

00:00:04:06 - 00:00:33:13

James Shooter

I'm cruising down the Sulina branch of the Danube Delta in Eastern Europe. This intricate network of river channels, lakes and wetlands is a maze to me. And let's face it, I'd be absolutely lost without my guide, David. Little gulls are keeping pace with our speedboat flapping furiously above our heads. Red-necked grebes dip and dive beneath the water's surface on the hunt for aquatic invertebrates, and great cormorants are displaying from untidy nests in towering willows.

00:00:33:15 - 00:00:57:22

James Shooter

The delta spans across three territories Romania, Moldova and Ukraine. And whilst most of the rewilding work to date has been happening on the Ukrainian side, I'm sticking to Romania for my visit for fairly obvious reasons. I was invited across the border to meet some of the team. I would just have to catch a ferry, which I was told was relatively safe because it had only been shelled once.

00:00:57:24 - 00:01:17:20

James Shooter

I remember letting out a nervous laugh at the time, and then falling quickly into silence as the gravity of the situation dawned on me. With this being a rewilding podcast, I almost shied away from talking about the war. It's a bit above my pay grade, I thought, but that would do a disservice to the hard-working people here.

00:01:17:22 - 00:01:44:14

James Shooter

So for what it's worth, this rewilder stands in absolute solidarity with the Ukrainian people, as I'm sure all you listeners, due to the fact that rewilding is still on the agenda in Ukraine, is nothing short of incredible. As war rages on in the east of the country, people are still restoring nature in the West. Humans can sometimes be both the worst and best species in this world.

00:01:44:16 - 00:02:20:23

James Shooter

Some bring tyranny, whilst others bring hope. Revitalising these wetlands and the surrounding steppes and plains is something hugely positive to focus on for the rewilding teams on the ground, where every victory won for nature is an investment in a brighter future. I'm James Shooter, host of the Rewild podcast, and this is a Danube Delta.

00:02:21:00 - 00:02:48:07

James Shooter

The power of water can do miraculous things. In some places, thundering waterfalls cascade into the abyss, cutting deep sided gorges into the land, and in others, gently flowing rivers hypnotically meander across giant flood plains. The ability of water to erode is second to none. Sand, soil, gravel and boulder are all ripped, chipped and heaved away across the entire course of a river.

00:02:48:09 - 00:03:15:16

James Shooter

The Danube, Europe's second longest watercourse, flows for almost 3000km from the Black Forest mountains of Germany in the west to the flatlands of Ukraine in the east, alongside the masses of water, 20 million tons of suspended sediment are carried out to the Black Sea every year. Eroded in the west, the sediment hits the coast in the east, fans out, slows down and settles.

00:03:15:18 - 00:03:38:04

James Shooter

As it builds up, it creates a complex web of new land and water channels. Vegetation then takes hold, and the diverse mosaic ecosystem, incredibly rich in life, is created. This is a river delta. Rewilding Ukraine is one of the organizations leading the charge for the Danube Delta and Mykhailo Nesterenko is the team leader there. At the start of the war

00:03:38:10 - 00:03:47:11

James Shooter

he managed to relocate to The Netherlands, so I catch up with him remotely to find out what's been happening and how things are going. Despite the huge challenges faced.

00:03:47:13 - 00:04:11:09

Mykhailo Nesterenko

Even despite the fact that we're not directly along the front lines. Well, there's been some shelling in the Delta. Well, first of all, we don't have access to the Danube Delta to the core area of the delta, all the civilians are restricted from visiting these areas directly along the seashore or the border where we were restoring wetlands, or we reintroduced some of the large herbivores.

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Mykhailo Nesterenko

We can only work in some kind of some areas, but not not everywhere where we used to be able and, everything takes a lot more time and efforts to do. We just kept on doing what we could, well, volunteering and also continuing rewilding. I think it was very well accepted by the general public. And then now it's even more I mean, is something positive.

00:04:34:24 - 00:04:47:06

Mykhailo Nesterenko

It's about rebuilding. It's looking to the future and, and they all realize that the future development will depend very much on, on the natural resources and developing along with the nature.

00:04:47:08 - 00:05:19:21

James Shooter

Throughout the winter, the calm waters of the delta become a haven for wildfowl. Masses of ducks, geese and swans spend the colder months here, where temperatures can drop to -20 and an icy grip takes hold. In the open channels, mallard, tufted duck, pochard, teal and goldeneye raft on the water's surface. Mute and whooper swans walk across the solid

ice, and flocks of greylag, white fronted and red breasted geese fly overhead to forage in nearby fields. As the thaw completes and spring arrives

00:05:19:23 - 00:05:45:16

James Shooter

these wetlands really come alive. The diversity of bird life doubles, if not triples, as nesting waterbirds like spoonbills, glossy ibis and black crowned night herons join the fray. Kingfishers zip across the channels and terns plunge into lakes. They're all drawn here by the bounty of fish that inhabit these waters. From catfish to carp, roach, perch and bream. There's even four different species of endangered sturgeon to be found here.

00:05:45:18 - 00:05:54:11

James Shooter

Perhaps the biggest crowd pleaser, though, is the pelicans. They come in two different flavours here Great White and the near threatened Dalmatian.

00:05:54:12 - 00:06:21:07

Mykhailo Nesterenko

Well the first thing that even, surprises even Ukrainians is that when they come and see pelicans and there's something unusual, knowing that people saw pelicans mostly on television, they thought that's somewhere in Africa. But few people knew that the Pelicans are actually in these large river deltas. Now, I think up to 20 years after you could see pelicans in above the Odessa city, which is 150km east.

00:06:21:07 - 00:06:26:16

Mykhailo Nesterenko

So the populations in the Delta was growing thanks to conservation efforts.

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James Shooter

So why does the Danube Delta need rewilding if it's currently so rich in nature? Well, simply put, because it could still be so much better. A fully functioning delta ecosystem has all the natural flows of water and connectivity, where sediments are allowed to settle here and move on there. And where wildlife has the ability to migrate from the sea into the rivers and wetlands, then back out again.

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James Shooter

But over the last century, large networks of dykes and embankments have been erected to hold water back and claim farmland from wetland. Further up river, over 700 dams and weirs play havoc with natural processes. The Iron Gate dams, shared by Romania and Serbia being the largest, holdback 3.2 billion m³ of water. If you can't picture that the reservoir is 270km in length, and if you can't picture how long that is, it's 159,000 pelicans back to back.

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Mykhailo Nesterenko

There are theories that said before the dam was constructed, there was a lot more sediment flowing into the delta. And you could see the delta growing very rapidly towards the Black Sea. And these processes have been kind of slowing down. We used all the main arms, the three main river branches of the Danube, when it flows into the Black Sea.

00:07:48:24 - 00:08:16:07

Mykhailo Nesterenko

We straighten them all for navigation. And that took all the sediments even further, faster into the Black Sea. And then we saw in many of the areas the delta, instead of growing to the Black Sea, started eroding. Before, let's say, or early 20th century, the population, living inside the Delta was very small indeed. There were just small villages who predominantly did fishing, and they were fishing, mainly sturgeon.

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Mykhailo Nesterenko

And then as we started developing and then bringing more people reclaimed large polders for agriculture, large swathes of land were used for, for crop production and then for fishery farms. Then, the water was used for irrigating the adjacent grounds. As I said, it's a very dry landscape, especially in summer, so to produce any good crop, you need to irrigate it.

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James Shooter

With a dunny running wild for millions of years before we pesky humans got our hands in the mix inter channel Islands, would form. Material gets deposited at various points due to fluctuations in the current. As the silt builds and starts to creep above the waterline, vegetation takes hold. Pioneer tree species like willow begin to establish and they then trap even more sediment.

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Mykhailo Nesterenko

Ermakov is a very, kind of classic example. It was a beautiful islands of of more than 2000 hectares in the middle of the Danube. and then the mid 20th century, the was drains, the dykes were erected and, and the island was drained. First of all, it was meant to be used for well, surprisingly reed production.

00:09:33:10 - 00:09:54:18

Mykhailo Nesterenko

And there was an idea that there's so much reed in the delta. Perhaps we can use it for paper production. And there was a big paper factory built in, Ismail town in Ukraine and bought Ermakov. But that, mowing reed was very difficult to organize and in fact, to realize that it can't supply the plants with, read for, for paper.

00:09:54:19 - 00:10:18:04

Mykhailo Nesterenko

There's been no flooding anymore that because of the dykes. So instead of being a nice and beautiful wetland, it turned into very kind of brownish saltmarsh. We've removed

large sections of dykes. it was done. I worked for WWF in those days. We were looking and the response of the nature was amazing. Like two years after, if you look at that picture of the island

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Mykhailo Nesterenko

And you would never believe that that's been so kind of dry, dry patch of land in the middle of the wetland. It was beautiful wetland full of birds and fish. We don't manage the island for any of the plants or species. We just let the natural processes, the flooding, the sedimentation, the grazing to shape the island. And that's essentially what rewilding is it's it's it's a functional restoration.

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Mykhailo Nesterenko

We're not trying to achieve any targets like ten pelicans or, 50 wild boars or that many deer. It is it is an open process and we don't know what why it's going to evolve eventually. And that's something also exciting that we're looking how all these processes interact and how the island is developing.

00:11:02:04 - 00:11:28:09

James Shooter

Interestingly, Mykhailo and his team are utilizing an intriguing character to assist with their rewilding efforts here. Water buffalo these domesticated bovines stem from the wild water buffalo found in Asia, and whilst it's often a bit of a No-No to incorporate non-native wildlife, it's their function and durability. Rewilding Ukraine are interested in. Europe did once have a native water buffalo of its own, *Bubalis murensis* in case you're wondering.

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James Shooter

But this disappeared in the Pleistocene. These modern day mimics are here to keep the vegetation on its toes. They bulldoze through reeds, open up meadows and create pools and puddles where they wallow.

00:11:40:17 - 00:12:03:11

Mykhailo Nesterenko

So if you look at the map of of the Danube Delta from the northern sides, you see very large lakes which you don't see on the southern side. Part of this program, these lakes were converted into water reservoirs, and they're managed for for well, they were exclusively for water needs, for economies and agriculture rather than nature.

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Mykhailo Nesterenko

But some of these lakes, they still retain their huge biodiversity. And Kartal Lake was one of them. here we attempt with water managers. We say, okay, that's this process of isolating the Danube lakes is not good. You see water quality deteriorating. In some of these lakes it's even brackish already, so that's a result of the broken connectivity.

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Mykhailo Nesterenko

And we say, why don't we restore the connectivity? Why don't we see how the native fish comes back? And then maybe that fish will be a foundation for a local economy. Another example is Katlahbuh Lake, where, I mean, this connectivity has been broken so much that the the lake didn't receive any water from the Danube. It it started even drying out.

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Mykhailo Nesterenko

Its levels were too low and people were concerned. And we we've also restored connectivity of of that lake which is much larger lake. It's about 8000 hectares. And we see the water quality is already improving. So connectivity of the lakes to the river, it's it is important natural process.

00:13:06:23 - 00:13:32:05

James Shooter

The first settlers in the Delta were hugely dependent on fisheries, something many of the local communities are still reliant on today. But some of the species started to dwindle. Sturgeon, for example, were part of a sustainable fishery at first, but the large dams cut off most of their spawning grounds upriver and with the fishing continuing, populations plummeted. The most famous species of sturgeon is perhaps the beluga.

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James Shooter

It's the largest freshwater fish in the world, with a record catch from 1827, weighing in at a whopping 1500 kilograms and measuring over seven meters in length. It's not the size, though, that brings their fame, but their eggs. Beluga caviar is considered a delicacy across the world, and is one of the main reasons they've been overfished across their range.

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James Shooter

I'm looking at a 500-gram tin of this stuff online, yours for just £3,500. This tin is apparently sourced from farmed fish, but at those prices, you can see why poaching is an ever-looming threat. Thankfully, there's an entire EU task force on the case to recover sturgeon populations in the river and whilst restocking has already begun, it's a sticking plaster if breeding grounds continue to be cut off and poaching remains.

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Mykhailo Nesterenko

The second important fishery is herring fishery, there's herring species that migrates up the Danube, and it's a very important foundation of local economies. And what we see, there's very rigorous monitoring of population. It is very sustainable. So both the population and the scale of fisheries, it's very well regulated and licensed. I think on both sides there are bans, for certain periods for the fish, for, for the core of population to be able to migrate upstream.

00:14:50:01 - 00:15:04:23

Mykhailo Nesterenko

And the fact that we see that, for instance, the pelican birds come back, especially the white pelicans, I think they nearly doubled over the last 70 years. That's a good indication that the fish fish stocks are recovering in the bigger Danube Delta.

00:15:05:00 - 00:15:24:05

James Shooter

I feel like I can't come out all the way to the eastern edge of Romania without heading out on a boat trip to try and see some of these famous pelicans for myself. It's late February, so we're the only one stepping onto the boat. Here I meet the boat driver and my guide for the day, David.

00:15:24:07 - 00:15:45:24

David

He's happy the engine started. It's always a bonus. He he says that he's seen some pelicans near by Melina. Like all right. It's not like Christmas. Yeah. Of course every hour is different. Yes. It's different.

00:15:45:24 - 00:15:48:07

James Shooter

I'm, back home I'm a wildlife photographer, so I fully know never to guarantee animals.

00:15:48:09 - 00:16:08:18

David

Yeah. Yeah, it's a wild area. I have the people – “do we see pelicans?” If you are lucky enough, yes you see them. Yeah. That's fun sometimes. Usually in the summertime is more often than they expect. Yeah. But I never promised that. No no never know.

00:16:08:20 - 00:16:14:05

David

“But somebody told us that we are going to see”. Okay this one is a liar!

00:16:14:07 - 00:16:18:17

David

Yeah. He is true. How can you promise something good?

00:16:18:21 - 00:16:21:09

David

It's like catching fish. Yes. Of course. Yeah.

00:16:21:14 - 00:16:38:12

James Shooter

We zoom down the main channel of the Danube, zipping in and out of large ships, taking supplies to Ukrainian ports along the river. We turn into one of the smaller channels and leave the boat traffic behind. David keeps teasing me with thoughts of the spring wildlife that will be here in a few months time.

00:16:38:17 - 00:17:11:15

David

Last summer I've seen. Last spring I've seen spoonbills here. Oh, nice. Yeah, I like I love the spoonbills. They're very beautiful on that. In the in the summertime. He is full of water lily, leaves here. Okay. Water. And, the Caspian tern Yes. It's making the nest on the water lily. Oh, wow. Yeah. We come here slowly with the pontoon boats just to take picture, because you can zoom at the end.

00:17:11:16 - 00:17:15:02

David

Wow. That's amazing. On the lily. Yes, yes.

00:17:15:04 - 00:17:35:20

James Shooter

It might not be the extravaganza of spring, but there's still lots to be seen. Little grebes are cackling away. Cute little pygmy cormorants take flight from fallen logs, and white fronted geese fly overhead in their classic V formation. The lake seem to be where most of the winter bird life is gathered. But a few hours in and no pelicans as of yet.

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James Shooter

I try to reassure David that I'm happy seeing whatever we come across, but I think the pressure of a single occupant is getting to him as he reaches for a mysterious bottle.

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David

So what do we have? Have to have a glass, please, I don't know what is it? Some medicine.

00:18:00:23 - 00:18:06:06

David

Aftershave!

00:18:06:08 - 00:18:14:05

James Shooter

Aftershave. Yeah.

00:18:14:07 - 00:18:22:10

David

He says it's not very strong. Okay. We'll see. Cheers. Cheers. Cheers.

00:18:22:12 - 00:18:24:19

James Shooter

Did he say it was prune?

00:18:24:21 - 00:18:32:04

David

Pruner, prune a plum. Plum, plum brandy. It is strong,

00:18:32:06 - 00:18:36:13

James Shooter

Not too bad.

00:18:36:15 - 00:18:44:01

David

Nice. Could be used as aftershave!

00:18:44:03 - 00:18:44:20

David

I don't like it.

00:18:44:22 - 00:18:54:13

James Shooter

I'm not sure if we're hallucinating because of his drink. Or Lady luck is finally on our side. But just around the corner, we get one hell of a prize.

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David

Right. Right. White-tailed eagle.

00:18:56:21 - 00:19:02:04

Unknown

Speaks Romanian.

00:19:02:04 - 00:19:11:00

David

Speaks Romanian

00:19:11:02 - 00:19:17:00

James Shooter

And then something different catches our eye in the sky to the left of the eagle. Pelicans!

00:19:17:02 - 00:19:23:05

Mykhailo Nesterenko

Wow.

00:19:23:07 - 00:19:49:12

James Shooter

That's amazing. All circling around to pelicans in the sky. And a white tailed eagle in the tree. What a treat to have been able to see the near threatened Dalmatian pelican. I think I need to carry a bottle of homemade booze with me everywhere if it brings me that kind of luck. These huge birds have been the focus of a large conservation campaign, both in the Danube Delta itself and across their entire range, they are symbolic of healthy wetlands, and act as an umbrella species for the delta.

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James Shooter

Save the pelicans and you save the wetlands. I'm keen to speak with Sebastian, a biologist at the Romanian Ornithological Society who's heavily involved in all things Pelican.

00:20:01:05 - 00:20:10:21

Sebastian Bugariu

I was just I'm just back now. I just arrived from, first, aerial monitoring session for this year, so. Oh, really? Yeah.

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James Shooter

So what's involved in the aerial monitoring? You go up in a helicopter.

00:20:14:14 - 00:20:19:02

Sebastian Bugariu

not helicopter, but, ultralight planes. oh. Really? Yeah, yeah.

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James Shooter

Oh, wow. That's cool.

00:20:20:10 - 00:20:39:18

Sebastian Bugariu

It's really cool. And it's really nice. I mean, it gives you a completely different perspective of the Danube Delta. but unfortunately, there's some, restrictions in place now because of the war. And, you can't actually fly for a very vast stretch along the border so with Ukraine.

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James Shooter

Dalmatian pelicans are one of the largest flying bird species in the world. And with a wingspan of over three meters across, they make for an impressive sight. If you look at a Dalmatian pelican side by side with a great white pelican, the great white looks like how you'd start a night out. Prim and proper, 'Daz' white with neat feathers and striking colours.

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James Shooter

The Dalmatian pelican looks a bit more how you might wake up the next morning slightly hung over with greying feathers and a messy bedhead on top.

00:21:08:22 - 00:21:42:17

Sebastian Bugariu

There are quite a few pelicans that are, that remain in the proximity of the breeding areas or in other areas in the Danube Delta and along the lower Danube, especially, during the winter, and outside the breeding season throughout the year, basically, contrasting with the great white pelican, which is a migratory species that, would even if some individuals,

tend to stay around just a few of them, the vast majority of, of great white pelicans would migrate to, tropical Africa, for the winter.

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Sebastian Bugariu

So they are a long distance migrant. This is one of the major differences between the two species.

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James Shooter

Dalmatians need large, undisturbed wetlands for breeding well away from people but have become quite accustomed to fishing alongside anglers, associating them with a chance for an easy meal. The birds tend to hunt using the element of surprise. They drift along slowly on the water's surface, pretending not to be all that interested, and then quickly dunk their head underwater

00:22:12:21 - 00:22:27:23

James Shooter

when they spot their prey. Their enormous throat pouch expands to fill with fish alongside 10 or 11 litres of water. They then push the water out and swallow the remains. I mean, they're basically feathery whales, aren't they?

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Sebastian Bugariu

And they are also, there are many instances is especially during the colder parts of the year when the, the food availability is, scarce. they would, display a kind of, behaviour which is known as kleptoparasitism, which where basically they rely on trying to steal food from other fish, namely cormorants mostly. So, yes, they would, they would join the cormorants in feeding, feeding pods and, you would see cormorants diving, deep for fish.

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Sebastian Bugariu

they would obviously chase the fish upwards and then the pelicans, they would just scoop them out from the surface of the water. And also if they get the opportunity, they will quickly try to grab the fish away from, emerging, cormorants, on the water surface.

00:23:21:01 - 00:23:44:20

James Shooter

The birds favour reed beds on isolated lakes for nesting, but they also take to rocky islands or artificial platforms put in place by conservationists where needed to breed in safety. Nests can be pretty flimsy structures, but soon get cemented together with fish flavoured droppings. Nice. They're monogamous, and both males and females take an active role in parenting duties.

00:23:44:22 - 00:23:57:19

James Shooter

Whilst you don't tend to find colonies as large as some of the other pelican species, they can still be up to 500 strong. Globally, there's around 9 or 10,000 breeding pairs, with 500 of those found here in the Danube Delta.

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Sebastian Bugariu

The most important condition that they need to meet is that the colony site, or the breeding site is, undisturbed, especially early in the breeding season, this can cause the birds to desert the area or just stop breeding, in larger numbers. and it exposes the young chicks and the eggs to attacks by predators such as gulls or crows.

00:24:30:06 - 00:24:50:02

Sebastian Bugariu

What has been happening throughout the 20th century along the lower Danube and also partly in the Danube Delta, there has been a large scale transformation of wetland areas, conversion to agricultural arable lands. This has had a great impact not only on Dalmatian pelicans, but on most wetland species.

00:24:50:04 - 00:25:18:04

James Shooter

Just a few decades ago, people's attitudes towards the pelicans was quite negative. With so many people reliant on fishing here, these huge birds were seen as a major competitor. Alongside the Danube's 500 pairs of Dalmatians they're joined by almost 20,000 great whites in the summer. If you're setting out a fishing net and a flock of several hundred pelicans descends nearby in a feeding frenzy, you'd be forgiven for getting a bit frustrated.

00:25:18:06 - 00:25:42:10

James Shooter

This ill feeling was leading to the disturbance of colonies and sometimes direct persecution. However, over the last 20 years, the ecotourism industry here began to boom and many people were now coming to the area willing to pay good money specifically to try and see these enigmatic birds. Once this economic opportunity came along, the pelicans were seen in a new light.

00:25:42:12 - 00:26:12:02

James Shooter

Extensive monitoring of the species, coordinated by partners across the Pelicans distribution range, is giving vital insights into the dynamics of this species. A census is carried out in spring and winter in every nation where the birds are found. Country specific rings are utilized for reporting on the general movements of immature birds, and patagial GPS transmitters fitted to the wings of a select few give a huge amount of data on specific flight routes, feeding grounds and nesting sites.

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Sebastian Bugariu

Once we have enough information on which are the wetlands that the birds are preferring or using, then we can target the conservation efforts to those wetlands. Apart from this,

what we are hoping is that the birds, which are generally, immature, but adults alike, they are, visiting different areas of Pelican congregations, in many cases, the cases they would visit colony sites and we, we are hoping that maybe, they would indicate some areas which are suitable for breeding and where they are not really, well known to us until now.

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Sebastian Bugariu

I think the, the Dalmatian Pelicans are definitely, at least stable and gradually increasing in the past, decades. They are doing well, even though they are still considered to be conservation dependent. So constant needs, they need to be, they need to be looked after, let's say I would like to see as well, happening the next decades along the, along the Danube and into the Delta is large scale restoration of, wetlands that have been converted to arable land throughout the 20th century.

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James Shooter

Over the past two decades, an EU funded program called the Pelican Way of Life has put considerable effort into the restoration of the species across Eastern Europe. This is included research and monitoring, working with key stakeholders, installing bird diverters on power lines, utilizing artificial islands, and also making the existing breeding colonies legally protected areas. Most of the sites now have wardens present in the spring and disturbance is

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James Shooter

at a record low, but it's only the further restoration of wetlands that will truly secure the future for the long term. Away from the shimmering wetlands of the Danube Delta. The rewilding team here are also responsible for the restoration of steppe ecosystems, a landscape at the complete opposite end of the spectrum to the place the pelicans call home to routine.

00:28:16:01 - 00:28:41:17

James Shooter

Tarutino steppe is an ocean of grass where the wind ripples through, it creates waves of green for as far as the eye can see. These semi-arid landscapes are too dry for forest, yet not dry enough for desert, despite Putin's invasion, rewilding officer of Lake Dickov and his team on the ground are still busy working on getting these grassy plains back up to functioning more naturally.

00:28:41:19 - 00:29:21:04

Oleg Dyakov

Actually, the Tarutino Steppe this is, remains of the huge, wild field from Danube up to Kazakhstan. Unfortunately, now, the only four per cent of the former steppe area, remains in Ukraine. First of all, this is because of, really, unsustainable approach to agriculture. And, this is, very important source of income for, Ukraine, for local people.

00:29:21:06 - 00:30:00:12

Oleg Dyakov

At the same time, the percentage of the arable lands and especially ploughed lands, in the southern part in the steppe region of Ukraine is, much, much higher than it could be sustainable. It could reach up to 80% and, this leads to many problems like, soil erosion, disappearing of small rivers because of the siltation of its riverbed, pollution and fragmentation of habitats decreasing.

00:30:00:12 - 00:30:24:13

Oleg Dyakov

This is mainly, monocultures of huge fields like, several hundred hectares each. For example, sun flowers. If we can add some pollution because of using of pesticides, of herbicides. So aggressive agrochemicals the problem even increased.

00:30:24:15 - 00:30:55:15

James Shooter

Tarutino is the second biggest fragment of steppe remaining in Ukraine, after the world famous Askania nova. This 33,000 hectare site is located in the Kherson region, which unfortunately means it's now under Russian occupation. This means rewilding Ukraine's efforts at Tarutino are even more important. Tarutino steppe is just over 5000 hectares in size but sits on a huge former military training area of some 24,000 hectares.

00:30:55:17 - 00:31:15:00

James Shooter

Whilst this is had some negative effects during active times, explosions being a part of that, it was also saved from ploughing, which overall is probably the worst of the two for steppe ecosystems at least. The abandonment of the site by the military in the year 2000 offers a good chance for scaling up the size of the protected area.

00:31:15:00 - 00:31:15:23

James Shooter

Here.

00:31:16:00 - 00:31:53:11

Oleg Dyakov

One of our projects, supported by endangered landscape program dedicated especially to assessment of carbon sequestration by the steppe ecosystem. The idea is to compare it with arable land or different types of steppe under different types of, management, like, grazing, sometimes overgrazing or compare these, places, in Tarutino Steppe, which very often has some wildfires.

00:31:53:13 - 00:32:52:04

Oleg Dyakov

and already now we can say that the steppe ecosystem looks like iceberg. When you see grasses above the soil, this is just, comparably small amount of the mass. The main part located is a roots, beneath of the soil and creates huge, depot for carbon sequestration. There is a possibility to restore many steppe habitat due to the fact that some slopes, some other, not really good for agriculture are not very profitable area because of level, high

level of erosion and other processes, it will be even more profitable to use this land as, not just field, but as pasture or, hay harvesting and at the same

00:32:52:04 - 00:33:01:00

Oleg Dyakov

time, if it will be possible also to use some carbon credits and they are working in that direction.

00:33:01:02 - 00:33:29:01

James Shooter

Farming in semi-arid conditions is always going to be a gamble. With a changing climate, that risk becomes even greater. When drought rears its ugly head farmers not only forego their income but can face great losses. The natural flora full of hardy species used to these tough conditions, like feather grass and bunch grass, are growing no matter whether it's a dry year, wet year, cold year or hot year, they can provide a more stable income

00:33:29:01 - 00:33:52:24

James Shooter

than non-native crops with hay harvesting and carbon credits, all the while being able to feed a multitude of wild animals. Oleg has been working with the head of a local community, together, they've been working on the creation of the new BoJack Steppe National Park proposition. Tarutino would form the core and the surrounding lands would make it up to a total of 9000 hectares.

00:33:53:01 - 00:34:11:14

James Shooter

It will increase the level of protection for the steppe, bring more financial support in and create an array of jobs for local people. Equally, the protection from national park status can't come soon enough. In 2016, over 800 hectares of the natural grasslands were illegally ploughed in the hope of claiming them for crops.

00:34:11:16 - 00:34:56:17

Oleg Dyakov

Areas were abandoned because of our campaign partly prepared for, future crop and they receive very interesting experience in terms of how the, steppe ecosystem can be restored, like themselves. And we see that this process was very long and unsuccessful on abandoned, previously ploughed areas because the destroyed soil, it was partly covered by grasses at the same time, a mainly was wheat grasses and not really typical for the steppe plants.

00:34:56:17 - 00:35:27:19

Oleg Dyakov

And also, it was very high level of erosion even after several years of abandonment, the top of these hills, was uncovered with vegetation. In the end, they decided to involve experience of our colleagues from, Askania Nova Biosphere Reserve. We found support from Endangered Landscape Program. they received some money to make a huge steppe

00:35:27:19 - 00:36:22:06

Oleg Dyakov

Restoration works. So using, different type of agricultural machinery, the soil, level it to reduce the, the erosion afterwards they harvested hay on, the, natural part of the steppe and, use that as a seed for the restored areas. And now they monitor speeds of restoration. And I can say that restoration, really increase the, the velocity of steppe plant communities on on this area compared to the abandoned, sites, the losses could be increased three up to five times.

00:36:22:08 - 00:36:53:10

James Shooter

Once you have the grasslands restored, you need to start thinking about the grazers. Mykhailo coined a nice phrase. There's no point in having a theatre without any actors. Kulan are one of those actors. This subspecies of the Asiatic wild ass great name, I know is effectively a wild donkey. They were classified as endangered in 2016, following years of habitat loss, high poaching pressure and persecution for competition with domestic livestock.

00:36:53:12 - 00:37:06:07

James Shooter

They once stretched from the Mediterranean to East Asia, but now can be found only in fragmented populations in Turkmenistan, Uzbekistan, Mongolia, Kazakhstan, and, as of May 2020, Ukraine.

00:37:06:10 - 00:37:53:07

Oleg Dyakov

Like other big herbivores, first of all kulan eat vegetation. So this is one impact. They trample and compact the soil, create some, dust baths, their carcasses I hope in future, an important source of food for various scavengers. Their impact, their influence, quite, diverse on ecosystem. But what is very important that unlike livestock, kulan actively move across the different parts of, steppe territory, and they don't create overgrazing.

00:37:53:07 - 00:38:14:19

James Shooter

So far, 40 Kulan have been brought in from Askania Nova traveling the 550km to Tarutino steppe in two releases. After acclimatizing in large pre-release enclosures they were set out into the wild. Their grazing effects will help keep grasses short, which in turn benefit small mammals like ground squirrels and steppe marmots.

00:38:14:20 - 00:38:51:08

Oleg Dyakov

Due to feasibility study developed by our experts, they plan to reach several herds of wild kulans in Tarutino Steppe and nearby up to 250 300 individuals in in future, ten years. But, also very important that, they create a wild herd. So last year, they receive four newly born kulans in the wild herd and two newly born kulans in enclosure.

00:38:51:10 - 00:39:23:17

James Shooter

The fact they are now breeding on site is great news for the species. In time, they'll also become part of the food chain, as grey wolves also inhabit the area. Oleg tells me they already found footprints of both in one location, but so far haven't had any losses. These wild donkeys are well adapted to deal with predators. As one of the fastest land mammals in the world, they can reach speeds of up to 70km an hour, and groups of stallions won't hesitate to fend off any potential threat.

00:39:23:19 - 00:39:47:03

James Shooter

Another large grazer high on the list for Oleg, looks more like it belongs in Star Wars than real life. Saiga antelope look a bit like they've got a squashed elephant's trunk attached to their face. They're near threatened at a global level, but critically endangered in Europe. In healthy populations, they can number herds of tens of thousands. An incredible sight which I find hard to comprehend.

00:39:47:05 - 00:39:52:12

James Shooter

Unfortunately, they're also pretty good at dying, having had several mass die offs in the past decade.

00:39:52:17 - 00:40:22:23

Oleg Dyakov

Reintroduction of saiga antelopes is my, dream. Actually, they already had several attempts to bring little number of saigas to our enclosure in Tarutino Steppe. Unfortunately, it was unsuccessful. The animals, they were brought from a Askania Nova biosphere reserve, but there are many, very important thing and, especially to bring and breed saigas

00:40:22:23 - 00:40:50:10

Oleg Dyakov

Firstly, in a captive breeding enclosure. And you need to keep them together with these other herbivores. the best companion is kulan and I hope that later on, after the end of the war, we will be able to create a breeding herd of saigas in Tarutino Steppe and afterwards release them.

00:40:50:15 - 00:41:12:13

James Shooter

From the big to the small, European hamsters have also featured in the wildlife comeback of the Tarutino Steppe. Now, don't judge me. But I was embarrassingly old when I realized hamsters were even a wild species. I just accepted them since I was a kid as an animal you'd see in pet shops. You know how you don't necessarily think of wolves when you look at a chihuahua?

00:41:12:15 - 00:41:24:11

James Shooter

Well, that's what I did with hamsters anyway. This wild species is pretty big. They can reach up to 40cm in length and half a kilo in weight. That the juggernauts of the hamster world.

00:41:24:13 - 00:41:55:08

Oleg Dyakov

The role of hamsters, as well as, other big and small rodents in Tarutino Steppe is very high. They spread seeds, they creating burrows and they play very important role in terms, source of food for different types or for predators, mammals and birds of prey. They improve the fertility of the soil.

00:41:55:10 - 00:42:29:24

Oleg Dyakov

they have a quite important impact on vegetation at the same time, they also not, pure vegetarian. They could eat also vertebrates and invertebrates even sometimes they can predate on local mouse species. so, the hamster population has sharply decreased, I can say over the past 20 years, due to different impacts, first of all, decrease in fertility

00:42:29:24 - 00:42:57:24

Oleg Dyakov

And in previous time, it was at least, ten young, hamsters in one litter but now sometimes even more up to 20, but now generally not more than 3 or 6. And, maybe this is due to use of aggressive, agrochemicals like pesticides because they becoming infertile.

00:42:58:01 - 00:43:24:14

James Shooter

Kyiv zoo has been hard at work breeding hamsters to reintroduce them back to the wild. And in 2022, the first families were released back into the steppe, with a further 15 individuals reintroduced the following year. They spend 95% of their time underground in burrows, along with steppe marmots, another rodent recently reintroduced, which can have burrows up to 20m in length and three meters below the surface.

00:43:24:16 - 00:43:45:13

James Shooter

The tunneling of both species can improve the composition, aeration and water permeability of the soil. Oleg continues to tell me he has high hopes for the future steppe wildlife recovery centre with marbled and steppe polecat, great bustard and demoiselle cranes also on the list for recovery. It sounds like there'll be no stopping him as things progress.

00:43:45:15 - 00:44:48:23

Oleg Dyakov

The importance after the thought of the Russian-Ukrainian war, the value of the Tarutino steppe increased very much and this future centre too, because before the war, the main source for kulans and other herbivores, for our rewilding activity was Askania Nova Biosphere Reserve or Beruchi National Park, or the National Park. So all these areas now located under Russian occupation, also due to the war, many, habitats, destroyed, many

steppe habitats destroyed, and I'm sure that Tarutino Steppe and our centre for steppe wildlife recovery, it will be both source of animals for reintroduction of certain species and steppe and other ecosystem restoration on

00:44:48:23 - 00:44:55:22

Oleg Dyakov

the occupied areas of Ukraine in the southern and eastern part of the country.

00:44:55:24 - 00:45:24:10

James Shooter

I am absolutely in awe of this team. Their rewilding plans would be ambitious for an average team, but to be getting on with the job in the face of such adversity is utterly inspiring. When all else fails in society, nature still brings hope. Restoring the Danube Delta and the Tarutino Steppe brings hope. Releasing hamsters, reintroducing kulan, turning the tide for Dalmatian pelicans and sturgeon.

00:45:24:12 - 00:46:08:15

James Shooter

It all brings hope. Rewilding is hope. It's the promise of a brighter future. The dawn of a new day. When the dust settles and Ukrainians get their country back. The people here will be so thankful of those fighting back for nature, where even in the darkest hour, people could still see some light. I was really gutted not to be able to head across the border from Romania to see the steppe and the wetland restoration works for myself, but one day, in the not-too-distant future, I'll return to share a beer with Mykhailo and Oleg. We'll watch beavers go about their business in the delta, and then we'll move on to the Tarutino Steppe, where perhaps we'll get a glimpse of Oleg's Saiga antelopes grazing on the free lands of a new Ukrainian national park. Better times are coming friends. Stay strong.

00:46:29:15 - 00:47:01:19

James Shooter

Thank you for joining me for episode 14 of the Rewild Podcast. A story of resilience, strength and resolve. A huge thanks to Mykhailo, David, Sebastian and Oleg for your time talking to me from the Netherlands, Romania and Ukraine. As always, a tip of the hat to Andrew O'Donnell of Beluga Lagoon for lending me his musical prowess, and to Gemma Shooter, who despite being nine months pregnant and about ready to pop, still found time to produce some stunning artwork for me.

00:47:01:21 - 00:47:23:23

James Shooter

If I sound a little tired on the next episode, you'll now know why. The biggest of thanks, of course, goes to Rewilding Europe for collaborating with me on this series. The Danube Delta is one of ten inspiring rewilding landscapes brought together as part of a broader rewilding movement. Join us next month as we'll be hanging with the vultures of the Rhodope Mountains of Bulgaria.

00:47:24:00 - 00:47:24:21

The Rewild Podcast
By James Shooter
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Danube Delta

James Shooter
Catch you next time.

