

## The bird that blocked the sun; the Passenger Pigeon

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PARRY SOUND – “Extinction is forever - or so we thought,” opened Mark Peck at his presentation at the West Parry Sound District Museum on Thursday evening, January 15.

Peck, a technician in the Department of Natural history at the Royal Ontario Museum in Toronto, presented on the 100th anniversary of the extinction of the passenger pigeon and the De-Extinction Project – a project that aims to revive and restore the species.

A sold out crowd listened intently as Peck described this once bountiful species and how in a matter of approximately 50 years it went from being the most numerous bird in the world to extinction.

“It’s hard to imagine that 150 years ago this bird was probably the most common, most numerous bird on the planet,” said Peck. “They estimate as many as 6 billion birds in North America.”

One of the most notable characteristics of the passenger pigeon was their enormous flocks.

“So many pigeons would land on a branch in the tree they would actually break the branches and kill several of the birds in doing so,” said Peck.

His presentation included numerous paintings done by artists that portray the sheer immensity of the species. Peck noted that virtually every image that you see of passenger pigeons includes large flocks and men with guns.

A bird that would “block out the sun” with “wings that sounded louder than thunder,” – it seemed unimaginable to people that this species could, or would, ever die out.

“There were so many of them that they actually started to become agricultural pests,” said Peck. “Although pigeons normally feed on oak or beech mass or whatever seeds they could get from the forest, as men cleared the forests, they moved into the agricultural areas and became, obviously a big concern.”

Overhunting and clearing of the eastern forest contributed to the extinction, Peck said. Both the pigeon’s food resources and nesting areas were being affected.

“Their nesting areas – which were huge – they talked about nesting colonies about 20 km wide by 20 km long where there would be millions of pigeons all along this area,” said Peck. “Passenger pigeons only laid one egg at a time so it was important that they kept in those big flocks and big colonies in order to successfully reproduce.”

The screen then portrayed this colossal mound, and Peck explained that the mound was actually dead passenger pigeons that hunters had killed. A variety of gasps and sighs were heard around the room.

“In 1869, three train carloads of pigeons from the town of Hartford, Michigan were shipped to market each day for 40 days,” said Peck. “Approximately 12 million birds – and that’s one year from one area.”

Peck explained that these large amounts birds would be sent into cities to various fancy restaurants but rural people who were hunting passenger pigeons for a food source also did a great deal of damage to the species.

“In the course of about 50 years, we took the most numerous bird on the planet to the brink of extinction,” said Peck. “The last bird was seen in 1901 in the wild and on September 1, 1914 at one o’clock in the afternoon, Martha, who was the mate of George, died at the Cincinnati Zoo. And she was 29 years old at the time.”

Stewart Brand, co-founder and president of The Long Now Foundation, speaks of Martha’s death in a TIME video on The Long Now Foundation’s website: “When I was growing up my mother said that when the last [pigeon] died in 1914, it broke America’s heart. It was one of the prideful things that America had to show the world and it was gone.”

100 years extinct

The year 2014 is the 100th anniversary of the species’ demise.

“Everyone is doing something on passenger pigeons,” noted Peck. “You can go to the Smithsonian and there’s [an exhibit], American Museum’s got one, the Cincinnati Zoo has got a billboard across the street of a flock of passenger pigeons flying by, there are three or four books that have been written this year on passenger pigeons.”

Today, technology and genetic research are making it possible, at least theoretically, to bring species back to life – an idea that prompts images of the Jurassic Park movie.

Ben Novak, Lead Researcher, The Great Passenger Pigeon Comeback, immediately rejects that thinking in a TIME video on the Long Now Foundation's website. "No, no it's not [like Jurassic Park]. I don't think that a passenger pigeon is going to be plucking lawyers off of toilets," said Novak in making a reference to the Jurassic Park films.

"Every organism has a unique code in their genes. Now if you can get DNA then we can actually make it into a living cell," said Novak. "We are going to sequence its whole genome; we are going to building from scratch the code that is a passenger pigeon – one gene at a time – compare it to its closest relative, then, we are going to introduce DNA into a living cell of band-tailed pigeon. And when you introduce and extinct animals egg cell into a new mother, then you've changed the game."

Peck explained that the De-Extinction Project has significantly affected the ROM.

"In 2012, the University of California Sana Cruz researchers came up, they took a small toe pad, or a small bit of skin, from the toe pad of the passenger pigeons that we have in our collection, took them back to California and started working on this idea of bringing passenger pigeons back to life," said Peck.

One of the passenger pigeons from the ROM's ornithology collection, Passenger Pigeon 34.3.23.2, is a major part of the genomic sequencing that is taking place at the University of California. "For whatever reason, the best DNA available for a passenger pigeon [came from this passenger pigeon] and they are now sequencing her entire genome," said Peck.

Peck noted that since 2012, when the University of California researchers first came to the ROM, constant communication has remained between the two organizations. Peck went on further, stating that this project should ignite some pride from Canadians, specifically Ontarians, as "31 of the 32 Passenger Pigeons that are being used in the genomic program come from the ROM. So even though the research isn't being done in Canada – it is being done in California – the birds are all from Ontario."

Peck acknowledged the fact that this idea of bringing extinct species back to life rises a plethora of questions, like: Would passenger pigeons survive in the world today? Do we want a million passenger pigeons flying into our backyards each spring? Does this create challenges for other endangered species? And where does it stop? Do we stop at birds? Due to the ethical questions and problems that this ground-breaking research involves, the University of California is encouraging professionals from all disciplines, including philosophers and theoreticians, to get involved in the project, said Peck.

"The government is going to have to make this decision sooner or later if it is in fact possible to do," said Peck.

The last photograph that Peck displayed at his presentation was that of thousands of dead birds, ranging in size and species. These photographs are released each year by the Fatal Light Awareness Program (FLAP) to demonstrate to people the thousands of birds that are killed each year by colliding into the glass buildings that are located throughout the GTA. The room echoed with the sound of both astonishment and appreciation for this group as they viewed the photograph.

"After 100 years – after six or seven species going extinct – have we learned anything?" asked Peck. "Whether or not the passenger pigeon does come back into existence or not, we as part of this world need to do a better job at protecting species."

At a TED Talk in March of 2013, titled, "The dawn of de-extinction. Are you ready?" Stewart Brand said, "The fact is, humans have made a huge hole in human nature in the last 10,000 years. We have the ability now – maybe the moral obligation – to repair some of the damage. Most of that we'll do by expanding and protecting wild lands - by protecting the populations of endangered species. But some species that we have killed off totally, we could consider bringing back to a world that misses them."

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If you would like to learn more about the De-Extinction Project or the Long Now Foundation visit: [longnow.org](http://longnow.org)