



Watch your Danube



JDS2: WATER POLLUTION IN THE DANUBE RIVER BASIN

What is the Joint Danube Survey?

The Joint Danube Survey 2, also known as 'JDS2', is the world's biggest river research expedition in 2007. Its main goal is to produce highly comparable and reliable information on water quality and pollution for the entire Danube River and many of its tributaries. The Secretariat of the International Commission for the Protection of the Danube River (ICPDR) coordinates the implementation of JDS 2.

Launched on August 14, 2007 from Regensburg, Germany, the three boats of the JDS2 will travel 2,375 km downstream the Danube River, through 10 countries, to the Danube Delta in Romania and Ukraine until late September.

Is the Danube Blue?

Depending on the light, location and time of day, the Danube River may appear blue. More typically, however, it looks like a mix of green and brown, with varying underwater visibility. Does this mean that it is polluted? At the particular place you are looking into, not necessarily. But in general, pollution is a serious problem for the Danube Basin with large variations between locations, and between the main Danube River and its tributaries.

Poorly treated wastewater is a big problem, especially for tributaries, according to the recently published 'Roof Report'. Released in 2005 by the ICPDR, the report, technically known as the 'Danube River Analysis', is the first-ever comprehensive analysis of the Danube Basin's environment and pressures impacting it. It found main pollution sources to be municipalities, industry and agriculture, from both point sources (e.g. pipes) and non-point sources (e.g. crops). Pollution really starts affecting water quality after Budapest. Upstream in Austria and Germany, point source pollution is low because of major recent investments in wastewater treatments plants.

The good news is that overall pollution has declined, mainly because of the drop in industry and agriculture in Central and Eastern Europe (CEE) following political transformations in the late 1980s. But with expected economic improvements in these countries, pollution could increase. And overall, pollution still remains high, especially from nutrients and hazardous substances.

Nutrient Pollution

Nutrient pollution, mainly from nitrogen and phosphorus, dropped in the past 20 years. But levels are still almost twice those in the 1950s, states the Roof Report. Nitrogen use doubled from the 1950s to the mid-1980s followed by a substantial reduction in the 1980s mainly due to economic changes in CEE and improved wastewater treatment in Germany and Austria. Today, agricultural nitrogen mineral fertilizers and raising livestock are main contributors. The main source of phosphorus in the basin is wastewater from urban settlements. Overall phosphorus levels are 20 percent higher than in the 1950s, in part because of increases in their use in cleaning detergents.

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The biggest impact from nutrient pollution is eutrophication, which reduces oxygen in the water, decreases plant and animal species and worsens water quality. As a result, Danube nutrient pollution helped create a severe ecological imbalance in the Black Sea.

Hazardous Substances

The Roof Report also found that hundreds of hazardous substances are used and released in the Danube Basin. Many pose serious threats to the environment and health. The EU's main body of legislation for protecting water - the EU Water Framework Directive (WFD) - specifies 33 priority substances as hazardous, 11 of which are pesticides, and requires their phase-out within 20 years. 29 are used in the Danube Basin, many in producing cereals, rapeseed, sunflower, maize, orchard fruits and grapes. Only three are authorised in all countries while a shocking seven are not authorised in any country, many having been left in old stockpiles, some in flood-prone areas.

The biggest threat is from DDT, a pesticide banned in Europe: in water samples taken from the Danube, 71 percent had DDT levels above permissible levels. Pesticides are a serious risk in the Danube, and their levels generally increase as you go downstream. "Alarming concentrations" can be found in some tributaries and in the lower main branch of the Danube, according to the Roof Report. Since the 1990s, pesticide use declined by 40 percent, but increases are expected with economic developments.

Pollution and the EU Water Framework Directive

These pollution problems don't just violate the environment. They may also break the law. A main goal of the Roof Report was to provide the European Commission with an assessment of how Danube countries will meet the main goals of the WFD -- clean waters and good ecological status -- by 2015. EU countries had to assess the degree to which water bodies within their boundaries were at risk of failing to meet the directive's objectives in relation to four risk categories: organic pollution, hazardous substances, nutrients and hydromorphological alterations.

The results weren't very positive. The portion of the Danube at risk or possibly at risk is 47 percent from organic pollution, 55 percent from nutrient pollution and 73 percent from hazardous substances. The delta is at risk from hazardous substances and nutrient pollution. All Black Sea coastal waters are at risk from nutrient pollution and possibly at risk from the other three. And the pesticides DDT and Lindane are at risk of failing to meet the WFD.

The Roof Report also tried to assess groundwater in the basin for the first time. Most countries appear to be at high risk of groundwater pollution from fertilisers and chemicals, untreated sewage and leaching from contaminated soils. That's a big problem because groundwater is the source of 95 percent of the public water supply in some Danube countries.

Next Steps

One key next step for the ICPDR and Danube countries is the development of a 'Danube River Basin Management Plan' by 2009 on how to achieve the WFD's 2015 objectives. Work is now underway,

JDS2 Stops:

Regensburg, 14 August
Vienna, 20 August
Bratislava, 22 August
Budapest, 28 August
Osijek, 2 September
Belgrade, 6 September
Turnu Severin, 12 September
Ruse, 19 September
Vilkovo, 25 September
Tulcea, 27 September



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including significant efforts to identify what ‘measures’ will be needed to reduce pollution. Another major step is the regular sampling and testing of water quality and pollution in Danube Basin waters, to see what is getting better and what is getting worse – and that is exactly why the JDS2 is needed. In fact, much of the information for the Roof Report was collected by the JDS1 in 2001!

Get involved! Online (www.icpdr.org/JDS) you can view the JDS2 and some of its results, stories and pictures. Or just come to the river and see it live!

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