

From floods to forest fires: early warning systems

Floods, severe weather and forest fires don't stop at national borders, and as one of the effects of climate change we will see more and more extreme weather conditions. To better protect our citizens from floods and forest fires, the European Commission is sending alerts and constantly updated maps to national authorities so they can warn civilians about upcoming threats and prepare their civil protection forces. Such early and reliable information helps save lives, avoid property damage and protect the environment. These early warning systems are developed by scientists of the Joint Research Centre.



DID YOU KNOW:

- That almost 1 million ha of forest were burned in Europe in 2007. These fires claimed the lives of 75 people.
- That the Danube river basin is shared by 19 countries, making it the world's most international river.
- That forest fires in Greece in 2007 are estimated to have caused 2 billion Euros in immediate damage.

European Flood Alert System

In the last decade Europe has experienced a number of severe floods. For instance, the serious flooding in spring 2006 in Central and South-Eastern Europe demonstrated once again that extreme weather conditions in one country can also have an impact across borders. One of the initiatives to improve the preparedness for floods is the European Flood Alert System (EFAS), which is being developed and tested at the European Commission's Joint Research Centre.

National authorities mostly monitor developments within their own borders and have often been taken by surprise by unexpectedly high water flows from neighbouring countries. EFAS takes into account geographical data, climate conditions and rainfall estimates over the whole of Europe and helps to improve preparedness for upcoming floods by providing warnings up to 10 days in advance. Reservoirs can be opened, rescue services alerted and, if necessary, people can be evacuated in time.

Predicting Forest Fire Risks

Did you know that more than half a million hectares of forest land, equivalent to twice the size of Luxembourg, burn every year in the European Union? Severe fires in Central and Southern Europe, induced by extreme weather conditions or arson, lead to an unacceptable loss of human life and damage to property and the environment on a yearly basis. The European Forest Fire Information System (EFFIS) provides relevant information for the protection of forests in Europe against fire. During the forest-fire season (which runs from February until October), EFFIS issues daily forest fire risk forecasts. If risks are high, national authorities can take timely measures that help prevent forest fires or limit their consequences. An EU fire database is also set up to better understand which forest fire prevention measures can be implemented to reduce the number of forest fires and their impact. Finally, damage assessment reports from the same system provide the basis for payments from the EU Solidarity Fund to affected regions.



Dresden railway station, Elbe flood August 2002 (Uwe Hoehne, Dresden).



Elbe flood August 2002 (M. Zebisch TUBIPIK, Potsdam).



Satellite image of 2007 forest fires in Greece (NASA).

Want to know more: www.jrc.ec.europa.eu/research4u