

Chernobyl zone turns into testbed for Nature's rebound

April 19 2016, by Olga Shylenko



Dogs are pictured near a radioactive sign near a crucifix in the ghost city of Prypyat near Chernobyl Nuclear Power Plant on April 8, 2016

What happens when the site of the world's worst nuclear accident is left all but abandoned for nearly 30 years?

In the case of Chernobyl, it becomes a unique chance to see how wildlife recovers in what is a giant nature reserve, bereft of humans but tainted

by radiation.

"When the people left, nature returned," Denys Vyshnevskiy, a biologist in Chernobyl's so-called exclusion zone, told AFP during a visit, while nearby a herd of wild horses nosed around for food.

Some may wonder how the northern edge of the former Soviet nation, where a part of the station exploded on April 26, 1986, spewing toxic clouds that reached from Sweden to Greece, could host any life forms at all.

About 30 courageous and atrociously under-protected rescuers died in the weeks it took to control the fourth reactor's meltdown and a 2,800-square-kilometre-wide (1,100-square-mile-wide) exclusion zone was set up.

The World Health Organization estimated in 2005 that 4,000 people could eventually die from radiation-related illnesses, a figure that Greenpeace slammed as a gross underestimate.

The region and its 300 or so mostly elderly inhabitants remains far from safe, with radiation readings within 10 kilometres of the plant reaching 1,700 nanosieverts per hour—10 to 35 times the normal background levels observed in the United States.



A wild Przewalski's horse stands on a snow covered field in the Chernobyl exclusion zone

Today's animals in the exclusion may have shorter lifespans and produce fewer offspring, but their numbers and varieties are growing at rates unseen since long before the Soviet Union's 1991 collapse, says Vyshnevskiy.

"Radiation is always here and it has its negative impact," said Vyshnevskiy.

"But it is not as significant as the absence of human intervention."

Environmental renaissance?

About 130,000 people were rushed from the region in the disaster's wake, with signs of former existence like children's sandpits and swings still standing and collecting snow in the winter, as if frozen in time.

With the quick death of the local Red Forest—10 square kilometres of pines that wilted from the radiation that permeated the ground—various birds, rodents and insects were lost.



Maria Urupa, who is in her early 80s, is a "samosely", or self-returner, as inhabitants of the Chernobyl exclusion zone are known

Over time, the forest was cut down and a new, healthy one sprung up in its place.

The exclusion zone was placed under military surveillance to keep away

the homesick for their own safety, and while a few hundred pension-aged people slipped back in over the decades, curious things slowly began to emerge in nature.

On the one hand, species dependent on human crops and waste products vanished: white storks, sparrows and pigeons fell silent and no longer filled the skies.

Yet on the other, indigenous species that flourished in the lush flora long before the catastrophe, reappeared.

These include elks, wolves, bears, lynxes, white-tailed eagles and many others.

One of the more brazen experiments came in 1990, when a handful of endangered Dzungarian horses were brought in to see if they would take root. They did so with relish, and about a hundred of them now graze the untended fields.



Abandoned gas masks lay on the floor in a class room in a school of the deserted town of Prypyat, adjacent to the Chernobyl nuclear site

For Vyshnevskiy, the rebound is an "environmental renaissance".

Other scientists, though, are more cautious.

Tim Mousseau, a professor of biological sciences at the University of South Carolina at Columbia, heads a team that has been conducting long-

term research into biodiversity at Chernobyl—a mission that they are also carrying out in the zone around Fukushima in Japan.

In a phone interview with AFP, Mousseau said that the range of species, the number of animals and their survivability in Chernobyl is less than what would be expected in a non-contaminated area—especially in "hotspots" where radiation is high.

Butterflies and birds in particular seem to have been affected most, apparently because of susceptibility on a key chromosome, he said.

"When you put a fence around an area, it's clear that some animals will have an opportunity to expand, but because they are visible, it doesn't mean that they have increased as much as they should have, or that you have the biodiversity that you would normally have," Mousseau said.

Chernobyl: timeline of a disaster

1 April 25, 1986

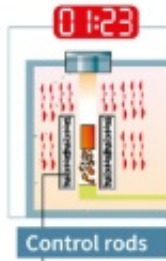
A safety experiment is carried out while Reactor No. 4 is shut down for routine maintenance.



2 26 April, 1986

1:23 am: a sudden drop in power triggers a chain of events causing the reactor to overheat.

Reactor no.4 explodes. A radioactive cloud of smoke shoots 1 km into the air and, pushed by the winds, spreads across northern Europe.



Control rods



3 April 26 - May 5, 1986

Thousands of tonnes of sand, clay and lead are dropped on to the reactor to quench the fire.



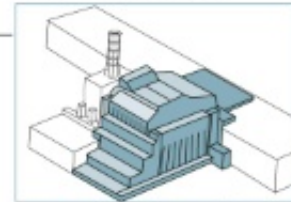
N° 4

4 Spring and summer 1986

116,000 peoples are evacuated from immediate area. In later years 230, 000 people relocated.

5 November 1986

"Temporary" steel-concrete cover is build over destroyed reactor to contains its 200 tonnes of molten nuclear fuel.

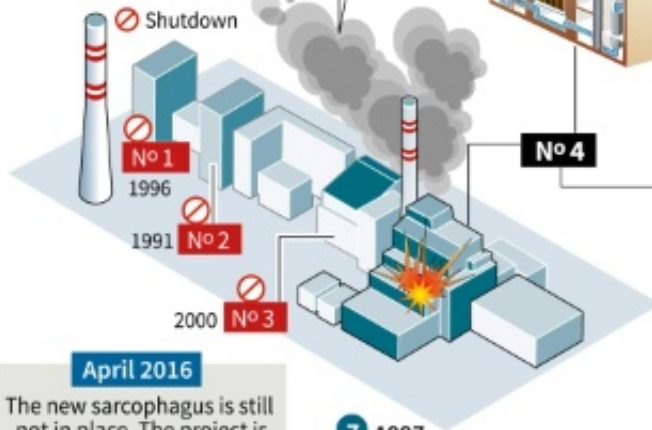


6 1986 - 1990

Hundreds of thousands of clean-up workers attempt to isolate and decontaminate the danger zone



Reactors



April 2016

The new sarcophagus is still not in place. The project is due to be completed in 2017

7 1997

An international fund is set up to build a new sarcophagus to replace the badly leaking "temporary" cover over the reactor

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Sources : www.world-nuclear-org, UNSCEAR, OMS

Chernobyl: chronology of the nuclear disaster

He added in an email: "Overall, in almost all cases, there is a clear signal of the negative effects of [radiation](#) on wild populations. Even the cuckoo's call is affected."

Disaster's sole positive outcome

Maryna Shkvyrya, a researcher at the Schmalhausen Institute of Zoology, Ukraine's oldest in the field, also urges prudence to those

tempted to idealise the exclusion zone as a nature reserve.

The zone is "unique... but not exactly a paradise for the animals nor an oasis", Shkvyrya said.

"There are lots of people working on the power plant. There are tourists, stalkers and poachers."

Vyshnevskiy says that the biodiversity benefits will rise with time. When the woods sprawl even wider across the empty fields, forest fauna and flora will multiply, he predicts.

"There is a huge contrast between Chernobyl just before the catastrophe and Chernobyl 30 years after," said Vyshnevskiy.

"These animals are probably the only positive outcome of the terrible catastrophe we had".

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