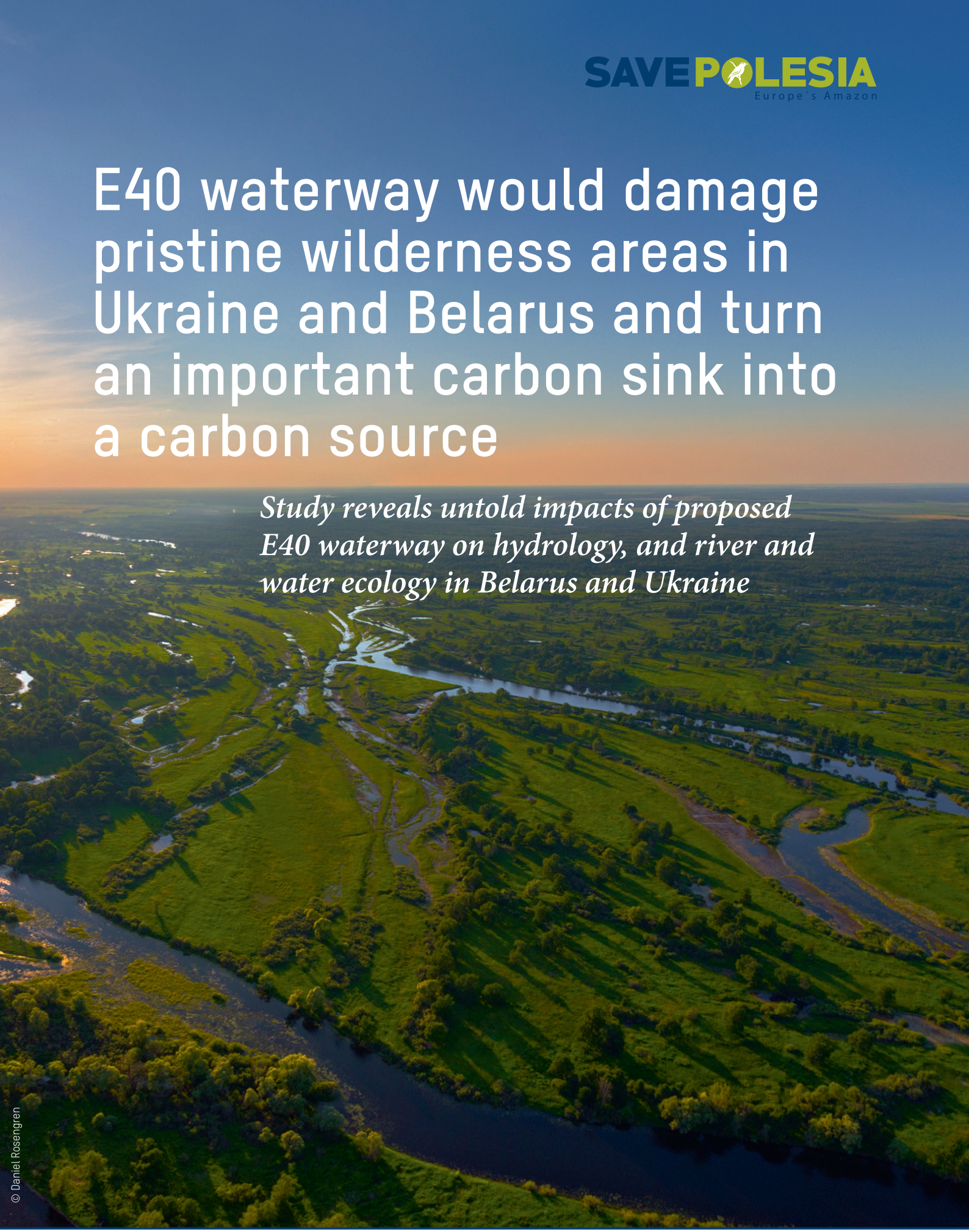
SAVE POLESIA
Europe´s Amazon

# E40 waterway would damage pristine wilderness areas in Ukraine and Belarus and turn an important carbon sink into a carbon source

*Study reveals untold impacts of proposed E40 waterway on hydrology, and river and water ecology in Belarus and Ukraine*



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## Summary

The 2015 feasibility study on the proposed E40 waterway failed to look in detail at hydrological impacts in Belarus and Ukraine. Experts identified a range of crucial issues the study did not consider, including the impacts of climate change; the impact of ice management on riparian habitats; the impacts of modification and regulation on the meandering stretch of the Pripyat river; the impacts from invasive species; water quality issues; impacts of radiation and the challenge of maintaining the ecological status of the Pripyat. They also identified the need to involve stakeholders in discussion on likely changes to local hydrology.

**They found that:**

- The development of the E40 waterway may affect ice processes in the Pripyat river and intensive management of the ice is likely to be needed to enable navigation.
- Climate change may reduce the water available for the operation of the E40 waterway, meaning it cannot operate consistently throughout the year.
- Channelisation of the meandering stretches of the Pripyat will destroy the river's near-pristine environment.
- Almany mires reserve, one of most exceptional peatlands in Central Europe, is likely to be cut off from some of its vital water supplies.
- Pripyatsky National Park, one of the least disturbed areas of Belarus, – which protects a core section of the meandering Pripyat river –, will be irrevocably damaged.

## Background: Polesia and the E40 waterway

Polesia is a vast wilderness area stretching across Belarus, Poland, Russia and Ukraine[1]. The E40 waterway[2] is a transnational initiative aiming to link the Baltic and Black Seas by an approximately 2,000 km long navigable connection running from Gdansk in Poland to Kherson in Ukraine. This could have very serious impacts on the natural and cultural heritage and people of Polesia, as well as more wide-ranging effects on economies and the global carbon balance.

Although the planning of E40 waterway is still at an early stage, a feasibility study was published in 2015[3]. This proposes that the route would go through the river systems of Vistula, Bug, Pina, Pripyat and Dnieper (see figure 1). Along the majority of its course it would go through free-flowing rivers, and several parts would need to be straightened, dammed, dredged, or drained. While some shipping channels already exist, the extent of the proposed new development is so massive that it threatens an environmental catastrophe in the region.

1 See factsheet "About Polesia – A unique wilderness of global importance"

2 See factsheet "Polesia under threat – How a new waterway could destroy Polesia's natural environment"

3 Maritime Institute in Gdansk (2015) Restoration of Inland Waterway E40 Dnieper –Vistula: from Strategy to Planning. Final Feasibility Study Report – Corrected Report (According to the remarks and requirements introduced by Willem Zondag, Legal and Technical Consultant). Gdansk, December 2015.

The Belarusian stretch of the canal would run along the Mukhavets river, the Dnieper-Bug canal, Pina river, and Pripyat river to the Belarusian-Ukrainian border. Although part of the Belarusian stretch of E40 waterway would run through the navigable canal, vast parts of the course of the planned waterway cuts through a heavily meandering stretch of the Pripyat (see figures 1 and 2).

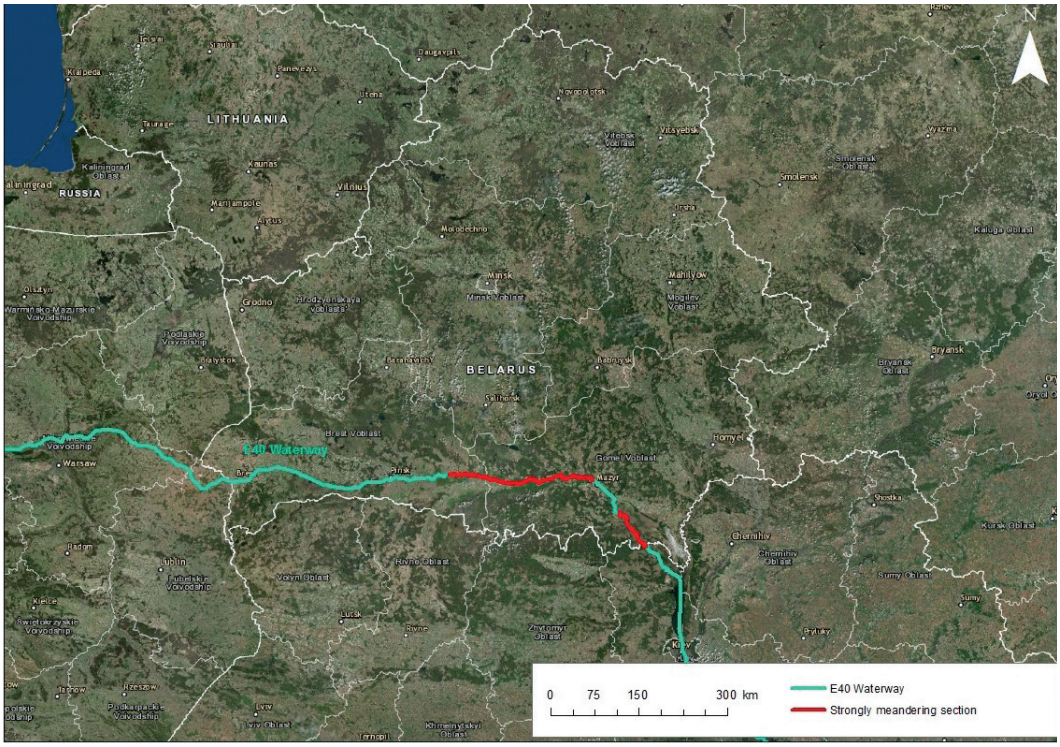


*Figure 1: Overview of the proposed channel and natural stretches of E40 in Belarus (Ortophoto: Google)*


*Figure 2: Overview of meanders of the Pripyat river in Pripyatsky National Park (Ortophoto: Google)*

Part of the E40 waterway runs through the Pripyat and Dnieper rivers in Ukraine. This includes a section of the Pripyat which passes the remnants of the Chernobyl Nuclear Power Plant. Entrance to the area around the old power plant is strictly regulated – extended exposure to radiation in the area is still considered hazardous. There is a significant danger that the development and operation of this stretch of the E40 waterway could exacerbate the problem, disturbing and distributing radioactive material, potentially affecting millions of people[4] .

## Expert studies

To better understand the potential impacts of the E40 waterway on Polesia we commissioned a range of experts to look at the factors including: hydrology, transport economics, radioactivity, and potential alternative development scenarios for Polesia. This factsheet summarises the findings of a study on the potential impacts on hydrology and wetland ecology in Belarus and Ukraine. It has been carried out by experts from the Wetlands Conservation Centre. The full report is available here[5].

**What the assessment looked at**
Experts analysed the 2015 feasibility study focusing on the development of the Belarusian and Ukrainian stretch of the E40 waterway.

**The key issues considered were:**
- the water resources needed for the E40 waterway to function;
- the additional effects of climate change;
- the impact of the E40 waterway on the ecological status of watercourses;
- the impacts on the Almany mire reserve and Pripyatsky National Park;
- and criteria for a detailed environmental assessment of the area.

## Findings

**Water resources in Belarus would only initially be sufficient for the waterway to function**
Unfortunately, hydrology data available for the relevant area is limited. However, experts think it is likely that available water resources in Belarus and Ukraine would initially be sufficient for the E40 waterway to function although this is likely to change with climate change – see below. They found the Belarussian stretch to have resilient water resources, perhaps because the wetlands provide a continuous water supply to the rivers, and that most of the Ukrainian stretch has already been impounded.

Development of the E40 waterway is likely to affect natural icing processes, and when channelised the Pripyat is likely to require intensive ice management to enable navigation.

**Climate-induced pressures will affect water availability for the E40 waterway**
The feasibility study failed to look at potential impacts of climate change on the function of the E40 waterway. Experts looked at relevant international studies, finding these predict water shortages, an increase of evapotranspiration, an instability of river discharges, and decreasing flood volumes – including earlier occurrence of spring floods. In light of these predictions, experts consider the biggest problem for the E40 waterway will be changes to rivers upstream in Belarus, where the water resources of the rivers forming the upper parts of the waterway are relatively small.

[4] Also see factsheet "E40 waterway could expose millions of people to dangerous levels of radiation."

[5] Grygoruk M, Jabłońska E, Osuch P, Trandziuk P (2019) Analysis of selected possible impacts of potential E40 Inland Waterway development in Belarus and Ukraine on hydrological and environmental conditions of neighbouring rivers and wetlands. Warsaw, March 2019.

A predicted 25-50% decrease in flood volumes in the tributaries of Pripyat, such as the Pina, would dramatically decrease the availability of water for the E40 waterway. Climate change pressures, such as longer and more severe droughts, are likely to increase the use of water for agriculture, which would limit the water available to feed the E40 waterway in June to September – the most critical periods of the year.

**The E40 waterway will affect the ecological status of watercourses**

The most significant impact of the E40 waterway in Belarus is likely to result from modification of the meandering stretches of the Pripyat river. The Pripyat is one of the last remaining near-pristine major lowland rivers in Europe, with more than 250km considered to be in a 'very good' or 'good' hydro-morphological state, according to Water Framework Directive (WFD) definitions. Channelisation is likely to affect sediment levels and impact aquatic organisms like crustaceans, molluscs and insects as well as fish communities. During operation the E40 waterway is likely to have a wide range of impacts, for instance fishery management may be threatened and invasive species may spread.

**The E40 waterway threatens the Almany mires**

Changes to the flow regime of the Pripyat river from the proposed E40 waterway canalisation and associated changes to tributaries are likely to have serious negative effects on the Almany mires reserve. The reserve, nestled between the Horyn and Stviga tributaries of the Pripyat river, is one of the most exceptional peatlands of Central Europe. The main part of the mire complex is located in Belarus and is a protected area both nationally and internationally. The mire is home to a large number of threatened bird species, including Europe's largest population of greater spotted eagles and Belarus's largest populations of short-toed eagle, crane, and aquatic warbler. Experts state that this issue must be further examined through detailed environmental impact assessment studies to ensure this place of global natural importance is not damaged.

**The E40 waterway will irrevocably damage Pripyatsky National Park**

Construction of the E40 waterway would involve channelisation and straightening of meanders on the Pripyat river. This would cause irreversible damage to the heart of the Polesia. During spring floods, the middle stretch of the Pripyat river transforms into a huge lake up to 10 km wide and almost 200 km long – bearing a strong resemblance to the Amazon basin. Part of this meandering section lies in Pripyatsky National Park (see figure 3).


*Figure 3: Floodplains of the Pripyat river*

The park is internationally protected and is one of the least disturbed areas of Belarusian Polesia. It provides vital ecosystem services: the floodplains provide flood regulation, human water supplies, maintain water quality, and recharge groundwater. The peatlands store and sequestrate carbon, helping to regulate the global climate. The area has a high number of nationally and international protected species, including breeding birds and is a hugely important migration site. Any damage to this unique ecosystem would be an international catastrophe.

**There are many other issues to consider in a detailed environmental assessment of this stretch of the E40 waterway**

Experts identified a range of important issues not considered in the feasibility study. These include: the impacts of climate change on operation of the E40 waterway; the impact of plans for ice management on riparian habitats such as forests; the impacts of modification and regulation of the meandering stretch of Pripyat river on Horyn-Pripyat connectivity and groundwater flow in the Almany mire; the impacts from invasive species brought into the area; water quality issues related to algal blooms; impacts of radiation; and the challenge of maintaining the ecological status of the Pripyat river. They also stress the need to involve stakeholders in discussion on the probable changes to local hydrology.

## Who is Save Polesia?

**Our coalition includes six organisations from four countries.**

**APB – Birdlife Belarus**
APB's mission is the conservation of biological diversity for the benefit of the present and future generations and involvement of people in active nature protection activities.

**Bahna, Belarus**
The aim of Bahna is to prevent further degradation of the environment and to preserve natural habitats and biodiversity of our country.

**FZS – Frankfurt Zoological Society, Germany**
FZS invests in wilderness areas of global significance – "legacy landscapes" – with aesthetic and natural values, pristine landscapes, important ecosystem processes or values, and endemic and endangered species.

**NECU – National Ecological Centre of Ukraine**
NECU is an NGO with branches in a dozen of Ukrainian cities. It works to bring environmental consideration into the core of any decision making.

**OTOP – Polish Society for the Protection of Birds**
OTOP's mission is to protect birds and their habitats and establish and manage new bird reserves. The organisation has strong educational work in order to increase public support for nature conservation.

**USPB – Ukrainian Society for the Protection of Birds**
USPB's mission is to conserve the biodiversity of Ukraine by saving birds, sites and biotopes.

**Contact for more information**
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Find out more on **www.savepolesia.org**