IEDRO
INTERNATIONAL ENVIRONMENTAL DATA RESCUE ORGANIZATION
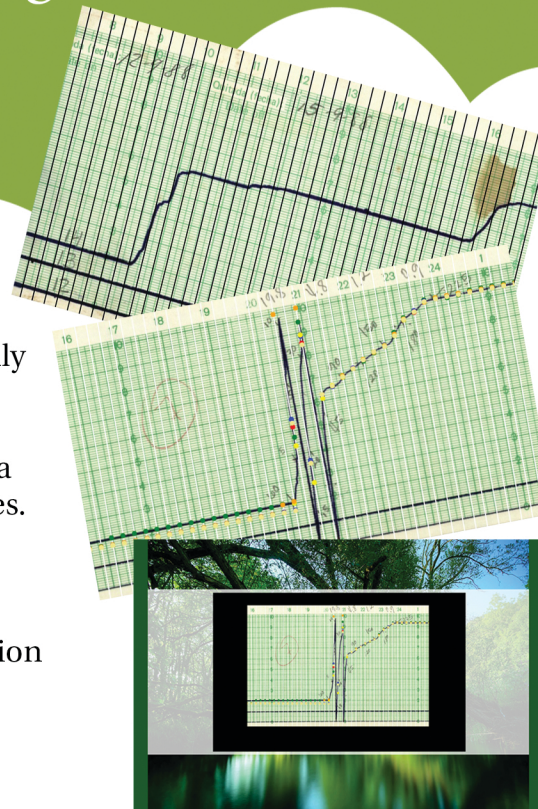
WeatherWizards
Saving Data, Saving Lives IEDRO.ORG

For over 200 years, weather observations of precipitation, temperature, atmospheric pressure, wind and other parameters have been made at tens of thousands of sites worldwide. These historic climate records live on, but only as ink traces on paper charts. A new web-based application from IEDRO called Weather Wizards is being developed to rapidly and cost effectively digitize these records which now only exist on paper.

Daily observations, recorded by hand as numbers on a form or ink lines on a chart, are the basis for most countries' historic hydrometeorological archives. These detailed records show values taken continuously, 24 hours per day, sometimes for years. However, they are not in a format that is usable by scientists. They need to be translated into digital forms that can be easily processed and analyzed digitally. Historic analog charts recorded precipitation amounts, not every 24 hours, but every minute! Such detailed data is of critical importance in developing computer models to forecast flash floods, mudslides, the frequency and duration of damaging winds only if the information can be transferred from paper into computer data.

Why hasn't the critical information been retrieved from these historic analog strip charts and made available to the researchers, modelers and forecasters?

The manual process is tedious. It takes about 30 minutes to manually examine an average chart and transcribe the parameter values. Considering the world has tens of millions of these charts in storage, the task is an impossible one…until now!

The Weather Wizards digitization program, developed by Summit Business Technologies for the International Environmental Data Rescue Organization [IEDRO], provides an answer.

Weather Wizards uses web based graphical tools to enable paid participants or volunteer communities to rapidly digitize climate charts. Users view a computer image of a chart and then sweep the cursor over the ink trace on the chart registering the parameter value at whatever time interval is needed. One chart, with practice, can be "digitized" in about a minute, 30 times faster than a manual effort. As a quality control feature, several people can digitize the same chart and the software compares all the entries and determines which parameter values are correctly identified. The data is then stored as a comma-delimited file, easily usable by any computer program. In a pilot test program Weather Wizards successfully digitized over 3000 charts from El Salvador.

With the Weather Wizards program, IEDRO will work with the National Meteorological and Hydrologic Services throughout the world. IEDRO requests that the Services provide sample charts. If, for example, five countries have the same type of chart, IEDRO could prioritize its development as a digitized format. Working together, we can ultimately get billions of detailed archived weather observations digitized and made available to the world for the benefit of all humanity. Before they fade away, and are lost. Forever.

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