STOCKHOLM ENVIRONMENT INSTITUTE

WEAP

Highlights of New Version of WEAP

Scenario Explorer

The Overviews View has been renamed the Scenario Explorer View (see right), and it now comes with a section to create "sliders" for important data variables. Move the slider to change the value of the associated scenario data variable, and then WEAP will recalculate so that you can instantly see the impact on user-selected key results.

Scenarios can be created and managed directly from the Scenario Explorer.
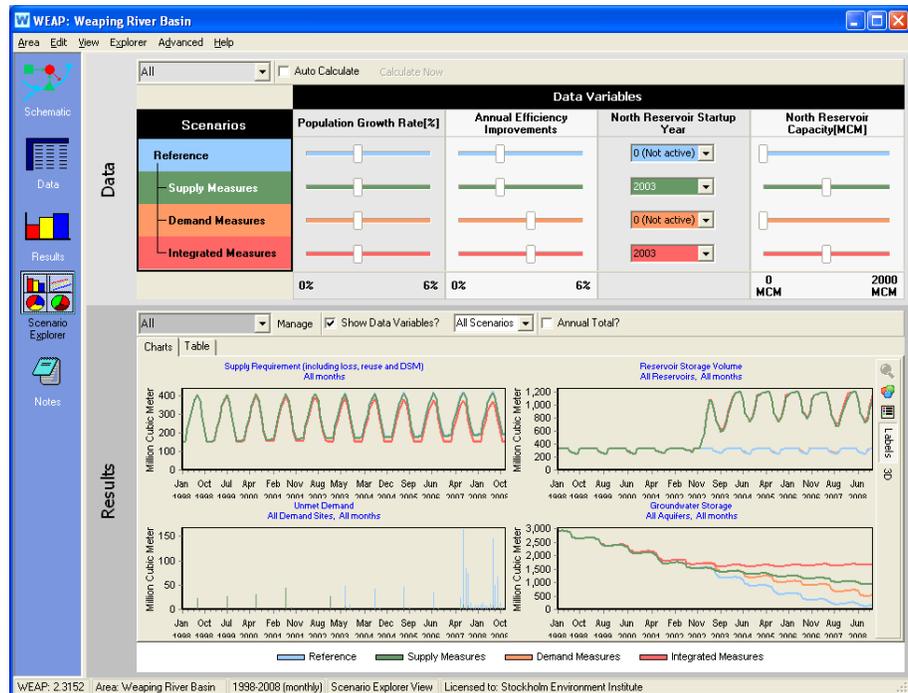
Scripting

Create and embed your own models or link to other external models by building scripts (using WEAP's script editor) in VBScript, JavaScript, Python, Perl, Ruby or any other ActiveScript-enabled scripting language. For example, one recent project built an embedded reservoir temperature model in VBScript; another used Python scripts to link an external GAMS optimization model for demand estimation and supply allocation. Edit, run and debug scripts using WEAP's built-in script editor.

User-defined Variables

Add new variable tabs to extend WEAP's built-in models and algorithms.

Hydropower Energy Demands

Hydropower energy demands can be assigned supply priorities, either for individual reservoirs or for the system as a whole. With a priority and energy demand set, WEAP will try to release water from reservoirs in order to meet the energy demands. Depending on the priority, this release requirement will be satisfied either before, after or at the same time as other demands for water on the river. You may change the energy demands and priority over time or from one scenario to another.

Windows 7

Compatible with all versions of Windows, including 64-bit.

Go to http://www.weap21.org to download WEAP

FAO 56 Crop Requirements and Hydrology

New method for catchment hydrology: the "MABIA" method is a daily simulation of transpiration, evaporation, irrigation requirements and scheduling, crop growth and yields, and includes modules for estimating reference evapotranspiration and soil water capacity. The MABIA Method uses the 'dual' Kc method, as described in FAO Irrigation and Drainage Paper No. 56, whereby the Kc value is divided into a 'basal' crop coefficient, Kcb, and a separate component, Ke, representing evaporation from the soil surface. The basal crop coefficient represents actual ET conditions when the soil surface is dry but sufficient root zone moisture is present to support full transpiration. It was derived from the MABIA suite of software tools, developed at the Institut National Agronomique de Tunisie (INAT) by Dr. Ali Sahli and Mohamed Jabloun.
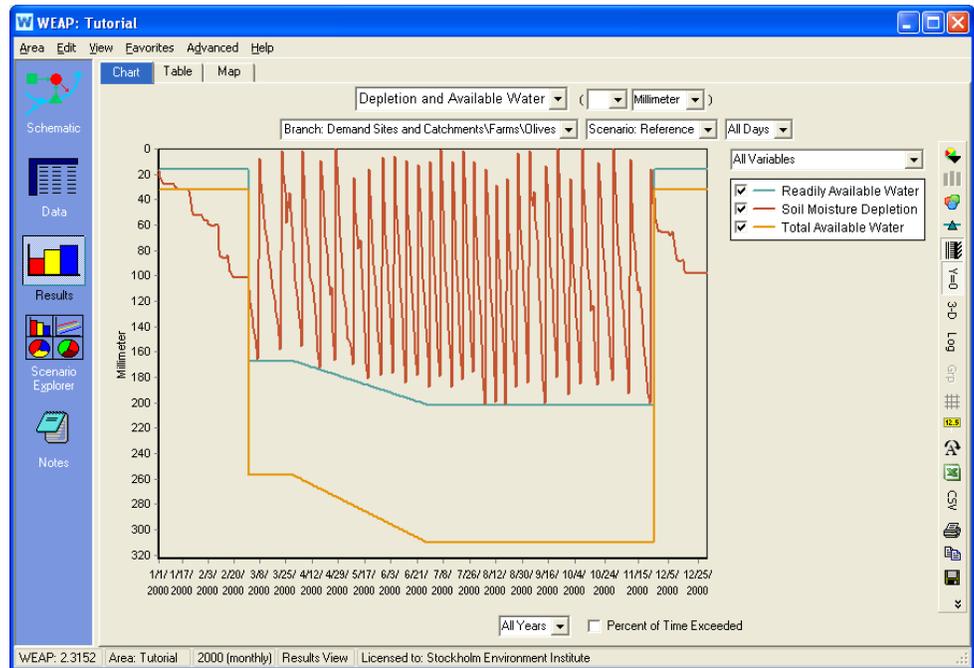
Groundwater Particle Tracking

Perform groundwater quality analyses, such as identifying the capture zone for a well or visualizing the groundwater plume from a contaminated site, using the new dynamic link to MODPATH, the USGS groundwater particle tracking model. WEAP can display particle pathlines as 3-dimension vectors, viewable from any angle.
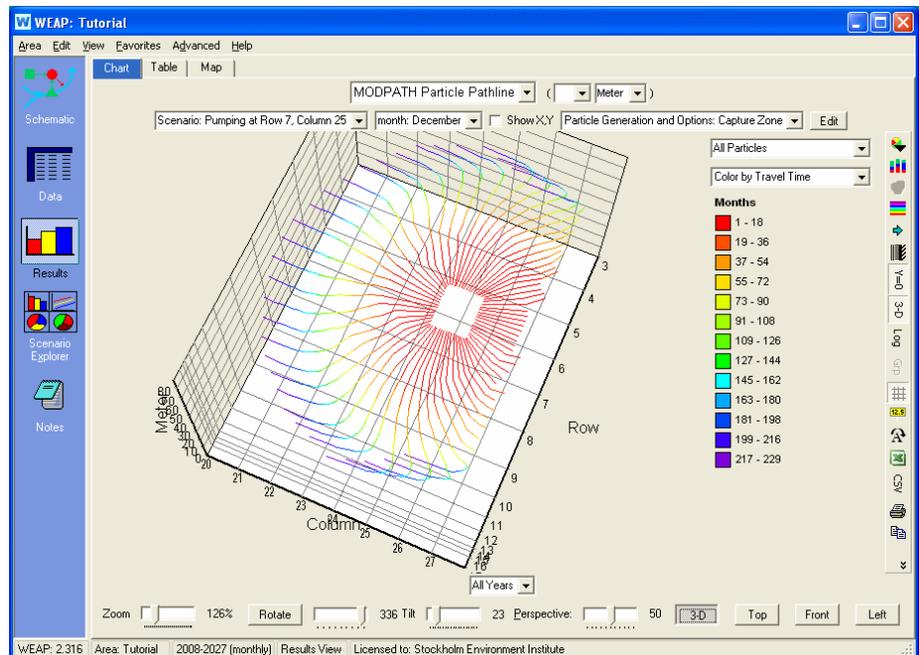
Safe Yield Wizard

The Safe Yield Wizard can help optimize and evaluate tradeoffs among human and environmental water supply needs by finding the maximum safe yield for a given WEAP model. For example, you could explore different policies for reservoir release, instream flow requirements and demand management to see what impact they had on the maximum safe yield from the reservoir and on instream flow.

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The Wizard will attempt to maximize the "goal variable" in each selected scenario, such that all selected demand sites and flow requirements have 100% reliability (no unmet demand) for all years in the study period, and all selected reservoirs refill completely at least once after their lowest point.

PEST Calibration Wizard

WEAP now includes a linkage to a parameter estimation tool (PEST) that allows the user to automate the process of comparing WEAP outputs to historical observations and modifying model parameters to improve its accuracy. Using the PEST Calibration Wizard in WEAP, choose the model parameters to adjust and results and observations to compare, and WEAP will build and run the PEST scripts to perform the calibration.

Chart Improvements

Numerous improvements to the customization of result charts.