear sanctuary*** run by ***Four Paws***, in the Lviv region of western Ukraine, and they agreed to temporarily adopt our animals and provide us with crates.

We needed volunteers because it was very difficult to get around; many roads were closed or overloaded, there were numerous checkpoints and petrol was very hard to come by. For all these reasons, the decision to evacuate was not an easy one. It was very dangerous and thanks to the volunteers, we were able to organise everything. We spent two very difficult days evacuating all our bears and pets in two stages. In the first convoy, we evacuated five bears and all the dogs. The second convoy was organised by vets who were working with us; three days later, all our bears arrived at the Domazhyr sanctuary. We started working with them to help their staff and provide them with everything they needed. Of course, we covered all the costs, as we didn't want to add to the burden on our colleagues. Three of the bears were then transported to Germany — two brown bear cubs and an Asian black bear — and four were temporarily housed in the Domazhyr sanctuary.

Left page: Synochok (see his story page 74) — Below: Nynphadora, a wolfdog (natural hybrid). In 2020, she was stolen from her den as a small cub and kept in a cage for almost four years

Three months later, we returned home with our bears when Kyiv region was liberated from the Russian occupiers and started participating in other rescue projects. For example, when activists of a neighboring shelter and soldiers rescued an Asiatic black bear in Donetsk region, we adopted him temporarily. He was then transferred to Poznan, later to Belgium and finally to Scotland. It's a rather famous story because this bear survived this situation two times. In, 2015 when his zoo was ruined completely, he was the only survivor, and the second time was in 2022. Unfortunately, ***Yampil (Borya) died on July 13***. We have also adopted Dora, a grey wolf from Zhytomyr region that was transferred later in Greece, a young lion and participated in several other projects, in particular educational ones. And we adopted Jah, the polar wolf from Donetsk region who passed away because of leukemia in 2023. We got a small grant from IFAW for translation and adaptation of Wildlife Rehabilitation standards and we shared this experience with other organisations. For us, it was a very good experience to meet ***LAV*** Foundation, an Italian NGO, and we started a very fruitful work with them. They still support us and they really helped us a lot, not only with funding and some very useful items like refrigerator or a small house for caretakers, but also by sharing with us their knowledge, how a Foundation should work, how an Animal Welfare organisation can work and I visited them in Italy and got a lot of very useful information. We're now waiting for them to visit us in Kyiv!

L. D. — The situation of the war in Ukraine is quite alarming. In what ways the current pressure of the Russian army which in particular is getting closer to Kharkiv, is impacting you?

M. S. — For example, every day or every week, we have missile or drone attacks, where shrapnel and debris can fall very close to the shelter. So, you have to constantly bear in mind that, day and night, a missile can fall on your shelter or your flat and everything will be over in a matter of seconds. Today everything's fine, I'm having my breakfast and my coffee, but tonight it could be death. The Russians don't need to send soldiers. It's easy for them to send missiles. We're on a motorway between Kyiv and Kharkiv, and we're very close to the airport, so it's a target zone.

Above: The Asian black bear Malvina leaves Bear sanctuary Domazhyr to the Tier-Natur-und Jugendzentrum Weidefeld (Germany). Right page: a tiger cub from the 'Wild Animal Rescue' shelter, which the Save Wild team helped evacuate their animals

Y. Y. — Our situation can't be separated from the military context from which it is of course totally dependent because the Russians do not fight only against the Ukrainian army, they fight also against Ukrainians civilians; we are all their enemies and they're trying to completely destroy our energy infrastructures, the transformers, the generators of electricity and, of course, it has an impact on us because all the products, all the materials are more expensive, some products can be three times expensive than before the war; they're trying to destroy the oil storages. Can you imagine that fuel is now double its pre-war price?

M. S. — Mobilisation is also an important point, because at any moment Yegor or members of our staff could go off to war. Two of our caretakers have already been mobilised and are taking part in the fighting. This is a problem because an organisation that looks after animals — particularly wild animals —, cannot recruit people who have no training or experience in this field. It's a unique skill and therefore a job that can't be improvised. It takes time to train carers and it's very difficult to recruit them. In short, we have to cope with the rising cost of basic necessities such as food, but also with staff shortages due to mobilisation and the danger of missile and drone attacks.

Y. Y. — When a residential area is within range of their artillery, the Russians systematically destroy all the buildings, all the residential areas in order to prevent the Ukrainian army to defend itself.

L. D. — Yes, it is their barbaric tactic to carpet bomb all urban areas as already done in Chechnya, in Syria, in Mariupil, etc.

Y. Y. — They break the rules. It is not the rules of the war. It is complete atrocity. For instance, when they occupied the Kyiv region, they burnt a stable with the horses and the people. It was our friends.

L. D. — Yes, and we all have in mind the dogs that the Russian deliberately let to die from starvation, preventing volunteers to feed them and give them water.

Y. Y. — Volunteers and activists are considered as enemies of the Russian army. It's a target.

L. D. — I remember in particular the very sad story of a young girl whose name I can't remember. She set off in a car with friends at the beginning of the war to rescue animals from a refuge but was killed on the way. This is obviously just one of many examples

M. S. — It's a problem because you know sometimes we got questions like why you don't want to evacuate all animals abroad? But it's impossible, it's a big country and we have a lot of animals in captivity and obviously much more in the wild. So, we need to save the country and we need to save our nature as much as we can because, if we don't resist, it will be a desert, just a dead zone between Russia and Europe. It's not an option. We want to try to do something. Of course, to do scientific work is almost impossible. We still supervise some reintroduction projects, for instance with hamsters and with bats but we had to stop completely our research work in the Chornobyl zone because we cannot move freely around the territory and monitor wolves, lynx or horses. It's impossible now. It's a strategic district and it's very hard for us to work there but some of our colleagues still do.

L. D. — Can you say a few words about how this project was going before you had to interrupt it?

M. S. — We've been collecting field data in the Chornobyl area since 2002, over 20 years, and our main interest was the ecology of large carnivores and, later, Przewalski's wild horses. We can say that it's not Paradise, like nature without people; it's not such a big area and there are lots of employees working for the nuclear power station and there have always been lots of soldiers, police, tourists and other businesses, but it's still a huge forest unique to the centre of Europe and a very important ecological corridor for many endangered species. So, we can't just talk about an 'exclusion zone', because it's part of our entire lowland forest region, the Northern Forest. If we take into account the three countries — Belarus, Ukraine and the Russian Federation — it's a single, massive area, which also forms a corridor to Poland. We're talking about a very important and very precious territory which, unfortunately, is very vulnerable today because it's a border between three countries and all these countries are in a state of war and there are a lot of soldiers, a lot of fortifications and landmines. Of course, this will be a problem in the future for species such as brown bears, lynxes, many ungulates and other species that are anthropophobic or need to migrate. The impact on nature has been enormous, even if we can't estimate it accurately today. We need to protect our borders but, of course, this is not good for wildlife. What's more, European countries are trying to close their borders and sometimes erect walls or fences, not because they're afraid of Russian soldiers, but because they're afraid of migrants, as illustrated by the crisis between Belarus and Poland and, of course, the situation is much more complicated today on the border in the Carpathian. So, everything can have an influence on wildlife, because Ukraine is not an island; we are part of the European ecosystem and this is of course a very important point for wildlife.

L. D. — Can you tell us about the two ways in which you raise public awareness, through an educational programme and through visits to your sanctuary?

M. S. — We organise a number of different activities, in particular guided tours; every weekend we organise several guided tours during which we provide information about the animals. We also provide information via social media and spend a lot of time on local interviews. I'm also writing a popular science book for people about carnivores and all the conservation issues, and we're involved in various educational projects with other organisations. So, we try to do everything we can in Ukraine.

Another part of our work as a Foundation, and not just as a sanctuary, is to try to help other rescue centres by sharing our expertise and skills, because we have a lot of project promoters who want to help animals but know nothing about wildlife, standards, partnership with the English-speaking part of the world. It's very important for us to be like a link in the chain, to be able to act as an intermediary and help local projects to gain new experience and new knowledge, because we're always looking for new knowledge and we also want to disseminate it in Ukraine to our colleagues and explain in particular how rehabilitation standards work in other countries. We also tell people not to breed, sell or buy wildlife.

L. D. — I've seen on your website or Facebook page about the death of the polar wolf Jah who died from leukemia and you say that, among other reasons, it can be a genetically determined disease due to inbreeding and mindless reproduction of polar wolves in Ukraine. Before reading your post on this, I had no idea that reproduction of polar wolves could be a huge issue in Ukraine.

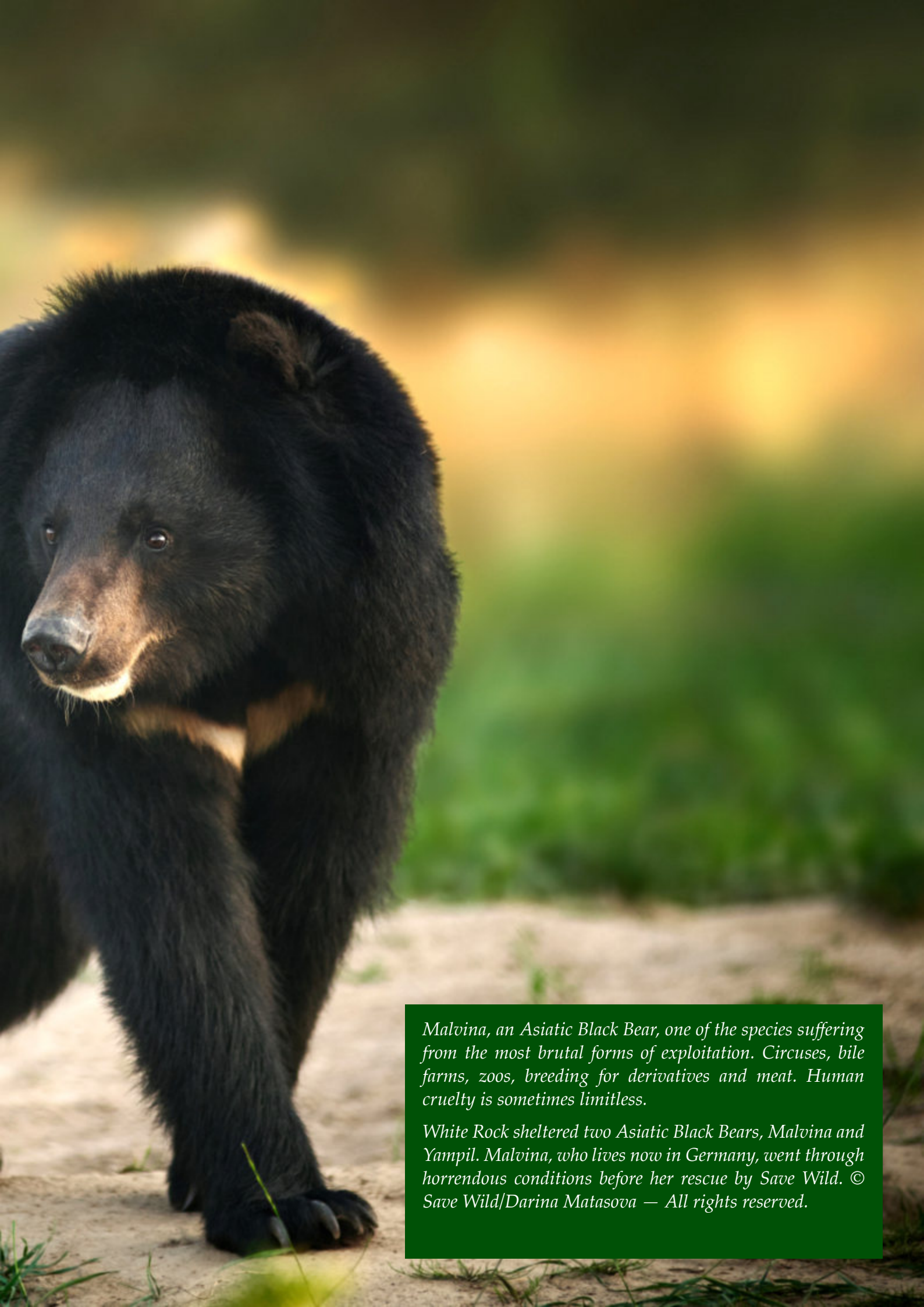
M. S. — Not only for polar wolves but generally it's a huge problem because we have a lot of private zoo collections, a lot of menageries and a lot of people who develop this business, smuggling, grey zone selling through the borders between Europe and Ukraine and also Eastward. It's a huge problem for different species. As far as lions, tigers and polar wolves are concerned, this is also a breeding problem which has dire consequences on the quality of animals' life. The trafficking of reptiles and amphibians through the borders is also a huge business. It's a hard topic but we try to work a little bit on it. We don't do a lot now for it but we are trying to explore this issue in greater depth because Ukraine is a huge transit hub between European market and Asian market and it's a problem of course for primates especially, for reptiles, for amphibians, for birds of prey and we need to do something about it. We need to solve this problem, especially if we are planning to join to European Union and we understand we need to think about it.

L. D. — What are your relations with the authorities?

M. S. — It depends. Authorities can support us or other NGOs time to time on certain issues but they are often corrupted and really incompetent and I'm afraid this kind of partnership is not very effective. I'm not very optimistic about the situation in Ukraine, that's why we need to join the European Union and to implement as much as possible laws to start changing because now it's a grey zone and there are still too many possibilities to exploit nature.

Top left: Dora the wolf lives now in Greece. Bottom Left: Yegor with the bear cubs Popeye and Asuka who were brutally exploited for photos with visitors. Top page: visits to the refuge are an excellent way of raising public awareness, particularly among young people, of wildlife protection and respect for animals

Chada belongs to a rare subspecies of the Tien Shan brown bear, Ursus arctos isabellinus [Horsfield, 1826]. These animals are included in the IUCN Red List as an endangered (EN, endangered) subspecies. In the wild, in the Western Himalayas, there are only a few hundred of them left. Chada was sold to the National Circus of Ukraine from early childhood. She spent twelve years on wheels, travelling on tour and in travelling circus shows. Ultimately, the owners abandoned her in a small rusty cage in an industrial zone in Bilogorodka near Kyiv where she spent the next seven years



Malvina, an Asiatic Black Bear, one of the species suffering from the most brutal forms of exploitation. Circuses, bile farms, zoos, breeding for derivatives and meat. Human cruelty is sometimes limitless.

White Rock sheltered two Asiatic Black Bears, Malvina and Yampil. Malvina, who lives now in Germany, went through horrendous conditions before her rescue by Save Wild.

Myhasyk was a contact toy to entertain visitors at a restaurant complex in the Khmelnytsky oblast. While he was small and defenceless, everyone was contacting him. People loved to take a photos or pet a baby. It doesn't matter if he wants to rest or to be with his mother. And when he grew up and became dangerous, he was locked in a metal box four square meters in size

Synochok (Synok, which means «Son») was born on February 25, 2010, to owners unknown to us and then lived for eight years in a family of circus artists, Valentyna and Yevhen raised him with their own hands. The bear was used for shows and performances, he performed balancing tricks and rode a bicycle. All life was on wheels. And his home was a metal cage of four square meters, which the owners built in the same private yard

Pavel Gol’din

Dr. Gol'din is a Full Professor and Leading Researcher at the Department of Evolutionary Morphology, Schmalhausen Institute of Zoology, National Academy of Sciences of Ukraine (Kyiv, Ukraine), and Senior Researcher at the Lab of Marine Vertebrates and Ukrainian Scientific Center of Ecology of the Sea (Odesa, Ukraine). Earlier he served as a researcher at the Museum of Southern Jutland – Natural History and Palaeontology (Gram, Denmark) and before 2014 as an assistant professor at the Vernadsky Taurida National University (Simferopol, Ukraine). Dr. Gol'din is a zoologist, a researcher focusing on marine mammals and their environment.

His area of research includes mammalian evolution, anatomy and development, paleontology of marine mammals, structure and dynamics of populations of marine mammals, conservation of marine and coastal areas. He is a coauthor of papers on biology of whales, dolphins and other mammals published in Nature Communications, Current Biology, eLife, Biological Journal of the Linnean Society, Evolutionary Biology, Journal of Vertebrate Paleontology, Marine Ecology Progress Series, etc. He is the editor of the Sixth National Report of Ukraine on the Implementation of the Convention on Biological Diversity, and an expert of the Operational Headquarters at the State Environmental Inspectorate of Ukraine for assessment of damage caused by Russia’s war. He is also a member of the ACCOBAMS Scientific Committee; the National Contact Person in Ukraine for the European Cetacean Society, and an expert for the IUCN Species Survival Commission (Important Marine Mammal Areas). He received an MSc in Biology (2000; Vernadsky Taurida National University); a PhD in Zoology (2006; Schmalhausen Institute of Zoology); habilitation in Zoology (2021; Schmalhausen Institute of Zoology), and has been a Full Professor since 2023.

Laurent Dingli. — I usually like to know what has triggered my guests' interest in wildlife. Did you have a special connection with nature from childhood? How did it start?

Pavel Gol’din. — When I was a kid, I was interested in many kinds of natural studies. I collected minerals, plants, fossils and so on. At the time, it wasn't particularly linked to animals and wildlife but, when I was a university student, I started to study dolphins and porpoises. It was a kind of more or less random choice.

L. D. — I'd like to take stock of the impact of the war on wildlife in Ukraine, particularly marine mammals, although we are obviously aware that in many cases it is impossible to assess and collect data in wartime.

P. G. — Your question has been partially answered. Assessing the state of flora and fauna in wartime is the most difficult task of all environmental assessments, because most of the information we obtain today comes from remote sensing, such as satellite images. That's why my colleagues and I can more or less assess the situation, for example with regard to the drought caused by the explosion of the Kakhovka dam by the Russians. We can also assess the consequences of forest and steppe fires, and partially assess the damage caused by a missile or mine explosion. But when it comes to assessing the situation of animal populations, most remote sensing methods don't work and we rely heavily on samples taken in the field, which is often dangerous or even impossible to do at the moment, so we have more assumptions than facts in this respect. Most of our evidence is therefore indirect. It may be data collected occasionally by people close to the front line or data collected by chance, for example when the body of a dolphin or porpoise washes up near Odesa. In Ukraine, we have no data on the deep-sea environment.

Data on cetaceans also comes from neighbouring and host countries. For example, we can obtain data from our Bulgarian or Turkish colleagues and that helps us a lot because we have a common cetacean population and that's why we can make judgements about the situation in the Black Sea as a whole based on Bulgarian data for example. These are the main sources of data: remote sensing, occasional field surveys and data from neighbouring countries. The bulk of the overall assessment will have to be postponed until after the end of the war. For the time being, we are mainly defining the risks and threats that may affect marine mammal populations, enabling us to plan protection measures and provide recommendations to the government, the army and donors who are funding nature conservation for the future. We define and classify risks and threats, noting those that actually affect wildlife and those that are only potential at the moment.

L. D. — I would like to give two examples for our readers, one on land animals and the other on marine mammals. Last year, in the Kreminna forest over 40,000 hectares of pine trees have become a battlefield fought over by Ukrainians and Russians. The Russians were firing incendiary shells and Ukrainian soldiers ***stated to the French journal Ouest France***: 'As well as magnesium plugs, they're sending us [...] seismically triggered anti-personnel mines. They fire them with Grad rockets. They fall from the sky with their parachutes, plant themselves wherever they want and wait for someone to walk by. At a distance of 15 metres, they detect footsteps, jump out of the way and project their 500 microbeads 20 metres around [...] Animals have been found riddled with microbeads on the paths.'

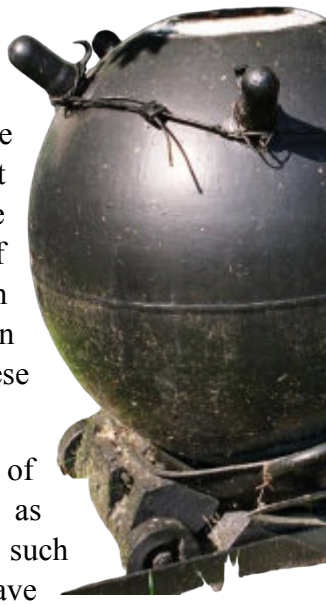
This example concerns land animals, but the disaster is similar when it comes to the marine fauna you are working on. Thousands of dolphins are dying off the coast of Ukraine. International investigators are trying to find out if they are victims of the war. The results of these investigations could be used to accuse Russia of ecocide. Some victims are found on beaches near the port city of Odesa, in southern Ukraine. Autopsies are done under the control of officers from the criminal investigation department, representative of the local public prosecutor's office. Porpoises are dumped en masse on the shores of the Black Sea. As are other species, such as common dolphins and bottlenose dolphins. As you just explained, it is very difficult to investigate in time of war but, beyond the thorny question of precise scientific data, how would you describe the various impacts of Russian aggression on marine fauna?

Harbour porpoise © ***Adrien Gannier/GREC — Groupe de recherche sur les cétacés [Cetacean research group] — All rights reserved.***

'Generally speaking, I would say that mining is the biggest environmental problem in Ukraine today.'

P. G. — The threats we have defined mainly include several types of contamination, chemical, biological and physical, namely acoustic contamination. Chemical contamination can come from munitions and the fuel used in certain weapons, in particular missile fuel, which is highly toxic and whose substances are fairly persistent, so they can accumulate and remain in the aquatic environment, becoming part of food chains and causing multiple deaths and pathological effects, which in the future may also be dangerous for humans. The problem is that we know very little about how these substances behave in the environment, because this is the kind of event that has never happened before. There have never been massive missile bombardments at sea. We are in the process of collecting samples and negotiating with toxicologists to obtain detailed analyses.

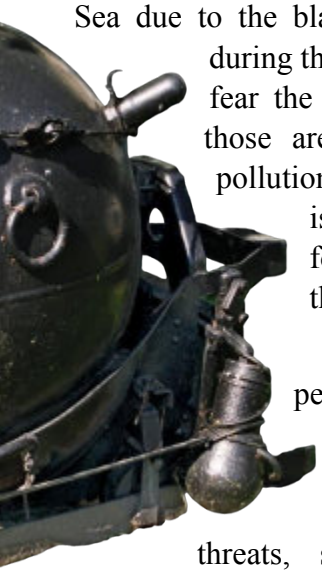
Another source of chemical contamination is the consequences of the ruining of drainage systems like it was in Mariupol. This is also similar to the effects caused by the ruining of the Kakhovka dam because a lot of nutrients which come from sewage waters and also from agricultural waste all go to the sea and we handle them as sources of chemical pollution. These numerous organic substances can also be a cause of propagation of different microorganisms including pathogens like pathogenic bacteria but they can cause also propagation of microscopic algae some of which are quite toxic as well. This effect was observed after the Kakhovka dam a year ago. Then, biological pollution is a more long-lasting threat, I would say a midterm threat which includes for instance the spreading of invasive species because when the landscapes and seascapes are disrupted, they are easily invaded by new species. This is especially disturbing for estuarian areas like the river Dnieper where the natural ecosystems were heavily damaged by the massive influx fresh water; after the ruin of the Kakhovka dam it was all flooded so the local aboriginal populations they were distorted or maybe some of them are completely exterminated. We have little data about it. This all means that some kind of free ecological niche appears that can be easily taken by invasive species. So, we are really concerned about it because one among the assumptions about the scenarios of future evolution of the Ukrainian wildlife is about the mass invasion of invasive species because of these war consequences.



Physical pollution means, first of all, the destruction of landscapes as they are; there are many examples such as the Kerch Bridge that you have already mentioned and the Kakhovka dam.

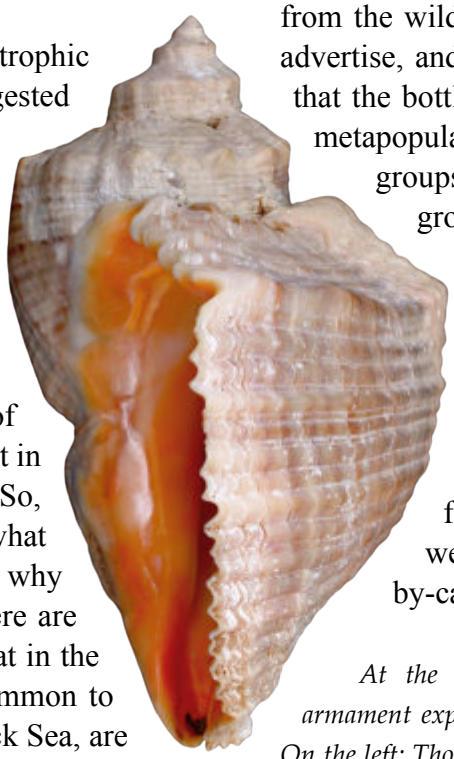
Dr Karina Vishnyakova performing a necropsy on a common dolphin stranded in the Turkish waters of the Black Sea, May 2022 © Mustafa Sözen — All rights reserved.

Their planes drop bombs that carry sea mines to hinder the movement of Ukrainian ships between Odesa and Istanbul and that's why we have a lot of these floating and sunken mines and other mines in the north-western part of the Black Sea. Generally speaking, I would say that mining is the biggest environmental problem in Ukraine today. Many teams have discovered this independently and it is also a problem for the marine environment. But as well as the damage caused by the explosion itself, these mines and other munitions can cause another type of physical damage, as they are a source of noise pollution. The blast has deleterious effects on fish and marine mammals. Blast injuries were described in the North Sea due to the blast from munitions left in place during the Second World War, and we now fear the same fate in the Black Sea. So those are the three main categories of pollution that we define. In addition, there is radioactive pollution, but fortunately this is only a potential threat today.



L. D. — What about the usual, permanent threats, i.e. those that are not directly due to war, and what about the cascading effect, the combined effect of all these threats, such as climate change, sea pollution, entanglement in fishing nets, etc.? Can you list the various threats to the three main species of marine mammals in the Black Sea?

P. G. — I would say that the trophic cascade effect has already been suggested for the Black Sea in the past and, in fact, we had a biodiversity crisis in the Black Sea in the second half of the 20th century and there is an idea suggested by ***Georgi Daskalov*** and fisheries researchers from Bulgaria that the main cause of this effect could be the direct catch of cetaceans which was quite significant in the 20th century in the Black Sea. So, this threat seems very real and it's what we've experienced in the past. This is why we are now monitoring whether there are any possible indications of this threat in the future. The most deadly threats, common to all three cetacean species in the Black Sea, are the consequences of bioinvasions. Historically, we have had two very harmful invasive species, the mollusc ***Rapana venosa*** and the ctenophore ***Mnemiopsis leidyi***, which undermine benthic and marine ecosystems respectively. After the invasion of the ctenophore Mnemiopsis, the three cetacean species died out en masse and fishing effort fell by 100 to 200 times in some years. This was the number one threat.



Another threat that is more specific to the species is bycatch in fishing nets, which is the most significant for the ***Harbour porpoise*** (Phocoena phocoena). My colleagues and I have estimated ***the annual by-catch in the Black Sea at 12,000 to 16,000 Harbour porpoises per year***, which represents around 4 to 5% of the total population, and this is a huge figure, perhaps the highest in the world. I would say that this could be offset by the highest birth rate in this population, which is really exciting. However, even if it's offset, it's still a very worrying rate, which makes the global population vulnerable and unstable to any further threat.

A third species' specific threat which concerns ***Bottlenose dolphins*** (Tursiops truncatus ponticus) more than any other, is direct take by dolphinaria. Historically, the Black Sea was one of the regions where dolphinaria appeared over 50 years ago and, unfortunately, they are now flourishing and are suspected of illegally taking bottlenose dolphins from the wild, even though this is prohibited by all national and international laws but, as you well know, it is very difficult to investigate criminal cases in Black Sea countries. There are no proven cases, but there are strong suspicions. The Russians openly take dolphins from the wild for military purposes, which they even advertise, and this is particularly sad. The problem is that the bottlenose dolphins of the Black Sea form a metapopulation made up of many smaller and larger groups. This is why the direct capture of a small group can lead to its extinction, and why the capture of several animals can have a significant deleterious effect.

L. D. — As far as fishing nets are concerned, we had a recent experience in France. Under pressure from NGOs, the government had to suspend fishing for a month in the Bay of Biscay, where we know there are the highest numbers of by-catches.

At the center: naval mine from the open-air naval armament exposition in Hel,Poland. Credit Topory/Wikipedia. On the left: Thomas's Rapa Whelk, Length 10.0 cm; Originating from the Black Sea near Sevastopol, Ukraine; ex coll. George Chernilevsky. Credit Wikipedia.

According to the scientists, a month is not enough, but this is a first attempt and it was necessary to strike a balance with the fishing organisations. Do you think it would be possible to try something like this in Ukraine too, perhaps after the war?

P. G. — In fact, this is already in place, and not just in Ukraine, but in all the Black Sea countries, there are a number of restrictions, including temporal closures. So there is a closed season for fishermen, not for cetaceans but for the spawning season of the target species, which are the turbot. All this is already in place in the Black Sea, but it's not working very well and it's certainly not enough.

L. D. — Why is it not working?

P. G. — As you said, people poach and fishermen don't know why these suspensions are necessary. They think it's against their freedom and they just go fishing at sea. Personally, I think that more positive incentives could minimise conflicts with fishing. One solution is to use ***acoustic deterrent*** called 'pingers'. A number of promising experiments have been carried out in Romania, Bulgaria and Turkey, some of them with very good results. This development is not so simple in the Black Sea. In fact, we cannot simply transfer the technology from the North Sea to the Black Sea because of the differences in acoustic behaviour between North Sea and Black Sea porpoises, but we believe that we can develop the technology and that it can be widely used in the Black Sea in the future.

Another development is stimulating the fisheries to make the most of certain species such as the invasive species. For Ukraine, it's especially important to take Rapana because it is an invasive species which, as I said, brought a lot of harm to all the benthic ecosystems. It is quite abundant in the country, large sized and at the same time it is considered quite valuable and delicious in Korea for example. So, here in Ukraine we could take it all export to Korea instead of fishing turbot which is the source of bycatch for porpoises so we can save both porpoises and turbot.

L. D. — It would be a win-win solution. So, there are many ways of protecting marine mammals and reducing by-catch. In France, we use pingers, the acoustic deterrent you mentioned. It helps, but it's far from preventing all by-catches, which is why fishing was suspended for a month.

Bottlenose dolphins, Black Sea, March 2023

Preparing to perform a necropsy on a porpoise, under the supervision of Pavel Gol'din, left, in Odesa, Ukraine, July 2023 © ***Laura Boushnak — All rights reserved.***

Undark has published ***a column that you have written*** about how Russia is committing cultural genocide in Ukraine by destroying and stealing scientific collections. You also summarise the recommendations for the preservation of scientific collections for various target groups (scientists, the state, and civil society) developed within the Science at risk project. Could you tell us more about it?

'Ruining our institutions and stealing objects seems to be a widespread and sophisticated strategy on the part of the Russians. They must be treated like other actions of hybrid warfare, fought and countered as measures of war.'

P. G. — Yes, we faced this problem in Ukraine. Russia is deliberately ruining cultural institutions and research institutes. I would stress that it is deliberately destroying them. There is plenty of evidence of these institutions being targeted by missiles, for example. It has set fire to several research institutes and museums. They also steal a lot of things. Generally speaking, the Russian strategy is to appropriate all kinds of Ukrainian heritage. But when they arrived as invaders, they also stole thousands of objects from certain established research centres such as Kherson; this has become a very big problem because they have stolen everything they could take with them and we, Ukrainian researchers, think that this is part of the strategy; it's what they call hybrid warfare and we are facing many of its manifestations. Ruining our institutions and stealing things seems to be a widespread and sophisticated strategy on the part of the Russians. They must be treated like other actions of hybrid warfare, fought and countered as measures of war.

L. D. — Since 2023, you have been a member of the Scientific Committee of the ACCOBAMS' Agreement (***The Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic area***). Can you tell us more about the work of this committee and about your expectations in this regard?

P. G. — It's a big responsibility because the Scientific Committee of ACCOBAMS is responsible for providing scientific advice on all aspects of cetacean conservation in the Mediterranean and the Black Sea and; there are over 25 countries in the region; they are very different; the region itself is huge; The natural conditions and the political situations are very diverse because one part of the region is made up of countries that belong to the European Union and another part that doesn't. Some countries are in war like Syria which is actually controlled by Russia in its coastal area. I would add that a study published by Turkish colleagues a few weeks ago showed that Russian naval exercises near Cyprus might have caused ***a mass stranding of Cuvier's beaked whales*** due to acoustic trauma.

So, there are many conditions, many circumstances and many threats. The scientific committee must summarise them and provide scientific recommendations to national governments and international institutions. This covers a very wide range of topics, from assessing population status, such as estimating abundance, to all kinds of cetacean welfare, such as assessing and mitigating by-catch in fishing nets, controlling noise pollution from multiple sources and ship strikes, which is a big problem for the western Mediterranean, including French waters where a lot of attention is paid to it, and controlling pollution from multiple sources of contamination. I am personally involved in the stranding working group and our task is to develop techniques to find the causes of the animals' deaths. I'm also involved in the bycatch working group and we're inventing mitigation measures.

L. D. — That's very interesting and we really would like to do follow your work in particular these working groups you just mentioned.

The ***I.I. Schmalhausen Institute of Zoology*** of the National Academy of Sciences of Ukraine has become a partner in an international consortium that has received a grant under the ***Horizon Europe programme*** to implement the project "Lighthouse for the Atlantic and Arctic Basins" (PHAROS). That looks very promising.

P. G. — This is part of a national effort that includes a large number of very diverse research activities, from the Canary Islands to Iceland. The geographical scope is therefore very broad, as is the range of research topics. Our area of responsibility concerns interactions between marine mammals and invasive species. Our closest partners in these tasks are institutions in Iceland and Denmark. The idea is therefore to compare the circumstances and orientations between cetaceans and invasive fish in Icelandic waters and in the Black Sea. The current hypothesis is that not only cetaceans, but also marine mammals in general, can improve the situation when it comes to controlling invasive alien fish species.

L. D. — In 2018, you became the editor of the ***Sixth National Report of Ukraine on implementing the Convention on the Protection of Biological Diversity*** (CBD). Do you think that the 30% target of protected natural habitat is realistic in six years' time or is just a path to follow, A dynamic that is in any case positive even if the objectives are not achieved?

P. G. — I don't see any such indication in Ukraine today. We are all trying to improve the situation, but we are a long way from positive solutions at the moment.

L. D. — Let's finish with one bad news and one good news. The bad one is Japan's effort to develop whaling, '***a marginal activity elevated to the rank of national pride***' as the Newspaper Le Monde put it. What do you think about this really disastrous policy?

P. G. — I don't think this is right and I think this tradition will disappear in the not too distant future. In fact, I believe that the goodwill of the Japanese people will put an end to it, if not today, then probably tomorrow.

L. D. — You have a positive approach on this issue. The good news is that in early March the European commission set its first ever mandatory cap on under water noise from human activities at seas. All 27 European member states are now required to use ocean noise thresholds in their National legislation. This is a major step forward for the protection of marine life. Do you have any comment

Ziphius cavirostris (Cuvier's beaked whale, goose-beaked whale), oil on paper. Credit: Jörg Mazur/Wikipedia

KAKHOVKA DAM DESTRUCTION BRANDED "ECOCIDE"

UKRAINE CALLS FOR ASSISTANCE TO ASSESS DAMAGE

P. G. — I can only welcome this initiative. I believe that noise is becoming a real threat. For a long time, we may not have been very concerned about it, but I'm very pleased that the public is becoming more and more aware of noise. I was one of the first people to talk about it here in Ukraine, almost 10 years ago, and most people were very sceptical about it. So I'm pleased to hear that people are becoming more aware of the problem.

L. D. — What are your relations with the Ukrainian authorities? Do you think that they are really responsive to these environmental issues or are they considering that it's not a priority now, given the state of war?

P. G. — I'm in contact with highly professional and very responsible officials whose responsibility is sometimes not only directly connected to the environment but it's more about the whole Ukrainian economy and this is helpful.

L. D. — If you had one or two priorities for the short term what would you say, what would be needed for protecting wildlife?

P. G. — Generally speaking, I propose three priorities. The first is evaluation. We need to know more about what's going on. The second is emergency planning, because the war is still going on and we need to be prepared for unusual and unexpected situations, for different types of disaster. The third is the creation of new protected areas. This is always important, but especially now, during the war, we should continue with special planning that should include protected areas here and now, without waiting for the end of the war. So, assessment, emergency planning and creation of protected areas.

Bohdan Vykhor

Dr Bohdan Vykhor is the Managing director (CEO) at WWF-Ukraine. He has previously worked as Wildlife program manager at WWF-Ukraine, supervising work on iconic species conservation sturgeons, bison, bears and lynxes. Previously, he has worked in the energy sector as Deputy of technical director for environment protection at Lviv Coal Company responsible for environmental standards, waste management and pollution prevention. He started his career as a state servant in the Lviv region branch of the Ministry of Environment of Ukraine managing natural resources, lands and mines usage. He also acts as a Scientific volunteer at the State Museum of Natural History, National Academy of Sciences of Ukraine, Lviv, participating in scientific studies on biodiversity protection in the Carpathian region. He has a Ph.D. in Ecology from State Ecological Academy of Postgraduate education and Management and graduated with a Master degree from Ivan Franko national university of Lviv, Biological faculty.

Laurent Dingli. — Thank you again for your time, Bohdan. First of all, I have a rather ritual question to ask you. How did you first become interested in wildlife? Have you always been attracted to animals in general and wildlife in particular? How did it all begin?

Bohdan Vykhor. — Yes, actually I grew up in the countryside and, as a child, one source of entertainment was the television and I loved watching the National Geographic series. I spent my childhood first in the Soviet Union and then in independent Ukraine. As I lived not far from the Polish border, in the countryside, I could listen to the Polish National Geographic channels. Unfortunately, this content was not available during the Soviet time and at the start of Ukraine's independence. So, I fell in love with National Geographic and I remember very well the underwater Odyssey of ***Jacques-Yves Cousteau*** and then it was the documentaries by ***David Attenborough*** and ***Steve Irwin*** who died while filming in the Great Barrier Reef.

These people changed my life and passed on to me their love of nature. I was a very curious child, I wanted to understand the word around me and I read a lot about nature, particularly at school.

During my studies, of course, I was interested in biology and joined the Faculty of Biology at the ***Ivan Franco National University*** of Lviv. I obtained a master's degree in botany and continued to work in this sector. After several years, I defended my thesis on the ecology and impact of invasive species on both biodiversity and people in Ukraine, such as ***Heracleum sosnowskyi*** [Sosnowsky's hogweed] which cause skin burns, or ***Ambrosia artemisiifolia*** [common ragweed], which causes severe allergies and can also affect others plant species, particularly in areas rich in biodiversity. Part of my thesis was therefore devoted to the proper management of the risks associated with invasive alien species, for example in the Ukrainian Carpathians, which have both a social impact and consequences in terms of biodiversity.

After my PhD, I developed a regional Heracleum sosnowskyi management programme for the Lviv region. I'm delighted that the programme is still running 10 years after it was set up. I'm originally from the Lviv region. So, I found it extremely gratifying to be doing something very pragmatic and practical, firstly for people, but also for biodiversity, because eliminating this invasive species offers much more space for other species. I'm a scientist but I'm also a field conservationist and today, as Executive Director General of WWF-Ukraine, I'm working on a much broader, much more systematic programme, developing the environmental movement in Ukraine, safeguarding biodiversity, inspiring the sustainable use and management of natural resources and, of course, contributing to Ukraine's post-war recovery, good governance and integration into the European Union.

Before my career at WWF, I worked at a university, in a branch of the Ministry of the Environment as a state advisor and also as deputy technical director in the general management of a major energy company in western Ukraine. So, I have a wide range of experience — university, government, private enterprise and now one of the biggest Ukrainian environmental NGOs and the biggest global environmental NGO in general.

L. D. — What is your opinion on the way decisions should be taken on conservation?

B. V. — I think we need to adopt both a bottom-up and a top-down approach in order to involve all the stakeholders. It all starts with communication at community level between the various players, scientists, farmers, businesses, nature conservation experts, NGOs, etc., and continues to develop up to national level. There is a close link with the economy, the functioning of the country's economy; it is clearly an economy and consumer-centred process. It's also linked to policy advocacy, to things that might regulate these interactions between nature and the economy, nature and business, nature and the community, nature and NGOs, nature and the state, nature and scientists. I think nature conservation is a super complex system, an 'ecosystem' that has many connections and, in fact, the relationship between scientists and nature is only a small part of it and if you only target your impact on that small part, you won't succeed.

Extract from the report of the *'Forum on Ukraine Forest Science and Education: Needs and Priorities for Collaboration'*, held in Laxenburg, Austria and online, 21-22 Nov. 2023.

Forest in Ukraine © ***Yuliia Novoseltseva/WWF-Ukraine — All rights reserved.***

L. D. — Yes, we have many examples of success achieved through the involvement of all stakeholders.

Now, regarding the environmental impact of the war. As early as the 14th of June 2022, you wrote: 'Since February 24, 2022, the war in Ukraine has caused untold human suffering. It has also brought unprecedented and long-lasting challenges to the environment. With extreme violence still ongoing, it is too early for a comprehensive assessment of the environmental damage, yet there are already worrying indications of the nature and scope of the damage that is growing with each day of the war.' At the beginning of November, the cost of environmental damage was estimated at 56 billion dollars, a staggering sum according to Jaco Cilliers, representative of the United Nations Development Programme (UNDP) in Ukraine. We know that almost 30% of Ukraine's forest areas and around 20% of its national nature parks have been affected by the war, according to Minister Ruslan Strilets. I could cite many other examples, but what is your assessment of the current situation regarding the environmental impact of the war and, more specifically, of Ukraine's forests?

B. V. — Nature has no borders, and the war is not only having an impact on Ukraine and damaging the Ukrainian environment. Could you imagine Ukraine losing forests the size of Switzerland without having an impact on the global climate? Absolutely not! The question of the precise impact of war on the environment is sometimes a little more difficult to answer. A year ago, we had the Kakhovka disaster. What is its impact on the Black Sea in general? The Black Sea basin borders many countries. How have their fisheries been affected? This is also a question of food security, not just for Ukraine but for all the countries bordering the Black Sea.

Regarding the environmental impact of Russian aggression in Ukraine, we can estimate the damage as far as current circumstances allow, because part of Ukraine is still under occupation and active military action is taking place in a large part of the country.

'The mined area is equivalent to the size of Great Britain'

For example, if we talk about forests, 67,000 hectares of Ukrainian forests have been burnt; 100,000 hectares are currently the subject of active fighting; almost 500,000 hectares are mined; 1 million hectares remain under occupation and 3 million are affected by the war in general, some of them contaminated by unexploded bombs and shells, partially burnt, etc. But there is a tricky problem. The correct and complete environmental assessment of the impact of war is not an easy task. In particular, it requires a great deal of resources, both financial and human. Moreover, a large part of Ukraine is still mined, so it would be very dangerous to carry out an environmental assessment of the Russian invasion of the country. Some experts even estimate that this assessment could take up to 30 years and that, in some cases, it will be difficult to document the consequences of the invasion on the Ukrainian environment. This is an unprecedented challenge, as Ukraine has become the most heavily mined country in the world. The mined and military polluted area is equivalent to the size of Great Britain and, unfortunately, this has both short and long-term consequences.

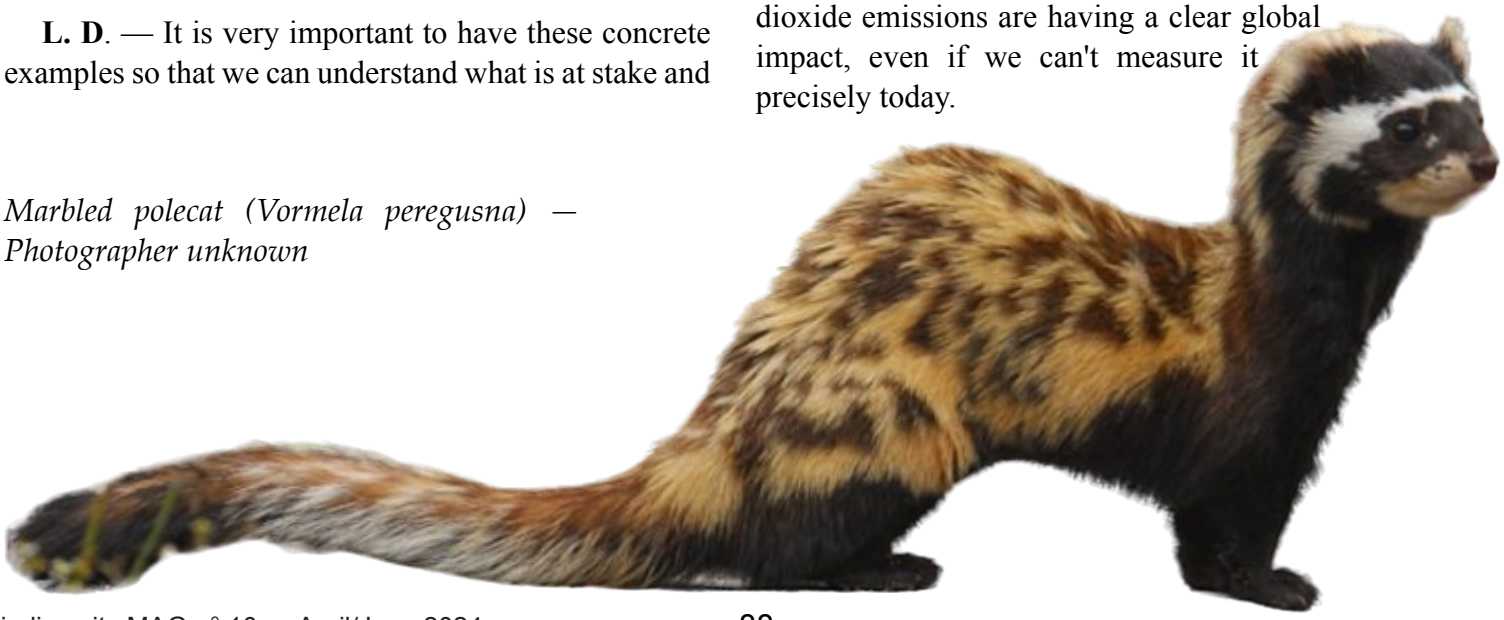
Let me give you an example of how difficult it is to assess the impact of military activities. ***The Marbled polecat*** (Vormela peregusna) is a small mammal listed in the ***Red Data Book of Ukraine***, and there are very few of these mammals — around 100 individuals — living only in the steppe ecosystems of south-eastern Ukraine. No one knows what has happened to the population of this extremely rare animal, and it is impossible to make any kind of assessment because these territories are occupied or subject to active military action.

L. D. — It is very important to have these concrete examples so that we can understand what is at stake and how difficult it is to make assessments as you have just said.

'The destruction of forests the size of Switzerland and the huge carbon dioxide emissions are having a clear global impact, even if we can't measure it precisely today.'

B. V. — Yes, let me add something: as I mentioned, part of Ukraine, an area almost the size of Great Britain, is affected by the war. So, imagine how much soil is poisoned by toxic elements and imagine how difficult it could be to make a proper assessment of the soil alone; how many resources we would need to explore the equivalent of the surface of the whole of Great Britain and take, as part of a scientific approach, soil samples for analysis.

Conflict-related pollution also has an impact on the freshwater network, notably through the circulation of rainwater and the infiltration of this polluted water into the soil and even the oceans. Once again, this is not just a Ukrainian problem. Because of the natural cycle of the elements, these poisons contaminate the water tables and end up in the Black Sea. I could also mention the carbon footprint of missile attacks on Ukraine, which is considerable, reaching near ***180 mil ton CO2 emission*** in May 2024. All this contributes to global environmental instability, and nobody knows how these carbon dioxide emissions and poisoned elements affect global environmental security and the global climate process. We all breathe the same air. The carbon dioxide emitted here in Ukraine has moved elsewhere and has had a certain impact on the global climate. Perhaps at this very moment, people are suffering from flooding around the world because of the consequences of the war in Ukraine or extreme heat. The destruction of forests the size of Switzerland and the huge carbon dioxide emissions are having a clear global impact, even if we can't measure it precisely today.



Marbled polecat (Vormela peregusna) — Photographer unknown

A team clears a forest stream blocked by various objects © ***WWF-Ukraine — All rights reserved.***

L. D. — Being much older than you, I remember that when the Chornobyl nuclear power station exploded 38 years ago, some people seriously claimed that the contaminated cloud had stopped at the French border, which was a completely ridiculous argument. To think that the current war in Ukraine would not have a global environmental impact would be equally absurd.

So, yes, as you say, it's a very complex task and I suppose you're hoping for more international cooperation and funding to meet this huge challenge?

B. V. — Absolutely, and if you ask me how the international community could support Ukraine in terms of environmental issues, I have a fairly simple answer: support President Zelinsky's peace formula on environmental security, which targets three main blocks — damage assessment, liability and recovery. All three are very important. The WWF has a great deal of expertise in restoring nature and we see this as a necessary condition for the country's overall resilience. But it's also an investment in supporting general environmental security on a global scale. As I mentioned, the Earth has no borders and what happens in one country affects another. I personally believe that particular attention should be paid to the restoration of natural ecosystems in Ukraine, both those affected by the war and those not affected by the war. Many forests were directly affected by the war, but we have many forests in Ukraine.

Some of them are artificial, they are cultivated forests, such as monocultural pine or spruce forests, forests of a single species, and these forests are not climate-resistant. What we could do in this case — this is of course an ideal scenario — is to have a healthy, climate-resistant forest for the whole country, which harbours biodiversity, protects fresh water and is a source for the economy and for rebuilding Ukraine in terms of housing. I see great potential for climate-smart forest restoration, which is based on science. This means that we should extend the size of the forest so that it is as close as possible to the natural forest that we have in Ukraine. Of course, this depends on the specific nature of each region, with its climate, temperature, rainfall, etc. So we need science-based forest restoration.

WWF-Ukraine is also developing a ***forest restoration platform*** with the company SoftServe Ukraine. This is a digital and analytical tool that can predict the best climate-proof forest 100 years in advance. This year, we planted the first forest in the Lviv region that is expected to be 'climate-proof'. I won't get to see this forest, because it takes 130 years to grow, but we could nevertheless plan for a sustainable future now, based of course on modern science and combining it with technology. This approach could be explored for the whole country and we could recover all the Ukrainian forest that was particularly affected by the war — nearly 3 million hectares — and return it to as close to nature as possible. Of course, we're thinking about stabilising the planet's climate and I think that restoring this size of forest that was affected by the war in Ukraine could make a general contribution to climate resilience. If you restore them with a sound, scientific and climate-smart approach, they will contribute to the future environmental security of the whole globe. They could also be a source of inspiration for other future climate-smart plantations.

L. D. — Yes, it's really fascinating. In a way, you want to heal the wounds of war and adapt to the climate crisis at the same time.

'Forests could serve as an emotional treatment for people affected by the war because it is scientifically proven that nature could treat psychological traumas.'

B. V. — Forests also provide many ecosystem services and, in the Ukrainian context, forests could serve as an emotional therapy for people affected by war, as there is scientific evidence that nature can treat psychological trauma. So we need healthy forest ecosystems to support people's mental health. From another point of view, as I mentioned, forests also provide many ecosystem services, in particular food for vulnerable groups of people, such as women living in rural areas who are heavily dependent on these forest resources.

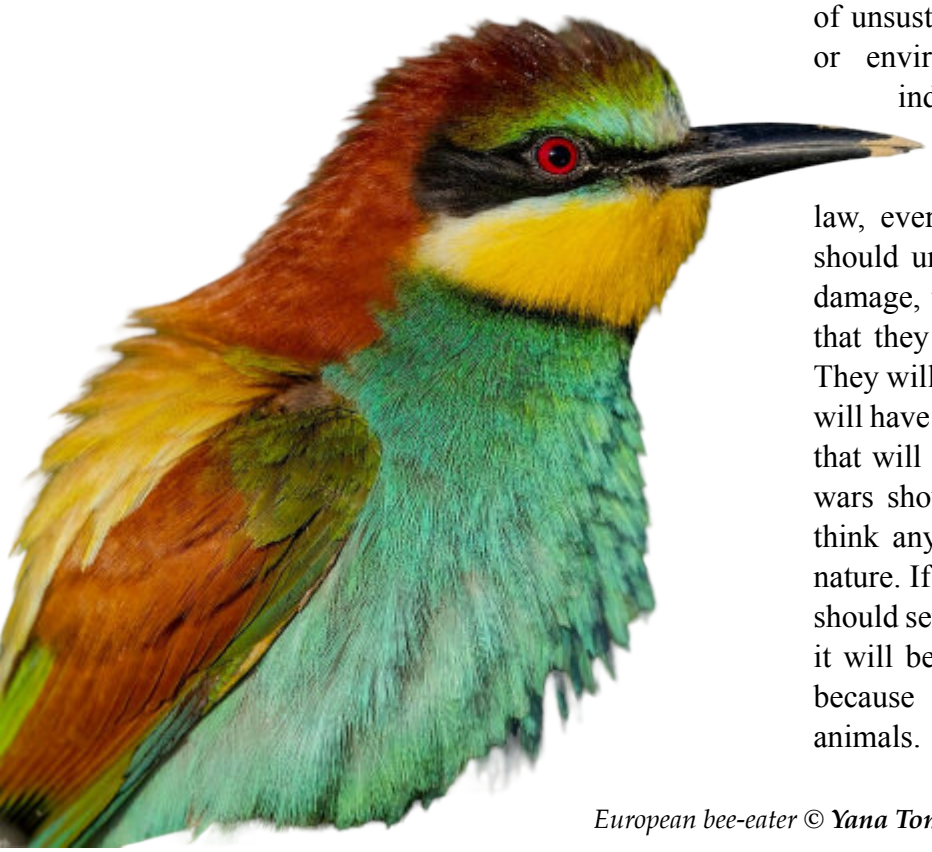
L. D. — What are your views and expectations regarding agroforestry in Ukraine? Intensive agriculture has a very negative impact on biodiversity and nature throughout the world. But it's very difficult to change our production methods because the agro-industry lobbies are fighting, particularly within the European Community. Yet we know that we need to change the way we produce food. What is your view on this? What can we do in this post-war context?

A group of white herons on the territory of the Tuzly Estuaries National Nature Park in Odesa region © ***Yana Tolmachova — All rights reserved.***

B. V. — As you probably know, an hybrid event entitled '***Seven reasons to invest in agroforestry for post-war reconstruction and reform in Ukraine***', organized by the Agroforestry Network Sweden, was held last month in Stockholm and on the internet. It was under the supervision of Margot Wallström, co-chair of the ***Environmental Compact for Ukraine***. I had an overview on how agroforestry could elaborate sustainable post-war recovery of Ukraine and contribute to climate, environment and biodiversity targets. WWF-Ukraine, along with other partners, took part in the presentation of an information note on agroforestry for Ukraine in the context of post-war reconstruction. I believe that agroforestry could be quite relevant for Ukraine from different perspectives. For example, shelter belts would provide protection against erosion, particularly in the south of Ukraine; they would increase general humidity and soil fertility, but would also provide shelter for biodiversity and help to stabilise the climate. In addition, these shelter belts could be used as a source of firewood or building materials for the local population. This is the kind of nature-based solution where the interests of nature, society and business meet, and where agroforestry has great potential for development in Ukraine.

Of course, there are many challenges to be overcome, and we could create a system in which key representatives of business, local communities, scientists and NGOs such as WWF-Ukraine could work together to jointly achieve a number of objectives in order to derive economic benefits from agriculture or other agroforestry techniques. Pastoral agroforestry could, for example, produce organic meat and, in this case, we could work together to support the local economy and communities, while creating the conditions needed to protect biodiversity. We could retain water in the landscape and also support the country's economic growth, because using fewer pesticides or providing organic food would be good for people's health and would also generate extra income, which is very important for local communities in the current circumstances. I think Ukraine has a lot of unexplored potential for implementing agroforestry and if we could create a lot of business incubators that support agroforestry, we could greatly develop and support food security on a global scale, because not only Ukraine, but the whole world is facing climate change and we are starting to see the effect of these global changes on food security now. In my opinion, certain countries could be the guarantors of this food security for the whole world. And this model of food production should be sustainable and climate-friendly.

L. D. — Yes, Ukraine will certainly have a key role to play in the near future in terms of food security.



European bee-eater © ***Yana Tomalcheva/WWF — All rights reserved.***

A word about ecocide, the environmental consequences of Russian aggression. You referred to the Environmental compact for Ukraine. I don't think there is any precedent in history for an aggressor being held responsible for crimes against the environment. With the help of the European Community and other allies, Ukraine could really lead the way in this area. What are your views and expectations in this respect?

B. V. — First of all, I'm not an expert in international law. I could give my opinion on the damage caused to the environment and I would provide two main consequences that are happening at this very moment. One very strong message to the world is that, despite the war, the environmental issue has been dealt with appropriately. If you talk about conservation and the experience of WWF-Ukraine, great conservation projects have been able to be implemented under difficult conditions, including war, and we think that we could inspire other people when they are facing different challenges such as wars, natural disasters, to try to have an impact and think about the resilience of their country because nature conservation is a long-term investment for a sustainable future and I think it would be a way to mitigate a lot of climate-related challenges and disasters.

On the other hand, I believe that any damage caused to the environment must be compensated and that anyone who causes damage to the environment — whether it is a country during a war, the consequence of unsustainable and irresponsible business practices or environmental damage caused by a private individual — must have an appropriate compensation mechanism. If this approach is properly incorporated into international law, everyone — states, companies, individuals — should understand, before they cause environmental damage, that they will inevitably be held to account, that they will pay and that it will cost them dearly. They will answer for their actions anyway because we will have a strong supply mechanism around the world that will hold them accountable. So I would say that wars should be quite expensive. I'm a pacifist, so I think any war is a total disaster for people and for nature. If someone is planning a war, the whole world should send a clear message: please don't do it because it will be expensive and there will be consequences because every life is important, even the lives of animals.

Nature and Culture

Ukrainians have always taken care of trees, and on Christmas Eve they used to wrap trees in straw to make the gardens fertile, saying: 'Give birth, O God, as abundantly as the stars in the sky, and as red as the light from them.'

L. D. — Do you think it's realistic to say that Ukraine will achieve the 30% targets set out in the CBD [Convention on Biological Diversity] agreement signed in Kumning and Montreal? That's only six years away. So it seems a little unrealistic. What do you think, what are the ways of getting closer to this target and what can you say about Ukraine's national plan?

B. V. — Ukraine is currently actively working on a biodiversity strategy for 2030, but we have to be realistic, because the country is facing huge challenges in general. However, I think it's important that we are ambitious. If no one had dreamt of flying, we would never have flown, if no one had dreamt of walking on the moon, we would never have walked on it, so I would say we have to dream. Even if it seems unrealistic, let's not give up, let's plan and do everything we can. If you ask me, should the Ukrainian government be so ambitious? Yes, absolutely, without a doubt! Should we set very high targets in terms of nature conservation despite the war? Absolutely, without a doubt. Whether or not we achieve this goal is another matter, but we will be sure that we have done our best to reach these targets. Ukraine is one of the largest countries in the world and one of the largest in Europe. It is home to 35% of Europe's biodiversity; it has a major impact on the food chain and our approach must be sustainable, climate-smart and resilient. So, we have to be ambitious, and the bar must always be set high.

L. D. — What can you tell us about your efforts to reduce conflicts between humans and wildlife? For example, I saw that in coordination with WWF-Poland, you have installed electric fences to keep bears away from farms and human settlements. What is the current situation in this respect?

'We systematically compile statistics and after installing electric fences, there were no more conflicts with bears in 99% of cases.'

B. V. — As part of our wildlife protection programme, we are working to reduce conflicts between man and wildlife and, thanks to the mentoring of our wildlife protection team by the WWF's Polish office, we have achieved a great deal of success over the last five years. I wouldn't say that we have many conflicts with large carnivores, and there are probably more with ungulates, but I can't give you any data because we're not working on that particular case. However, we do work on conflicts with red-listed species, such as bears and lynx in Ukraine, as well as bison. We have spectacular experience of reducing conflicts with large carnivores such as bears and lynx. Today, we have delivered more than 40 electric fences and provided numerous training courses for farmers and beekeepers in the Ukrainian Carpathians. We have set up a network of 'defenders', i.e. farmers who have received electric fencing and are convinced of its effectiveness. We have had many success stories in terms of mitigating conflicts with wildlife. I'd just like to give you one example related to Vyhoda forestry and in particular the Mizunske branch where hives were destroyed by a bear for three consecutive years and on each occasion almost all the honey and all the bees were eaten by the bear. The farmers contacted us and asked for help. We told them that we had very positive feedback in Poland and that they should try installing electric fences. We supplied them with these solar-powered electric fences free of charge, with an accumulator to store the energy for the night, as this is a fairly isolated area in the mountains. The first year, the bear came and cut two of the upper lines of this electricity network through the beehives; the following year, the animal tried to get under the line and cut the lower line and, finally, the third year, the bear didn't come back. So that's our little success story. We systematically compile statistics and after installing electric fences, there were no more conflicts with bears in 99% of cases.

B. V. — We are fully operational as a national WWF office, but Ukraine is a very large country and we currently have a team of 25 people. If we take into account only the regions not affected by the war, we would need 250 people to deal with all the environmental problems in Ukraine. We have a very interesting project that aims to safeguard both biodiversity and people. In fact, we're working on the greening of transport infrastructures and the development of the electricity network. With regard to the first point — transport infrastructure — our objective is twofold: firstly, to avoid the negative impact of transport infrastructure development on biodiversity wherever possible and, if this seems impossible, to try to mitigate it. This means building eco-bridges that link forested areas or other types of natural areas and promote ecological connectivity and ecological pathways for wildlife.

Bear © ***Ola Jennersten/WWF — All rights reserved.***

In doing so, we are not only preserving wildlife, but also saving the lives of people involved in road accidents. So I think we'll be making a major contribution to supporting ecological connectivity in Ukraine. We are currently developing a project on the Global Environmental Facility, which will enable us to integrate this approach into any Ukrainian rehabilitation project. We're targeting Ukraine's largest highway, the Kyiv-Chop [M06], and we'd like to make it much more nature-friendly in order to save people's lives and implement the best practices available. We believe that after this success, we could apply this approach to any transport infrastructure development project in Ukraine and that each project will meet environmental criteria and contribute to safeguarding biodiversity and ecological connectivity in the future. It will also be a very attractive project for investors, as it will meet the sustainability criteria of donors such as the EBRD [European Bank for Reconstruction and Development] or the World Bank on projecting the north ring way across Lviv city. So, we are also supporting investment in Ukraine with a view to post-war reconstruction.

L. D. — According to you, what would be the top priority in the context of the war and the top priority in the post-war context?

B. V. — I would say that the first priority is to integrate nature into the general organisation of decision-making in our society. Many of the processes underway in Ukraine could have a negative impact on nature, and the time has come to include this essential dimension in the country's reconstruction plan. In this way, we can be sure that nature will be systematically included and taken into account in all the decisions and transformations implemented during the second phase, i.e. in the post-war context. But of course, the restoration of nature is essential today because it supports the overall resilience of the country and the implementation of nature-based solutions, the restoration of wetlands, agroforestry, just other elements that will support the resilience of the country, the economy, the creation of products with added value such as organic food, and so on. So, even today, the restoration of nature in Ukraine is crucial. We must not wait for the war to end, we must act now, because tomorrow will be too late.

Dr **Oleksandr Zinenko** is a senior researcher at the Museum of Nature and an associate professor at the School of Biology, V. N. Karazin Kharkiv National University. He serves as the president of the Ukrainian Herpetological Society and is a Fellow of the California Academy of Sciences. A 1999 graduate of Kharkiv National University, he holds a Candidate of Science degree from the Institute of Zoology in Kyiv, Ukraine, awarded in 2006.

Initially trained as a herpetologist, Dr. Zinenko later expanded his focus to include nature conservation. He worked in the Dvorichna National Nature Park and contributed in multiple conservation projects, particularly those focused on small vipers of the *Vipera* genus. He is also a coauthor of the national Red Data Book and a member of the IUCN Viper Specialist Group.

Dr. Zinenko's research interests span population phylogenetics, phylogenomics, evolutionary biology, ecology, and taxonomy. He has held visiting scientist positions at Ohio State University as a Fulbright Scholar (2014), the State Natural History Museum in Braunschweig (2009-2011), and was a National Geographic Research and Exploration grantee (Harenna Forest expedition, Ethiopia, 2018). Currently, he is focused on developing and implementing DNA-based approaches to biodiversity monitoring, including DNA barcoding, amphibian and reptile pathogen surveillance, studies the genetic aspects of biological invasion and climate associated species range shifts.

Laurent Dingli. — I usually ask my guests how their relationship with wild animals began and developed. How did this happen in your case? Did you already have a special bond with animals when you were a child?

Oleksandr Zinenko. — It's a question I ask all my colleagues myself, and many of them felt a close connection with the natural world very early on in their childhood. They often recall an event that led them to become biologists or, at least, to want to observe nature in a particular way. One of the best stories is that of my grandfather in science — that is, the academic supervisor of my own academic supervisor, Valery Vedmederja. According to his earliest memory, he was sitting, dressed as a child, in a wet meadow, picking frogs and putting the brown ones in his left pocket and the green ones in his right pocket. He later became a herpetologist and described several species! Personally, I remember being attracted to animals from a very early age, and insects are one of my earliest memories. Ducks were much more my friends than humans. As you can see, my love of nature and wildlife has never waned.

L. D. — Were you living in the countryside at the time?

O. Z. — No, I'm very much a city boy, from a large town in central Ukraine, an industrialised region; but that didn't stop me finding anthills and various insects there that I could spend hours observing. I knew a lot about insects in those days. I also loved dolphins, parakeets and all the exotic animals. I had a parakeet of a common Australian species usually sold in pet shops. I kept her for 17 years. I had no doubts about what I was going to become and I've always been passionate about nature.

L. D. — When did you focus on snakes and amphibians in particular?

O. Z. — Again, the seeds were sown in childhood. I read a few good books on herpetology and when I went to university I decided to study ethology with two friends, but it was a failure. Animal behaviour is a complex subject, and it wasn't easy to study it in the 90s in Ukraine, where we had no recorders, no video. I turned to studying fish, and then lizards, without developing any real passion for these subjects. Then my university supervisor moved to the United States and suggested that I work on snakes, a subject that was both difficult and fascinating — you have to spend a lot of time outdoors, in the forest, to flush them out and be able to observe them.

Finding them and trying to understand their way of life quickly fascinated me, and this interest has since developed, taking me from basic population biology to taxonomy, then to genetics, genomics and toxinology. I've covered the whole spectrum of current biology, as far as snakes are concerned.

L. D. — It's fascinating. Snakes unfortunately have a very bad reputation, which has an impact on the way many people behave around them.

Oleksandr Zinenko

I'm not talking about people who are fascinated by snakes, of course, who collect them, although that can be a problem because they sometimes release them into the wild and some snakes can be invasive species. But they have a very bad reputation. It's part of our culture, particularly our Judeo-Christian culture, where the snake is the symbol of evil, of Satan. In some cases, we also overestimate the real danger. I gave the following example to your colleague Roman Svitin during our interview: one of my neighbours recently told me that she had killed a viper to protect her cat, which wanders around the housing estate. I told her it was pointless, that the viper would have been frightened off and gone away if she'd just made a noise. Anyway, I suppose this kind of unnecessary killing due to the bad reputation of snakes happens everywhere, and not just in countries where some snakes are indeed very dangerous and can cause many deaths, such as India, Australia or South Africa.

O. Z. — Yes, snakes are considered our enemies. Primates and early hominids developed many behavioural responses, perhaps inherited, perhaps simply cultural, to snakes and these responses are widespread. A friend of mine ***Dr Wolfgang Wüster***, Professor at ***Bangor University***, found out that spitting cobras developed spitting behavior in response of a human presence or hominid presence. Throwing sticks and stones at snakes is perhaps a primate behaviour that predates man himself, and snakes, which do not bite but spit venom at a certain distance, have developed this behaviour, which is safer and keeps the enemy at a distance; this confrontation between snakes and hominids may have been going on for a few million years, or at least for hundreds of thousands of years. [See '***Convergent evolution of pain-inducing defensive venom components in spitting cobras***'].

L. D. — That's very interesting. Does this mean that they don't behave in this way with species other than humans, for example with a buffalo?

O. Z. — It would be pointless to spit in the direction of buffalo, as they would either avoid the snake or step on it; instead, the snake develops a rattling behaviour to warn any threatening animal. Various approaches have therefore been developed to keep large, dangerous animals at a safe distance. That's essentially the idea of the study. But you know, fascination and fear are two sides of the same coin. I see a big cat on your wallpaper, apparently a leopard, and we feel the same way about all potentially dangerous animals; we both fear and love them. If the animal isn't colourful or dangerous, we tend to overlook it more than dangerous animals.

L. D. — Perhaps we could start talking about the impact of war and Russian aggression on biodiversity and, more specifically, on the species you are studying. It is obviously very difficult and most of the time impossible to collect data in wartime. You're not going to carry out field studies under shellfire and bombardment. But sometimes, despite this, you can get an overview, a first general impression. For example, Roman and I talked about the consequences of the explosion of the Kakhovka dam on newts, frogs and toads, which were absolutely disastrous. Do you collect data on this subject or do you have colleagues who send you data? What assessment could you make of the impact of Russian aggression on the species you study?

'Above: 'The impact of landscape damage and other forms of disruption on biodiversity and ecosystems can take time to study and understand, this includes the consequences of landscape fires caused or exacerbated by the conflict.' Left: 'Wildfires on the Kinburn Spit south of Kherson, southern Ukraine in May. Imagery like this is contributing to a comparatively detailed picture of the environmental consequences of Russia's invasion' — Text by ***Doug Weir for CEOBS. Image © ESA****. July 28, 2022.*

Fine-leaved peonies (Paeonia tenuifolia) in the Ukrainian Steppe Nature Reserve. Credit: Balkhovitin/Wikipedia

O. Z. — It's really difficult to formulate. We are collecting data with colleagues on the impact of war on wildlife, but at the moment we have rather a lot of cases and few conclusions, because we can simply illustrate the impact of war. Some places in Ukraine have been bombed so much that the soil must be full of toxins, lead, but also TNT, which persists in the soil for many years and degrades unpredictably, as well as other explosives, heavy metals, direct destruction, oil and petrol. As you can see, none of this is very good.

We are therefore in the middle of an event that has never happened before, at least in our lifetime, because the Second World War also took place in the same places and could have had the same impact in many places. The destruction of the Kakhovka dam is one of the events that could be better studied because the main impact is visible from space and we are using satellite monitoring to see how it develops, how much moisture accumulates, how many trees and other plants cover the now exposed surface of the former reservoir. At the same time, Odesa, on the Black Sea, experienced a very rapid and large influx of fresh water. There are at least two institutions in Odesa monitoring processes in terrestrial and marine ecosystems to find out how they cope with such a catastrophe. We are also contributing to this assessment with our project, ***Biodiversity Genomics Europe***, because our original intention was to collect DNA and check for the presence of invasive species. The hypothesis we are trying to test is: does this catastrophic event mean that invasive species occupy a new ecosystem more easily than an intact one? Since last year, we have been collecting samples for laboratory analysis. So it's an ongoing process, because we lack the staff, time and resources to document ourselves. But the best thing I've seen so far is the use of remote monitoring using satellite imagery. You can see the development of ecosystems, how vegetation is changing, of course in general terms, not at species level; at least you can detect the presence of contaminants on the surface, or chlorophyll in seawater, which is also instructive. But in the field, the most dangerous things are also the most interesting, and we don't have access to them.

L. D. — Can you tell us about the threats other than war to the species you study, such as the illegal trade, habitat loss, pandemics, climate change? Then I'd like to come back to the very important question you raised about intensive agriculture.

Leptopelis montanus, Gaysay Grasslands, Bale Mountains, Ethiopia, 2018 © ***Oleksandr Zinenko — All rights reserved.***

O. Z. — Everything is linked because war aggravates the negative effects of ordinary human activities on nature. When the Russians blocked grain exports from the port of Odesa, and trade with African and Asian countries collapsed, this disruption in supply put significant pressure on nature in those countries. In other words, the war in Ukraine has led to the loss of natural habitats in certain regions of Africa and Asia, and consequently to a loss of biodiversity.

What is also very worrying is the link between man-made and natural disasters. There's a war going on, and it's tempting to say: fine, let's forget about climate change; we need to finish this war first. Yet the use of more fossil fuels during a conflict exacerbates the climate crisis, which in turn amplifies the effects of population growth and therefore the pressure on nature, leading to a loss of biodiversity and more unfavourable conditions for agriculture, in particular a drop in production in tropical areas, all of which leads to more refugees, more political instability in the world, more wars and so we find ourselves in a vicious circle of disasters that only amplify each other. We risk a whirlwind of extinctions, and we ourselves could be caught up in such a spiral as a species.

L. D. — Absolutely. The war in Ukraine has a global impact and everything is interconnected in our modern world. What is the consequences of the climate crisis on the species you are studying?

O. Z. — For example, the distribution of invasive species of amphibians and reptiles is changing. We have noticed that several species present in Ukraine, such as the dice snake (Natrix tessellata), are moving northwards, but it is important to stress that they are doing so slowly. Climate change has therefore enabled them to move northwards, towards territories that they were previously unable to colonise. They don't fly! I say this because a lot of people ask me whether dangerous African species can spread to Ukraine. It's highly unlikely. In general, local species move a few kilometres north each year, along suitable habitats, to reach places that are now accessible to them.

L. D. — Does this give other species enough time to adapt to these newcomers to their ecosystems?

O. Z. — Not in the case of Ukrainian species, but in general, yes. I had a project in Turkey and we were looking for ***Vipera anatolica***, an endemic species whose range is limited to a single mountain, at an altitude of around 1,800 metres, near Antalya.

The temperature changes and this species cannot live below 1800 metres, whereas the altitude of this mountain is 2200 metres. The world where this snake lives is shrinking and fragmenting, as is the case for many species that live on ***Sky islands*** all over the world; for example, there are many species of this type in Africa, in Asia Minor, literally everywhere. The Ukrainian fauna is already the result of past climatic fluctuations and we have a strange combination of northern and southern species that have survived previous fluctuations in pockets of suitable microclimate and, of course, these pockets — depending on the current situation, can become smaller and more fragmented and expand in the case of a thermophilic species. We can see this today and, of course, it is difficult to distinguish this influence from the alteration of the habitat due to human activity, which is another focus of my studies.

L. D. — Several contributors to this special issue on Ukraine told me that, while the war was of course first and foremost an immense tragedy, it could also be an opportunity to avoid repeating the environmental mistakes of the past in the post-war context. For my part, I am firmly convinced that Ukraine could become a leading country in this field even though there are obviously many hurdles to overcome such as corruption. What are your thoughts on this?

O. Z. — I always hope for the best, but I'm prepared for the worst. Ukrainians are no different from people in other countries. Everyone wants to have a better life and better living conditions, to earn more money, increase GDP, produce more and spend more. I think it's human nature and all we can do is educate and communicate about these issues. If we have open discussions and a sufficiently high level of education, we can deal with these environmental problems. That's my general approach. We already had a very high demand for environmental education here in Kharkiv before the war and that's because the IT industry is flourishing and developing here in Kharkiv. So middle class people, those with enough money to live on and enough education to understand the concepts, were interested in environmental education and wanted to teach it to their children. For example, they taught their children not to be afraid of snakes, but to respect them. I've experienced this myself. Several times a year, I organise a special guided excursion to a place where people can see snakes.

Anatolian meadow viper (Vipera anatolica)

Green water frogs amplexus, Pelophylax lessonae and P. ridibundus, Chernivtsy, Ukraine, 2006 © Oleksandr Zinenko — All rights reserved

They are satisfied and, of course, after such an experience, they don't want to kill snakes. Many cases of hatred and aggression are due to a lack of knowledge, ignorance. Education is part of my job. I worked in the ***State Museum of Nature of V. N. Karazin Kharkiv National University***. I receive a lot of visitors who want to find out more about nature, and I've noticed that these visits are quite successful. I also get calls from journalists, especially during the summer 'dead period'; suddenly someone is bitten by a snake and I get my five minutes of fame! In this respect, I can see a positive evolution in the way the news is treated. The way we approach the subject of snakes is becoming more reasoned and serious. So education and communication certainly play an important role.

L. D. — Journalists therefore no longer use stereotypes and clichés about snakes and try more to understand the obviously complex interactions between the species and humans. In other words, the treatment of information is less one-sided. Could you talk to us about the very interesting subject of the evolution of diseases within the species you study as a result of climate change or other causes? Have you found anything on this subject?

O. Z. — It's really fascinating. I have a part-time job related to this issue. In recent years, there have been several outbreaks of fungal pathogens in animals: ***white nose syndrome*** in bats in North America, ***Batrachochytrium dendrobatidis*** (BD) in amphibians worldwide and ***Snake Fungal Desease*** (SFD) , which is an emerging pathogen in North America too. We therefore study all these pathogens by taking samples from a given environment to check whether they are present there and whether they are causing damage to local populations. In general, these pathogens are abundant and occur occasionally in all animal populations. All animals coexist and evolve with numerous pathogens; this is the normal situation and is not an exception. What is detrimental to species, ecosystems and biodiversity is the great mobility of people, goods and animals, for example as a result of the wildlife trade and anything that can transport an old pathogen to a new location, which is the greatest threat. We've seen the evolution of the Covid-19 pandemic and the same thing is probably happening in animals, but we pay much less attention to it.

Sometimes it's not so dangerous and people can develop resistance to new pathogens fairly quickly, but sometimes it's disastrous and we can't predict the consequences. We have to remain all the more vigilant, collect data and keep an eye on these cases of spontaneous mass deaths of animals in the wild. I think the norm will soon be that you won't be able to go into bat ***hibernacula*** [hibernation sites] in caves across Europe without changing clothes.

L. D. — Talking about bats, we had a webinar in particular with Dr Raina Plowright who summarized for us the fascinating study she co-authored, '***Pathogen spillover driven by rapid changes in bat ecology***' which provides a framework for examining causes of bat virus spillover and for developing ecological countermeasures to prevent pandemics.

So, if I've understood correctly, you haven't had any epidemics linked to climate change in Ukraine?

O. Z. — Probably not. An epidemic of African swine fever broke out in Georgia in 2008. The pathogen came from Africa and began to spread through the wild boar population in Ukraine. Today, the disease's distribution front is somewhere in Western Europe. It's an incredibly hot topic; everyone is doing modelling and trying to understand the rules and how to predict this epidemic. There's a lot of speculation about what would happen in natural conditions where wild boar wouldn't have as high a population density as they do on hunting grounds, because hunting grounds generally manage the population and bring it up to a high level so hunters can shoot it, but in the natural population there are predators and predators keep these animals under some form of control. Unfortunately, we no longer have a natural ecosystem, not least because we are particularly afraid of wolves.

L. D. — Absolutely. I totally agree and ***the latest issue of our magazine*** was on the consequences of hunting on animal welfare and biodiversity. We have many examples from France, Poland and the United States, with scientists debunking the myths spread by hunters who claim to be regulating populations and doing a marvellous job, which in many cases is not true. We also know that swine fever was spread, particularly in Belgium, by clandestine farms in Eastern Europe intended for hunting. I could also take the example of Highly Pathogenic Avian Influenza (HPAI), a global disaster that leads to massive culls of birds every year, which fails to get rid of the epidemic. Although there is now a vaccine, we believe that we need to rethink the way we treat nature; we advocate agroforestry, an end to intensive farming and the need to treat animals differently.

By way of conclusion, I'd like to know if you have any current or future research projects and what your expectations are for the near future, apart of course from Ukraine's victory and the end of the war, which we are hoping for. What are your priorities in terms of science, research and protecting the species you study?

O. Z. — In addition to what I have already said about our involvement in the biodiversity genomics project in Europe, I am now more focused on methods that allow us to study biodiversity in all its complexity with less effort and fewer people involved in the field because, as I said, we are short of people and resources. There are not enough biologists to monitor wildlife or biodiversity in general and the changes it undergoes as a result of human activity or natural causes. We carry out barcoding studies of environmental DNA, ***metabarcoding***, just to see all this dark matter of biology that makes our ecosystem work, which is not appreciated and is often not described, i.e. millions of species of insects, fungi or bacteria in the soil. How can we make them visible to a scientist and easy to assess? We are working with amazing new technologies such as MinION Oxford Nanopore Technologies to extract the DNA of all the creatures found on a site in a body of water, in the sea, in a river, in a lake or in the soil, or even traces of DNA in the air, and to assess the diversity and functional role of this biodiversity in order to understand the role that a particular species plays in the ecosystem and how it functions [See for instance '***Genetic Diversity of Porcine Circovirus 2 in Wild Boar and Domestic Pigs in Ukraine***', editor's note]. My aim now is to train enough people to be able to do this regularly in many localities, in order to observe changes and determine their function in diversity.

On the right: Bufo bufo, The Filyos River, Turkey © ***Oleksandr Zinenko*** *— All rights reserved — Below: Sand lizard male. Credit: George Chernilevsky/Wikipedia.*

Dr Oleksii Marushchak is a junio researcher at the Department of Anima monitoring and conservation, I. I Schmalhausen institute of Zoology NAS o Ukraine focused on the study of variou representatives of herpetofauna; co-founder o NGO “Ukrainian Nature Conservation Group (UNCG). In 2023 he obtained PhD degree afte successful defending of PhD thesis ‘Curren state of amphibians of Rightcoastal Polissia’ Author of more than 180 scientific work (including, collective monographs, thesis proceedings, abstracts, 8 articles in Ukrainia scientific journals that are included in the ‘Lis of professional scientific publishers of Ukraine and 30 articles published in international peer reviewed journals indexed in Scopus and WoS Oleksii is an official participant of EMYS-R project aimed on socio-ecological evaluation o wetlands restoration in favor of the Europea pond turtle Emys orbicularis reintroduction an associated biodiversity with a pan-Europea approach. At the same time Oleksii is a Head o Research and Development department o international breeding facility ‘BION Terrarium Center’ and Coordinator a international project ‘Responsibl Herpetoculture Foundation’. During th wartime, Oleksii is actively organizing th process of collecting, digitalizing an publishing of raw data of records o biodiversity in Ukraine. Main aim of thi activity is to document and publish biodiversity records (fungi, plants and animals) for th global scientific community in the form o databases available with free access on GBI network. Such studies, being relatively simple allow to monitor the meetings of rare species and therefore to analyze the state o populations within certain geographical unit in a timely manner, due to the war may b irretrievably lost. Oleksii and his colleagues d everything they can to save this valuable dat and use it after the war ends to assess its impac on wildlife.

Oleksii Marushchak

Laurent Dingli. — Can you talk to me first about your passion for animals and wildlife?

Oleksii Marushchak. — My passion for animals began when I was very young. I think I was six years old when, in our country house, I suddenly spotted a large group of green caterpillars on an apple tree. I was absolutely stunned by this phenomenon, because I'd never seen anything like it before. I was very young and my grandparents weren't as amazed as I was, because the caterpillars were going to eat the apples and damage the apple tree. Of course, they tried to get rid of all the caterpillars and I was against that because I already knew that, over time, caterpillars turn into butterflies. So, I saved a few and managed to make them grow into butterflies. After that, I realised that I wanted to link my future with nature and especially with animals that, let's face it, a lot of people don't like — frogs, snakes, lizards. I want to be the person who loves them.

At that time, we used to have the TV series filmed by ***Steve Irvin***, crocodile hunter; it was my favorite TV show and I imagined myself roaming somewhere in the bushes in Australia, Africa, wherever, finding snakes, finding lizards, catching them, telling people about them and mostly my dream came true.

L. D. — Can you tell us a bit more about your studies. When did you decide to focus on a specific subject related to wildlife?

O. M. — At the end of school, we take what are known as general exams; in each of them, we get a certain number of points that are needed to get into a specific university. I was one of the few graduates to get the absolute maximum in maths, 200 points out of 200, so all the maths faculties were open to me, but I wanted to study frogs! (laughs). My first scientific work was devoted to the study of morphological anomalies in frog populations, which could be indicators of environmental pollution and various unstable phenomena occurring in the population, such as the fragmentation of natural areas, pollution by various pollutants, climate change and parasites.

L. D. — Did you also study the combined effect of all these threats on toads, frogs and snakes?

O. M. — It's very difficult to divide up all these components, so I've mainly studied their combined effect. For example, when I sample a hundred frogs, 20 of them show different anomalies, some for obvious reasons, such as parasites that grow extra limbs to make the frog slower in order to increase the chances of it being eaten by a bird, which is the parasite's final host. But above all we studied the combined effect and the distribution, i.e. where these events occurred.

L. D. — Before we talk about the impact of the war what can you tell us about the consequences of the other main threats such as pollution or climate change on the species you are studying?

O. M. — Frog anomalies can be classified into three main types. In some cases, the reason for the anomalies was obvious. For example, 100% of the frogs became females in the pond near a factory producing hormone drugs for women. This factory had pipes with chemical waste in the water and most of the frogs appeared to be female. This was the finding of a study conducted in the United States. The main question was whether there is statistical evidence that morphological abnormalities are somehow linked to human impact, because in nature, even within a healthy population, a certain number of individuals are abnormal. This is due to spontaneous mutations. Even within the healthiest population, there will be individuals whose mutations will not help them and who will die. One malformed frog, or two malformed frogs, says nothing, but 100 malformed frogs says something.

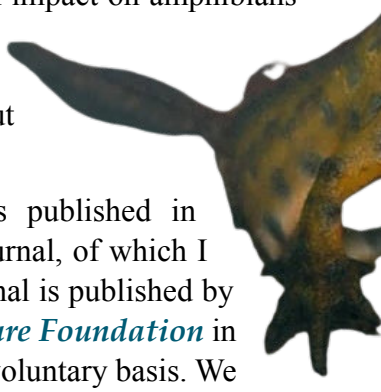
Fire salamander [Salamandra salamandra], Etang de la Maourine, Toulouse, France. Credit: Didier Descouens/Wikipedia.

We published the results of our scientific research in 2021 in a journal called ***Herpetology Notes*** where we gathered together all the information on frog anomalies in Ukraine and showed the average but reliable correlation between the appearance of anomalies and an integrated index that includes everything from human population density to light, physical and noise pollution, and many other parameters.

L. D. — Have the results of this scientific research been taken into account in Ukrainian regulations and legislation, or have they influenced them in any way?

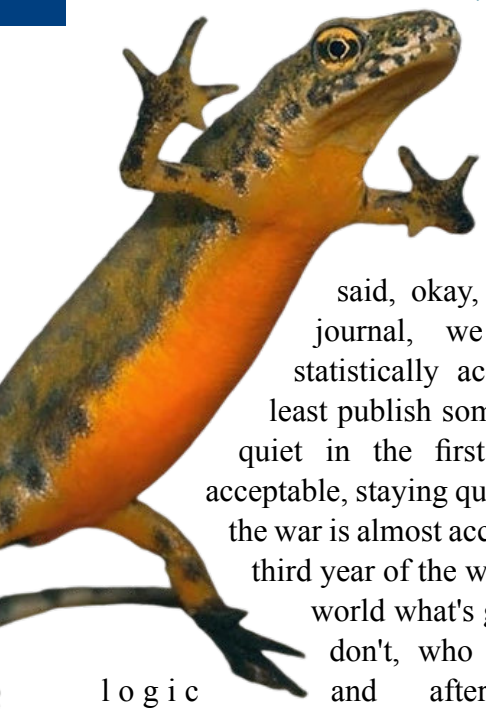
O. M. — So far, no. Unfortunately, the research of frogs and lizards hasn't had a direct or significant impact on the legislative sphere in Ukraine but since I'm also environmentalist, and within the NGO I have co-founded — ***Ukrainian Nature Conservation Group***, UNCG —, We work a lot on nature conservation issues and one of the main thrusts of our work is to bring Ukrainian nature conservation legislation closer to European standards. Europe has ***Natura 2000***; we have ***Emerald Network*** which is the equivalent of Natura 2000 for the Eastern European Partnership countries, and we are creating promising new objects — not me personally, but our team is involved in the designation of Emerald Network legislation in the future adaptation of Natura 2000 legislation. Some of the objects we create, design and propose are also intended for the conservation of amphibians and reptiles, as they preserve their habitats for egg-laying, wintering, reproduction, etc. The second direction of our work is the collection, digitalisation and preservation of raw data on the distribution of flora and fauna in Ukraine. We have a profile as a legal data publisher at GBIF (***Global Biodiversity Information Facility***) —, and, so far, our organisation has managed to digitise and upload to the GBIF database 491,000 records — almost half a million — from Ukrainian grey literature, the personal observations of many scientists and environmentalists in Ukraine, particularly people who became war refugees because most of them had their notes in written form, in the form of field notebooks. These notebooks can be destroyed in a second by a fire, a missile or a bombing. We are asking people to collect their notes, digitalise them and publish them online. So, this data is open to Ukraine, open to assessing the impact of the war, because we won't be able to assess the impact if we don't know the starting point, what the situation was before the war, and this data is available to all the scientists in the world.

L. D. — With regard to the impact of war, I read the very impressive and interesting article you recently co-wrote, ***Herpetofauna at the frontline: so many ways to die***. It's impressive because you detail all the ways in which war can have an impact on amphibians and reptiles, but also, of course, on many other species. Can you tell us a bit more about this work?



O. M. — This study was published in Responsible Herpetoculture Journal, of which I am one of the editors. The journal is published by the ***Responsible Herpetoculture Foundation*** in which I am also involved on a voluntary basis. We came up with the idea that, in one way or another, the impact of war should be highlighted at least in the popular scientific literature. Why should this be done? It's very difficult for a scientist to publish a really serious scientific article; it's a lot of work and it has to be statistically reliable; it has to contain a lot of information; it has to be well structured and so on. That's not a problem when it comes to carrying out an experiment or collecting data in nature in peacetime, but when it comes to the consequences of war, it's almost impossible, because the subject is important, it's topical, it's interesting, it's thought-provoking, but unfortunately it's impossible today to collect data — I mean from a biological point of view —, because we have geologists and biochemists who study, for example, the holes caused by bombing. As far as biology is concerned, it is quite difficult to collect data that is, let's say, 'accessible', because we are not on the front line and collecting such data on the front line can end very quickly with the death of the person collecting it. So, when journalists ask me about the consequences of the war, as a scientist I unfortunately have to reply that I can't say anything because I'm not there and I can only speculate, imagine and extrapolate.

L. D. — Yes, but you're giving many very interesting and concrete examples in this article. You talk in particular about the consequences of the Kakhovka dam's explosion and you have seen the corpses of frogs. So, even though you don't have statistics, certain things are visible; there is already evidence.



Montandon's newt © Jan Van der Voort [jansnaturepix.be]— All

O. M. — When the director of the journal said, okay, we're rather a sci-pop journal, we don't have to be statistically accurate, we have to at least publish something because staying quiet in the first year of the war is acceptable, staying quiet in the second year of the war is almost acceptable, but now it's the third year of the war, we have to show the world what's going on because, if we don't, who will? That's the basic logic and after that I started communicating with all my colleagues, mainly herpetologists, and we quickly agreed on the main theme which was: let's just tell people what's happening with herpetofauna; the same things are happening with avifauna, fish, insects and so on, but I'm a herpetologist so I'm going to talk about that. It appeared that each of us possessed a small amount of this knowledge, derived from personal observations, observations of friends or colleagues who are on the front line. Taken together, this information gives a more or less comprehensible picture of the impact of the war. And this is important because we have not found an equivalent work on the subject. International agreements, nature conservation directives and environmental management plans generally provide indications of the impact that hydroelectric power stations, nuclear radiation and wind turbines can have on flora and fauna. However, we found nothing on the impact that war can have on herpetofauna.

Our first objective was therefore to show the international community, in a single document, the impact of war. Secondly, we wanted to help the scientific community and the environmental protection community to think about compensation and mitigation measures, about how we can prevent or compensate for such impacts.

L. D. — There are some very interesting examples and I've learnt a lot. There are in particular consequences of war that we don't necessarily think about at first. For example, before leaving their homes, refugees release exotic pets into the wild, where they become invasive species such as the red-eared slider. Of course, war considerably accentuates peacetime threats, but there are also new and specific types of impact. The combination of all these threats makes the situation truly catastrophic. For example, you mention road kills, a peacetime threat that takes on new proportions during wartime for species with very slow locomotion and movement. These animals are crushed by tanks and military machines that invade fields and protected areas.

NCG participants at the meeting in October 2021. Credit Oleksiy Vasilyuk/Wikipedia. Oleksiy Maruschak is at the center (with a headscarf).

O. M. — Exactly, even in peacetime, I can name the nearest road to my house where there's a frog spawning ground and generally the frogs cross the road and die, crushed by vehicles. In wartime, the traffic is generally lower because there are fewer people, most of them fleeing the combat zones for their lives, but if we have really massive columns of military vehicles and machinery and the road is mined, as it often is, these vehicles will just go everywhere except the road, and of course the tanks won't stop for the frogs; they'll just destroy the spawning grounds and everything else. In spring, when the ground starts to dry out a little — usually in April or late March — this is also the busiest time for frogs to reproduce, as they migrate to the spawning pond, river or canal. At the same time, military action becomes more intense, because in early spring, the whole battlefield turns into one big mud puddle and even a tank has trouble getting around, but in April, when the ground dries out, the movement of military vehicles becomes more intensive and, unfortunately, takes place at the same time as the frogs migrate to and from the spawning pond. At that point it's just a mixture of frog flesh and soil. One of my colleagues sent me a video filmed at night from a Ukrainian army military vehicle which shows, thanks to its headlights, that they are going through the green toad migration and that the road is simply covered with a monolayer of killed toads. If this video was filmed at least once, you can imagine how many similar cases have not been.

Here I need to make an important note which was also written in the article: ***'Although some of the examples below may apply to both sides of a military conflict, the authors emphasise that such things would never have happened if Russia had not launched a full-scale war against an independent sovereign country in the centre of Europe in the 21st century.'***

L. D. — You might imagine that in times of war, people have other priorities than looking after animals and that they have to think about saving their own lives. But that's not quite true, because this war has also revealed the very interesting relationship, the special bond that Ukrainians — of course not all of them, let's not be naive — have not only with pets, but with animals in general. Did you feel this?

O. M. — Well, I'm not sure. I think that this special attitude towards animals had always been around. We have a special saying in Ukraine that I don't know how to translate into English: something like 'war exposes and reveals everything that's inside.'

L. D. — Yes, I understand what you mean.

O. M. — People who didn't care about wildlife continue not to care; people who have always cared will care more and more. Some people have continued to rescue abandoned pets; we have the ***Kyiv Animal Rescue Group***; they are real heroes — they were in Kherson when the Kakhovka dam was destroyed; they were in Bucha; they were in Irpin; they were in Bakhmut, Sievierodonetsk, Avdiivka; they rescued cats, dogs, cows, parrots, whatever they could find. Many ordinary people did the same.

A lake frog (Pelophylax ridibundus) in the Blue Lake (Kamianske). Credit: Volodymyr Tertyshnyk/Wikipedia.

You'll remember the photo of a girl evacuating Bucha with seven or eight dogs. I wouldn't say that the Ukrainian nation is more concerned about wildlife than, for example, the French or the Germans, but that this phenomenon has become more visible because we have taken an interest in it. I'm sure that if something - God forbid - but if something like this happens in any country, we'll have the same examples of behaviour from ordinary citizens who really love animals as we have in Ukraine, because good people still exist, fortunately.

L. D. — Yes, every everywhere, even in Russia.

O. M. — Well…

L. D. — It was ironic on my part, because we all remember, for example, how the Russian army forbade local people to bring food and water to the dogs that were caged in a shelter, and many of them died of starvation. It is horrifying and very shocking that these creatures were condemned to long agony and a painful death. But why? There was absolutely no reason for such cruelty.

O. M. — Trying to find logic in the Russians is a road that leads nowhere. Allow me to clarify things. I believe that there are people in Russia who will save a dog or a cat, or several of them. But, unfortunately, there are not enough people, even among those who will save a dog, who can get together and stop the war. They can save a dog, but they can't save human beings. Sorry, this is a very sensitive subject…

L. D. — I totally understand.

O. M. — To my deepest regret, I have far relatives in Russia, in Rostov region. None of them even asked how we feel or say: 'okay, guys we are so sorry; what the f… Putin is doing is madness.' No, they were silent; they didn't say a word. Sorry…

L. D. — Don't worry, I understand perfectly how you feel. But what do you think of the millions of Russians, mainly young people, who have fled the country since the war began? Do you think it's because they don't agree with the war, or that they're fleeing simply because they're afraid? Of course, it's impossible to know their true motives, but they have left their country all the same.

O. M. — As a scientist, I can't draw any meaningful conclusions because I haven't worked on this subject and I can't know what's in their minds. But, OK, let's forget about emotions. Those 4 million people could have come together and cooperated inside Russia instead of fleeing outside the country. There aren't enough prisons to imprison them all, there aren't even enough prisons to imprison 500,000 of them.

L. D. — You mean, they should have resisted inside the country?

O. M. — Yes, and this is what I was hoping during the first two weeks. I believe that there are normal people there. I believe that in a country with 142 million people or something like that there will be at least four million or even 1 million people who are against the biggest war since the Second World War. I'm not even talking about Ukraine or Russia, not talking about the goals of this war, but just about people who are standing against the war, just to put an end to it. There were a couple of people who went to the squares, threw some plastic glasses to the police and that was all. Some say that there are good people there, they're just scared, they are just nervous about the situation, they're frightened. Okay, maybe this is true. I don't know. So, what? What next? They are scared? I am scared too! And who is on whose land?

L. D. — Yes, and Russia is functioning now like a kind of cult, a death cult. I mean millions of people are following the propaganda without questioning what they hear on television. Well, it's unfortunately a long tradition in Russia.

So, to go back to wildlife, if you had to list a few priorities what should be done in the short term to preserve the fauna, particularly the species you are studying?

O. M. — Opinions differ on this. For example, I am against the reconstruction of the Kakhovka dam because a magnificent willow forest is now growing at the site of the reservoir and many of my botanical colleagues study these forests; many people have predicted that there would be nothing left but a desert or that invasive plant species would occupy the whole area. Instead, a magnificent willow forest, probably the largest willow forest in Europe, is developing. I don't think Kakhovka should be rebuilt, but some of my colleagues, whose opinions I respect, think it should be. Some have said that it was a disaster for nature. Yes, indeed, it was a temporary disaster for nature, but nature will recover fairly quickly; life will always find a way out. It was a disaster especially for humans, as many houses were destroyed and many areas were flooded. My favourite example is the Chornobyl restriction zone. If you get the chance in the future, I recommend you go there as a tourist. I went there once during my PhD; it was part of my study area in Ukraine and I was amazed by the number of animals I saw during those two days: elks, deer, eagles of different species, wild boars. I saw photos of bears and lynx taken by camera traps. Of course, Chornobyl was a disaster for humans, but for nature it was probably the best gift we could have given her. The Chornobyl Biosphere Reserve was created just twenty years ago.

So what will happen in the near future? Ukraine has a lot of arable land. It is an agricultural country. Unfortunately, around 30% of this arable land will not be accessible for many years, 10, 50 years or even more, because it is so full of mines and various artillery bombs that it will be impossible to use this land in the short term. We still find bombs from the Second World War.

L. D. — And even from the World War I in France.

O. M. — Yes, absolutely, and when I see that a small country like Serbia has still not demined a large number of territories after 30 years, I can't imagine how many resources are needed to demine a large country like Ukraine after a large-scale war. At the same time, there is a second threat: we are a large agricultural country and most of our major industrial facilities, a large number of factories like ***Azovstal*** , are in ruins or seriously damaged. So, it's very likely that we will be heavily dependent on agriculture in the near future and will need land to compensate for these losses. I'd like to be wrong, but I'm afraid that this land will be taken from natural areas where wildlife lives.

L. D. — There will of course be constant pressure because of the post-war context and I think you're quite right to be, not pessimistic, but realistic. However, the positive note in all this is that there are people like you, like Bohdan Vykhor, like Yuliia Ovchynnykova, like Margot Walström, who are preparing for the future, not only to comply with European rules, but also to prevent, offset or reduce the pressure from agricultural and industrial lobbies. It is obviously vital to anticipate and think about these threats now, in order to prevent them and reduce the risks. Even within the European Union, which is not directly at war, environmentalists have to contend with constant pressure from agricultural and industrial lobbies, which always want to sell more intensively farmed products while destroying the environment, and always have good reasons for doing so. I understand your fears.

O. M. — To finish answering your last question briefly, I think that the creation of nature reserves, including on the front line, in areas that are not accessible or to which access will be restricted in the future for humans, is the absolute priority, because if we leave Mother Nature to herself and stop harming her, she will recover faster than we think.

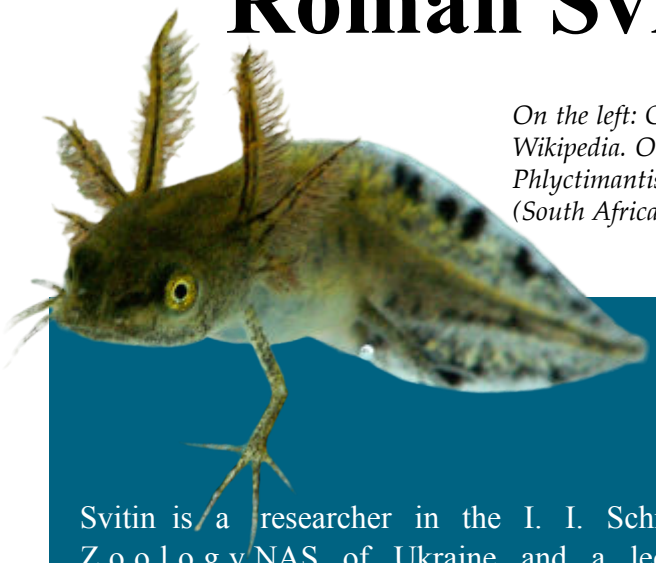
May 17, 2023 © Earth Observatory NASA gov.

June 18, 2023 © Earth Observatory NASA gov.

Left page: a member of the Main Direc
Emergency Service of Ukraine in Odesa Ob
April 2024. Above: While dealing wi
consequences of a rocket attack in Odesa r
hundreds of pelicans flying through th
Directorate of the State Emergency Service
Oblast [Головне управління ДСНС Ук
області] — All rights reserved . Below:
shelling in Mykolaiv Oblast, 9 Aug
dsns.gov.ua/Wikipedia.

torate of the State last clearing a shell, th the large-scale egion, rescuers saw e smoke © Main of Ukraine in Odesa раїни в Одеській A wildfire due to ust 2022. Credit:

Roman Svitin



On the left: Crested newt, larval stage. Credit: Piet Spaans/ Wikipedia. On the right: holding a red-legged running frog Phlyctimantis maculatus on a field trip in Limpopo Province (South Africa)

Dr. Roman Svitin is a researcher in the I. I. Schmalhausen Institute of Zoology NAS of Ukraine and a lecturer at the Taras Shevchenko National University of Kyiv. His research focus lies mainly on parasites of wildlife animals, their biology and evolution as well as the impact they make on their hosts and ecosystems. As a lecturer, he teaches courses on Zoology, Physiology, and Ecology.
Roman Svitin completed his master's and PhD degrees at the same university, doing most of the experimental part in the department of parasitology of the afore mentioned Institute of Zoology. After defending a doctoral thesis in 2016, he went as a post-doc to South Africa. Having short research visits in different countries under the supervision of world-leading specialists in animal parasitology during the post-doc, he came back to work in his alma mater in 2021. Currently, Roman Svitin is involved in two research projects funded by the Ukrainian government, both focusing on different aspects of parasites from amphibians, reptiles and birds in native and urbanised ecosystems.

Laurent Dingli. — There's a ritual question I ask my guests to find out how they became interested in wildlife. Was it a passion that started when you were very young?

Roman Svitin. — Thank you for that inspiring question. For my part, unlike many fellow zoologists, I wasn't the kind of crazy kid who picked up every bug, snake and everything else around him. I don't know, I've always loved nature. My parents used to take me fishing, but I wasn't very enthusiastic about it. Then, over the years and when I was at university, I started to pay more attention to it and became more and more interested in it. I feel like I'm at the stage that children go through when they're small, and I enjoy picking up insects, snakes and frogs more than when I was a small child! So, I think it's still developing.

L. D. — Can you tell us more about your background, your studies. How did you specialise in particular in amphibians?

R. S. — My specialty, my main research interest is parasites in general but nematodes [Nematoda], the roundworms [or eelworms] specifically, not the common ones that can be found in humans or in pets, more parasites of wildlife. I study parasites of frogs, toads, snakes, turtles, lizards and sometimes fish. Now we also have projects regarding parasites of birds but my main focus is nematode parasitic from wild amphibians and reptiles. That's what I'm doing for over a decade.

L. D. — If you had to explain what is the interest of your research, what would you say? What are your achievements and your expectations in this regard? Is it mainly basic research? Do you also deal with applications?

R. S. — First of all, most of the research am doing is the result of collaboration, of a team work.

I started with nematodes that had mostly interest in fundamental research. As my ornithologist friend who study swans said: when you're picking this tiny little nematode from a lung of a dead frog under the microscope, you understand what science is all about, i.e. looking at something that no one has looked before you. So, at the beginning it was more fundamental research. These parasites are a rather neglected group of animals, not least because amphibians and reptiles are not of great importance in agriculture or to mankind in general, mainly in the context of conservation activities; again, people prefer birds or beautiful insects. So that was my initial objective and I have to say that we succeeded. I was involved in the description of 17 new species for science and even one new genus and many of them are really interesting. I'm afraid to go too deep in this because I can talk about my nematodes for hours! Sometimes they can really surprise us.

There's one example I like to give to my students: the nematode parasitizes the lungs of frogs or toads or some species of snakes. In the lung the adult is sucking blood; they are big and produce a large number of eggs and larvae which emerge outside. So, the poor animal has to cough and then swallow it and then passes into the intestine and goes out. From this larva, not just a new parasite develops but a new generation does. Females have their happy few days life and get pregnant with like three/four five eggs usually and it just doesn't give birth. So, the larvae are hatching from the eggs inside of the female and then they eat the female from the inside. The female is still alive but they just keep eating her internal organs and when they are fully grown and finishing up the female they just break in it and come out. These are in fact the larvae that can infect the next host. Many don't waste their time waiting; they just go through the skin of the frog and migrate straight to the lungs.

The nematode is so tiny and so small; we have no idea how it distinguishes lung from other organ when it's inside because it really doesn't have that skills in anatomy, doesn't have eyes or any developed organs that could help. It's quite curious to study stuff like this. As one of my friends said, many years ago the matrix RNA (that became the basic of covid-19 vaccines) was also just a fundamental study and nobody ever thought it was going to be applied somewhere. So, we'll see.

Above: 'Inside one of these plump wax moth cadavers are thousands of wiggly nematodes, ready to serve as biocontrols against soil-dwelling crop pests. The cadavers can be placed in orchard or greenhouse soil, and the nematodes will emerge to protect crops from pests such as citrus root and black vine weevils . Credit: Peggy Greb, USDA Agricultural Research Service, Bugwood.org.

I like to study what is around and maybe one day it will be some important discovery that may save humanity but I'm doing it because I'm curious as many scientists are.

Regarding the second part of your question, the application of science, our studies are mostly ecological in Ukraine. So, parasites can tell us a lot of stories. For instance, if we use the group of animals that can move around a lot, that have different food preferences and interact with different conditions like water, earth, air. If we're speaking about birds or frogs and look at their parasites, the latter usually have complex life cycles. To get into the bird it must go first into the snail or into the bug or grasshopper or any other intermediate host (like even frog or fish) at the beginning. So, when we look at the parasites, we can say where the bird flew, what did it eat and compare the data to previous studies. This helps us to monitor and try to predict changes. If we look, for example, at the group of parasites of the frog, we can say that it lives in pristine water condition if it has a parasite that has an intermediate host, a very sensitive crustacean that can survive only in pristine water. So, we are summarizing data, we are currently working with a lot of data and then we can draw some conclusions on the environmental conditions based on study of parasites. As a matter of fact, parasites behave, ecologically speaking, close to top predators which are more sensitive to the environment than their prey on which they depend while the prey can go down in their number and still survive. But, if there's not enough prey, the top predator will not survive. It works in a similar way with parasites.

L. D. — It is a good indicator of the state of ecosystems. In a very different context, it makes me think about the French naturalist Dr ***Theodor Monod*** who was at the time the greatest French expert on deserts' ecosystems and someone quite religious, a Christian Unitarian, often referring to the Bible. In one of his books, he recounts an event that left an indelible mark on him and challenged him, without calling his faith into question. He observed a toad or a frog that was eaten alive by a parasite and he was thinking to himself how God could tolerate such a cruelty on a living creature? Well, he was not naïve, he knew that this was part of Nature and beyond the ethical judgment or religious vision but it's interesting to know that it has influenced his way of looking at the world and that came from this observation of a parasite eating a toad or a frog. Of course, this is a very human point of view, as this type of consideration does not exist in nature — in the rest of nature should I say because we're part of it. So, I just wanted to refer to this because it struck me when I read his books.

Now let's talk about the impact of the war, of the Russian aggression, on Ukraine's biodiversity. It is obviously impossible to have precise data in wartime. In spite of this, do you have some information, even partial?

R. S. — Unfortunately, we can't collect the data straight from the front line; we don't have the precise data; but we do have some information. The study my colleagues and I were working on last summer was on the Lower Dnieper River, the right shore, after the Russian exploded the ***Kakhovka dam***. A crazy amount of water flowed down to the Sea and many amphibians were just swept from the wetlands to the Dnieper Delta and a lot of frogs and endangered newts [crested newt – Triturus cristatus, editor's note].

The river's shores were covered with their bodies. It was really a sad picture and many frogs were washed out to the Black Sea and did not survive the salt water. At the beginning, they were still there because there was a huge mass of fresh water into the sea, but there were almost no good fresh water bodies nearby where they could go so they were just standing in the sea. We found one newt that was still alive but it was like you know shrinking because the salt water just took water out of its body. So, we rescued it, dropped it in a bottle with just tap water and, like a balloon, it has inflated, pumped up because it really needed water. Many frogs have died and we've dissected them and we found a big number of parasites, parasites of jackals or foxes and of some birds of prey like owls and other water wetland birds and frog specific parasites.

The conclusion was that the Kakhovka region was a really suitable environment for this type of ecosystem; there was a perfect wetland where frogs are in the middle of the food chain.

Above: French naturalist, humanist, scholar and explorer Théodore Monod, Adrar of Mauritania (Oued Akerdil), December 1998. Credit Bruno Lecoquierre/Wikipedia — On the bottom right: Roman in waders looking for a pond turtle, Emys orbicularis, near Prymorske village (Odeska Oblast, Ukraine)

They are predators because they prey on insects and other small animals that fit in their mouth and, at the same time, they are food for many birds and some mammals. This is why they have the full spectrum of parasites and are intermediate hosts for parasites of predatory birds and mammals. So, we knew that the ecosystem that was destroyed was really good.

The other thing is that in the lower Dnieper areas if the frogs would manage to go to the freshwater bodies they would carry all the parasites they have but there, in the Odesa region, in the lower Dnieper areas, the frogs and all their intermediate hosts like snails and water bugs are not used to this kind of parasitic pressure. So, parasites can actually have a very significant impact on the local water bodies if frogs manage to get to it. Unfortunately, again, we don't really have this data — did frogs bring any parasites there? —, but we're probably going to get it soon. So, obviously nothing good could have happened in this regard. Recently, there was a paper on amphibians and reptiles that are close to the front line and the authors describe all the difficulties they met in collecting data. One of these colleagues is Oleksii Marushchak, a very popular herpetologist.

L. D. — Yes, besides, the explosion carried out by the Russians released a lot of pollutants into the water, which obviously had disastrous consequences for biodiversity.

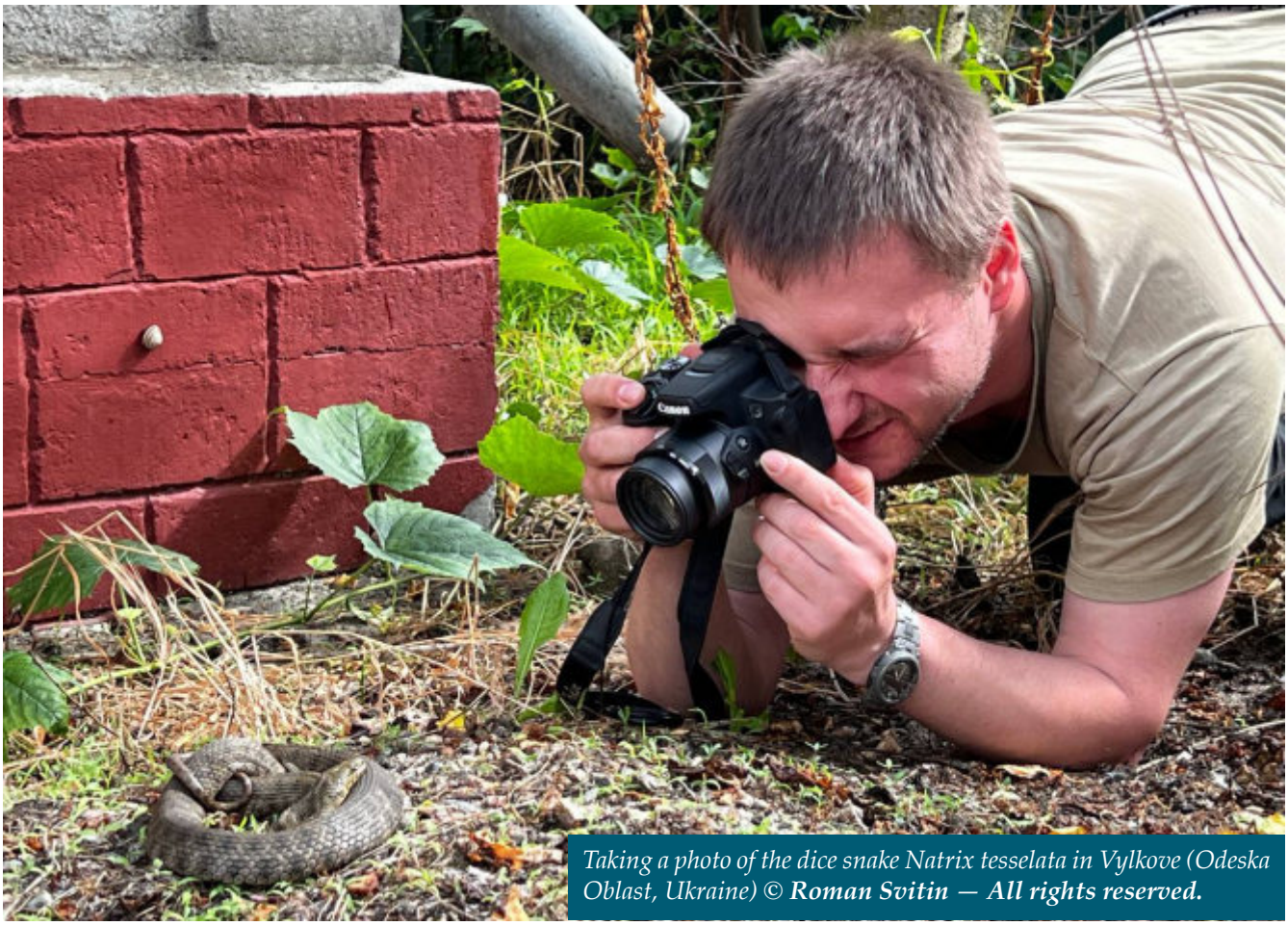
R. S. — All amphibians are suffering because water is getting very polluted after all these explosions; there are a lot of toxins in explosives, in the fuel that they use for their rockets; we're already trying to collect some data for heavy metals and we will do studies as soon as we can. Although we don't yet have any significant scientific data, we do know that it has a major impact.

L. D. — I had a very interesting discussion with Margot Wallström former Foreign minister of Sweden, who's co-chairing the High-Level Working Group on the impact of the Russian aggression on Ukraine. One of the priorities of this working group is to collect data that are then centralized in a database in The Hague. Are you participating in this process?

R. S. — Yes, sure, with my friend Oleksii Marushchak, and our research team, we published all the records of amphibians and reptiles and all the parasites that we found. We've done a database of parasites and published it. It was the first solid study in Ukraine on this subject. So, we're a little bit proud of it!

L. D. — What is your assessment on the impact of the other threats, on the combination of the multiple threats that Ukrainian biodiversity has to face such as global warming, pollution, habitat loss?

R. S. — That's the ecological part of our study. When we are analyzing the data on all parasites, we try to apply it in order to use it as an indicator for different threats. The global warming is a little bit tricky. Again, on the naked eye we can see that the species of amphibians and reptiles that lived, say in Kyiv and in the southern part of Kyiv, are now more common further North, like 50/100 kilometers away, because these areas are getting warmer and the parasites are also showing it.



Taking a photo of the dice snake Natrix tesselata in Vylkove (Odeska Oblast, Ukraine)

With my former supervisor and his PhD students we published a paper a couple years ago on nematodes from frogs that's previously have been recorded almost only on the South of Ukraine and we found it now mostly in the Central and more Northern parts of the country. So, this parasite is moving northwards, adapting to climate change. This nematode parasites frog's muscles, especially frog hips. People who like to eat that frog legs — which is quite a common dish in Europe…

L. D. — Yes, unfortunately (1).

R. S. — …People don't know that the frog's legs they are eating are sometimes tenderized by the nematodes which are living in them. But, it's just another good source of protein! Anyway, this parasite is transmitted by the vector which is a tiny little fly; we don't know much about this fly, it's one of the understudied animals but it's probably also dependent on the temperature or humidity or other climate aspects. It's just following climate and the parasite is following the fly because the frogs are still there; the frogs used to be in the South, in the North and in the Center of Ukraine; the frogs are still there but the parasite is showing how the climate is moving and again we don't know which parasites it will bring with vectors such as mosquitoes, flies, leeches; there are many different vectors for different parasites and diseases; animals also have viral, fungal and bacterial diseases. A very well-known fungus, the *Batrachochytrium dendrobatidis*, is devastating frogs in South America, in Central and South Africa where it's very well studied. It has probably originated in South Africa but with human traffic it's been transferred all over the world.

Another threat is invasive species. A very popular species, the red-eared slider (*Trachemys scripta elegans*), a tiny little turtle that you can buy in a pet shop, a very nice and adorable creature. It is very active, it grows very fast and when it's bigger it just starts pooping a lot and smelling and biting. So, people don't want to keep them at home anymore and they just throw them in the nearest pond; that happened all over Europe and in Ukraine as well. A couple of years ago, we had a project on this turtle. It's still not laying eggs in Ukraine at least but the red-eared slider competes with our pond turtle. Ukraine is one of a very few countries in Europe where pond turtle is still not listed as a critically endangered species whereas in most of the continent it's a very threatened one, mostly by red-eared slider.

(1) As we have mentioned in previous issues, many studies are showing that frog's consumption is a real threat on biodiversity particularly in Asia and also a disaster in terms of animal welfare.

We studied the red-eared sliders` parasites and discovered that it had brought parasites from North America to which our turtles are not used to and that they could possibly die from.

There are also invasive lizards and other invasive species.

L. D. — What do you think can be done to mitigate the impact of this invasive species?

R. S. — It must be governmentally regulated. I've seen it in South Africa and I think it really did work. They prohibited selling this turtle in pet shops. So, if you see people selling that turtle, you just report the pet shop, the police come and impose a heavy fine to the owner. Unfortunately, in Ukraine, you still can get it in the pet shop like many other animals. Again, it is overlapping with global warming; the climate in Ukraine is getting more suitable for species that would not have survived harsh winters decades ago, but they can survive now. It's not only turtles; there are many birds, different parrots that managed to survive; we don't have a very strong frosting winter anymore or many winters with temperatures of minus 20°C/30°C which was common in my childhood. So, many animals manage to survive. A parrot that will flee from a window represents a very aggressive species, it's just physically pushing away other bird species which are native and not used to aliens; they don't know what to do; they just simply go away.

L. D. — They have to adapt to climate change and suffer at the same time the consequences of this invasion of alien species which certainly makes things very difficult for them.

If you had to list a few priorities in terms of protecting ecosystems in Ukraine, what would you say, apart from the context of the war, which we hope will end in victory for Ukraine? So what are the priorities in your region?

Below: Marsh frog (Pelophylax ridibundus)

R. S. — I was blessed to study with professors who are really good in conservation and who have created a big national park in Poltava region. I was really lucky to be with them from the very first steps, from the very first field trip to the area until the national park was created. Now, it's working and accepting tourists. I've seen how it should be done in ideal way. There should be three steps I would say. The first and the most important is that it should be assessed by professionals, by scientists, because we really need to know what is going on there and, to do this, it requires people and funding; we have to gather specialists on frogs, birds, mammals, insects, earthworms, water, fungi, algae, higher plants, etc. We really have to go through every area we can. Then, we will provide recommendations, say here, in this big field there are a lot of grass and there could be a lot of insects and birds feeding on these insects but there are no big mammals which natively should be here. If we prohibit local farmers to send their livestock to graze, then it will just overgrow with one or two species of grass and a couple of species of herbs. So, if we want it to be a truly nice ecosystem we can either reintroduce buffalos or some wild horses or whatever animals supposed to be here before humans. If this is not possible, we can use the grass to feed livestock, that will also work. We can provide other types of recommendations, for example, we don't allow hunting on the banks of this river or the building of a factory, but fishing should be allowed because it's a recreational and educational activity. Just put up a big sign saying this bird, this frog and this turtle need your attention and please be careful if you find a turtle, don't take it back into the water, it just wants to go and lay eggs, let it go, and things like that.

Then local and central government must apply these recommendations and make them a rule, making them official. I saw this in the example of the National Park Pyryatynskyi National Park [***Pyriatyn National Nature Park***], in the central region of Ukraine. It's a fairly large national park and I have to say that everyone is happy, the local population in particular because the area is protected while allowing certain recreational activities, but they know that there will never be a big factory or major pollutant there. In my opinion, this is the ideal way to preserve nature.

L. D. — Yes, as you say, in order to find a balance between human activities and natural habitat sustainability.

R. S. — This happens everywhere in the world. You probably won't do any more than that if you close the area and say that no humans are allowed here, only wild animals; when humans can interact with nature, they can also understand why we need to conserve it. National parks are the most popular conservation areas in the world and South Africa's Krugger Park is probably the best example.

L. D. — Yes, now I think almost everyone agrees that the 'Fortress model' of conservation is outdated and won't be an option in the future.

Do you have other projects and ongoing studies?

Releasing a West African lungfish, Protopterus annectens, in Karingani Game Reserve (Mozambique) © Roman Svitin — All rights reserved

'Even though it is the heart of our research and studies, we never want to kill animals to study parasites'

R. S. — We are currently working on the project of parasites of birds from urban ecosystems. We have a brilliant PhD student who came up with the idea and she led the team. But, even though it is the heart of our research and studies, we never want to kill animals to study parasites. Many birds (in cities especially) are dying for eating some plastic that damage their digestive tract; sometimes they get hit by a vehicle; sometimes they got chased by dogs or cats or anything and people are bringing these birds to us and then we see which parasites they have. Urban ecosystems are a very popular topic. When scientists are trying to study nature in a human environment, they try to understand how nature is adapting. Every year, more and more wild animals are trying to find ecological niches in big cities and here the educational moment is crucially important. When you explain people that if you find a bat, you don't have to be afraid of it, it's just that the bat lives under the roof and it flies and catch mosquitoes and you have to be thankful. Our project aims on assessing the parasites of birds of populated places. We want to see what do these birds really eat and this something that parasites can also tell us. We want to see where do they fly, do they go in cities just for summer or just for winter or just for daytime or just for nighttime. It can also be evaluated by parasites that use intermediate hosts as insects that fly at night or they use as intermediate hosts earthworms or anything like this. So, we would really appreciate if people who find these birds could keep them for us so we can look at the parasites.

The second thing is that we want also to continue our research with amphibian parasites. Amphibians are very slow migrators. They generally do not stray beyond the pond closest to where they live or they can spend their whole life in one bank, but the birds are flying on hundreds or thousands of kilometers and it's interesting to compare which stories the parasites from amphibians and from birds can tell us and how the parasites adapt, how the hosts adapt to these parasites, where do they lose them or where they collect them. So, we're saying to people in Ukraine, if you see recently dead birds or frogs, please, don't hesitate to contact us.

L. D. — Do we have data on the impact of the wildfires and their increase with the climate crisis on biodiversity in Ukraine, and more specifically on amphibians?

'Fighters and biologists […] say that there is nothing alive, nothing but burnt ground.'

R. S. — Yes, Ukraine is not used to big forest fires unlike many other areas in the world where fire is the normal thing and even some plants require fire for their seeds to be able to sprout. But in Ukraine it can be devastated for amphibians. The ones that live in the water — the frogs mostly —, can survive. That doesn't mean they don't have any trouble with it but they can manage it; they just go under the water but they will have less food because many insects are dying in the forest. However, the toads and other terrestrial amphibians cannot survive. They're not smart enough to go and find some water when there is a fire; they simply sit there and burn alive; this is devastating and for reptiles as well. It's a really big problem, particularly in protected areas in the South and in the East of Ukraine where it used to be forest and now it's just burnt ground. Fighters and biologists who are there say that there is nothing alive, nothing but burnt ground.

L. D. — Recommendation 11 of the report of the High-Level Working Group on Ukraine states that there is 'a need to build the capacity of investigators and prosecutors to hold Russia accountable for its ecocide. There is currently no specialisation within the National Police for the investigation of environmental crimes. Ukraine could address this by creating special units within investigation Departments of the National Police they are dedicated to environmental war crimes and ecocide.' What do you think of such a measure?

R. S. — I think that would be very important. I know that members of our nature conservation group are documenting this ecocide and that they count the dead animals. Actually, according to our law, every dead animal has its own price, especially if it's from an endangered species, and you must pay a fine if you are responsible for killing an animal. After the explosion of Kakhovka dam, there were thousands if not tens of thousands of dead red listed newts. This is a lot of money that have to be counted. I'm not directly involved in this collection of data but I know we have people who are documenting it on a voluntary basis because they have no governmental assignment. So, we really need something like this recommendation 11 of the High-Level Working Group on the Environmental Consequences of the War in Ukraine.

Olga Chevganiuk

Olga Chevganiuk is a public activist advocating for animal rights in Ukraine. Born in Odesa and now residing in Kyiv, Olga studied organizational management at Odesa National University. After gaining experience in entrepreneurship, she became involved in the humane movement, specifically with UAnimals.

Since joining UAnimals in 2018, Olga has been with the organization from its early, informal days to its current status as Ukraine's largest animal rights movement. She has held various positions based on the fund's evolving needs.

Currently, Olga serves as the Head of the Department of Strategic Initiatives at UAnimals. Her work includes leading the #StopEcocideUkraine campaign, which seeks to recognize Russian ecological crimes in Ukraine. Additionally, Olga leads the advocacy department to drive systematic changes in Ukrainian legislation for better animal rights. By collaborating with strategic partners, Olga is advancing efforts to protect animals and nature amid the ongoing conflict in Ukraine.

Laurent Dingli. — Olga Chevganiuk, you are the head of the international department of UAnimals, which is the biggest animal rights movement in Ukraine.

I would like first to know more about your passion for animals. I guess it started during your childhood?

Olga Chevganiuk. — I have a very long story about this, but I'll try to shorten it to save time. I never heard any specific stories about this when I was growing up. My parents never told me, for example, that I took in abandoned animals. They only mention the fact that I used to pick up rubbish in the forest when I was a kid, before going to school, which nobody taught me to do. But in general, it wasn't something taught in the family. One day, when I was about 18, I went into the kitchen and started taking food out of the fridge. I did it mechanically, holding the plate and taking what was in the fridge. But I suddenly asked myself what I really wanted to eat. I realised that it was anything but meat and I told myself that I didn't have to eat it if my body didn't want it. So, I took it off my plate and, intuitively, I started asking myself this question every time I chose food at home or elsewhere, and systematically, it wasn't fish, meat or seafood, and that's how I intuitively stopped eating meat, and it was only after that that I started asking myself questions about being vegetarian or vegan. Would I get all the nutrition I needed? And, of course, when you study this kind of information, you discover the animal rights movement. So, I researched the major animal rescue organisations around the world. After that, not only did I cut out animal products from my diet, I also stopped wearing leather and using cosmetics tested on animals. At the time, I wasn't involved in animal defence activities. I didn't think it could be my profession in any way.

After years of looking for what I really wanted to do, I discovered the UAnimals movement, which had already been around for two years and was quite influential and important. So, I joined the association and, thanks to my management experience, we started organising different events. I started to learn more about wild animals, how they are used in captivity, the state of biodiversity in Ukraine, etc. That's how it all started.

L. D. — This is very interesting because usually people start by having a special bond with animals, especially pets, and then they change their diet, but in your case it seems to be the other way round. Your body and mind instinctively refused to continue with the ordinary diet you had, as if your body unconsciously felt the need to change. It's the first time I've heard such a thing.

O. C. — Yes, we more often hear people say they've become vegetarians or vegans, for example after seeing Earthlings.

L. D. — Absolutely. Could you describe your organisation and the work you do there? I think it was created in 2016 and that you joined it two years later.

O. C. — The UAnimals movement started in 2016. By the time I arrived in 2018, it was already quite large, bringing together the biggest animal rights march in the whole of Eastern Europe, not just Ukraine. In Kiyv alone, we gathered around 5,000 people every year, and several other cities — around thirty — took part in this animal rights march of which we are really proud. It was always like the starting point for all the activities the following year and inspired people to move forward.

So I came in 2018 and the first thing I did was talk to our Ukrainian designers about refusing to use natural fur in their collections and they signed special documents and became participants in the ***Fur Free Alliance***. UAnimals began by fighting against the presence of animals in circuses, but very quickly many other areas of intervention were included and today we work in all areas where animals are mistreated. For example, in the field of entertainment, we are against the presence of animals in circuses, dolphinariums, contact zoos, exhibitions, etc. We're against fur farming; we're in favour of correct identification of animals and we have a legal department that works to change the laws here in Ukraine, to improve them and, more recently, to comply with European laws, which helps us a little because it's a sort of additional stimulus for the government to move forward.

Below: Stop Ecocide Ukraine campaign

'Need a ride to another planet, please! This one is being destroyed by Russia.' That was the slogan of the recent # StopEcocideUkraine campaign organised by UAnimals. 'Hitchhikers' on the streets of cities in Canada, the United States, and Germany. Left: MEP Thijs Rutten joined the rally in Amsterdam, as did Ukrainian soldier Andriy Siromakha, who is currently undergoing rehabilitation in the Netherlands

At the start of the full-scale invasion in 2022, UAnimals had a staff of six, some of whom worked part-time, plus our volunteers, who still make an important contribution to our work. Today, the organisation has around 60 people and, sad as it may seem, it's the war that has enabled us to grow so quickly. A large part of our work is now devoted to saving animals from the war in Ukraine, and this also influences the department that works on wildlife in Ukraine, because we focus above all on the problems linked to ecological crimes, ecocide, which destroys biodiversity. As you probably know, Ukraine has 35% of the biodiversity of the whole of Europe. In any case, what we have here is truly precious to the whole world: ecosystems such as wetlands, different types of steppes and various species that are listed as endangered in Ukraine's red book. Therefore, we're trying to identify projects that are linked to war crimes against the environment. Of course, we have a lot of animal rescue projects going on in Kyiv. For example, the evacuation project, which began in 2022, is ongoing. So far, we have already evacuated more than 4,500 animals. In 2022, there were also a lot of wild animals, like tigers, lions and so on. It turned out that in eastern Ukraine there were a lot of private zoos and people keeping animals in captivity. We evacuated a large number of animals of this type and kept them temporarily near Kyiv in the Center for wild animals of Nataliia Popova, with which we cooperated, and those that are healthy enough to be transported. We are trying to find colleagues abroad to transport these animals to Europe, or even Africa.

In addition to evacuations, we have the program of sterilisation of stray animals. Russia destroys cities, kill people, and a lot of animals are left in the streets. So, we have the sterilisation program to avoid a possible catastrophe. We also have a humanitarian aid and medical department. This includes a veterinary vehicle that travels to the most complicated areas of Ukraine where people do not have vets, and where we help to carry out medical procedures, including surgery on animals. Nowadays, a lot of work is concentrated around the consequences of the war.

L. D. — Yes, I have to say that I'm really impressed by the spectacular growth of your young organisation, even knowing, as you said, that it's partly due to tragic circumstances. I think that many Europeans were moved after seeing the images of refugees holding their pets while trying to cross the Dnieper on the debris of a bombed bridge; it was really impressive and I think that people like me who live in the western part of Europe and therefore very far from the battlefield could nevertheless have some idea of what the Ukrainians were and are still going through. A few days ago, I heard an old Ukrainian lady on the news saying that she had evacuated her house but had left her parrot in its cage. Of course, I'm not judging her because I'm not in a war zone and I don't live under bombs, so I have absolutely no judgement, but I was wondering why she hadn't just opened the cage.

On the other hand, I had a very interesting discussion yesterday with a Ukrainian herpetologist, Oleksii Marushchak, who told me that one of the problems associated with the impact of the war is that exotic pets are being released into the wild; they are invasive species and therefore represent a danger to native Ukrainian species and biodiversity. This is a very complex situation that needs to be addressed, between rescuing animals and protecting biodiversity.

O. C. — Yes, that's right. I would say that in Ukraine we have enough rehabilitation centres for wild animals. Of course, they all need additional funding to improve their reception and care capacities. We have very good centers for native wildlife such as bears, like Synevir in the west of Ukraine, Domazhyr and the White Rock Bear Shelter in Kyiv where very good specialists work. But this is not the case for lions and other non-native species. Today, I don't think there are many left. We are also trying to improve the living conditions of these animals and have recently provided them with special buildings, modular houses.

One of the projects I run is called Stop Ecocide Ukraine. In 2022, we realised that the destruction of ecosystems was not a side-effect of the war, but one of its objectives. The Russians are destroying cities, culture and nature. When they entered the cities, they went into the shelters and killed the animals for no reason, then they targeted the zoos and simply destroyed nature by burning down the forests. During big catastrophes, for example, when the Kakhovka dam was destroyed by the Russians, there was a zoo called Kazkova Dibrova where there were hundreds of animals, all of which were left underwater. Only the birds, who could swim survived and a few other species — ***parrots, squirrels, chinchillas and guinea pigs*** that were brought to the house of one of the zoo keepers at the time of the destruction. The rest of the animals died underwater. Before that and for a very long time, we were in contact with the owner of the zoo (Olena Navrotska) and tried to help her financially to evacuate the animals.

We were prepared to provide food, medicine and everything else, but the Russians wouldn't allow the animals to leave the zoo. So the carers only rescued those they could carry in their arms, like very small animals, and they still have them at home. This is just an example, but when we saw the scale of the crimes committed by the Russians, we decided to launch a campaign. First of all, we launched a petition that attracted 25,000 signatures, and then we sent it to the UN and various governments so that the ecocide in Ukraine would be recognised.

Over the last two years, we've organised hundreds of events to get people's attention. This is our way of helping the government to one day make Russia pay for these crimes. As an NGO, we can organise demonstrations and different types of events such as photo exhibitions and films. For example, a few days ago we organised an exhibition at the National Museum of Ireland entitled 'Nest of War', showing a sculpture, a nest made of barbed wire and symbolic anti-tank hedgehogs, that was created by the Irish artist James Hayes. This is how we try to speak for nature and for those who cannot speak for themselves.

L. D. — I'd like to talk about Anton Ptushkin's recent documentary film. What do you think it teaches us about the bond between humans and animals?

O. C. — I like Anton Ptushkin's film because it's another way of letting the world know about Ukrainians and this side of Ukrainians because, as you mentioned earlier, it's quite unusual for people to rescue animals during war. I asked my contacts for more information about this and they confirmed that people don't normally do this during wars. And the movement in Ukraine is really important. So Anton Ptuschkin is one of the people who is showing that to the world, and he's doing it in a very positive way. I suppose a lot of people will see that. In the film, there is ***Petya Petrova*** who, at the time, was one of the most active members of our team in the evacuations, as well as ***Nataliia Popova*** who also contributed at the time to saving wild animals because she has a rehabilitation centre.

L. D. — As far as the reconstruction process is concerned, there is one issue that I discussed in particular with Margot Wallström: the war is a huge tragedy, but it can also be a way of correcting the mistakes of the past and preparing for a better future in terms of conserving species and biodiversity. It also means fighting corruption, which remains a major problem in Ukraine. I've seen that a bill co-authored by ***Асоціація зоозахисних організацій України - АЗОУ*** [Association of Animal Protection Organisations of Ukraine - APOU] and defended by 27 MPs of Ukraine has been registered, which provides for owners' obligation to prevent uncontrolled breeding of pets, including by spaying and castration.

Three out of the 10 laureates of the All-Ukrainian Zoo Protection Award

Transfer of 5 lions abroad in June 2023, organised by Nataliia Popova's Wildlife Rescue Center and UAnimals with the support of IFAW

So, this is for domestic animals but more generally, what are your expectations for the postwar context and what can you prepare from now on in this perspective?

O. C. — Yes, I agree that we now have the opportunity to do better than before. There are many things that need to be changed in Ukraine. It's not as if we just think that the world should help us. First of all, we have to set an example and change the things we can change ourselves. We have a lot of legal work and projects that are being discussed with MPs, scientists and so on. But UAnimals, as an organisation, is more focused on what we can do now, because we don't know when and how the war will end; we don't know what land we'll get back and for us, it's a bit strange that everyone is so focused on reconstruction when there are things that can be done right now. So, we talk to scientists and national park representatives and ask them what programmes they already have in place and what are the best things they can do to help nature now. Then, we prioritise what our audience is most likely to support.

This is an important step because it's much easier to raise money for something that's urgent and has to do with war. For example, the Russians shot up a stable of horses and these horses need help now and here to be evacuated, to heal, etc. When we talk about nature, we're talking about the wild animals. But when it comes to wilderness, these are long-term projects, the results of which will be felt later, sometimes several years later. Therefore, we try to prioritise and find the point where we can still get people's attention and where we'll get the best results. What we usually do is raise funds for nature park projects. It can be equipment — for example, we bought equipment for a nature park to help it prevent fires, because when the land is mined, the risk of fire is higher. We're also working with the Tuzlivski lymany national park in southern Ukraine, which needed to establish a connection between the estuary and the sea. They used to do this with their own funding, but now their resources have dwindled. It's important for fish to be able to migrate, and if they don't, it affects the whole ecosystem, birds and other animals. So, we carried out this project, helped with the equipment, the works and everything else needed to link these two areas.

That's what we think the country should be doing generally because there's a lot that can be done right now and, indeed, we don't have the opportunity to work on territories that are temporarily occupied. However, animals migrate and move around. Therefore, taking action in certain areas can have a more global impact in terms of species conservation. For example, we have a project for curly pelicans. The place where they used to nest is being bombed at the moment; that's why these pelicans no longer nest there. However, they are able to nest in another territory, also in the south, but in a safer, quieter area where conditions are very similar. The national park has a project to create artificial islands where they can nest; it's a project that has already been tried out, notably in Bulgaria. This is what we can do, and I think it could be a good strategy for the country and for the world in general when it comes to preserving biodiversity.

L. D. — What about the international collaboration, in particular with organisations that are used to intervene in context of war like Network for Animals and, of course, IFAW, an organisation that you know very well.

O. C. — IFAW is an international organisation that continues to be very effective and supports a number of different projects. A month ago, for example, we evacuated horses with their help and they also financed some of the modular houses that were built by us for feral cats in Nataliia Popova's rehabilitation centre. As this field is generally quite new, particularly in Ukraine, and people don't have the necessary knowledge, IFAW has organised a number of conferences for people who rehabilitate animals, which is very useful.

L. D. — Can you tell us more about your education programme?

O. C. — UAnimals gets quite a lot of coverage in the social media. It's our way of changing people's opinions on the different subjects we work on and raising funds to carry out our projects, which are not informative but practical to help animals. We have our Ukrainian pages on all social media; we have English pages on ***Instagram*** and ***Twitter***. We have a separate page called '***UAnimals kids***' to teach parents how to bring up their children so that they are more aware of humanity and so on. Basically, what works is the way we communicate, our communication strategy where we combine all the war-related topics with interesting cases about particular animals because that's what people always like to hear, not what's going on in general, but about a certain cat or a certain lion. So we tell these stories, we show our work, and what works well is that we're very transparent. From the first day of the large-scale invasion, we have daily reports. Every day we write down what we've done, and of course we have financial reports on our pages and monthly reports on our website, which is important because it gives people confidence. They can easily see how their money is being used. Recently, we launched ***UAnimals media***, a separate page on our website that works more like a niche media that talks about animals, humanity and our projects, and we run campaigns abroad that I've already told you about.

L. D. — Are you visiting schools or anything like that?

O. C. — We are invited to do so and sometimes I carry out this type of visit, but more as a part of my activity for investigation and to help others. We have signed a memorandum with the Ukrainian Ministry of Education and the main aim is to change the curriculum in schools, adding a few lessons and more information about ecosystems, animals, plant-based diets and so on. Within our work with the Ministry of Education we have also started a communication projects, which is good as they're starting to talk about subjects they've never talked about before.

The lion Akeru was rescued from a private property in the city of Kramatorsk, in the Donetsk region of eastern Ukraine

Christina Dragomaretska, former architect in Odesa, is an animal catcher working in frontline areas— Gian Marco Benedetto/UAnimals — All rights reserved.

Main Directorate of the State Emergency Service of Ukraine in Ky
fighting a fire and rescuing a cat

Click on the image below to watch the short video © Main Directorate of the State rescuEmergency Service of Ukraine in Kyiv[управління ДСНС України у м.Києві] —All rights reserved. On the right bombing in Toretsk, Donetsk region.

EVERY LIFE MATTERS

iv

Головне

State Emergency Service of Ukraine Odesa Garrison rescuing a dog after a Russian attack

Click on the image to visit their Facebook page

'This dog was just saved from cold waters of Dnipro river.
That's what Russia doing to us. To our people, to our animals.'


UKRAINE
STOP NUCLEAR TERRORISM
polluted with harmful substances
TOGETHER AGAINST ECOCIDE IN UKRAINE
FULL EMBARGO ON RUSSIAN OIL AND GAS
MAKE RUSSIA PAY
TOGETHER AGAINST
ECOCIDE IN UKRAINE
campaign ukraine

On June 22, about 60,000 people took to the streets of London as part of the "Restore Nature Now" campaign. In total, about 350 organizations joined the action to encourage the government to pay more attention to biodiversity protection

Anton Ptushkin

Anton was born on 22 May 1984 in Voroshylovhrad, now Luhansk. He graduated from the East Ukrainian National University named after Dahl with a degree in sociology. After graduation, he worked as a DJ and art director in a nightclub. A few years later, he became a manager at the Jewish Agency.

In 2012, he moved to Kyiv, where he started working in radio. He founded the Lounge FM radio station, where he also worked as a programme director. He is also a co-founder of Radio Friday.

In 2017, he became the host of the new season of the show 'Heads and Tails' together with Anastasia Ivleva.

Anton himself is originally from Luhansk and has been forced to live in Kyiv for the past 8 years. In a YouTube video, he condemned the war waged by the Russian Federation against Ukraine, calling on Russians not to be silent. On 20 April 2022, Ptushkin was banned from entering Russia until 2072.

On the occasion of the Independence Day of Ukraine, President of Ukraine Volodymyr Zelenskyy awarded Anton Ptushkin the title of Honoured Journalist of Ukraine (21 August 2020) for his significant personal contribution to state-building, socio-economic, scientific, technical, cultural and educational development of Ukraine, significant work achievements and high professionalism.

In 2024, Anton Ptushkin directed and co-produced the documentary film, 'Us, our pets and the war''a film about life, humanity, as well as an incredibly close connection between people and animals, which even more strongly was highlighted by the war in Ukraine', as specified in the text accompanying the trailer.

Laurent Dingli.— First, there is a kind of ritual question I'm asking to my guests. Did you always have a special relation with animals and with nature?

Anton Ptushkin. — To be honest, I wasn't particularly interested in the animal world and I don't have any pets. During my travels, I often photographed animals, because I visited countries like Namibia, Australia and New Zealand, where wildlife is very abundant, but I was not an animal right activist. It was while making this documentary that I discovered the subject.

L. D. — You told the BBC that it all started when you saw photos of Ukrainian refugees being evacuated with their pets. ***Wayne Jordash***, one of the film's contributors, says that he has never seen so many animals evacuated during a conflict. What do you think is so special about this war and Ukraine? What does it say about the Ukrainian people?

A. P. — I think this is probably the biggest animal evacuation in human modern history. We've never seen anything like that.

We estimate that approximately from 10 to 15 million people evacuated from Ukraine in 2022, according to a survey carried out by ***The Institute for Behavioral Studies*** (IBS) of the American University of Kyiv up to 70% of respondents had at least one pet. So, two third of at least 10 million people, just do the maths. We're talking about millions of pets. It was really obvious that people would evacuate with animals that became a part of their life. For us, it was a kind of eye opener because we were going through really hard times two years ago. At the time, I was sitting in this apartment and I didn't know what to do. I thought that maybe I was going to die the next day and those stories of people evacuating with their pets and sometimes risking their life in order to evacuate with their pets were really heartwarming; there's something really humane in those stories and that was the first moment we realized that maybe we could do something on this topic. There was a lot of stories regarding evacuation of wild animal from zoos. I vividly remember in particular the picture showing maybe 10 wallabies being evacuated in a small truck here in Kyiv. It was mind-blowing. So, that's was the trigger. And, obviously, for foreigners, it was some kind of metric of humanity. They didn't know that Ukrainians were really bonded with their pets. Wayne Jordash who is a great lawyer from the UK said that he had never experienced anything like that although he was involved in many conflicts, like in Syria, Rwanda. So, I believe that it was a really interesting point, an eloquent thing that told a lot to foreigners about who Ukrainians people really are, something about their humanity and something about their human traits.

L. D. — Rescuing can easily put your life in danger but it also works as a kind of therapy for the rescuer. You said during a recent interview with the BBC that you didn't know before doing this film that animals could suffer from PTSD, exactly as humans. One has to imagine the terror of animals locked in cages in the middle of the battle field with the constant blast of shells and missile. This is one the very interesting angles in your film and something quite new I believe because many people don't know that animals too can be affected by trauma.

'Before making this film, I didn't think that animals could suffer from post-traumatic stress disorder. '

A. P. — It never crossed my mind. Once again, I think this war has opened our eyes to the fact that we humans share almost the same suffering as animals, but that animals can't say that they are suffering. I think I'm suffering from post-traumatic stress disorder (PTSD) — well, not exactly post-traumatic stress disorder, because the causes of the trauma are still present; there's no 'post' trauma yet. For example, yesterday I couldn't sleep all night because there was a combination of a violent and very strong thunderstorm in Kiev and, at the same time, a rocket fire from Russia.

What I mean to say is that we are still as stressed as the animals. I've collected footage that unfortunately we haven't included in the film showing people sitting in their bathrooms because, they say, you need two walls to protect yourself from the blast, and people are sitting in the bathroom holding their cats or dogs because it's easier for them to cope with the stress, because obviously the animals can help them get through it. We also have a lot of footage of dogs that don't bark but cry when they hear explosions, which means they're stressed too. In a very recent sequence filmed in the Dombas region, we see a dog digging a tiny trench to hide from shellfire. I was struck by these images. Coming back to PTSD, I think the best illustration of PTSD is the lion we showed in our documentary. When a creature is not in a war zone, it can recover and that gives us hope that the damage is not permanent, that the condition of a particular animal can change for the better or improve. I've visited many animal shelters throughout Ukraine and I've seen dogs in shock following an explosion — you know what shock is, a dog's limbs are shaking because it's been under a lot of stress.

L. D. — This is exactly what happened to the veterans of the First World War. I have images in my mind of soldiers shaking, and some for days, weeks, even years. And it probably resembles the behaviour of the dog you observed.

A. P. — Yes, indeed, and I've seen dogs that have gone completely deaf because of the explosions and again, while people can understand that it's war, that it's trauma, animals can't and that's why I think they need to receive not just treatment but basic care and love.

L. D. — It works like a kind of double mirror, because we can see our own stress, our own anxiety in the terror, the anxiety, the stress of the animal, but it's not just a question of looking at this terror, it's also a way of treating it, of healing it. Perhaps it's too early to talk about this, but don't you think we should be preparing for the post-war context in this area, thinking about ways of healing the traumas of humans and animals by interacting with animals, of course while respecting their needs and their freedom. There may be something here to develop. What do you think of this type of mutual therapy?

A. P. — It's 100% legitimate and yes, at the moment, I think that all of us who live in Ukraine are more or less traumatised because of the war. This is the third year of this conflict.

Imagine living without knowing what's going on, not knowing whether there will be another attack tonight. I saw, for example, at the ***Ohmatdyt Children's Hospital***, which is the biggest Children Hospital in Kyiv, that they practice animal therapy. We have included this episode in the international version of the film.

Marina Bolokhovets and the dog Bahmut © Anton Ptushkin — All rights reserved.

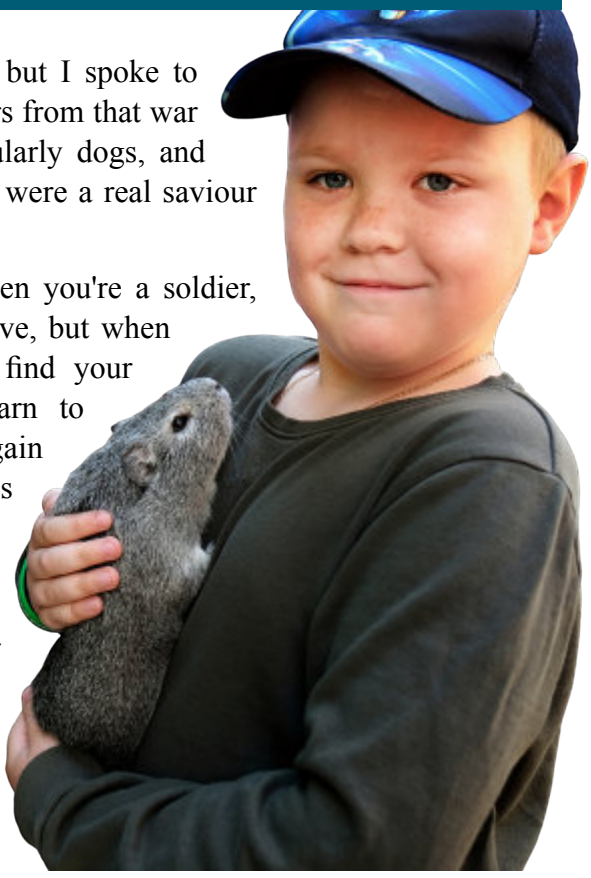
Orikhiv, Zaporizhzhia region © Photographer unknown/UAnimals

A pretty young girl from the Kherson region, aged eight or nine, lost her leg as a result of a Russian air strike, a rocket hitting their house, and she is suffering from post-traumatic stress disorder.

At the same time, I spoke with her psychotherapist and learned that the ***dog Patron***, a Jack Russell Terrier, a Ukrainian sniffer dog, which is quite famous in Ukraine, has started to visit this girl, Marina, and that this has radically improved her sleep, her dreams, her behaviour, the colours in her drawings have become brighter, not as black or white as before, and, as far as I know, this particular hospital uses this type of animal therapy. Once a week, animals are brought in from Kyiv zoo and I think that this improves people's psychological health considerably.

It's not in the film, but I spoke to veterans, retired soldiers from that war who have pets, particularly dogs, and they told me that dogs were a real saviour for them.

During the war, when you're a soldier, you don't talk about love, but when you come home and find your dog, you have to learn to communicate again through love, tenderness and cuddles; and a dog's life is very structured; dogs generally have regular schedules and a precise timetable, so to speak.



Kyiv Zoo regularly organises visits to the Okhmatdyt Children's Hospital, pictured here in May 2024, before the children's hospital was hit by a Russian missile

Brave, a leopard cared for by Wild Animal Rescue

Below: Patron, landmine finder and mascot of the State Emergency Service of Ukraine in Chernihiv Oblast, with the Golden Paw award of the Irish Kennel Club.— Credit: Dsns.gov.ua/Wikipedia.

For example, you have to walk your dog and there are no excuses for not doing so. It's too early to talk about the end of the war, but I believe that animal therapy can be a saviour, and not just for cats or dogs. We did a shoot in Lebanon where there is donkey therapy (at ***Little Reed*** near Beyrouth). You can communicate and heal a donkey or a horse. I think this animal therapy has a really big potential.

L. D. — Rescue in the context of war also raises wider issues such as the consequences of the wildlife trade, whether legal or illegal. For instance, ***Nataliia Popova, Founder of the Wild Animals Rescue Center***, notes that some wealthy people own wild animals, such as the lion cubs seen in the film, but when they grow up and their owners can no longer look after them, they abandon them or keep them locked up in tiny cages in appalling conditions. It's a problem that animal and nature conservationists are very familiar with, and one that occurs all over the world unfortunately, with a few hotspots such as the Middle East, Asia and so on. Do you think your film could help to shed light on this problem and, hopefully, help to change certain attitudes to it?

A. P. — I'm very pleased that you've highlighted this. It's not a problem specific to Ukraine or the former Soviet Union regions, it's actually a global problem and I think we've managed to show that with the lion cubs. They're really cute, small and fun but, once they're grown up, they become these big cats that you can't keep in good conditions. It's a huge problem. As you said, the war has shed light on this issue. For example, there were the lionesses that were abandoned because they were in the middle of a war zone, under bombardment. I hope that, because of this conflict, we're going to see some really important changes in the way Ukrainians behave towards animals. For example, I know that circuses with animals have been banned in Ukraine, which is very important because they are still allowed in Russia. A few days ago, I saw in a small town in Russia that lions had attacked their trainer during a circus show. I know that there is a lively social debate on issues such as zoos with animals or the purchase of pets — 'adopt, don't shop', as animal rights activists rightly say. Once again, this negative way of treating wild animals is probably a legacy of the Soviet Union and its way of thinking. It's obviously all about showing off and it's often a kind of entertainment for rich people.

L. D. — Yes, and we see it particularly in the Gulf States, Mexico and France, where rich people, especially drug traffickers put on a show with large predators that they keep on a leash and drive around in their luxury cars. This ridiculous behaviour is a way for them to show their power.

A. P. — It's a really good example and I think we all have heard about Pablo Escobar's hippos. It is a big problem for the Colombian government, which doesn't know how to deal with them.

So, yes, I think things will improve, but it always takes time because it's a question of mentality. Our documentary, like other films, can help to raise awareness and perhaps change attitudes. Above all, animal rights organisations have played a major role in raising awareness during this war. I have spoken to many of their representatives on this subject.

L. D. — We just emphasized that the war and this behaviour towards animals was saying a lot on Ukrainians. This war says also a lot on the behaviour of the Russian army. Not to mention the torture and slaughter of humans in Bucha and elsewhere in occupied Ukraine and all the war crimes and crimes against humanity that Russians have committed, I have in mind the horrible story of the Borodyanka dogs' shelter among many other sordid examples. The Russian let many of these dogs to die from hunger and thirst with no purpose, not even military purposes. So, we're just wondering why? I don't want to say that all Russians are monsters but there is a kind of constant in the behavior of the Russian army for decades, especially since the conflicts in Chechnya, Syria, Ukraine. We know how it works in the Russian army where acts of extreme violence are committed against the young recruits such as tortures, rapes and even murders. They are embedded in violence from the very beginning. So, what do you think about this behavior?

A. P. — Firstly, about a week ago I watched a very good documentary, ***Intercepted by Oksana Karpovych*** which is mainly based on intercepted phone calls from Russian soldiers with their loved ones in 2022. If you get a chance, watch it. I think it will soon be shown around the world, as it is currently making its way through the festivals. It's an excellent documentary because, in addition to all the acts of cruelty and atrocities committed by the Russians, it tells the story of how your behaviour as a human being changes during the war, as if people really do turn into beasts. During the preparation of this film, I spoke with soldiers who told me that the Chechen troops in the Russian armies systematically killed dogs, which I believe are considered 'impure' by Islam. We also heard that the Russians use dogs as live mine traps: it's really cruel, they break the dog's back legs, place a mine or grenade under the dog and leave it to die. The poor dog would then start crying and begging for help. If anyone, soldier or civilian, tries to rescue him or her, the bomb or grenade explodes. We know this because a dog with broken hind legs was rescued and the bomb defused. I don't think this phenomenon is very widespread in the Russian army, because Russia is a very vast country where people and behaviour are very different. I know Russians who behave normally with animals, as people should, but, yes, there is evidence that some barbaric attitudes were perpetrated, particularly at the beginning of the large-scale invasion of Ukraine, when the Russians committed so many atrocities against humans and against animals as well. It goes hand in hand.

Below: 222 dogs out of the 485 living in the shelter of Borodyanka, in Kyiv's Oblast, died from thirst and starvation during the Russian occupation. Photographer unknown.

L. D. — Very often, if the animals could not be rescued in the territories temporarily occupied by Russia, as in Bucha, it was because the invaders forbade them to be rescued. We are also reminded of the horrible story of the Borodyanka shelter. When the Russian army prevented people from feeding the dogs in this refuge, Natalya Mazur, the director, decided not to open the cages. I can't judge her decision because I don't live in a combat zone where vital decisions have to be taken urgently, but you can't help thinking that some of these dogs could have been saved if she had opened the cages. The risk of these dogs biting humans — which was the main reason for keeping them in cages — was in fact very low. This, of course, is just my opinion.

'One of the biggest questions I asked myself before starting to make this film, was this: is it acceptable to risk the life of a person, of a human being, to save the life of an animal?'

A. P. — I had an interview with a major magazine here in Ukraine and the journalist asked the same kind of question. It was interesting. I'd like to point out that this episode with Natalya Mazur provoked — I wouldn't say hatred — but a lot of discussion in Ukrainian society, and I was even criticised, as the director, for including her in the film. Many activists and animal rights organisations thought that I shouldn't have shown this woman because she was guilty, she was responsible for this situation. It's not my style to get involved in commentary. I don't want to show quarrels. I included Natalya Mazur for several reasons. First of all, this is a documentary and if you're going to tell a story, you have to allow both sides of the conflict to contribute. Secondly, as you said, she is responsible for what happened, but she claims that she saved some people's lives. In fact, one of the biggest questions I asked myself at the beginning, before starting to make this film, was this: is it acceptable to risk the life of a person, of a human being, to save the life of an animal? Obviously, it's a rhetorical question; there's no right or wrong answer and I think everyone should answer this question; everyone has their own kind of answer. Natalya Mazur has answered this question. Although she was responsible, she decided to abandon these animals and obviously, if you ask me, as Anton, a documentary filmmaker, this argument that they could have bitten people is pathetic. She was responsible for that and I've included this episode because it makes the heroism, the bravery of the employees of these refuges even stronger because, despite the risk, they stayed in their place of work and managed to help the animals and for me, that's something very important.

I'd just like to add one last thing. I've heard a lot about the confusion of the first days of the large-scale invasion, but I can clearly speak about it myself because I lived through it. During the first three or four days of the war, it was a total mess in your head, inside you. I didn't know what to do and a lot of people were in a state of shock. When you're in shock, you can't think; your basic attitudes and reactions are activated. That's what people mean when they say that war brings out the true human in you. Some people risked their lives to save another human, an animal, while others simply abandoned their pets.

L. D. — I think you were absolutely right to show that because it's the reality; you don't have to take sides all the time. It also fuels the debate and, as you said, at that time people weren't making cold-blooded decisions; there was the shock, the surprise of the sudden start of the full-scale invasion.

Could we talk now about the incredible story of the cat Gloria who survived for two months on the 7th or 8th floor of a building in ruins and who was finally rescued by a whole team with a fire engine. One of them says in the film: 'For us, every life matters' – and another rescuer states that he's 'saving animals to remain human'. How could this message have an impact beyond wartime?

'Saving animals to stay human.'

A. P. — If I had to sum up the whole film in one sentence, I'd choose that one — saving animals to stay human —, because this film is not just about animals, it's also about people, about humanity. When you help defenceless animals, there's something human and comforting because, once again, I can say that war is really dark; it really reveals the dark sides of humanity, especially during the first few weeks of the war. If I can talk about it with you today, it's because we've got used to this war. Two years ago, we were in a state of confusion, survival mechanisms built into the evolution of our species were triggered, but there's something comforting, something good about saving those who need help and who can't beg for help because they can't speak. I think we become human when we do things like this, like saving animals, and those words from the emergency team were really inspiring.

Like humans, animals can suffer serious after-effects from trauma, particularly in wartime, but unlike humans, animals do not have the means to understand what is happening and therefore cannot use their intelligence to reduce stress © Fourth Separate Tank Brigade, Kharkiv State Emergency Service, Suspilne Kharkiv/Vyacheslav Mavrychev, Roman Negrienko / Hromadske.

L. D. — I also wanted to say that this is a way of inviting us to change our vision in order to face up to the enormous challenges we have to deal with, such as the climate crisis, the loss of biodiversity and pollution. In other words, the attitude of these rescuers can be seen as an invitation to change, as an evolution in our collective way of seeing these challenges. This may seem a little ambitious. I think you understand what I mean.

A. P. — I know exactly what you mean. Let's take an example. Before the invasion, I used to sort my household waste so that it could be recycled. Of course, with the spread of the war and the constant dangers we were facing, sorting this waste initially seemed to me to be a very secondary action, not to say derisory. But I've recently got back to it. The situation in Kiev is calmer and safer now; even if it's temporary, we're less in a state of emergency. In other words, your idea is a good one, but it can only be applied in a post-war context, because at the moment, the impact of the Russian invasion on the ecology, flora and fauna of Ukraine is not measurable. Many regions are currently occupied by Russia and we do not know what is happening there. For example, there are some very large nature reserves in the Kherson region like the ***Oleshky Sand National Nature Park*** which I believe is the biggest one in Ukraine. It is still under occupation and we don't know what's going on there.

'Probably because of Russian submarines, their sonar and missile's strikes, between 5,000 and 10,000 dolphins died in 2022.'

There are two different versions of the film in English, the first of which you have seen is the theatrical release, and the second, which lasts 50 minutes and was acquired by ***PBS*** [Public Broadcasting Service] was made specifically for television in the United States. Probably because of Russian submarines, their sonar and missile's strikes, between 5,000 and 10,000 dolphins died in 2022. It was a mass die-off and we know this because many bodies were found on the shore, and I filmed it. A special team of criminal prosecutors investigated the war crimes and the mass deaths. The investigation is still ongoing because the war is still going on and we don't yet know all the consequences, but the impact on flora and fauna will certainly be enormous.

L. D. — I'm particularly interested as I had an interview with someone you know well, Dr Pavel Gol'din.

A. P. — Yes, he took part in my documentary. He is an extraordinary scientist, a great specialist in marine mammals. As you know, we have endemic species in the Black Sea that are now threatened because of the war.

L. D. — As you told the BBC, you don't have any plans at the moment because life is obviously unpredictable in wartime and you could join the army. Even if we can't put this on the same level, don't you think that with this kind of documentary you're also helping your country a lot? And that your next films could have an impact in this respect? I don't know, for example by documenting the Russian ecocide in Ukraine?

A. P. — Thank you very much. You know, when you're not on the front line, when you're a man in Ukraine, living inside the country, when you haven't fled, I think that, whatever you do, you have this feeling of guilt. I know that many people can cope with this, thinking that not everyone needs to go to the front because we also need to keep the economy going so that the country can survive, and we need to communicate about the war and support this political and informational battle in which I have taken part. I think films can help not only to provide additional aid to Ukraine, but also to document Russian war crimes, which is really a major objective, because Russia should be held accountable and pay for all the cruelty and damage it has caused here in Ukraine. It's interesting that you should ask me this question because I was thinking about this, about what I should do, in my summer house. I recorded 85 hours of footage and I think only 10 or 15% of it made it into the final cut. So I have a lot of interesting material like, for example, the rehabilitation of soldiers with the help of animals or animal therapy and that could be interesting for Western audiences. I might consider doing something with it, not as a documentary, but for YouTube. As far as my project is concerned, it's an open question for me.

L. D. — I think this is a pioneering subject, something really new. Ukraine can set a precedent in this area and it would be very interesting if you could use your documentary, your film skills to support this precedent, this pioneering action to include ecocide as a crime recognised by the main international organisations and courts. For example, I interviewed Margot Walström, who co-chairs the high-level group on the impact of ecocide in Ukraine. It would be very interesting to document this whole process on film. Of course, as the war is far from over, it will probably take years, but it would be really fascinating to do and I'm sure many people around the world would be interested. It could also be used as a document in court. So, I think such a film could be very useful in many ways. It's just an idea!

Left: Anton with disabled soldiers at a screening of his film. Below:

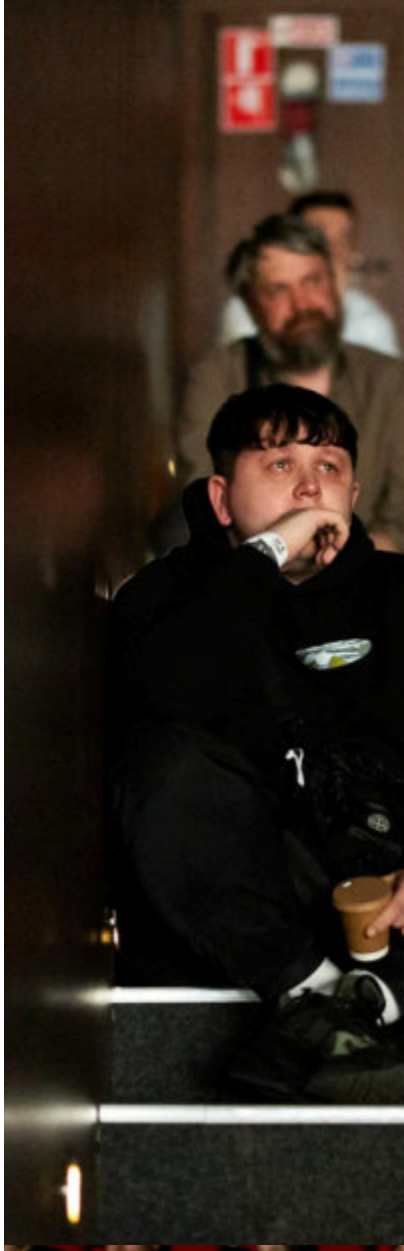
A. P. — I'm very glad you said that, and I think it's a very topical subject. When I attended the premiere of this documentary in the United States and Canada, I spoke to a few people. I realised that people are really interested, really passionate about the subject of ecocide. There are people in the West who are really concerned about this subject in general, and not just in the context of war. It's an interesting aspect of the different approach I took to this film, because Westerners are sometimes more curious about animals than people. That may sound cynical, but I think it's true in a way. Yes, perhaps I should investigate this ecocide more, but I was too tired and that's why I didn't manage to get to the Kakhovka dam. I'm sure you've heard about this disaster.

L. D. — Of course, as you know, there is currently a debate among Ukrainian biologists as to whether or not it is necessary to rebuild the dam, because some say it isn't because a new forest is growing there and it might be better to leave things as they are. So it's interesting to provide a platform for this debate and to see how things might evolve, thereby fuelling a kind of democratic debate that obviously doesn't exist in Russia or many other non-democratic countries.

'My documentary is not the first about animals in Ukraine, but because we have experienced so much suffering, so much tragedy and grief, I wanted this documentary to shed some light, to be both moving and positive in some way.'

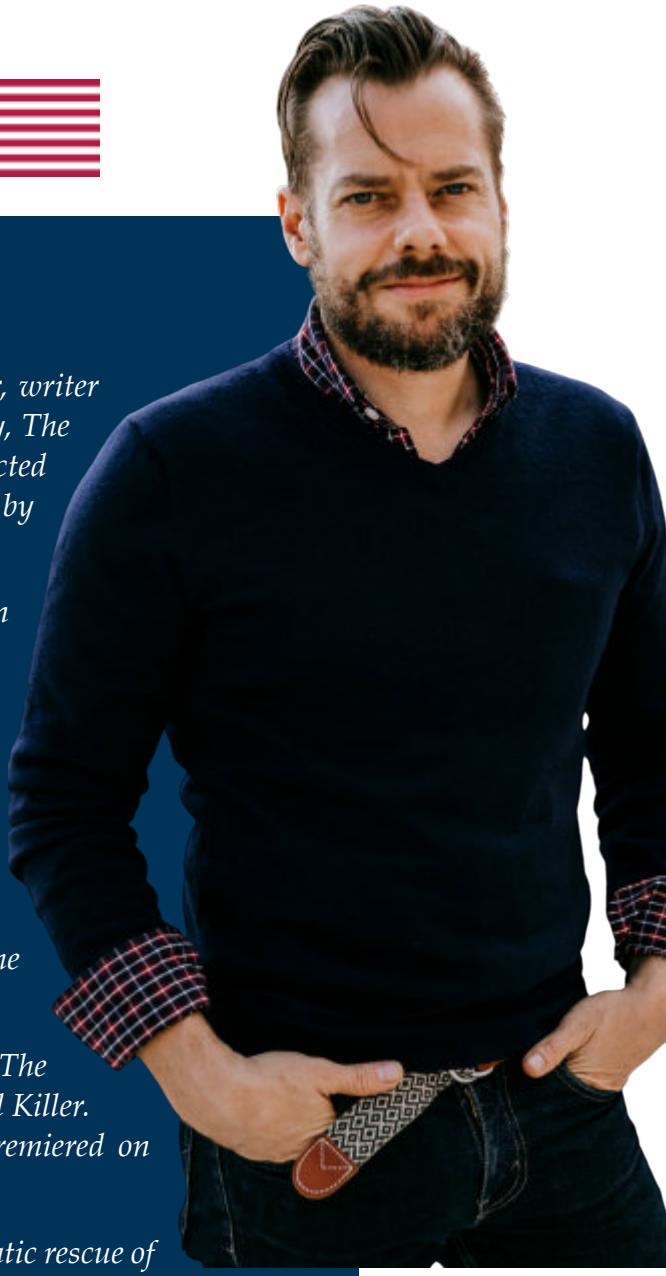
A. P. — It's a tricky thing to say, but although war is above all a tragic event, it can also indirectly lead to positive things, such as the improvement of the condition of animals. For example, lions were able to return to their natural habitat in South Africa. Another example is that hunting was banned throughout Ukraine during the war, for obvious reasons, and that's why all Ukrainians are able to see wildlife flourish and observe a wide variety of species thanks to this ban on hunting. My documentary is not the first about animals in Ukraine, but because we have experienced so much suffering, so much tragedy and grief, I wanted this documentary to shed some light, to be both moving and positive in some way.

L. D. — And you have been really successful achieving that. Of course, it is war and there are tragic situations but you deliver indeed a positive message, a message of hope, and people need this. It is obviously a very good message for the future.



A powerful documentary film that evokes a whole range of emotions

Joshua Zeman



Joshua Zeman is an American documentary film director, writer and producer. He is best known for his documentaries Cropsey, The Killing Season and Murder Mountain. He most recently directed and produced The Sons of Sam for Netflix. He is represented by UTA.

Zeman graduated from Pennsylvania's Lehigh University in 1994.

His debut feature documentary, Cropsey, premiered at the Tribeca Film Festival in 2009. In 2011, he directed the short film, The Best Man for the Job, starring David Call. In 2012, he received a MacDowell Colony Fellowship and won the 2013 Djerassi Residency Award from the San Francisco Film Society. He has co-produced or produced films including The Station Agent, Mysterious Skin, Choking Man and Against the Current.

In 2016, Zeman directed a documentary television series, The Killing Season, for A&E about the case of the Long Island Serial Killer. He also directed another series Murder Mountain, which premiered on Fusion TV and Netflix in 2018.

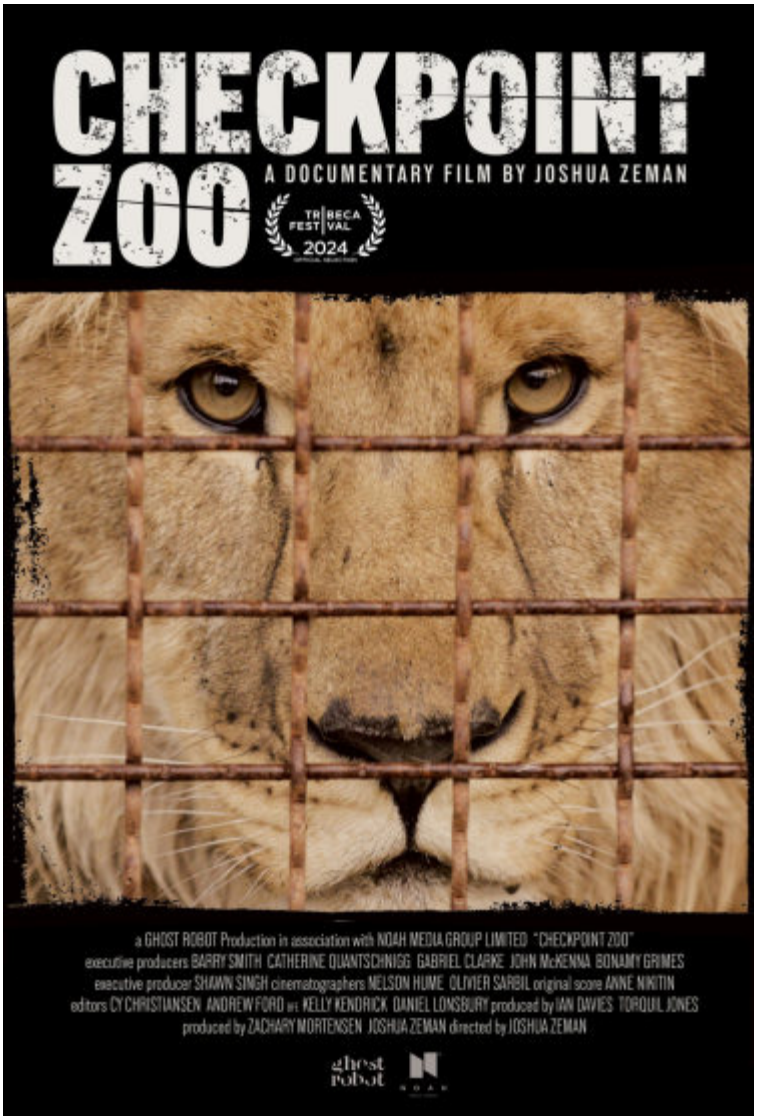
Joshua's latest film, Checkpoint Zoo, tells the story of the dramatic rescue of thousands of animals trapped behind enemy lines in an animal park at the start of the large-scale Russian invasion.

Above: 'Checkpoint Zoo' director Joshua Zeman © Jennifer Manville/Ghost Robot — All rights reserved.

Laurent Dingli. — Joshua Zeman, you are an American documentary film director, writer and producer. In 2009, you wrote and co-directed the feature-length documentary Cropsey, which gained critical acclaim from prestigious outlets. It evokes both a bogeyman-like figure from New York urban legend and the real-life story of Andre Rand, a convicted Staten Island child kidnapper whose crimes may have inspired the legend of Cropsey. Among many other works, you also directed documentary television series, ***The Killing Season*** in 2016, for A&E, which focuses on the infamous Gilgo Beach murders, and ***The Sons of Sam: A descent into Darkness***, in 2018, for Netflix.

Before I talk about your latest film on Ukraine, I'd like to know more about your choice of subjects to produce and direct. It seems to me that the criminal investigations you describe are also a way of taking a broader look at the society of your time. In Cropsey, for example, you talk about the crimes of André Rands as I just said, but also about social neglect, the mistreatment of the weak — children, disabled abuse — and the kind of impunity that has often been the rule and which is in a way the consequence of society's lack of interest in these fringes. Similarly, regarding the Gilgo Beach murders, it's also a way of exploring the world of sex workers, which seemed to be hidden from view and also on the fringes of society. So, I wanted to know what the guiding principle of your work is, what can link apparently very different subjects such as Cropsey, The loneliest whale or your latest work for instance?

Joshua Zeman. — Yes, it's a good question. I think any filmmaker needs to have empathy for his subjects, curiosity and also a desire to explore. I used to do a lot of True Crime but there was always a level of social justice, the fact that we were not taking care of those who needed it most whether it's the mentally ill, sex workers. You know the power of Storytelling. Gilgo Beach shed light on a crime that hadn't been solved and sex workers needed our help in terms of bringing that story to justice. So, there is kind of social responsibility for sure and an empathy. Just after a while, I started to realize that while there's a lot of mysteries in the human world, there's a lot of very interesting mysteries in the animal world as well and that led me to the mystery of the loneliest whale, this whale that had been theoretically swimming through the oceans calling out at a different frequency than any other whale, the story of this whale that was searching for connection. The ocean is just the greatest mystery we have and from that I was really intrigued by our unbelievable connection with animals and the ability for animals to show a different side of humanity that we sometimes don't ever get to see. It really came from Mystery. There's a famous book, ***War is a force that gives us meaning***, and it's true but at the same time, animals give us meaning too. So, what happens when you bring these two apparently incongruent subjects together? People talk about war; we talk about bravery and heroism; we talk about victims; we talk about civilians but let's talk about the animals and I think we were just very lucky to find this story, that somehow had all these elements in it and a very specific story that allowed us to explore all these different connections.



L. D. — As you just explained, your penultimate film, ***The Loneliest Whale — The search for 52***, which came out three years ago, in July 2021, is a quest to find a whale which has a unique call. The whale calls out at a frequency of 52 hertz, different from any other known whale in the world. Scientists believe that this unusual call has prevented "52" from communicating with other whales, leading to a life of solitude and therefore the title of 'the loneliest whale'. What do we learn about the animal and, more widely, what the marine mammal's plight can teach us?

J. Z. — First of all, whales are unbelievable creatures; they're so big; they're so massive and so it's not just what we learn about whales and our relationship with whales. By the way, there's probably no other creature in which our relationship has changed so dramatically; 150 years ago, we were killing whales, decimating them and now in a fairly short amount of time that relationship has switched where whales have become revered creatures; they have always been revered in some cultures but I'm talking about mass society and so that's a fascinating switch, especially for Americans. Some of our greatest literature, Moby Dick, is about the search for one unique whale. Then, of course the ocean is a humbling environment if you will and then we deal with communication. What is so interesting to me is that you have these massive creatures using sound, waves, frequency to speak with each other across thousands of miles in this dark nether world, this ether if you will, and whale communication is like our communication over the Internet, there was a very interesting juxtaposition, it was the same. Of course, there's the theory that the internet is atomizing us, that it is making us more lonely than we are and so I was trying to explore why this tale of this lonely whale seemed to affect so many of us, and then I just learned about sound in the ocean which is fascinating. And again, there was also our history of whales, from Moby Dick to Greenpeace; some say that the 'Save the Whales' movement kick-started the environmental movement we know today.

So, I was just super fascinated about that story and now we learn about the ways in which we're affecting the ocean whether it's ocean noise pollution, whether it's ship strikes and all these other issues and there was a reverence there, an undeniable reverence in our relationship with whales and whales in general, that I wanted to explore.

L. D. — By the way, did you always have this connection with wild animals or animals in general?

J. Z. — Like so many of us I wanted to be a marine biologist. I grew up in the 70s and the coolest guy in the world was ***Jacques-Yves Cousteau***. So many people wanted to be marine biologists. It's like ***The Life Aquatic with Steve Zissou*** by Wes Anderson, it was just a cool thing. I mean how could you not? You watch some of those 1970s movies of Jacques Cousteau, he's cool, they're wearing cool clothes; they're seemingly doing cool things. ***Rod Serling***, who is the creator of The Twilight Zone, is narrating it. I mean how can a child not be so enamored by this incredible mystery and this incredible adventure story. So, yes, I think that I've always had that interest. I worked on a boat when I was younger, on the East Coast and the boat had a very interesting history to whaling and so I think this is a very interesting reconcile of our past and then, I am very much into Marine bioacoustics. For example, we could go down the rabbit hole of the SETI program, ***Carl Sagan*** and ***John C. Lilly*** trying to understand animal-human connection and communication. There's so much there to unpack, I could have done five documentaries on whales and on marine life!

L. D. — I just want to give two opposite recent examples. Japan is about to add Fin whales [Balaenoptera physalus] to the list of whales it allows its fishermen to hunt despite criticism (***Le Monde***). But there is also good news: recently, the EU has set its first-ever mandatory noise thresholds to protect marine life from underwater noise pollution caused by human activities at sea. When we care about animals and nature, when we believe that we are all connected, do you think that, like the whale 52, our language is not understandable by the majority of our fellow human beings or are you a bit more optimistic about our ability to change? By the way, what you just said about how quickly our look on whales has changed was very interesting.

J. Z. — Well, either that's a great thing or just goes to prove how horrific we were previously.

You could look at it both ways but we are obviously reaching a new level of understanding when it comes to whale-human communication. We are obviously understanding that there is a profound sentience that goes beyond the TikTok videos and things like that; we are now understanding that whales are using sound to map the ocean floor not in 3D, but in 4D! You're talking about a creature who has a brain size as larger than us but has developed along a different evolutionary tract and therefore uses sound in the way that we use sight. So, there's so much to learn. First of all, understanding that these creatures are not floating oil rigs, but they are in fact incredibly intelligent species with spindle cells creating cooperative behaviors. So, the first part is understanding that, the second part is to me one of the most important aspect; it's about educating people about what we're talking about; you just don't want to tell them, 'oh let's stop doing this', you want to give them a because we want to stop doing this, because these affect these animals and they're so smart. Wales is one of the best examples I think of our conservation efforts. In fact, the '52 whale', a hybrid whale we now believe, is out there because of returning whale stocks and, when we have returning whale stocks, we have species that tend to commingle. So, I am bolstered by that especially when it comes to whales. Yes, we're always going to have some outliers. And yes, it's unfathomable to me that Japanese would still be eating whales; culturally I understand it. I have a little bit more reverence for example for the Eskimos who are doing it on a more traditional sense, in a less aggressive stance. So there is hope, and I even see this hope through Checkpoint Zoo, because before, when people talked about the war, they didn't talk about animals. Now there's a lot of talk about Ukraine and the animals. However, the flip side of that is we're also talking a lot more about animals in relation to climate change disasters. So, tragically, are we waking up and understanding at a point in which we are too late? The problem is misinformation, misinformation is unbelievable and that's what we have to fight.

L. D. — Your latest film, Checkpoint zoo is a documentary about a dramatic rescue in a warzone — the evacuation of the Feldman Ecopark located north of Kharkiv, 30 km from the Ukrainian-Russian border. The documentary was premiering at Tribeca Film Festival 2024. I really must say that this film had a profound effect on me. It is a documentary of great emotional power, hard-hitting at times, because it is the spectacle of war, but also and above all an extraordinary lesson in humanity. But before talking more about it, could you tell us how this project came about, what triggered it?

Click on the image to watch the official trailer

Orangutan of the Feldman Ecopark © Mark Edward Harris — All rights reserved

J. Z. — Yes, I was always interested in the juxtaposition of animals and war; like many, I find war movies are incredibly dramatic and they can be rough, movies like ***Come and see*** to Platoon, there is a whole range of war films of this type. I just wanted to look at a war in a different perspective through the eyes of animals and understanding that, when we use animals to talk about war, it changes our understanding. So, ironically, I had first heard of this story from the New York Times; there was an article in the New York Times, some video of a chimp named Chi-Chi who had escaped a temporary home in the Kharkiv zoo in the middle of the city, and there was ***video of this chimp*** walking around what was known as Freedom Square in the middle of Kharkiv and this idea, this juxtaposition of this chimp strolling through Freedom Square looking for its own freedom while the people of Kharkiv and the Ukrainians were fighting for their own Freedom, the very symbolism that emerged from these two events struck me as really profound, the metaphor was there. I did some research and found out that Chi-Chi had come from Feldman Ecopark*, another zoo outside of Kharkiv that has been bombed and I thought maybe Chi-Chi was trying to go home to his other Zoo. So, I called and spoke with them. I knew nothing I learned that they had quite a bit of social presence, that they had rescued over 5,000 animals and that they had videos of some of their young volunteers rescuing these animals. It was just hopeful. I think that the animals gave these people hope, rescuing animals gave these people a great sense of hope in their fight and I thought that that was a dramatic and important story to be told.

L. D. — If you haven't watched the film, it is difficult to figure out the challenge faced by the rescuers: as you just said, 5,000 animals living not at close range from the battlefield, but on the battlefield. Only 10 zoo keepers left to take care of them out of 100 that were working there before the war. No proper cages to transport the animals, not enough food, nothing to anaesthetise them. So, what was your first approach on what is called in the film 'an impossible mission' to save these animals? Did you have a preconceived plan or you just discovered things on the spot? How did it go at the very beginning?

J. Z. — Well, we knew that it was a success, that they had rescued these animals and we knew there were many Ecco parks in Ukraine that had been tragically bombed but Feldman Ecopark had a very unique situation: on one side of it was the Russian front line and on the other side of this ecopark was the Ukrainian front line, and this zoo was trapped in the middle. They called it a grey zone. I called it a No Man's Land, a kind of somehow mystical place in the middle of these two battle zones that became maybe a place where the animals roamed free if you would, a kind of Purgatory, that was the metaphor that we were working with. But then, when we got there, we found out that evacuating animals in normal circumstance is extremely difficult, evacuating animals, dangerous predators, while bombs are falling, is a mission impossible. I'm a big fan of those 1970s war movies ***Where Eagles Dare***, ***The Dirty Dozen*** all this kind of very shiny war films, very 'Tarantinesque' — ***Inglorious bastards*** is a take on that and so I wanted to do a kind of Mission Impossible war movie of the 1970s with animals and that's how we approached it, as a mission impossible, and it was true, I didn't know how true it was, what they were doing.

L. D. — I was struck by the evocative power of this film and your ability to immerse the viewer in the atmosphere of the war and the daily challenges of these real heroes who chose to risk their lives — and in some cases who have actually lost them — to save animals. I suppose that, from the outset of your project, you decided to take an uncluttered approach, with no frills or pathos, which I think is one of the film's many strengths?

** **NB**: After the interview, reliable sources told us that the Feldman Ecopark featured in Joshua Zehman's film operated more as a commercial operation dedicated to entertainment than as a centre genuinely dedicated to the welfare and conservation of species (even though it funded conservation projects such as the Ukrainian Bat Rehabilitation Center in Kharkiv), and finally that the Feldman Ecopark had refused **several offers to evacuate its animals**. Needless to say, we in no way condone this type of exploitation, which is contrary to all our principles. On the other hand, we make a clear distinction with Joshua Zeman's film, the aim of which is not to promote Feldman Ecopark but to pay tribute to the heroism of Ukrainians who risked their lives, some of them losing them, to come to the aid of animals. It is also to these Ukrainians that we wish to pay tribute, and we still believe that Joshua Zeman's film is a must-see.*

This powerful photograph by Mark Edward Harris gives an idea of the violence of the fighting in the Feldman Ecopark area north of Kharkiv, which lay between the two enemy lines at the start of the war

'One of the early questions that came up was would you risk your life for saving an animal?'

J. Z. — In the first days of the war, when it was some of the older folks just trying to get the animals out, they didn't film very much but, when these younger kids came in, Timothy and his band of brothers, they started to film themselves and suddenly the film opens up and it was all right there, maybe that's the thing, you didn't need to add anything; originally, we had added all this context about what was happening in Ukraine but people now understand that. What was striking was going in, the act of saving the animal and one of the early questions that came up was would you risk your life for saving an animal? How could you risk your life for saving animal? Could you condemn the zookeepers who left to save their families and their children? Can we judge them for doing so? I don't think any of us can really make that judgment call when the bombs are falling and yes, the bombs are falling and people are getting killed.

So, I was intrigued by these people who risk their lives to save these animals. For them the question is how could you not risk your life to save these animals. By the way, it's very easy to be bold and brave to save a majestic lion but is it the same to say a guinea pig, a chick? That, to me, is where the true test of empathy, compassion, bravery and heroism really comes into play; many people will go to the ends of the Earth to save a majestic lion but will they do the same for a tapir?

L. D. — There is in particular like intertwined stories of resilience between one of the zookeepers who had been through very difficult times before working at the Ecopark and the animals, as if they both helping each other to hill their wounds. And that ties in with what you just said.

J. Z. — Yes, that guy we're speaking about, a guy named André who was a former drug addict living on the street who had tried to kill himself. What's so interesting is that before the war he was living on the grounds of the Eco Park but he wasn't involved in the animals, he was just running the drug and alcohol rehabilitation center, and during the first two days of the war they turned to him and they said, André, can you help us evacuate these animals and he said sure. I met him 8 months later. He was one of the first people I met and I said this guy must be the head zookeeper because he had this unbelievable connection with these animals and I thought he knew these animals for years. Actually, he told me, no, I've been here the least. I'm the newest member and I was like 'oh! that's fascinating, this guy's a gentle giant, a powerful individual. All the people we met told us that the war was horrible, tragic but André said to me actually, this war has been the best thing that ever happened to me because I found my home working with these animals and I thought that was really fascinating as well. No one usually says that!

L. D. — I'm sorry, it's a bit of a cliché but I really felt that you are showing the worst and the very best of humanity. Of course, there are very painful moments, in particular the death of the young Denis. I don't want to spoil the story but am I right if I say that it is of course about war and death but most of all about the meaning we want to give to our lives and to our societies, individually and collectively?

A volunteer for the animal evacuation at Feldman Ecopark helps direct the high-risk rescue amidst the debris of Russian missiles in Kharkiv, Ukraine.

One of the most poignant sequences in the film is when the father of young Denis, who has just been killed by a Russian shell, shows his hands full of his son's blood to a Russian prisoner.

J. Z. — To be honest, I made the film to be hopeful, because war is hell and what goes on there is horrible, but you know, it's those moments when people show their best side in terms of humanity. But the irony is that the way they become their best selves is through the animals, and that's what the whole film is about. Animals occupy a very unique position in our world. It's because, by definition, they're not human, because they're completely different, because they're species that we come into contact with on this planet but that are not human, that they become in a way the mirror that allows us to look at our own behaviour through a different lens, a lens of compassion, a lens of survival, a lens of emotions, if you like.

L. D. — Yes, and it makes me think of a French novelist that I quote quite often and that you probably have heard of, Romain Gary. He has written one of the first novel dedicated to protecting animals in the wild, precisely elephant in Africa, because the European and all Westerners used to go to Africa for hunting which some are still doing unfortunately. That was in the 50s. Not many cared about that at the time and Romain Gary wrote, referring to animals that sentence that stroke me: 'we need friends.' It was really a beautiful sentence. As you just said, we have so many things to learn, to look at but there is also this kind of sentimental demand.

J. Z. — I think there's something else here. In conservation issues, we put the lens to ourselves; even that is a bit of cliché; we always talk about the mirror of animals and things like that but what I contend here is that humans fighting against each other, this war is what makes even more specific and unique situation because humans killing animals for sport, for commercial purposes, whatever, is one thing, but humans killing each other and then having that animal perspective, the animal gaze if you will, to look at who we are, there's the line in the film where the guy goes: 'some animals are humans and some humans are animals'. So, to me, that is where I wanted to separate this film out from other quote conservation films, or other films that require us to look at each other through that lens. We did the same thing in The Loneliest Whale. It was loneliness; humans are involved in an epidemic of loneliness brought on by who knows what; the destruction of the family unit, the atomization of the internet what have you I don't know.

L. D. — Yes, and they're teaching us to have a bit more humility. In my opinion, one of the successes of this film is that it allows viewers not only to put themselves in the shoes of the rescuers, but also to identify with the animals themselves. We feel their terror, their anxiety, their trauma. We hear the constant explosions of missiles and shells. I assume that you did a lot of editing work using live footage of course but what can you say on the ways you used to allow us to identify to these animals?

'Most of the animals were hurt from shrapnel but they died from heart attacks, monkeys, kangaroos, all these animals died of terror and to me that was just horrific.'

J. Z. — To be honest, we held back from showing the most suggestive, the most difficult images. Imagine bombs falling all around, you have the ability to escape, to run — the act of running, fight or flight is one of our most base human emotions, it's literally part of our lizard brain —, so, being able to at least run gives your brain some sense of action and reaction. The terror is being in a cage and bombs falling all around; you are not able to go anywhere; you are trapped and so we didn't even go that far; we could have gone there and really showed what it was like to be trapped in a cage and not be able to go anywhere; there were stories that I had heard and you realize why there are so emotional talks about. Most of the animals were hurt from shrapnel but they died from heart attacks, monkeys, kangaroos, all these animals died of terror and to me that was just horrific.

The other thing we didn't even show because it was just becoming too much was the fact that many of the animals — because they were starving, because they were in terror, in fear, because they just knew —, ended up killing their own young, they realized it was better to stop feeding the young than to have it grow up and starve or what have you; so, there was numerous examples of infanticide going on out there as well. So, we held back but it was the point of trying to show what it was like to be trapped inside of a cage.

I also wanted to show how difficult it is a lot of people will turn around and say oh why couldn't you evacuate these animals sooner? you know and I definitely got into the complication there. Evacuating an animal is extremely stressful; you could end up killing it by evacuating a zoo. I learned a lot about how difficult it is to evacuate a zoo; how difficult it is to send human beings into a zoo to evacuate animals.

Feldman Ecopark got a lot of flak because people were saying, you need to rescue them you but many times they couldn't go in because the army wouldn't allow them or because it was just too incredibly dangerous. I'm surprised they did as good a job as they did; they were extremely lucky that they got as many animals out as they did.

Images from the film showing volunteers risking their lives to save the animals of the park © Ghost Robot — All rights reserved.

'I think saving these animals for these people was their contribution to the war effort. They weren't just saving animals, they were saving Ukraine's innocence and reestablishing its hope.'

And then, of course, the film brings up other questions, the role of zoos in society, the role of zoos in war. There's a very unique history of zoos in war that I never knew about but it's a dramatic history whether you're talking about the siege of Leningrad, whether you're talking about the London Zoo. One point that I just want to bring up that I learned is especially in European cities zoos were always in the center of the city, and that was by design; zoos were the one place like the Garden of Eden that was in the center of the old medieval city, the one place where people could go and commune with animals, the idea that in the center of the city was its heart and that's where pure innocence was, the animals. I love that idea that there was this Garden of Eden in the middle of these cities and it was such a revered place. I was asking other cities in Ukraine how come you don't want to take these animals out and they said well first of all, it's unbelievably difficult; we have limited supplies. But there was also something else going on underneath it: they didn't want to take the animals out because they felt that if they did they were ripping the heart out of the city, the innocence, the purity and if you took the heart out of the city, the city is lost to the marauders. So, it is also a very interesting ideology in terms of the roles that zoos have. Sure, I don't like zoos much as anybody else but the film is not to answer that, is not to break up that question; the film is to look at this notion of animals and innocence and zoos in the face of war. There is this very interesting thing in the siege of Leningrad: the zoo was the one place where they could bring the children for some kind of normalcy; it represented the Innocence Lost. That's the beauty of animals in terms of the hope and the innocence that they provide and I think saving these animals for these people was their contribution to the war effort. They weren't just saving animals, they were saving Ukraine's innocence and reestablishing its hope. There are so many fascinating things that we didn't get to put into the film!

L. D. — Another interesting aspect is this international collaboration set up to save the animals which sounds like a positive message for the future of Ukraine, of Europe and beyond.

J. Z. — Well, the other thing we learned in this conflict was that with more regional wars and with more climate change disasters, we are going to have protocols in place.

That was a big lesson from some of the larger zoos; there needs to be protocol plans in place, euthanasia protocols — as tragic as it sounds, it's far more humane than an animal starving —, and evacuation protocols. They had some evacuation protocols in place but not a plan; it's one thing when you know that Putin is going to invade and you have months and months to prepare but they never thought Putin was going to invade. So, they didn't have an action plan that they could immediately go to. This doesn't just apply to Europe and Eastern Europe, this applies to the United States. If you look at a lot of the video of Ukrainians fleeing — we're talking about 6 million people —, they're all carrying dogs and cats, all of them. That not only says something about the compassion and empathy of the Ukrainian people, but of people in general: 6 million people and almost all of them are bringing these animals. But finally, we're starting to realize that is part of evacuation processes. My point is, as shown by ***Carol Guzy***, the famous photographer who won a Pulitzer for her work documenting the evacuation after the Hurricane Katrina and the flooding, there were boats going up to a house that had been submerged up to the second floor. Somebody was sitting on the roof waiting to be rescued with a cat and the rescuer said okay, come, leave the cat behind and the person said no way, I'm not going, and many people died because there was no protocols in place for them to go with their animals, i.e. with their family members.

So, now I think with Ukraine and the fact that it is a kind of ground war, we are starting to realize that we need to have more protocols in place for evacuation purposes and for zoos. What happens when we have flooding in 20 years? What happens when we have unbelievable heat in Texas, flooding in Florida, flooding in France? There needs to be protocols in place for these zoos to have a kind of action plan.

L. D. — As you say, it is essential to put protocols in place. I was in contact with the NGO Network for Animals about how to evacuate the animals from Gaza Zoo. The situation there was terrible for both humans and animals. Several NGOs did their best to evacuate the animals but the military situation did not allow it.

J. Z. — Yes, you make a great point, Laurent, because if 50% of war is propaganda as all wars are, the best thing you can do is put those protocols in place and then hit them hard when Israel or whatever does not do what they need to do. That was the whole issue with Russia. They thought that Russia was going to allow corridors, green corridors, at least to get the animals out. Then we discovered, ironically — it's a crazy story — that many zoos in Ukraine had received letters from Moscow asking what animals they had because the Russian government was going to take them over. Moscow realizes of course that zoos are a wonderfully inexpensive entertainment for the populace. It costs too much to make movies.

Ukraine is still about 25 years behind us in terms of our understanding of animal welfare and so that's another important thing with this story. I think we're dealing with a little bit of a Cold War battle still and animals are part of that battle. I don't know if you read the book about the Berlin Wall and the two zoos on the side of the Berlin [***The Zookeepers' War***] but it was really fascinating; circuses are just starting to be outlawed in Ukraine; small animal zoos, restaurant side zoos are just starting to be outlawed as well and it's all about education. There was a great story. Like in Russia, many restaurants, old school restaurants in Ukraine, used to have lions or bears outside for the children to be entertained by, while the parents were eating or something like that and, finally, ***Yelp*** came around and people started writing their reviews saying the food was great but I didn't like the fact that there was an animal in a cage while I was eating and the owner of the restaurant goes, 'oh my God! I didn't like it either. Now I know from all the people that I don't have to do this and I'm so happy.' It's very interesting how we are changing our ways through communication.

L. D. — There's this bottom up side of the story. We, as consumers, can have a great influence on this shift in mentality and in behaviour.

J. Z. — If people ask me what can this movie do, I say look at ***Blackfish***. It has changed an Industry. You cannot tell me that a documentary cannot change the world. Look at Roger Payne and '***The Sounds made by humpback whales***'; an album changed the world, a movie changed the world absolutely; we have the ability and the power with which to do that. It doesn't happen often but it happens.

L. D. — The way Ukrainians took care of their pets, in particular when they were fleeing the combat zone and, at the opposite, the way Russians were shooting at animals for no reason or just for fun, just for the pleasure to kill animals and living creatures, these two opposite attitudes say a lot about the respective attitude of Ukraine and Russia.

Volunteers help push a camel onto the truck so that he can be successfully evacuated from Feldman Ecopark in Kharkiv, Ukraine

J. Z. — Sure, but it is a little bit too easy to draw those black and white lines. Remember Sting do 'Russians love their children too'. Of course, they do. And do they love their animals? Of course, they do. Maybe the lesson to learn here and I asked this question and it kind of ruffled some feathers: isn't the unbelievable power of animals in the unconditional love, that they could love a Ukrainian zookeeper as much as they can love a Russian soldier who brings them food? The lesson from the animals is not good-bad, east-west; the lesson from the animals is the unconditional love which needs to be applied to both parties. That is the message and, ironically, the message that becomes action when that one father decides not to strike the soldier who killed his child but instead shows him the blood on his hands.

L. D. — This is one of the powerful moments of the film.

J. Z. — Yes, the whole film wrapped up in this one moment. This person who saved the animals, has compassion and empathy, and then, when faced with the human aggression displays that empathy and compassion to a human relationship.

L. D. — Yes, Russians could have this kind of feelings too, but far from all of them and, anyway, those who could express such compassion and empathy are not allowed to do it. Russian society is steeped in violence, particularly during military training.

J. Z. — Yes, they're not allowed to express or it's just about everybody embracing their compassion and the Ukrainians are very mad at me for making this equation of unconditional love (1). Of course, 'Love your enemy', 'turn to them the other cheek', it's not easy to say when your home is being bombed but this becomes the lesson of the animal to us.

L. D. — Personally, I don't have this biblical approach. Anyway, compassion does not preclude justice, quite the contrary, and I believe that the Russians must be held accountable for their crimes.

As a conclusion, I want to say to our readers that they should not think that this film is just another sad story about war. It gives hope. There is a positive message and we learn a lot about resilience, about how we want to build our future. Through those very moving stories you're showing how empathy is part of resilience and I think it's a very wonderful lesson for all of us even if we're not living in these tragic conditions.

(1) I myself have a very different point of view from Joshua Zeman on this subject. First of all, I'm not sure that Denis' father was expressing empathy for the Russian prisoner. Secondly, I don't know if the Russians "love their children too', as Sting sang in a completely different context, but I'm sure they don't care much about the children of Afghanistan, Chechnya, Syria and Ukraine.

A CALL FOR UKRAINE

David Barritt

David Barritt is the Executive Director of Network for Animals (NFA) and Animal Survival International (ASI). He has worked in animal welfare for 30 years. David established the International Fund for Animal Welfare's (IFAW) South African office before becoming IFAW's Africa director. After a break running a successful public relations company, he joined NFA in 2014.
He was made executive director in 2019, overseeing all the NGO's activities.
He is based in South Africa and Greece.

David in Kyiv in June 2024 © ASI — All rights reserved.

Our readers are very familiar with David Barritt and the work of Animal Survival International and Network For Animals, as we had ***an interview with him*** in issue 5 of our magazine.

Even though the publication of this special issue on Ukraine has been considerably delayed, we wanted to pass on the appeals for support from these associations, which are doing extraordinary work at international level, particularly in emergency situations such as conflicts and natural disasters, but also in offering long-term support to animals in difficulty.

ASI is present on all fronts. Among many other examples, we wanted to highlight the recent rescue carried out by Animal Survival International in collaboration with the Wildlife Rescue Center founded by Natalia Popova, a leading Ukrainian figure in the field of wildlife care.

The terrible war in Ukraine is claiming human and animal lives by the thousands. Among the tragic victims are lions and tigers abandoned as zoos collapse and private owners flee.

ASI's team was in Ukraine in June when two tiny lion cubs were found wandering around the frontline with serious injuries to their back legs. ASI doesn't know how they ended up there or how they were injured, but they do know that, frightened and alone, they only had each other until their partner, Wild Animal Rescue Center (WARC), came to their rescue.

WARC founder Natalia Popova saved them from the violence and they are now at WARC, which provides medical treatment and temporary shelter for animals rescued from Donetsk and Luhansk in eastern Ukraine.

X-rays showed that the leg bones of both cubs were cracked, but ASI and WARC hoped that, with time and proper nutrition, they could heal. And this is indeed what's happening thanks to the constant care of Natalia and the support of ASI. The two lion cubs rescued from the frontlines of the Ukraine-Russia conflict are currently on the road to recovery. Their broken legs are healing and they're slowly but surely regaining their strength.

ANIMAL SURVIVAL INTERNATIONAL

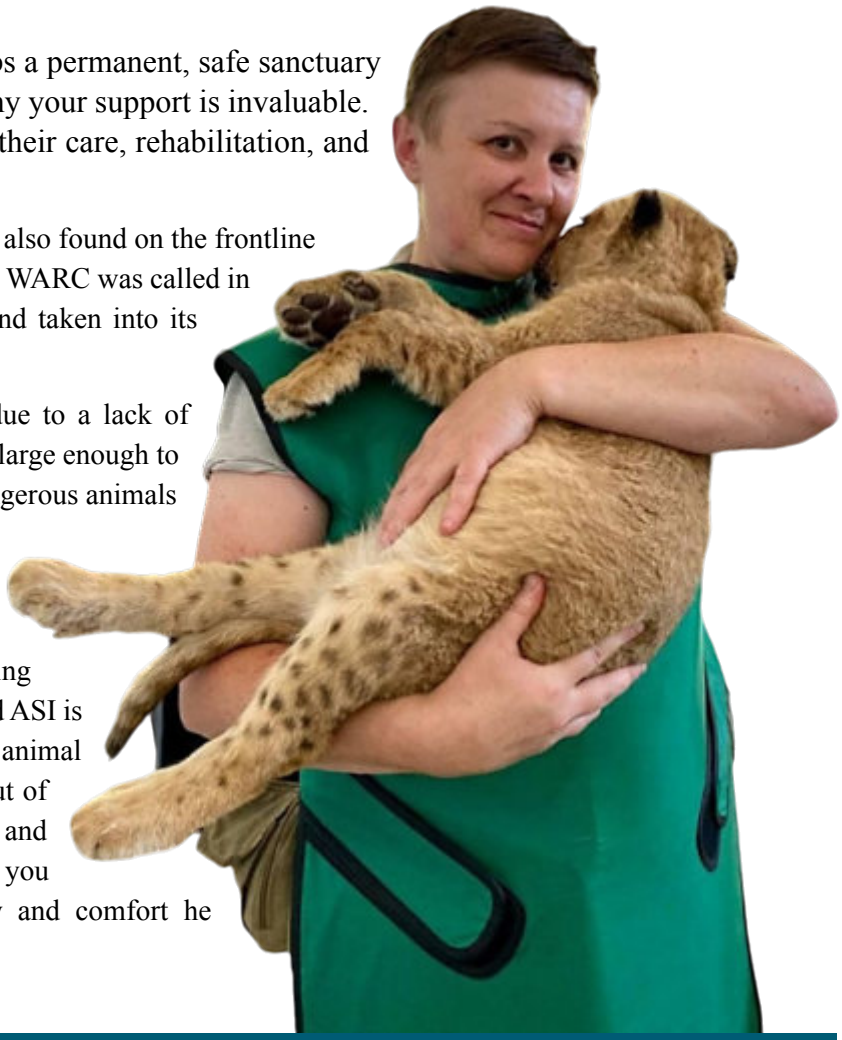
However, their journey is far from over.

ASI is committed to finding these precious cubs a permanent, safe sanctuary where they can live like lions in peace. This is why your support is invaluable. By donating, you're helping to cover the costs of their care, rehabilitation, and eventual relocation.

An enormous tiger weighing at least half a ton was also found on the frontline after escaping from a private estate in eastern Ukraine. WARC was called in and the animal, now named Tigarula, was rescued and taken into its care.

Tigers need a lot of space to thrive, but sadly, due to a lack of funding, Tigarula is being kept in a cage that is barely large enough to accommodate his bulk. Tigers are among the most dangerous animals in the world, extraordinarily strong and natural born killers – but Tigarula is like a giant pussycat, rubbing up against the bars of his cage and seeking affection.

With less than 6,000 tigers left in the wild, saving these majestic animals is more important than ever, and ASI is redoubling its commitment to providing this beautiful animal with a spacious enclosure as it struggles to get him out of the country. But working in a war zone is challenging, and ASI can't do it alone. Please donate as generously as you can so that the NGO can give Tigarula the safety and comfort he deserves.



To support ***Animal Survival International*** and ***Wild Animal Rescue***, just click on their names.

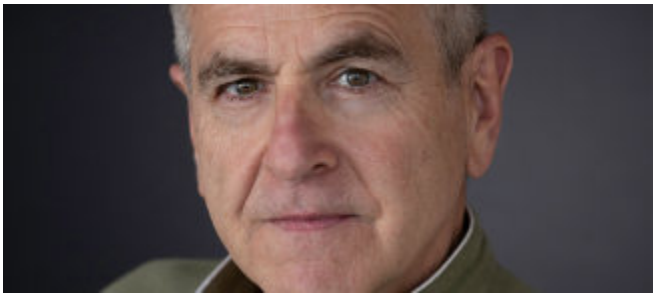
Above: Natalia Popova, who appears in Anton Ptushkin's film, is a famous rescuer of wild animals and a true Ukrainian heroine.

On the left: Tiger Tigarula at Wild Animal Rescue in Kyiv

Click on the images below to visit the websites.

Mark Edward Harris

Click on their photo to visit their website



After graduating from California State University, Los Angeles with a Master of Arts Degree in Pictorial/ Documentary History, Mark started his professional photography career doing the stills for the Merv Griffin Show and various television and movie companies. When the show ended he set off on a four-month trek across the Pacific and throughout Southeast Asia, China and Japan. The images created on that trip brought attention to his travel and documentary photography. He since has visited all seven continents and photographed in more than 100 countries. His editorial work has appeared in publications including Vanity Fair, LIFE, GEO, Time, Newsweek, Wallpaper, Stern, Conde Nast Traveler, National Geographic Traveler, Forbes, AFAR, Vogue Brazil, Elle Canada, Esquire Japan, Harper's Bazaar, Italian GQ, Marie Claire, The New York Times, The Washington Post, The London Times Travel Magazine, The Los Angeles Times Sunday Magazine, as well as many photography and airline in-flight magazines. His commercial clients range from The Gap and Coca Cola to cruise lines, airlines and government tourist bureaus for his travel photography. He is the recipient of numerous awards including a CLIO Award for advertising photography, an Aurora Gold Award for commercial directing, an ACE Award for directing and producing a video for television, an ImpactDOCS Award of Excellence as a producer on the feature film "From Hell to Hollywood" and a Sports Photographer of the Year Gold Award for his Tokyo 2020 Olympic coverage.

Laura Boushnak

Laura Boushnak is a Kuwaiti-born Palestinian photographer, whose work focuses on women, literacy and education reform in the Arab world. Laura's documentary project "I Read I Write" explores the role of literacy in improving the lives of Arab women, and the barriers they face in accessing education. As a wire-service photographer, Laura's images have been published in The New York Times, the Guardian, and National Geographic, and her work has been exhibited in galleries and museums around the world. She is also co-founder of RAWIYA, a collective which brings together the work and experience of female photographers from the Middle East.

Johan Bäveman

Johan Bävman (b. 1982) combines his own long-term projects with freelance assignments from different clients worldwide. He has previously published the photobook Albino – In the shadow of the sun (2009). The project Swedish Dads has had a tremendous impact and has been published/shared widely all over the world.

Between the years 2008 and 2011, Johan Bävman worked as a staff photographer at Sydsvenskan, one of the largest newspapers in Sweden. He graduated from Nordens Fotoskola, Stockholm 2007. He was previously a member of Moment Agency (2007–2015). Johan Bävman has won several awards, including the World Press Photo, POY, Sony Award, NPPA, UNICEF Photo Award.

Professional photographers who kindly contributed to this issue

Yana Tolmachova

Yana Anatolyivna Tolmachova, born on May 21, 1980, Kharkiv, is a professional photographer;

Member of the National Public Nature Protection Organization "Ukrainian Bird Protection Society" (since 2023);

Member of the Western Ukrainian Ornithological Society (since 2024); Since May 2021, she has been actively running a personal blog about the life of birds, illustrating it with her own photos, under the slogan "Wings need freedom" / Wings need freedom @birds_planet_ph;

Since May 23, 2021, she is an active member of the national ornithological group on the Facebook network "Birds of Ukraine" and is the top group contributor with over 160,000 post credits;

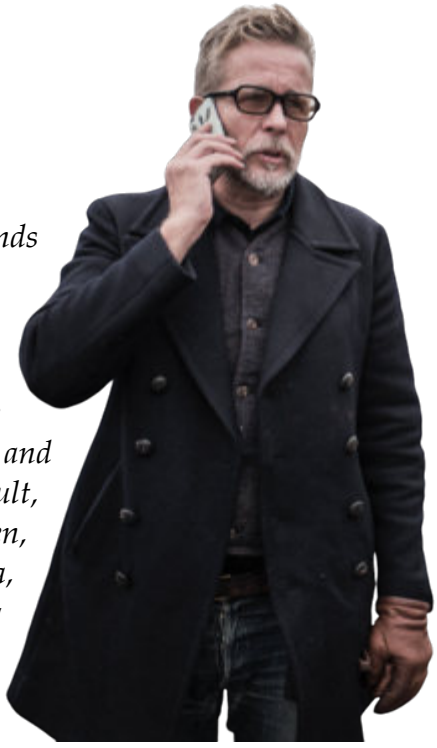
The winner of the "Viki Loves the Earth" photo contest (November 15, 2023) in two nominations;

Participant of the international stage of the photo contest "Viki Loves the Earth" 2023, in which her photo of Chepur bigi was presented among the best 15 photos of Ukraine;

Participant of the All-Ukrainian ornithological conference "Ornithological research in Ukraine: past, present and prospects" (Kharkiv, October 20-22, 2023).

Her photographs were published in UANIMALS, WWF UKRAINE, birdlife.Ukraine, Fox News, Verkhovna Rada of Ukraine, Ukrinform, NURNBERG-2022, mr.scrubber, zoopatrulkyiv. In particular, in the photo contest "BEST LIGHTS OF BIRDS OF UKRAINE - 2021", announced by birdlife.Ukraine

Kristian Pohl



I have had the good fortune to work with a wide range of customers and friends since I started my business in 1989.

Magazines like DamernasVärld, ToppHälsa, Bruno, HOME, VeckoRevyn, Form, M-Magasin, Tara, SkönaHem, Hemmets Journal, FamilyLiving, Senioren, Residence, Året Runt, Scanorama are longtime customers. I have also had the pleasure of working closely with demanding organizations and companies like Fojo, Staffan Bengtsson/SVT, Regeringskansliet, Zap, Renault, Nike, Altor, Stadsholmen, MeritMind, Myrén Film, RödaKorset, Riksbyggen, Hyresgästföreningen, Specsavers, Hemma annonsbyrå, Bonniers fakta, Kantar Sifo, FeatureFamiljen, SOS barnbyar, SvenskaBostäder for many years.

Serhii Korovayny

Serhii Korovayny *is an editorial and portrait photographer based in Kyiv, Ukraine. He covers the Russian-Ukrainian war, Russian war crimes in Ukraine, environmental issues, the refugee crisis, healthcare topics, etc.*

Serhii worked with the Wall Street Journal, Washington Post, Financial Times, Time, The Guardia, Spiegel, The Economist, and Politico.

As a visual storyteller, Serhii also works with video and VR. For example, he collaborated with the Ukrainian VR production New Cave Media. There, he became an assistant director of Aftermath VR Euromaidan, a Google-supported immersive documentary project.

He received the Fulbright scholarship and made his Master's study in Visual Communications in the Newhouse School of Public Communication in Syracuse, NY, USA (2017-2021).

Serhii's works were showcased at multiple personal and group exhibitions worldwide.

He is a member of The Ukrainian Association of Professional Photographers (UAPP).

Lyndon Brandt

Lyndon is a qualified filmmaker from the Eastern Cape South Africa who has been fortunate to be granted the opportunity to work as a freelance documentary sound recordist for broadcasters such as National Geographic Television, Discovery Channel, Animal Planet and many others. The opportunity to work within this fascinating industry has given him a rare glimpse into the lives and cultural practices of many different people from very diverse countries. His work is informed by a wide range of interests - from Natural Science to History, Journalism, Film and Fine Art.

Darina Matasova

'I was born in Kyiv and have lived all my life in the city and its suburbs. I have loved animals and nature since my childhood - it is something that was missing for a child in the capital. I am a psychologist by education, but for my professional activity, I chose more creative professions: a dog photographer and an author of collectable teddy bears. Bears and photography united in my life with the appearance of the White Rock Bear Shelter in our suburb, where I often come for inspiration. This gave me a huge number of photographs of these amazing animals that you could see.'

Stefano Unterthiner

Growing up in the mountains of Northwest Italy, Stefano Unterthiner spent his early years photographing and trekking around the Gran Paradiso National Park. He began serious photography at the age of 17, went on to study zoology and, in the fall of 2000, obtained a Ph.D. from the University of Aberdeen, Scotland. After completing his studies, Stefano returned to Italy and began his career as a zoologist. But his camera was always at his side, and it was not long before his hobby turned into an all-consuming lifestyle and profession.

His first award was in 2000, when Unterthiner won the prestigious Mario Pastore prize for best Italian Young Environmental Journalist. Unterthiner travels around the world in search of new subjects for his photo stories: he specializes in telling the life stories of animals, living in close contact with his chosen species for long periods. He also has a strong commitment to wildlife conservation and environmental issues, with a particular interest in human-wildlife conflict and coexistence.

Widely published in magazines worldwide, he's the author of nine photography books, a multi-award winner in the Wildlife Photographer of the Year and since 2009 a contributing photographer for National Geographic magazine. Stefano has run a number of long-term multimedia projects, the latest 'A family in the Arctic'. He lives with his wife Stéphanie and their children Rémi and Bahia in the Aosta Valley, Italy.

Ola Jennersten

Ola Jennersten is now actively retired. He has worked for more than 30 years with nature conservation at the World Wildlife Fund WWF. The camera has always been a natural accessory for documenting, especially nature. Ola's interests centre around species and nature conservation both nationally and internationally, as well as gardening, insects and pollination.

Ola has co-authored several books and countless articles with content from both near and far. Two of the books have been awarded as WWF's Panda Book (2017 and 2021). Ola gives many lectures every year on, among other things, illegal species trade, tigers, pollination and not least insect-friendly gardens.

*You can help animals like Tsar and Jamil rescued from war-torn Ukraine by supporting the **BORN FREE FOUNDATION** (click on the image on the right). Above: Tsar and Jamil at Shamwari Big Cat Sanctuary, SA. On the right: Tsar as he entered his new home*

BORN FREE®

PETITION

'On July 21 2024, Captain Paul Watson was arrested by Danish police upon arrival in Nuuk, Greenland, onboard the M/Y John Paul DeJoria. Danish authorities claim that the arrest was made due to an international arrest warrant issued by Japan, related to his anti-whaling campaigns in the Antarctic more than a decade ago.

Paul faces the possibility of extradition to Japan, where he could spend the rest of his life in prison.

We need your help to #FREEPAULWATSON.

Please sign this petition addressing the Denmark Ministry of Justice, to release him from custody. As Paul once said, "Every social revolution in the history of humanity has been carried out by the passion, the imagination and the courage of individuals".

Now, we need individuals from all over the world to come together and campaign for the release of a man who has dedicated his life to protecting our planet. We need you. Please sign and spread the message amongst your communities. Together, we can do this.

NOTE: Paul Watson is no longer affiliated with Sea Shepherd Conservation Society or Sea Shepherd Global. Follow and donate to the Captain Paul Watson Foundation to continue supporting Paul's work for the oceans.

Thank you to everyone who has stood up for Captain Paul Watson over these past four weeks. He remains in Anstalten prison in Greenland for his unwavering commitment to protecting our oceans.

During this time, he has received hundreds of letters and drawings from supporters around the globe, and he's doing his best to respond to each one.

Let's keep the support going! Send him a letter and show your solidarity. He truly appreciates every message he receives.'

Write to Paul:

Anstalten for Domfældte,

Jagtvej 3900, NUUK

GREENLAND

Click on Paul's photo to sign the petition on Paul Watson Foundation's website ⟶


#FREEPAULWATSON
SUPPORT AT PAULWATSONFOUNDATION.ORG

READ THE PREVIOUS ISSUES ONLINE

CLICK ON COVERS