




FOOTPRINT

**The FOOT-NES tool:
Pesticide risk assessment and management at the large scale**

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Today's talk

- > Brief introduction to FOOT-NES
- > Demonstration of the FOOT-NES software
 - Pesticide Scenario and Mitigation Manager
 - Modelling Module
 - Communication and Reporting
- > Feedback and Discussion


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The FOOT-NES tool

- > To be used at the large scale by EU and MS policy- and decision-makers, ministries, pesticide registration authorities
- > Prospective exposure / risk assessment
- > Emphasis on:
 1. Identifying the areas most at risk from pesticide contamination (maps)
 2. Assess the probability of pesticide concentrations exceeding legal or ecotoxicologically-based thresholds (spatial CDFs)


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Basics of the FOOT-NES software

- > FOOT-NES basic modelling concept:
 - GW: leaching beyond bottom boundary of the soil profile
 - SW: hypothetical edge-of-field surface water bodies (FOCUS ditch, stream, pond; with FOCUS upstream catchment)
 - PEC are calculated for each agro-environmental scenario (NUTS2/climate/SMU/CLC/STU/crop combination) → afterwards spatial aggregation to maps and CDFs
- > Software:
 - Add-on in ArcGIS 9
 - Modular structure


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Modules of FOOT-NES (1)

- > FOOT-NES has five modules
- > Will demonstrate only the three most important ones
- 1. Pesticide Scenario and Mitigation Manager
 - Here the user specifies the pesticide application(s)
 - Also allows to explore the effects of mitigation (= risk reduction) measures
- 2. Modelling Module
 - Does the actual calculations
 - Extracts values from the Modelling Database
 - Calculates concentrations in surface water / sediment.
 - Produces maps and CDFs (tables and graphs).

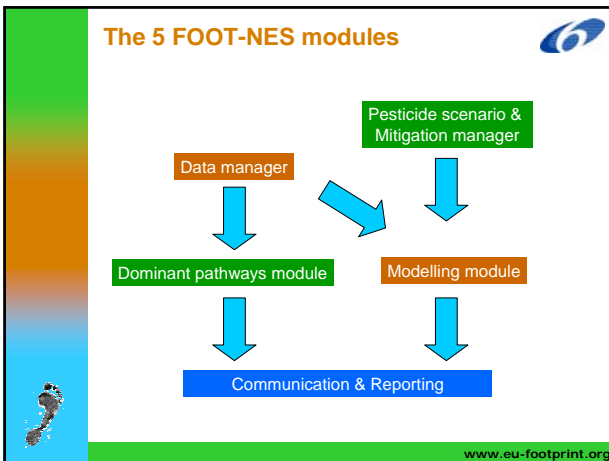
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Modules of FOOT-NES (2)

- 3. Communication and Reporting
 - Presentation of the output variables of the Modelling Module (maps, graphs, percentiles)
 - Provides standard legends for output maps.
- 4. Data Manager
 - Facilitates import of user data to be used in the Modelling Module (soil map, land cover, land use etc.)
 - Administration of default and imported input data
- 5. Dominant Pathways Module
 - Gives vulnerability estimates

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- ### Development status
- > 4 out of the 5 modules have been completed
 - > Last module was not essential for running the tool
 - > Beta version available to FOOTPRINT partners since June 2008 to support evaluation activities
 - > Coming weeks/months
 - Finalise the Data Manager module
 - Start serious beta-testing
 - Integrate modelling results coming out of MACRO and PRZM
 - > Important point: today's demonstration integrates dummy data and NOT real modelling data
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Beta version of FOOT-NES

> DEMONSTRATION.....

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Thanks for your attention!

Questions?

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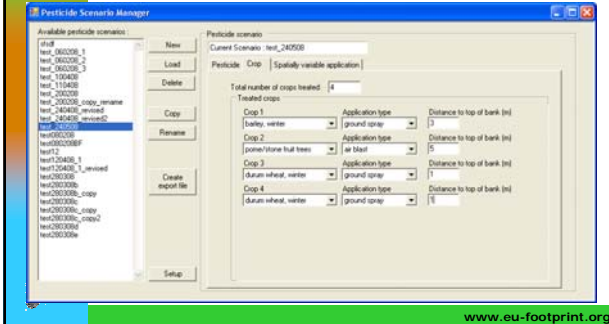
Pesticide Scenario Manager: pesticide

- > Select/enter compound and properties
- > Select percentiles for surface water calculations

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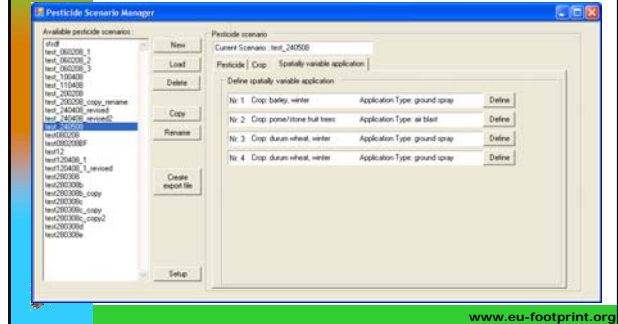
Pesticide Scenario Manager: crops

- > Select crop(s), application type and distance to surface water body



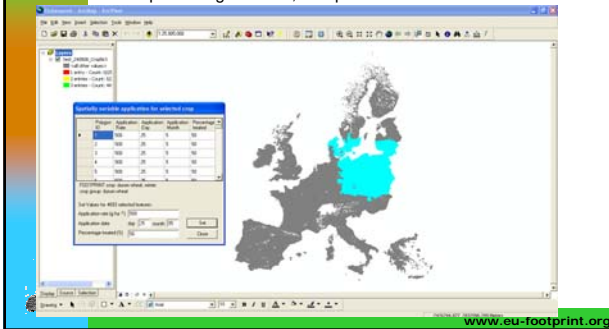
Pesticide Scenario Manager: spatially variable application (1)

- > For each crop, define spatially variable application



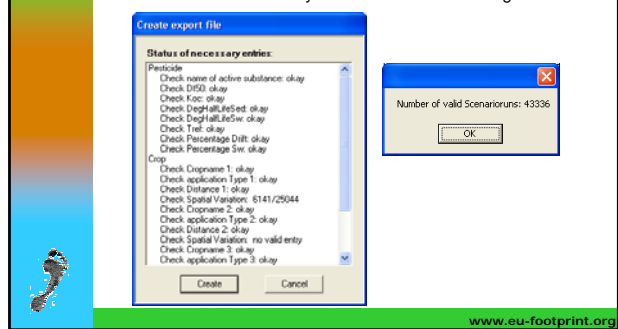
Pesticide Scenario Manager: spatially variable application (2)

- > 1. Select polygons; 2. enter application rate, date and percentage treated; 3. repeat

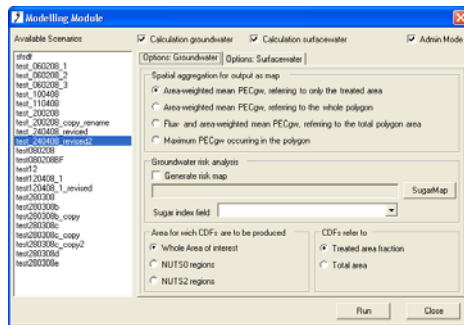


Pesticide Scenario Manager: create export file

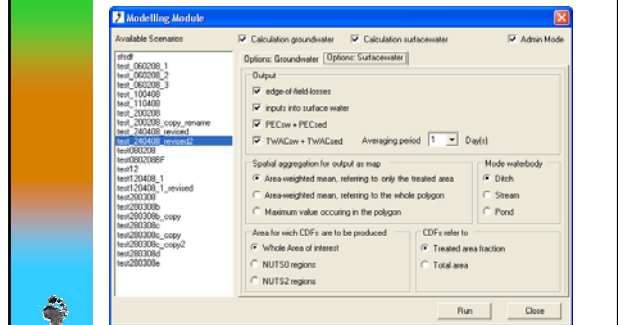
- > The pesticide application scenario is exported as a text file, which is then read by the FOOT-NES Modelling Module.



Modelling Module: Select options for groundwater



Modelling Module: Select options for surface water



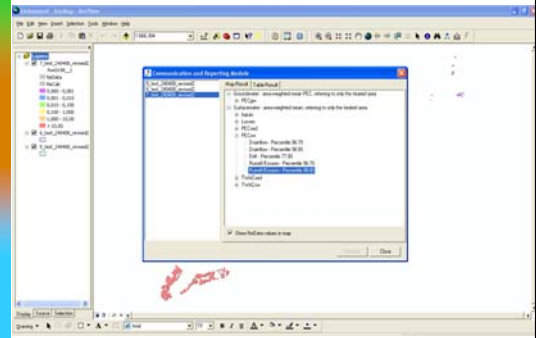
Run the Modelling Module



Communication and Reporting: Maps



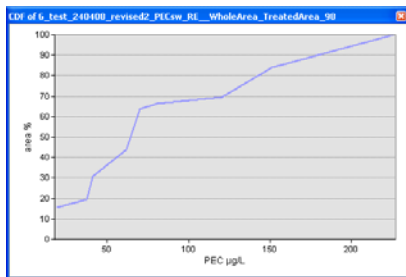
- > Select variable for map display + automatically create standard legend



Communication & Reporting: CDF (1)



- > Spatial Cumulative Distribution Functions (CDF) are automatically created for each output variable in dbf format + as basic graphs in ArcGIS.



Communication & Reporting: CDF (2)



- > Select variable + automatically calculate percentiles and area percentages of exceedance
- > Export facility still under construction

